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**[0001]** The invention relates to a syringe body comprising a safety device arranged at one end for preventing pricking injuries, the syringe body comprising a piercing element that is arranged at one end and the safety device having at least one guide pin and a recess, by means of which recess a guide slot is formed in order to guide the guide pin, upon a movement of the syringe body relative to the safety device, in a longitudinal direction of the syringe body.

**[0002]** From the state of the art safety devices for preventing pricking injuries have hitherto been known, which are mounted around the entire syringe after the syringes have been filled.

**[0003]** However, these safety devices increase the bulk, both in terms of sheer size and weight, of the syringe in use, making handling syringes with such safety devices significantly more difficult.

**[0004]** In addition, safety devices are designed such that a syringe can already be made unusable, for example, when interrupting the injection, without the needle tip even having emerged from the safety device. The syringe is thus already unusable even before it had any contact with the patient and had not actually been contaminated.

**[0005]** Other known safety devices reflect the opposite case. The needle tip is only transferred to a safe position when the needle tip has already exited the safety device. This has the serious disadvantage that an injection could be repeated even though the needle was already in contact with the patient. It is therefore possible that someone may come into contact with a contaminated syringe and get injured or even become infected. Generic safety devices which disclose the preamble of claim 1 are known from US 2011/0319833, US4966592 and US5591138.

**[0006]** It is therefore the object of the present application to provide a syringe body with a safety device, which no longer has the disadvantages of the prior art.

**[0007]** This object is achieved by a syringe body comprising, inter alia, a safety device that is arranged at one end for preventing pricking injuries, the syringe body comprising a piercing element that is arranged at one end and the safety device having at least one recess and at least one guide pin, by means of which recess a guide slot is formed in order to guide the guide pin, upon a movement of the syringe body relative to the safety device, in a longitudinal direction of the syringe body, the guide slot comprising a first and a second slot region, which are separated by notional separation line, which extends in the longitudinal direction of the syringe body and wherein the guide pin in an initial position is arrangeable in the first slot region and may be transferred from the first into the second guide region in an end position, by crossing the notional separation line, when a distal end of the piercing element is arranged at the level of an exit opening of the safety device, upon a movement of the syringe body relative to the safety device.

**[0008]** The term "arranged at one end" is to be understood in this context such that the respective structural element is arranged on a distal end. Thus, the safety device and the piercing element are arranged at the distal end of the syringe body.

**[0009]** The term "piercing element" is to be understood as meaning a needle, a cannula, a lancet or the like.

**[0010]** An "initial position" describes a position, preferably of the guide pin, which corresponds to an unused syringe, that is to say prior to the use of a syringe.

**[0011]** An "end position" describes a position in which the present syringe has already been used. If the guide pin has reached the end position, it is no longer possible to use the syringe again.

**[0012]** According to the invention, the guide pin can be transferred from the first slot region into the second slot region. This transition takes place when the guide pin crosses a notional separation line separating the first and second slot regions. If the guide pin is in the first slot region, i.e. in an initial position, the syringe has not yet

been triggered, i.e. the needle has not yet left the safety device. If the guide pin is located in the second slot region, then the needle has already left the safety device, so that an injection is possible. In the transition from the first slot region to the second slot region, i.e. just when the guide pin crosses the separation line, the distal end of the piercing element, for example the needle, is at the level of the exit opening of the safety device.

**[0013]** According to a particularly preferred embodiment, the safety device comprises at least one spring element. The spring element is preferably operatively connected to the syringe body and counteracts the movement of the syringe body relative to the safety device. This means that when a user of the syringe moves the syringe body with respect to the safety device, the spring element counteracts said movement and, if the relative movement is suppressed, would return the syringe body with respect to the safety device back to a position in which the syringe is located again completely in the safety device.

**[0014]** The spring element can thus ensure that the needle after use of the syringe can be safely returned to the safety device and that the guide pin can preferably be automatically transferred to the end position.

**[0015]** In this context, the spring element can be configured in various ways. Preferably, the spring element is a helical spring.

**[0016]** According to a preferred embodiment, the safety device is at least operatively connected to the syringe body by means of a mounting element. It is conceivable that the guide pin/pins is/are arranged on the mounting element. In this case, the mounting element is advantageously connected, on the one hand, to a needle attachment which is connected to the syringe body and, on the other hand, to the safety device by means of the at least one guide pin, since the guide pin is arranged within the guide slot of the safety device.

**[0017]** Particularly advantageously, the mounting element is arranged within a sleeve of the safety device. Further advantageously, this sleeve also comprises the guide

slot. According to a preferred embodiment, the safety device, in particular the sleeve, two recesses, and the mounting element, comprises two guide pins, wherein the recesses and the guide pins are advantageously formed opposite one another, whereby a particularly advantageous guidance can be ensured.

**[0018]** More preferably, the spring element is also disposed within the sleeve and particularly preferably secured against falling out by means of the mounting element in the sleeve.

**[0019]** According to the invention, the first slot region has a first curved slot portion and the second slot region has a second curved slot portion, on which the guide pin is guided, depending on the position in the guide slot. Advantageously, the respective slot portion may have a plurality of sub-portions.

**[0020]** Since the slot regions have curved slot portions, it is advantageous if the mounting element, when mounted on the syringe body, is axially fixed, but can rotate radially around the syringe body. This ensures that the guide pin can follow the profile of the respective slot. This means that in a relative movement, the mounting element and consequently also the guide pin can rotate around the syringe body.

**[0021]** According to the invention, a separating region adjoins the first and the second slot region. In this case, this separating region can be arranged at least partially between the first and the second slot region.

**[0022]** According to the invention, the separating region is designed in such a way that the separating region has an apex which lies on the notional separation line. Advantageously, this apex is a local extremum of the separating region, so that in this way a movement of the guide pin can be supported. Because the apex lies on the separation line, the first and the second slot region can be well determined by means of the separating region and the separation line. In addition, because the apex is preferably a local extremum, the guidance of the guide pin is directed in particular against the longitudinal direction of the syringe body, since the apex in the region around the apex determines in which slot region the guide pin is guided.

