

Child safety lock apparatus for preventing access to the interior of the cabinet or drawer

Technical field of the invention

5 The present invention relates to child safety lock apparatuses for preventing access to the interior of the cabinet or drawer in and about the household.

Background of the invention

10 Due to children's curiosity, children often get into trouble when the parent or the child's caretaker is distracted for just a few minutes. Accordingly, it is important for parents, day care centers, baby sitters and other child caretakers to child-proof their homes for young children.

15 One of the most common accidents for young children in the home is childhood poisoning. In fact, many serious illnesses, and even fatalities, occur each year to young children due to children consuming poison household products or medicines. Many of these accidents could have been prevented by keeping these dangerous products stored in places inaccessible to young children.

20 In view of this problem of childhood poisonings, numerous efforts have been made to develop child-proof enclosures or latch mechanisms, which would prevent young children from opening the enclosure, and yet still allow relatively easy access by adults.

25 Adhesive mounted locks are a less permanent solution to child-proofing your cabinets or drawers, and can simply be removed when no longer needed. Adhesive locks will generally require two anchor points to be stuck to the surface of your cabinets or drawers. A strap join both anchors

together, preventing your cabinets from being pulled open by a child.

However, current locks on the market may still be opened accidentally by a child. Hence, there is a need for locks that are even more secure than the current ones, and still relatively easy for an adult to open.

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Summary of the invention

A first aspect relates to a child safety lock apparatus comprising:

- a first anchoring unit; and
- a flexible or rigid elongate strap member connected to a second anchoring unit at its first end, and to a lock unit at its second end;

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wherein the first anchoring unit comprises:

- a) a base plate adapted for fastening to a surface; and
- b) an anchoring section connected to the base plate, and configured as a protrusion with two opposing cavities;

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wherein the lock unit comprises:

- a) a base plate adapted for being connected to the flexible or rigid elongate strap member, and comprising an opening adapted for receiving the anchoring section through a first surface side;
- b) two sliding members, each adapted for slidingly engagement with one another, and adapted for sliding, in opposite direction in relation to one another, on the base plate on the opposing surface side to the first surface side; wherein each sliding member comprises a first protrusion adapted for fitting into one of the two opposing cavities in the anchoring section of the anchoring unit.

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The above configuration is child safety lock apparatus where the opening operation may be performed by one hand, but requires the movement of two sliding members to be moved in opposite direction in relation to one another. This operation has shown to be very difficult, if not impossible, for a young child to perform.

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As used herein, the term “flexible” refers to the elongate strap member being able to be bent or flexed, as opposed to a rigid elongate strap member.

5 In one or more embodiments, the elongate strap member is flexible.

In one or more embodiments, the elongate strap member is pre-shaped at an angle with respect to the length of the elongate member; wherein the angle is within the range of 30-120 degrees, such as within the range of 45-
10 105 degrees, e.g. within the range of 60-90 degrees (preferably 90 degrees). This configuration allows the elongate member to fit around e.g. a front corner of a cupboard to prevent the door from being opened.

In one or more embodiments, the anchoring section of the first anchoring
15 unit is provided with one or more flanges configured such that the anchoring section must be inserted into and removed from the opening of the base plate at an oblique angle. This configuration, in combination with the sliding member configuration, still allows for a one-hand operation, but makes the operation even more difficult, if not impossible, for a young child
20 to perform.

In one or more embodiments, the anchoring section of the first anchoring unit is provided with one or more flanges.

25 In one or more embodiments, the base plate of the lock unit comprises a guide track; and the sliding members, each comprises a guide pin adapted for moving within the guide track. This configuration guides the one-hand operation in the movement of the two sliding members in opposite direction in relation to one another. Furthermore, this configuration makes the child
30 safety lock apparatus stronger, and minimizes the risk of the sliding members being pulled of the base plate.

In one or more embodiments, the sliding members are spring-operated, and adapted for sliding, in opposite direction in relation to one another, on the base plate between an open position and a locked position; wherein the
5 locked position is where the first protrusion of each of the sliding members is blocking the anchoring section from entering the opening through the first surface side of the base plate; and wherein the open position is where the first protrusion of each of the sliding members is allowing the anchoring section to enter the opening through the first surface side of the base plate.

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In one or more embodiments, the flexible or rigid elongate strap member is releasably fastened to the second anchoring unit at its first end, and/or releasably fastened to the lock unit at its second end. This configuration allows for an easier mounting of the child safety lock apparatus to a cabinet
15 or drawer.

In one or more embodiments, the two sliding members each comprises a hook-shaped protrusion adapted for slidingly engagement with one another. This configuration guides the one-hand operation in the movement of the
20 two sliding members in opposite direction in relation to one another. Furthermore, the configuration makes the child safety lock stronger, and minimizes the risk of the sliding members being pulled of the base plate.

In one or more embodiments, each sliding member comprises a second
25 protrusion adapted for fitting into one of the two opposing cavities in the anchoring section of the anchoring unit; and wherein the second protrusion and the first protrusion on an individual sliding member are adapted for fitting into the respective of the two opposing cavities. This configuration provides addition security, since the sliding members need to be positioned
30 precisely in relation to one another in order for the lock unit to be removed from the anchoring section of the first anchoring unit.