**[0023]** According to a particularly preferred embodiment, when the guide pin is located in the second slot region, the guide pin can be transferred into an end region by means of a slot of the second slot region. Preferably, in this end region the guide pin is operatively connected to a stop element.

**[0024]** Advantageously, the slot of the second slot region is the second slot portion.

**[0025]** This means that when the guide pin is in the second slot region, the guide pin is transferred by means of the second slot region and preferably with the aid of the spring element in the end region and is then operatively connected to the stop element.

**[0026]** The stop element is designed such that when the guide pin is in the end position, the guide pin can no longer be moved in the longitudinal direction towards the distal end of the needle, whereby further removal of the needle from the safety device is prevented.

**[0027]** According to a preferred embodiment, the stop element therefore comprises an apex which lies on a line which is arranged perpendicularly to the separation line. This means that the line extends in a width direction of the syringe body. The line can also be referred to as a transverse line. Particularly advantageously, the stop element also extends with the apex in the direction of this transverse line. This means that the stop element is arranged substantially at an angle of 90° to the separation region.

**[0028]** Due to the arrangement of such a stop element, it is therefore possible that an already used syringe, i.e. a syringe whose piercing element has already emerged from the safety device, cannot be used again for an injection process. Likewise, a patient or a third-party user can no longer injure themselves on the piercing element before and after the injection process, since the piercing element is enclosed in each case by the safety device.

**[0029]** According to a preferred embodiment, it is therefore also conceivable that in addition to the previously described safety device, the safety device comprises a cap element and/or a needle guard. Advantageously, the cap element is equipped with the needle guard. Further advantageously, the cap element is removable from the safety device before use of the syringe, whereby, if necessary, the needle guard can also be removed therewith. Thus, for a user of the syringe, the safety of the safety device can be further increased, so that the risk of injury can be further reduced.

**[0030]** Further advantageous embodiments will be apparent from the dependent claims.

**[0031]** Further objects, advantages and uses of the present invention will become apparent from the following description taken in conjunction with the drawings, in which:

Fig. 1 shows a portion of the syringe body;

Fig. 2A is a perspective view of the sleeve;

Fig. 2B is a perspective view of the cap element;

Fig. 3A is a perspective view of the mounting element from above;

Fig. 3B is a perspective view of the mounting element from below;

Fig. 4 is a longitudinal section of a syringe body with a safety device mounted thereon;

Fig. 5A shows a syringe in the initial position;

Fig. 5B shows the syringe of Fig. 5A at the moment of transfer;

Fig. 5C is a longitudinal section of the syringe of Fig. 5A at the moment of transfer;

Fig. 5D shows the syringe of Fig. 5A in the end position;

Fig. 5E is a longitudinal section of the syringe of Fig. 5A in the end position;

Fig. 6 shows a syringe suspended in a syringe nest comprising syringe body and safety device.

**[0032]** Fig. 1 shows a possible syringe body 1 on which the invention may be based. Commercially available syringe bodies 1 are designed substantially cylindrically, as in the case of the present syringe body 1, and have a predetermined diameter 23. In the present case, moreover, the syringe body 1 has at its distal end 24 a narrowed region 25, which is likewise of substantially cylindrical design. In the present case, however, the narrowed region 25 has a truncated cone shape, wherein the narrowed region in the shape of a truncated cone has a diameter 26 on the top surface (not shown here), i.e. the distal end 27 of the narrowed portion 25, wherein the diameter 26 of the narrowed region 25 is smaller than the diameter 23 of the syringe body.

**[0033]** Further, in the present case at the distal end 27 of the narrowed region 25, a needle-holding device 28 with a piercing element 3, in the present case a needle 3, is arranged, said needle-holding device 28 having a diameter 29 which is greater than the diameter 26 of the narrowed region 25, but smaller than the diameter 23 of the syringe body 1. Further, the needle-holding device 28 is disposed at the distal end 27 of the narrowed region 25, so that a transition region 30 is formed, wherein due to the transition region 30, a region is formed, where the diameter 26 of the narrowed region 25 and the diameter 29 of the needle-holding device meet, so that the diameter is changed abruptly. Thus a sort of protrusion is formed by the transition region 30.

**[0034]** Fig. 2A is a perspective view of a first important component of the safety device 2, namely the sleeve 31. As can be clearly seen from Fig. 2A, the sleeve has a recess 4 which forms the guide slot 6 for guiding the guide pin 5 (not shown here). In addition, the sleeve may have an aperture region 32 delimited by a boundary 33.

Advantageously, the recess 4 is arranged opposite a mirror-image recess 4' and the aperture region 32 is opposite a mirror-image aperture region 32' on the sleeve 31.

**[0035]** In the present case, the aperture region 32 is used so that a cap element 21 (see Fig. 2B) can be plugged in a guided manner, in order to increase the safety of the safety device 2. Through the boundary 33 of the aperture region 32, the cap element 21 is connected to the sleeve 31 at least in operative contact and preferably at least with a force fit.

**[0036]** At the distal end 34 of the sleeve 31, the sleeve preferably has an exit opening 13, which in the present case is designed as a circular ring 35, wherein the sleeve 31 is then extended with an annular region 36 on the circular ring 35. In the present case, the annular region 36 has a larger diameter than the circular ring 35. Particularly advantageously, the circular ring 35 and the annular region 36 are arranged concentrically to one another. Advantageously, the cap element 21 is designed such that it can be placed on the circular ring 35, but not on the annular region 36, so that when placing the cap element 21, the cap element 21 is in contact both with the circular ring 35 and with the annular region 36 and the engagement movement of the cap element 21 is limited by this configuration.

**[0037]** Fig. 2B shows the cap element 21, already cut, as previously shown. In the present case, the cap element 21 also comprises a needle guard 22 and further a first wing element 37 and a second wing element 37', which are configured such that they are designed to be complementary to the aperture region 32 or the mirror-image aperture region 32'.

**[0038]** The needle guard 22 is preferably designed substantially cylindrically and is advantageously firmly connectable or connected to the cap element 21, wherein the needle guard 22 is preferably configured such that the needle guard 22 is insertable into the circular ring 35. This means that an outer diameter 40 (not shown here) of the needle guard 22 corresponds at most to the inner diameter 39 of the circular ring 35. However, it is conceivable that other geometric shapes are used instead of a circle.

**[0039]** The distal end 38 of the cap element 21 is in the present case also configured as a circular ring 41, whose inner diameter 43 corresponds at least to the outer diameter 42 of the circular ring 35 and at most to the outer diameter 43 of the annular region 36. This means that the circular ring 41 comes to rest on the annular region and these are thus operatively connected to each other.

**[0040]** Fig. 3A and 3B show the mounting element 14, by means of which the sleeve 31 and thus the safety device 2 as a whole is connectable to the syringe body 1, wherein Fig. 3A is a perspective view of the mounting element 14 from above and Fig. 3B is a perspective view of the mounting element 14 from below.

**[0041]** The mounting element 14 is present in the form of a substantially cylindrical shape with an outer diameter 45 and an inner diameter 46, wherein reference numeral 47 indicates the distal end of the mounting element 14.

**[0042]** In the present case, two guide pins 5 are arranged on a lateral surface 48 of the mounting element 14 and lie opposite each another with respect to the mounting element 14. These guide pins 5 can then be arranged in the guide slot 6 of the sleeve and operatively connected thereto.

**[0043]** In addition, the mounting element 14 has one or more, in the present case two, recesses 49 and one or more, in the present case three, locking elements 50, the functions of which are shown below with reference to Fig. 3B.

**[0044]** In Fig. 3B, reference numeral 51 denotes a proximal end 51 of the mounting element 14. As can be seen, the locking elements 50 of the mounting element 14 extend upwards from the proximal end 51 towards the distal end 47, i.e. the locking elements are greater at the distal end 47 than at the proximal end 51, as seen in the radial direction.

**[0045]** If, during assembly of the mounting element 14 with the syringe body 1, in particular with the narrowed region 25, the mounting element 14 is first pushed with

its proximal end 51 onto the needle-holding device 28, the first half 52 and a second half 53 of the mounting element 14, which are separated by the recesses 49, are moved away from each other, due to the thickness difference in the radial direction and increasing in the axial direction. It is therefore necessary that the mounting element 14 is designed to be resilient at least in part.

**[0046]** If the distal end 47 of the mounting element 14 passes through the transition region 30, then the first 52 and the second half 53 move towards one another due to the resilient configuration, so that finally the mounting element 14 and thus the safety device 2 are clipped onto the syringe body 1.

**[0047]** To secure this clip connection, the locking elements 50 have at their distal end 50' securing portions 50", which extend in the circumferential direction of an inner circle 54 of the mounting element 14 and are in mechanical operative contact with the transition region 30.

**[0048]** Particularly preferably, the safety device 2 comprising the sleeve 31, the mounting element 14 and the cap element 21 is already pre-assembled and is connectable as a whole to the syringe body 1 by means of the mounting element 14.

**[0049]** Fig. 4 shows a syringe body 1 with a safety device 2 mounted thereon in a longitudinal section.

**[0050]** In addition to the cap element 21, the sleeve 31 and the mounting element 14, the safety device 2 comprises a spring element 17, which in the present case is designed as a helical spring 17.

**[0051]** As can be clearly seen, the guide pins 5 are in contact with the recess 4 or the guide slot 6, so that the guide pins are guided by the guide slot during a movement of the syringe body relative to the safety device.

**[0052]** The mounting element 14 is clipped together with the narrowed region 25 by means of the locking elements 50 and their securing portions 50" and is connected to

the sleeve 31 by means of the guide pins 5.

**[0053]** The sleeve 31 further comprises at its distal end 34 an inner support region 57, which is operatively connected to the spring element 17. The spring element 17 is thus held on the one hand by the support region 57 and on the other hand by the mounting element 14 in the sleeve 31 and is secured against falling out.

**[0054]** The dimensions of the safety device 2 are chosen such that the sleeve 31 has an inner diameter 55 which is greater than the diameter 23 of the syringe body 1, so that the syringe body 1 when moving forwards in the longitudinal direction L, wherein the direction of movement is shown by an arrow L, is insertable relative to the safety device 2 into the sleeve 31. At the same time, the outer diameter 56 of the sleeve 31 or the safety device 2 is selected such that it corresponds at most to a maximum diameter of a holding device 58 attached to the proximal end of the syringe body 1 for holding and securely setting the syringe. The purpose of this size restriction will be described in more detail with reference to Fig. 6.

**[0055]** With reference to Fig. 5A-5E, the safety device 2 is again shown in detail, in particular the movement of the guide pin 5 and the syringe body 1 relative to the safety device 2 and the position of the needle 3. For sake of clarity, the safety device 2 is shown in Fig. 5A-5E without the cap element 21 and needle guard 22.

**[0056]** Fig. 5A shows the arrangement consisting of the syringe body 1 and the safety device 2 in an initial position 10. An initial position 10 is understood to refer to a syringe that has not yet been used.

**[0057]** The guide pin 5 is also in an initial position 10 and is arranged in the first slot region 7. The first slot region 7 is separated from the second slot region 8 by the notional separation line 9 and the separating region 15, which has an apex 16. The apex 16 lies here on the notional separation line 9. The first slot region 7 comprises a slot portion 60 and the second slot region 8 comprises a second slot portion 61. Furthermore, the second slot region 8 comprises a stop element 19.

**[0058]** The first slot region 7 is in this case essentially L-shaped and comprises a curved first curve portion 60, the second slot region 8 having an essentially L-shaped configuration with a second curved curve portion 61, wherein the second curve portion 61 consists of several parts.