In one or more embodiments, the sliding members are spring-operated, and adapted for sliding, in opposite direction in relation to one another, on the base plate between a first locked position, an open position and a second locked position; wherein the first locked position is where the first protrusions are blocking the anchoring section from entering the opening through the first surface side of the base plate; wherein the second locked position is where the second protrusions are blocking the anchoring section from entering the opening through the first surface side of the base plate; and wherein the open position is where the first and second protrusions are allowing the anchoring section to enter the opening through the first surface side of the base plate.

In one or more embodiments, the two sliding members each comprises a guide pin, and a guide track, and wherein a) the guide pin of the first sliding member is adapted for moving within the guide track of the second sliding member, and b) the guide pin of the second sliding member is adapted for moving within the guide track of the first sliding member, only when the two sliding members are pressed against each other by a user. Otherwise, the guide track will be offset from the guide pin.

In one or more embodiments, the two sliding members each comprises a guide pin, and a guide track, and wherein the guide pin of the first sliding member is adapted for moving within the guide track of the second sliding member, and vice versa, only when the two sliding members are pressed against each other by a user.

Another aspect relates to the use of a child safety lock apparatus according to the present invention for child protecting a cabinet or drawer.

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As used in the specification and the appended claims, the singular forms "a", "an", and "the" include plural referents unless the context clearly dictates otherwise. Ranges may be expressed herein as from "about" or "approximately" one particular value and/or to "about" or "approximately" another particular value. When such a range is expressed, another embodiment includes from the one particular value and/or to the other particular value. Similarly, when values are expressed as approximations, by use of the antecedent "about", it will be understood that the particular value forms another embodiment.

It should be noted that embodiments and features described in the context of one of the aspects of the present invention also apply to the other aspects of the invention.

Brief description of the figures

Figure 1 shows an isometric view of a child safety lock apparatus in accordance with various embodiments of the invention;

Figure 2 shows an embodiment, where the first anchoring unit is provided with one or more flanges;

Figure 3 shows an exploded view of the lock unit relative to the flexible elongate strap member, and the first anchoring unit;

Figure 4 shows the one-hand operated steps of releasing the lock unit from the first anchoring unit;

Figure 5 shows the lock unit and the first anchoring unit immediately after release from one another;

Figure 6 shows the lock unit and the first anchoring unit when engaged with

one another; and four different cross-sections thereof;

Figure 7 shows the embodiment, where each sliding member comprises a second protrusion adapted for fitting into one of the two opposing cavities in the anchoring section of the anchoring unit;

Figure 8 shows the lock unit and the first anchoring unit when engaged with one another; and three different cross-sections thereof;

Figure 9 shows the embodiment, where the two sliding members each comprises a guide pin, and a guide track; and

Figure 10 shows the lock unit and the first anchoring unit when engaged with one another; and three different cross-sections thereof.

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Detailed description of the invention

Figure 1 shows an isometric view of a child safety lock apparatus in accordance with various embodiments of the invention. The child safety lock apparatus 100 comprises a first anchoring unit 200, and a flexible elongate strap member 300. The flexible elongate strap member 300 is connected to a second anchoring unit 310 at its first end 302, and to a lock unit 320 at its second end 304.

Figures 2, 7, and 9 show three different embodiments of the present invention, but the general feature of sliding elements being adapted for sliding, in opposite direction in relation to one another, is the same.

Figure 2 shows the embodiment, where the first anchoring unit 200 is provided with one or more flanges 226.

The first anchoring unit 200 comprises a base plate 210 adapted for

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fastening to a surface; and an anchoring section 220 connected to the base plate 210, and configured as a protrusion with two opposing cavities 222, 224. The lock unit 320 comprises a base plate 321 adapted for being connected to the flexible elongate strap member 300, and two sliding members 324, 325, each adapted for slidingly engagement with one another, and adapted for sliding, in opposite direction in relation to one another, on the base plate 321. The numbers 1-3 indicate the steps that are needed to remove the lock unit 320 from the first anchoring unit 200. Steps 1 and 2 are performed simultaneously.

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Figure 3 shows an exploded view of the lock unit 320 relative to the flexible elongate strap member 300, and the first anchoring unit 200.

The two sliding members 324, 325 are adapted for sliding, in opposite direction in relation to one another, on the base plate 321 on the opposing surface side 326 to the first surface side (323, best seen in Figure 8). The base plate 321 comprises an opening 322 adapted for receiving the anchoring section 220 through a first surface side. Each sliding member 324, 325 are spring-operated 330, and comprises a first protrusion 327 adapted for fitting into one of the two opposing cavities 222, 224 (Figure 2) in the anchoring section 220 of the anchoring unit 200. The two sliding members 324, 325 each comprises a hook-shaped protrusion 340, 341 adapted for slidingly engagement with one another.

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Figure 4 shows the one-hand operated steps of releasing the lock unit 320 from the first anchoring unit 200. Figure 5 shows the lock unit 320 and the first anchoring unit 200 immediately after release from one another.