**[0059]** Preferably, the distal end 34 of the sleeve is placed directly on the skin, so that the exit opening 13 is in contact with the skin. If the syringe body 1 is now moved relative to the safety device 2 in the longitudinal direction L, the guide pin 5 is guided through the first slot portion 60, as a result of which the mounting element 14 is moved around the narrowed region 25. The mounting element 14 is thus fixedly mounted in the axial direction, but can rotate freely in the radial direction around the narrowed region 25.

**[0060]** If the guide pin 5 crosses the notional separation line 9, then the guide pin 5 is transferred from the first slot region 7 into the second slot region 8, as can easily be seen in Fig. 5B and 5C. At the moment of transfer, the distal end 12 of the piercing element 3 is arranged at the level of the exit opening 13. The piercing element 3 is thus just about to emerge from the safety device 2, so that an injection is possible.

**[0061]** The piercing element 3 can then be moved further out of the safety device 2 until the guide pin 5 has reached a distal end 63 of the second slot region 8, thereby preventing further movement in the longitudinal direction.

**[0062]** If the injection was carried out or the piercing element 3 was moved out of the safety device 2, the user reduces the pressure on the syringe, whereby the syringe body 1 is moved counter to the longitudinal direction L with respect to the safety device 2 by the spring force of the spring element 17. The piercing element is thus automatically moved back into the safety device 2 by the spring element 17. The guide pin 5 moves here, depending on how far the piercing element 3 has been moved out, along the second slot portion 61 and/or on a line (not shown here), which runs parallel to the longitudinal direction.

**[0063]** Starting from a certain position of the guide pin 5 in the second slot region 8,

the guide pin 5 is in contact with the second slot portion 61 and is guided thereby. The second slot portion is configured such that, with the assistance of the return movement by the spring element 17, it automatically transfers the guide pin into an end position 11 and is in contact with a stop element 19. The stop element 19 preferably comprises an apex 20 which is arranged on the transverse line 64, which runs perpendicularly to the separation line 9. The apex 20 provides a better guidance of the guide pin 5 within the second slot region 8. In the present case, the stop element further comprises a portion 65 on which the guide pin 5 rests. In the present case, this portion 65 is also on the transverse line 64, although other embodiments of the portion 65 are conceivable. For example, the portion 65 may also have a curved path.

**[0064]** The shape of the portion 65 is always to be selected such that, when attempting to operate the syringe again, the guide pin 5 remains in its end position 11.

**[0065]** In Fig. 6, reference is made to Fig. 4, in which the size has been described, which the safety device 2 should advantageously have. Also visible is a portion of a syringe nest 66, the syringes being suspended in a respective opening 67 of the syringe nest 66. In order to be able hang a syringe in the syringe nest 66, the diameter 59 of the holding device is selected to be larger than the diameter 68 of an opening 67. In order to hang the syringe body 1 together with the safety device 2 in an opening 67, the outer diameter 56 of the sleeve 31 or the outer diameter 56 of the safety device 2 should be selected to be smaller than the diameter 59 of the holding device 58. It is therefore possible to mount, fill and sterilise the syringe already provided with the safety device 2 in the syringe nest.

**List of reference numerals**

**[0066]**

1 syringe body
2 safety device

3 piercing element
4 recess
4' mirror image recess
5 guide pin
6 guide slot
7 first slot region
8 second slot region
9 notional separation line
10 initial position
11 end position
12 distal end of the piercing element
13 exit opening
14 mounting element
15 separating region
16 apex of the separating region
17 spring element
18 slot of the second slot region
19 stop element
20 apex of the stop element
21 cap element
22 needle guard
23 diameter of the syringe body
24 distal end of the syringe body
25 narrowed region of the syringe body
26 diameter of the narrowed region
27 distal end of the narrowed region
28 needle-holding device
29 diameter of needle-holding device
30 transition region
31 sleeve
32 aperture region
32' mirrored aperture region
33 boundary

34 distal end of the sleeve
35 circular ring
36 annular region
37 first wing element
37' second wing element
38 distal end of the cap element
39 inner diameter of the circular ring
40 outer diameter of needle guard
41 circular ring
42 outer diameter of circular ring
43 inner diameter of circular ring
44 outer diameter of annular region
45 outer diameter of the mounting element
46 inner diameter of the mounting element
47 distal end of the mounting element
48 lateral surface of the mounting element
49 recess
50 locking element
50' distal end of the locking element
50" securing portion
51 proximal end of the mounting element
52 first half of the mounting element
53 second half of the mounting element
54 inner circle
55 inner diameter of the sleeve
56 outer diameter of the sleeve
57 support region
58 holding device
59 diameter of the holding device
60 first slot region
61 second slot region
62 distal end of the cap element
63 distal end of the guide slot

64 transverse line

65 portion of the stop element

66 syringe nest

67 opening

68 diameter of the opening

**Krav**

**1.** Sprøjtelegeme (1) med en sikkerhedsanordning for enden (2) til at undgå stikskader, idet sprøjtelegemet (1) omfatter en nål for enden (3) med en distal ende (12), og sikkerhedsanordningen (2) har en udsparing (4) og mindst en føringsstift (5), ved hjælp af hvilken udsparing der er dannet en føringsslids (6) til at føre føringsstiften (5) i en langsgående retning (L) af sprøjtelegemet (1) ved sprøjtelegemets (1) arbejdsbevægelse i forhold til sikkerhedsanordningen (2), idet der i en udgangsposition (10), i hvilken nålens (3) distale ende (12) er anbragt inden for sikkerhedsanordningen (2), føringsstiften (5) er anbragt i et første slidsområde (7) af føringsslidsen (6) og i en endeposition (11), i hvilken nålens (3) distale ende (12) er bevæget ud af sikkerhedsanordningen (2) gennem en udgangsåbning (13), føringsstiften (5) er anbragt i et andet slidsområde (8) af føringsslidsen (6), idet der mellem det første (7) og det andet slidsområde (8) i det mindste delvist er anbragt et skilleområde (15) med et kurvetoppunkt (16), idet der i langsgående retning (L) løber en fiktiv skillelinje (9) gennem kurvetoppunktet (16), hvilken linje deler det første (7) og det andet slidsområde (8),
**kendetegnet ved, at**
det første slidsområde (7) har et første kurveformet afsnit (60), hvorpå føringsstiften (5) ved sprøjtelegemets (1) arbejdsbevægelse føres til den fiktive skillelinje (9), idet det andet slidsområde (8) har et andet kurveformet afsnit (61), hvorpå føringsstiften (5) føres ved sprøjtelegemets (1) arbejdsbevægelse efter at have krydset den fiktive skillelinje (9), idet den distale ende (12) af nålen (3) er placeret på højde med sikkerhedsanordningens (2) udgangsåbning (13), når den fiktive skillelinje (9) krydses.