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Figure 6 shows the lock unit 320 and the first anchoring unit 200 when engaged with one another; and four different cross-sections thereof. The lock unit 320 is shown with an embodiment, where the base plate 321 of the lock unit 320 comprises a guide track 328; and the sliding members

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324, 325, each comprises a guide pin 329 adapted for moving within the guide track 328 (cross-section E-E). Cross section A-A shows the two sliding members 324, 325 each comprising a hook-shaped protrusion 340, 341 adapted for slidingly engagement with one another. Cross section B-B shows that the first anchoring unit 200 is provided with flanges 226. Cross section C-C shows the positions of the springs 330, and the first protrusions 327A, 327B positioned within the two opposing cavities in the anchoring section 220 of the anchoring unit.

10 Figures 7 and 8 show the embodiment, where each sliding member 324, 325 comprises a second protrusion 350 adapted for fitting into one of the two opposing cavities 222, 224 in the anchoring section 220 of the anchoring unit (200). The second protrusion 350 and the first protrusion 327 on an individual sliding member 324, 325 are adapted for fitting into the
15 respective of the two opposing cavities 222, 224. Cross section A-A shows the two sliding members 324, 325 each comprising a hook-shaped protrusion 340, 341 adapted for slidingly engagement with one another. Cross section B-B shows that the first anchoring unit 200 is without flanges, but such an embodiment is possible. Cross section C-C shows the
20 positions of the springs 330, the first protrusions 327A, 327B positioned within the two opposing cavities in the anchoring section 220 of the anchoring unit, and the second protrusions 350A, 350B in a retracted position in relation to the two opposing cavities in the anchoring section 220 of the anchoring unit. The numbers 1-3 indicate the steps that are needed
25 to remove the lock unit 320 from the first anchoring unit 200. Steps 1 and 2 are performed simultaneously.

Figures 9 and 10 show the embodiment, where the two sliding members 324, 325 each comprises a guide pin 360, and a guide track 370, and
30 wherein the guide pin 360 of the first sliding member 324 is adapted for moving within the guide track 370 of the second sliding member 325, and

vice versa, only when the two sliding members 324, 325 are pressed against each other by a user. The numbers 1-3 indicate the steps that are needed to remove the lock unit 320 from the first anchoring unit 200.

References

	100	Child safety lock apparatus
	200	First anchoring unit
	210	Base plate
5	220	Anchoring section
	222	Cavity
	224	Cavity
	225	Sliding member
	226	Sliding member
10	300	Elongate strap member
	302	First end
	304	Second end
	310	Second anchoring unit
	320	Lock unit
15	322	Opening
	323	First surface side
	324	Sliding member
	325	Sliding member
	326	Opposing surface side
20	327	First protrusion
	328	Guide track
	329	Guide pin
	330	Spring
	340	Hook-shaped protrusion
25	341	Hook-shaped protrusion
	350	Second protrusion
	360	Guide pin
	370	Guide track

Claims

1. A child safety lock apparatus (100) comprising:
- a first anchoring unit (200); and
 - a flexible or rigid elongate strap member (300) connected to a second anchoring unit (310) at its first end (302), and to a lock unit (320) at its second end (304);
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- wherein the first anchoring unit (200) comprises:
- a) a base plate (210) adapted for fastening to a surface; and
 - b) an anchoring section (220) connected to the base plate (210), and
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- configured as a protrusion with two opposing cavities (222, 224);
- wherein the lock unit (320) comprises:
- a) a base plate (321) adapted for being connected to the flexible or rigid elongate strap member (300), and comprising an opening (322) adapted for receiving the anchoring section (220) through a first surface side (323);
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- b) two sliding members (324, 325), each adapted for slidingly engagement with one another, and adapted for sliding, in opposite direction in relation to one another, on the base plate (321) on the opposing surface side (326) to the first surface side (323); wherein
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- each sliding member (324, 325) comprises a first protrusion (327) adapted for fitting into one of the two opposing cavities (222, 224) in the anchoring section (220) of the anchoring unit (200).
2. A child safety lock apparatus (100) according to claim 1, wherein the
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- anchoring section (220) of the first anchoring unit (200) is provided with one or more flanges (226) configured such that the anchoring section (220) must be inserted into and removed from the opening (322) of the base plate (321) at an oblique angle.
3. A child safety lock apparatus (100) according to claim 1, wherein the
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anchoring section (220) of the first anchoring unit (200) is provided with one or more flanges (226).

5 4. A child safety lock apparatus (100) according to any one of the claims 1-3, wherein the base plate (321) of the lock unit (320) comprises a guide track (328); and the sliding members (324, 325), each comprises a guide pin (329) adapted for moving within the guide track (328).

10 5. A child safety lock apparatus (100) according to any one of the claims 1-4, wherein the sliding members (324, 325) are spring (330)-operated, and adapted for sliding, in opposite direction in relation to one another, on the base plate (321) between an open position and a locked position; wherein the locked position is where the first protrusion (327A, 327B) of each of the sliding members (324, 325) is blocking the anchoring section (220) from
15 entering the opening (322) through the first surface side (323) of the base plate (321); and wherein the open position is where the first protrusion (327A, 327B) of each of the sliding members (324, 325) is allowing the anchoring section (220) to enter the opening (322) through the first surface side (323) of the base plate (321).