**2.** Sprøjtelegeme (1) ifølge krav 1,
**kendetegnet ved, at**
føringsstiften (5) er placeret på et monteringselement (14) på sikkerhedsanordningen (2).

**3.** Sprøjtelegeme (1) ifølge krav 2,
**kendetegnet ved, at**
sprøjtelegemet (1) og sikkerhedsanordningen (2) kan forbindes med hinanden ved hjælp af monteringselementet (14).

**4.** Sprøjtelegeme (1) ifølge et af de foregående krav,
**kendetegnet ved, at**
sikkerhedsanordningen (2) mindst har et fjederelement (17), som er operativt forbundet med sprøjtelegemet (1) og modvirker sprøjtelegemets (1) arbejdsbevægelse i forhold til sikkerhedsanordningen (2).

**5.** Sprøjtelegeme (1) ifølge et af de foregående krav,
**kendetegnet ved, at**
når føringsstiften (5) befinder sig i det andet slidsområde (8), føringsstiften (5) bevæges til et endeområde (69) ved hjælp af en slids (18, 61) i det andet slidsområde (8), og føringsstiften (5) er operativt forbundet med et stopelement (19).

**6.** Sprøjtelegeme (1) ifølge krav 5,
**kendetegnet ved, at**
stopelementet (19) omfatter et kurvetoppunkt (20), som ligger på en linje (64), som er placeret vinkelret på skillelinjen (9).

**7.** Sprøjtelegeme (1) ifølge et af de foregående krav,
**kendetegnet ved, at**
sikkerhedsanordningen (2) omfatter et kappeelement (21) og en nålebeskytter (22).

## Drawings

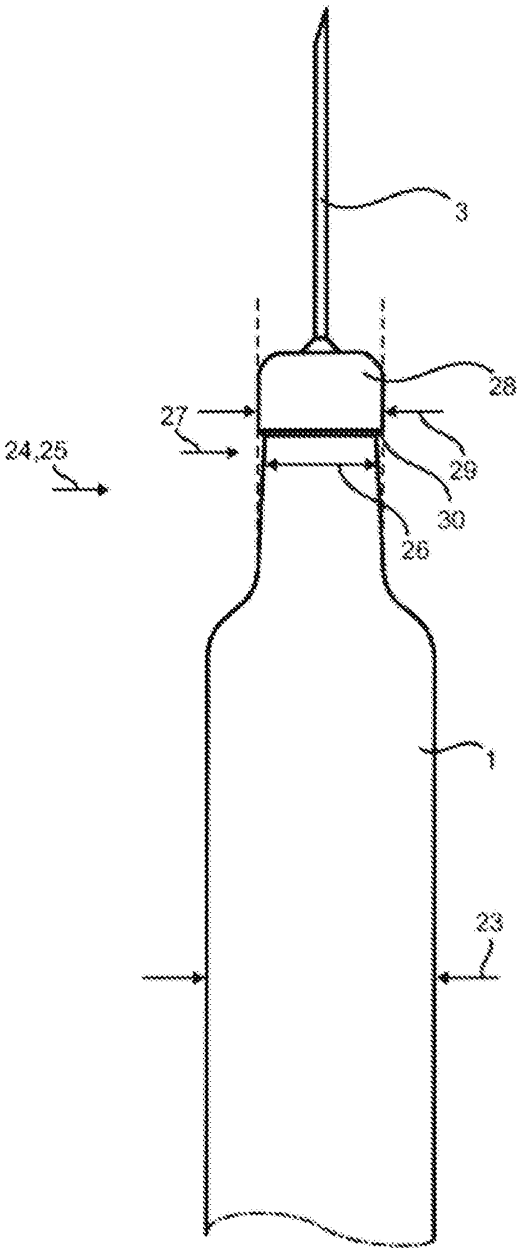


Fig. 1

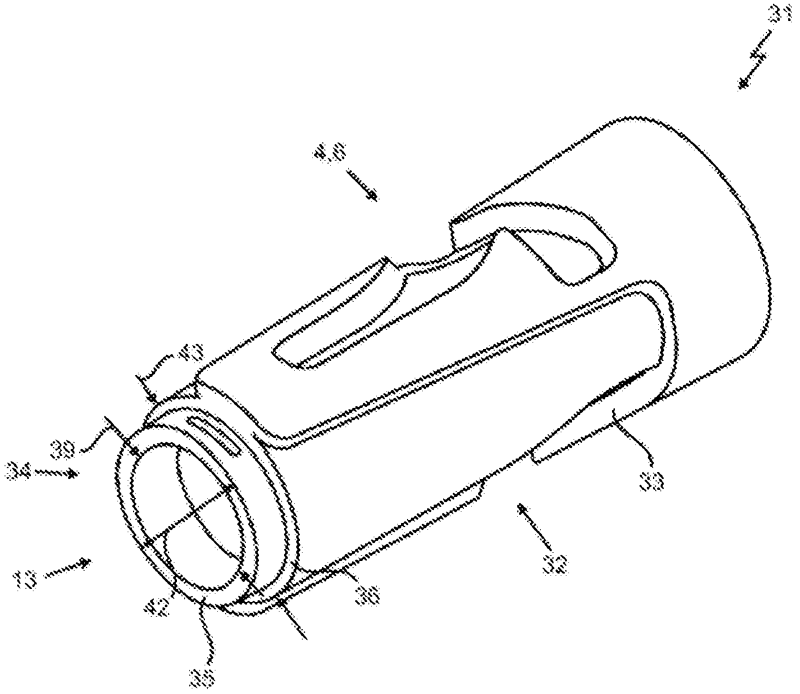


Fig. 2A

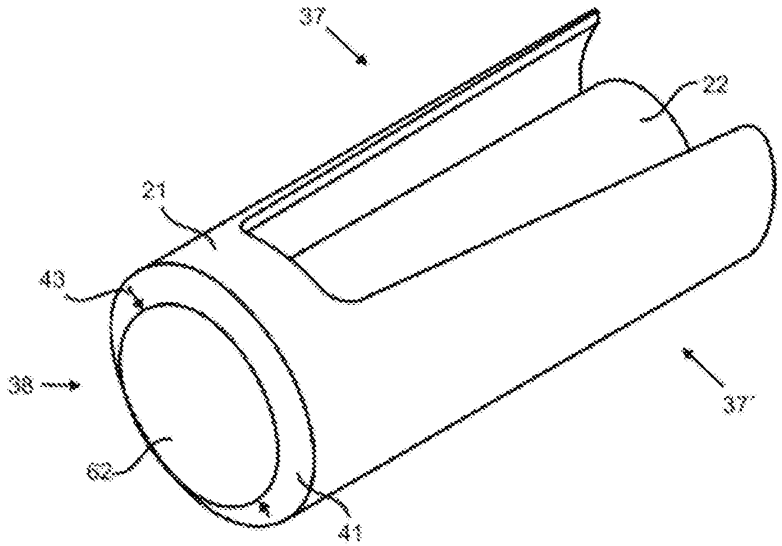


Fig. 2B

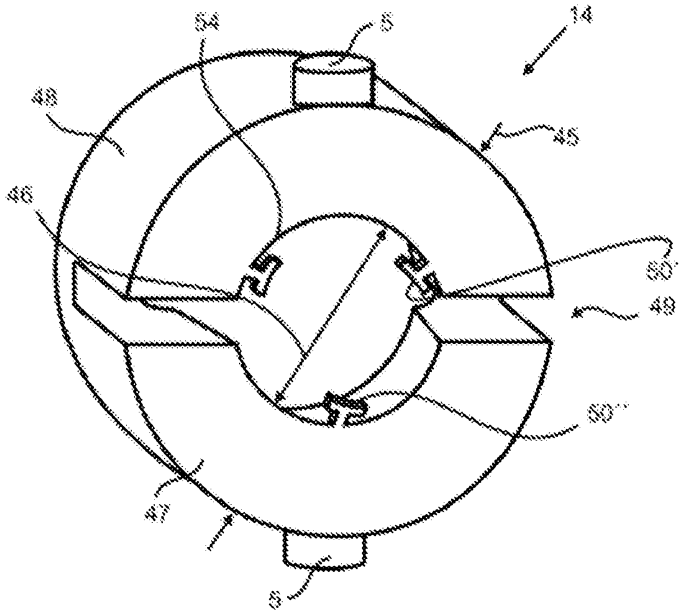