20 6. A child safety lock apparatus (100) according to any one of the claims 1-5, wherein the flexible or rigid elongate strap member (300) is releasably fastened to the second anchoring unit (310) at its first end (302), and/or releasably fastened to the lock unit (320) at its second end (304).

25 7. A child safety lock apparatus (100) according to any one of the claims 1-6, wherein the two sliding members (324, 325) each comprises a hook-shaped protrusion (340, 341) adapted for slidingly engagement with one another.

30 8. A child safety lock apparatus (100) according to any one of the claims 1-

7, wherein each sliding member (324, 325) comprises a second protrusion (350) adapted for fitting into one of the two opposing cavities (222, 224) in the anchoring section (220) of the anchoring unit (200); and wherein the second protrusion (350) and the first protrusion (327) on an individual
5 sliding member (324, 325) are adapted for fitting into the respective of the two opposing cavities (222, 224).

9. A child safety lock apparatus (100) according to claim 8; wherein the sliding members (324, 325) are spring (330)-operated, and adapted for
10 sliding, in opposite direction in relation to one another, on the base plate (321) between a first locked position, an open position and a second locked position; wherein the first locked position is where the first protrusions (327) are blocking the anchoring section (220) from entering the opening (322) through the first surface side (323) of the base plate (321); wherein the
15 second locked position is where the second protrusions (350) are blocking the anchoring section (220) from entering the opening (322) through the first surface side (323) of the base plate (321); and wherein the open position is where the first (327) and second (350) protrusions are allowing the anchoring section (220) to enter the opening (322) through the first
20 surface side (323) of the base plate (321).

10. A child safety lock apparatus (100) according to any one of the claims 1-7, wherein the two sliding members (324, 325) each comprises a guide pin (360), and a guide track (370), and wherein the guide pin (360) of the
25 first sliding member (324) is adapted for moving within the guide track (370) of the second sliding member (325), and vice versa, only when the two sliding members (324, 325) are pressed against each other by a user.

11. A child safety lock apparatus (100) according to any one of the claims
30 1-10, wherein the elongate strap member (300) is flexible.

12. Use of a child safety lock apparatus (100) according to any one of the claims 1-11, for child protecting a drawer or closet.

Abstract

The present invention relates to child safety lock apparatuses for preventing access to the interior of the cabinet or drawer in and about the household. The child safety lock apparatus comprises a first anchoring unit; and a

5 flexible or rigid elongate strap member connected to a second anchoring unit at its first end, and to a lock unit at its second end. The first anchoring unit comprises a base plate adapted for fastening to a surface, and an anchoring section connected to the base plate, and configured as a protrusion with two opposing cavities. The lock unit comprises a base plate

10 adapted for being connected to the flexible or rigid elongate strap member, and comprising an opening adapted for receiving the anchoring section through a first surface side; and two sliding members, each adapted for slidingly engagement with one another, and adapted for sliding, in opposite direction in relation to one another, on the base plate on the opposing

15 surface side to the first surface side. Each sliding member comprises a first protrusion adapted for fitting into one of the two opposing cavities in the anchoring section of the anchoring unit.

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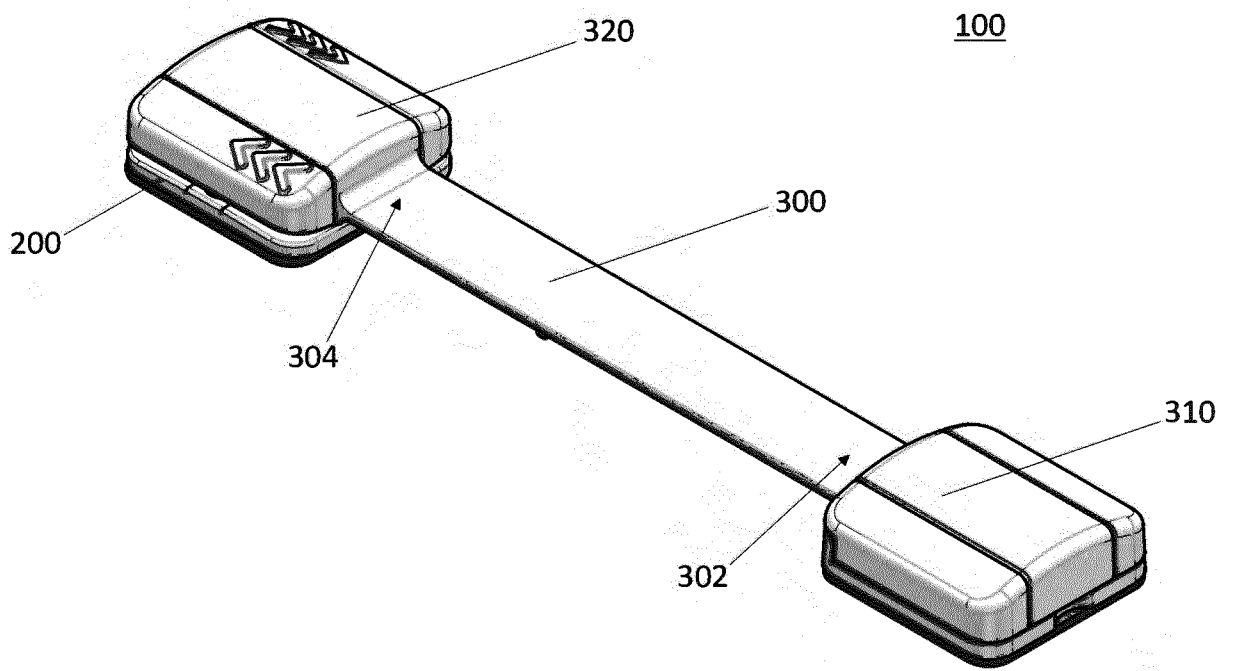