Fig. 3A

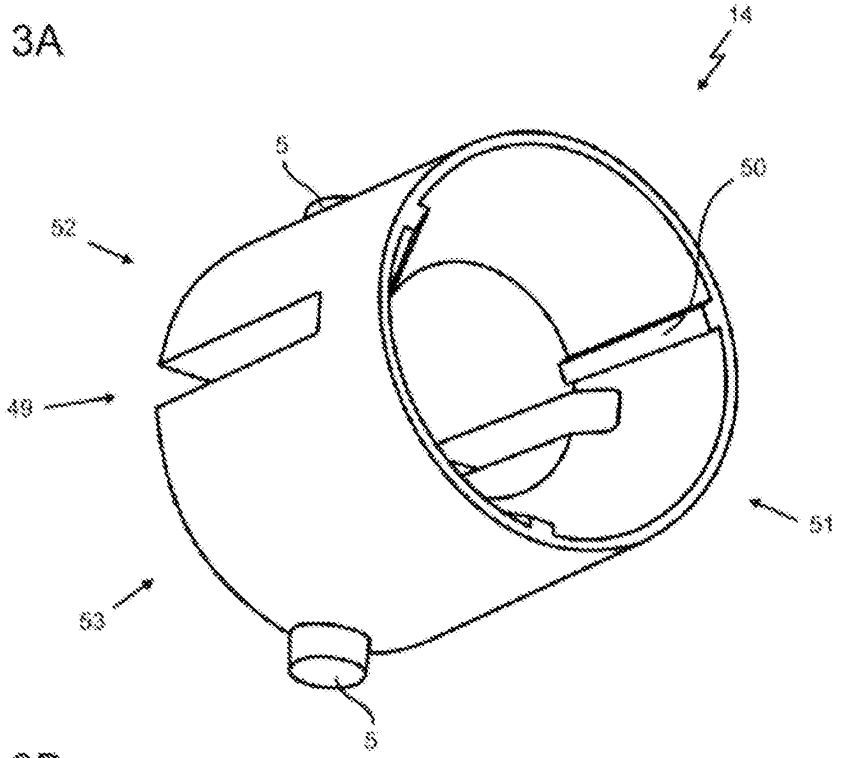


Fig. 3B

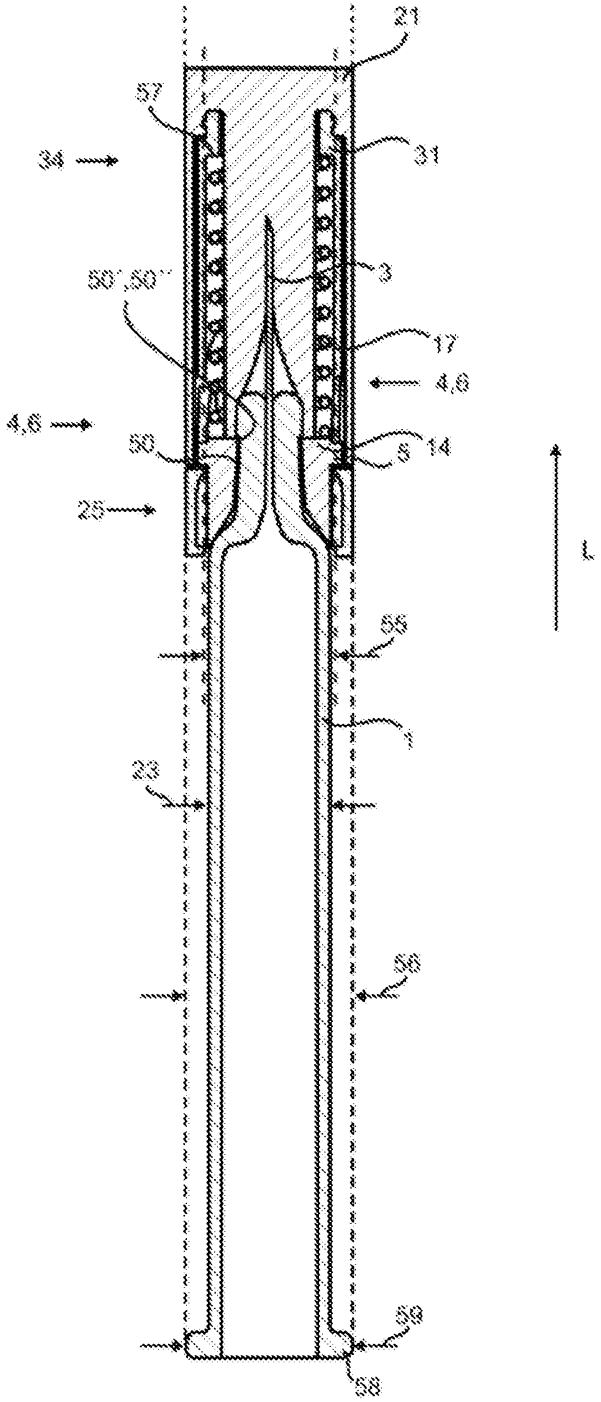


Fig. 4

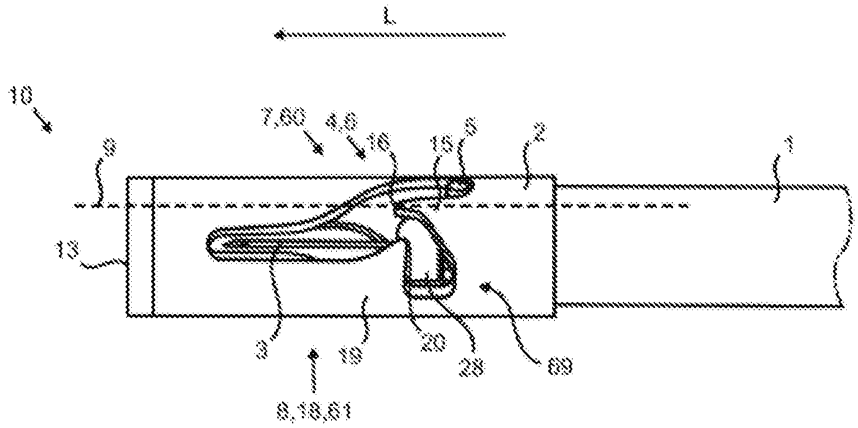


Fig. 5A

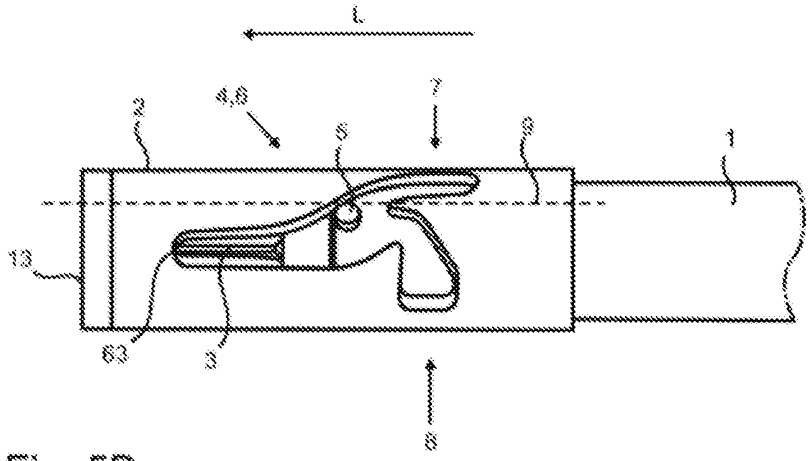