Fig. 1

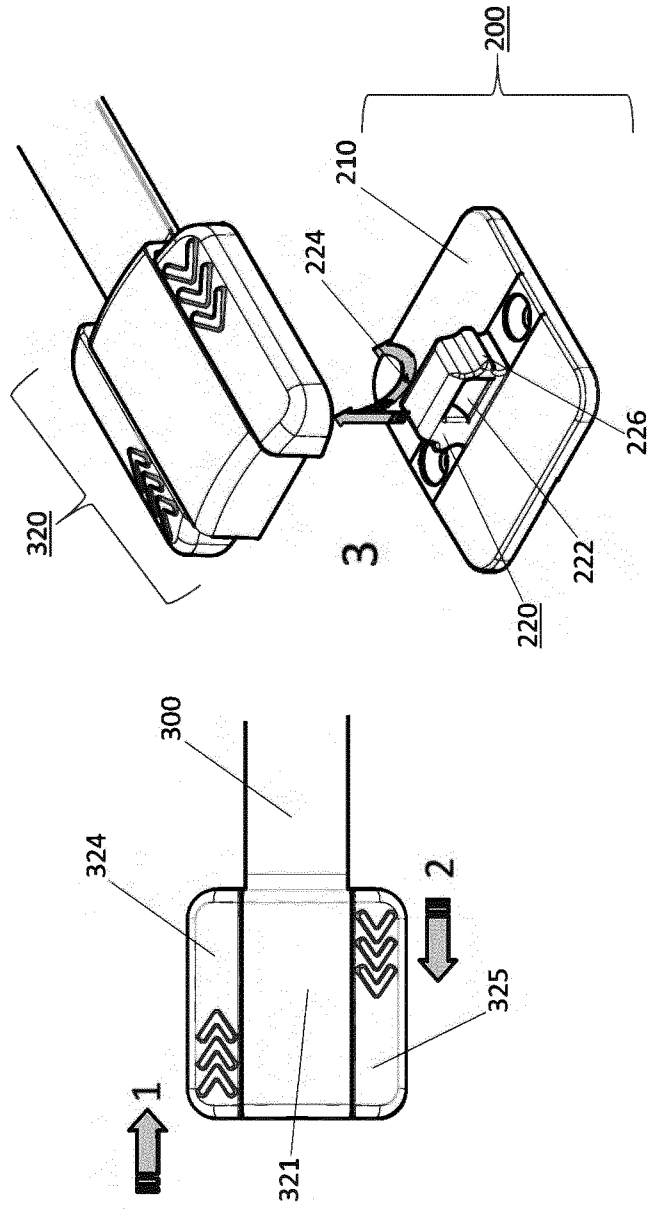


Fig. 2

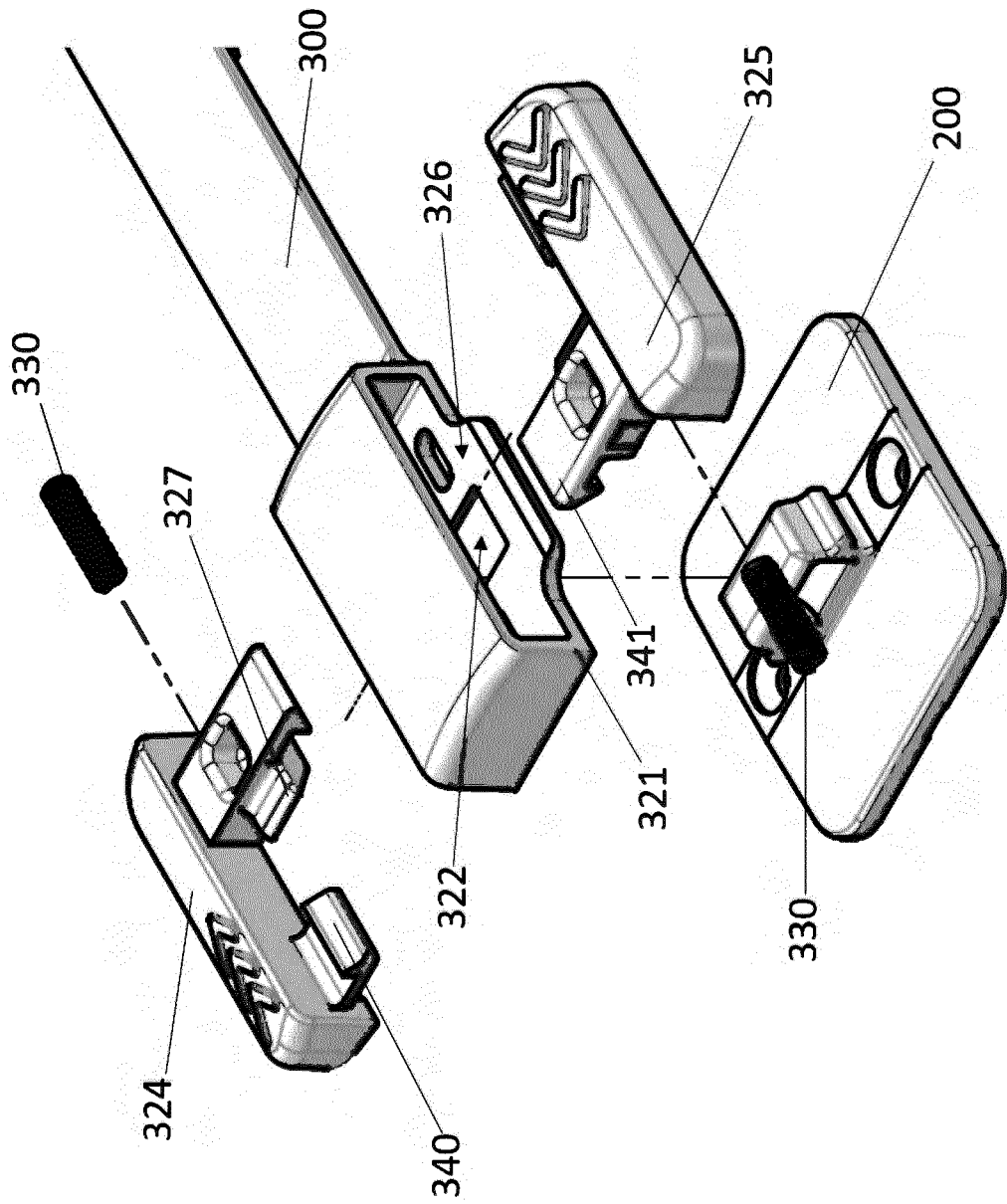