Fig. 5B

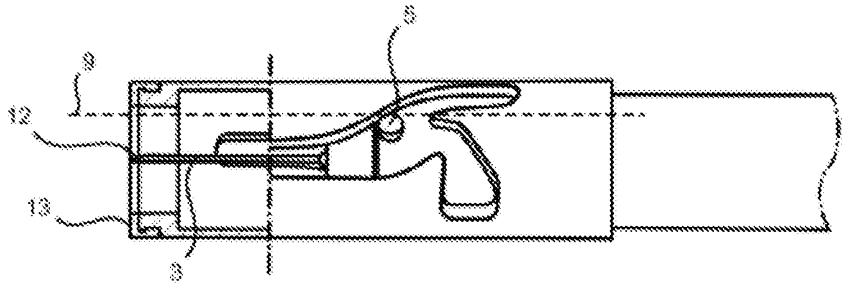


Fig. 5C

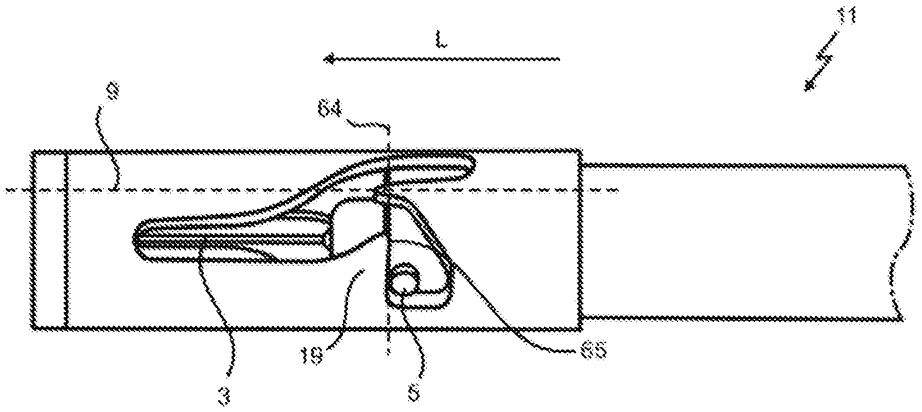


Fig. 5D

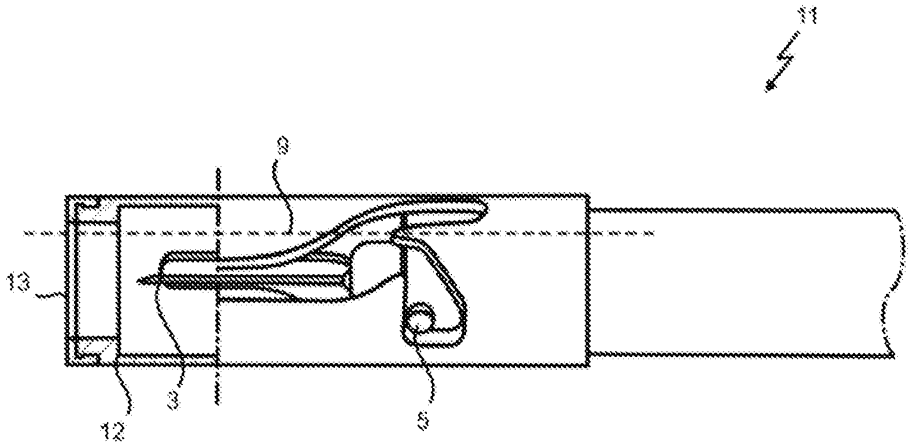


Fig. 5E

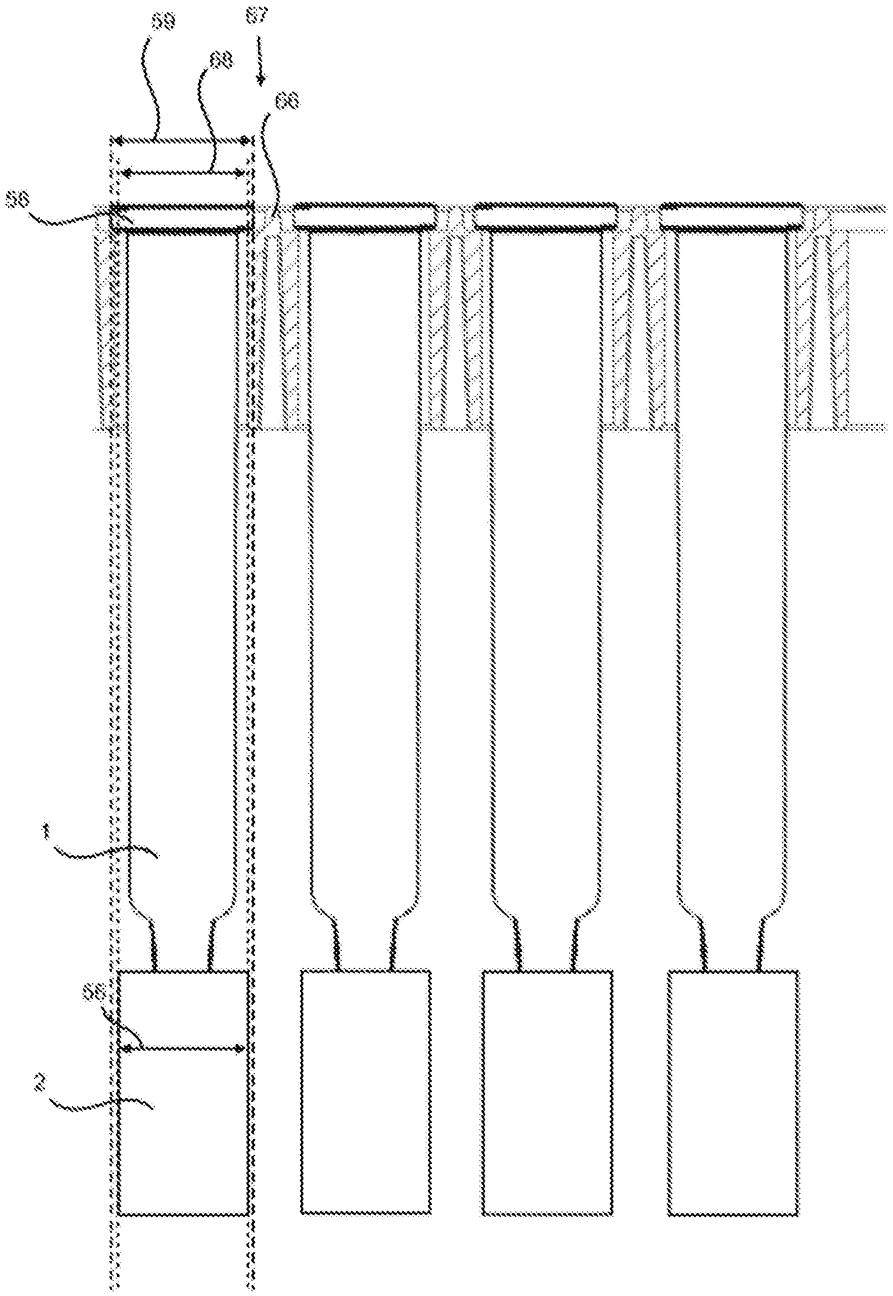


Fig. 6