Fig. 3

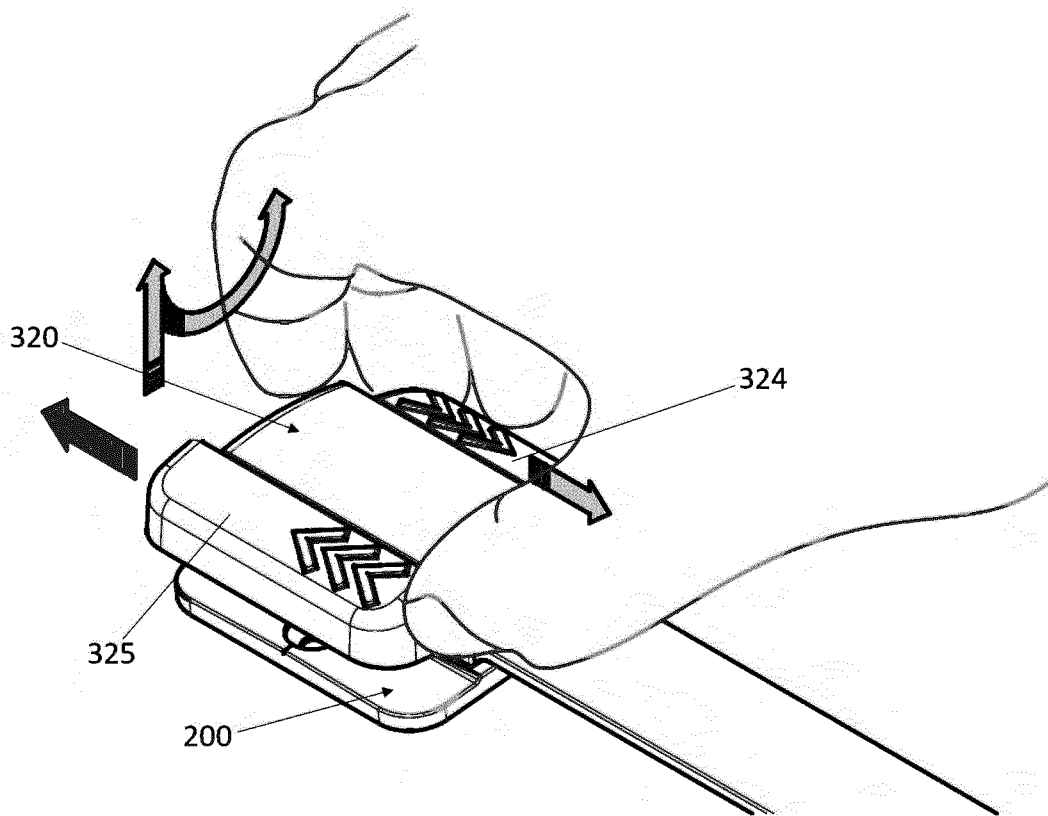


Fig. 4

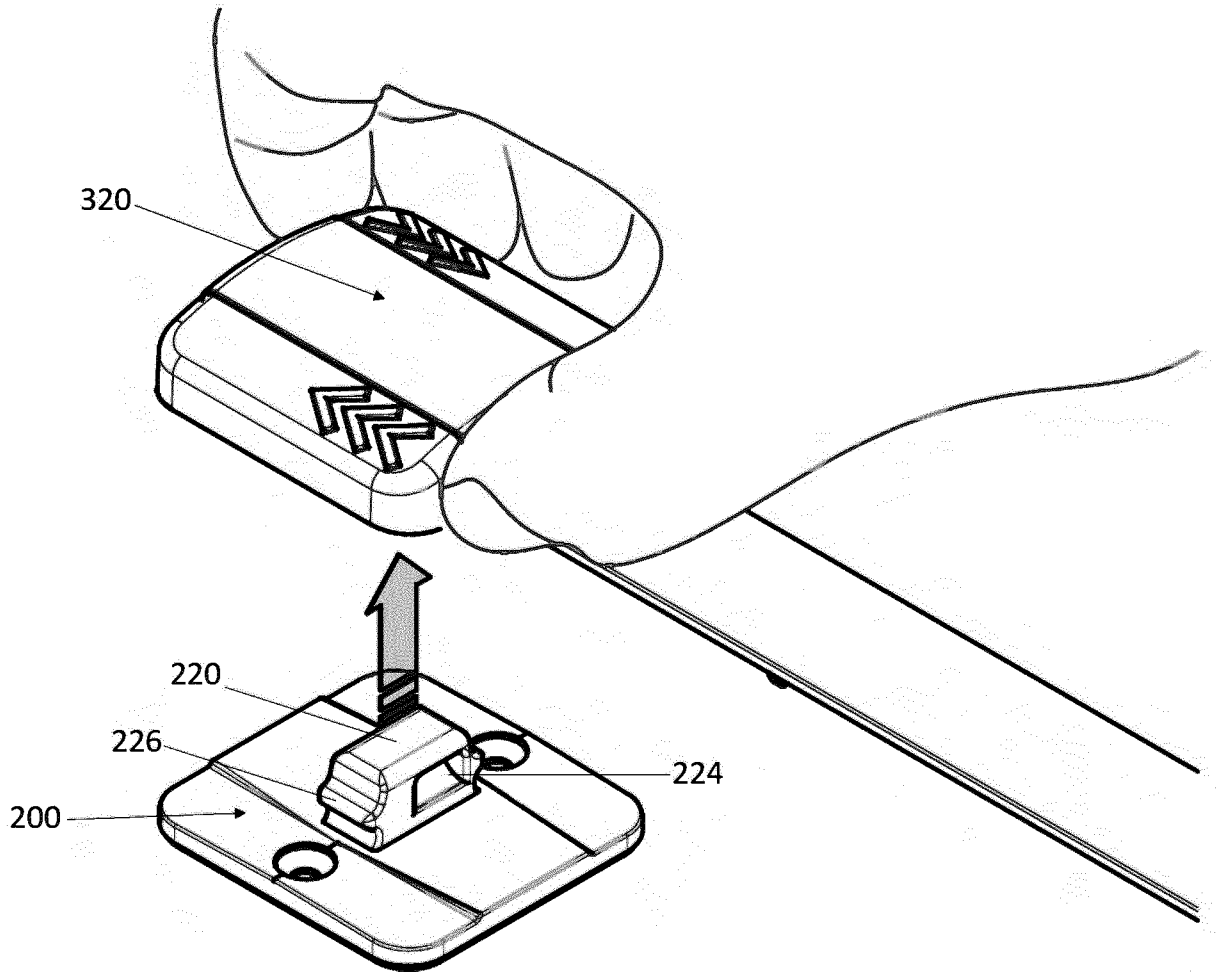


Fig. 5

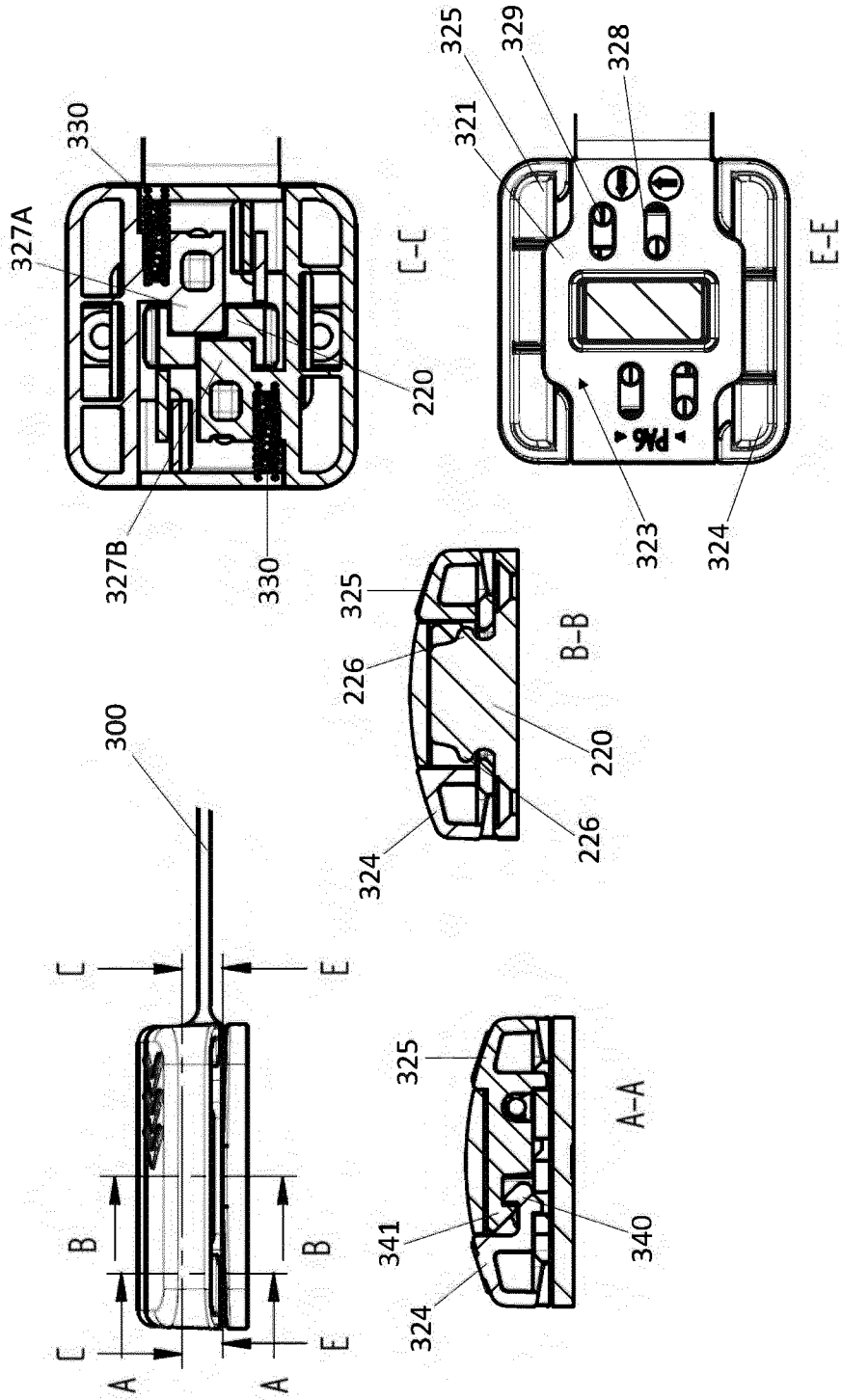


Fig. 6

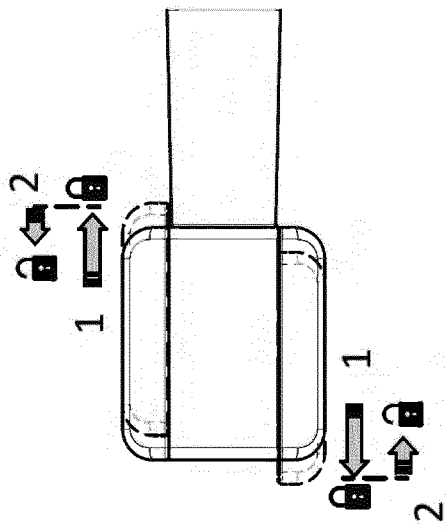
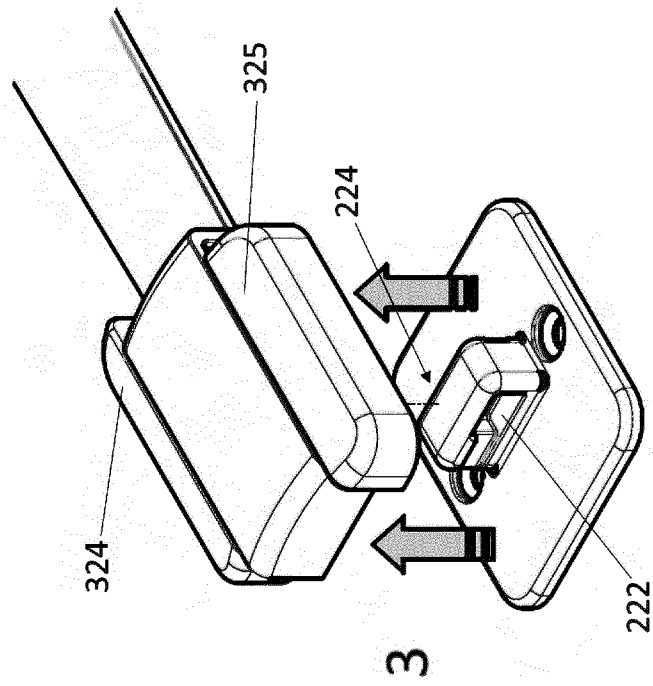


Fig. 7

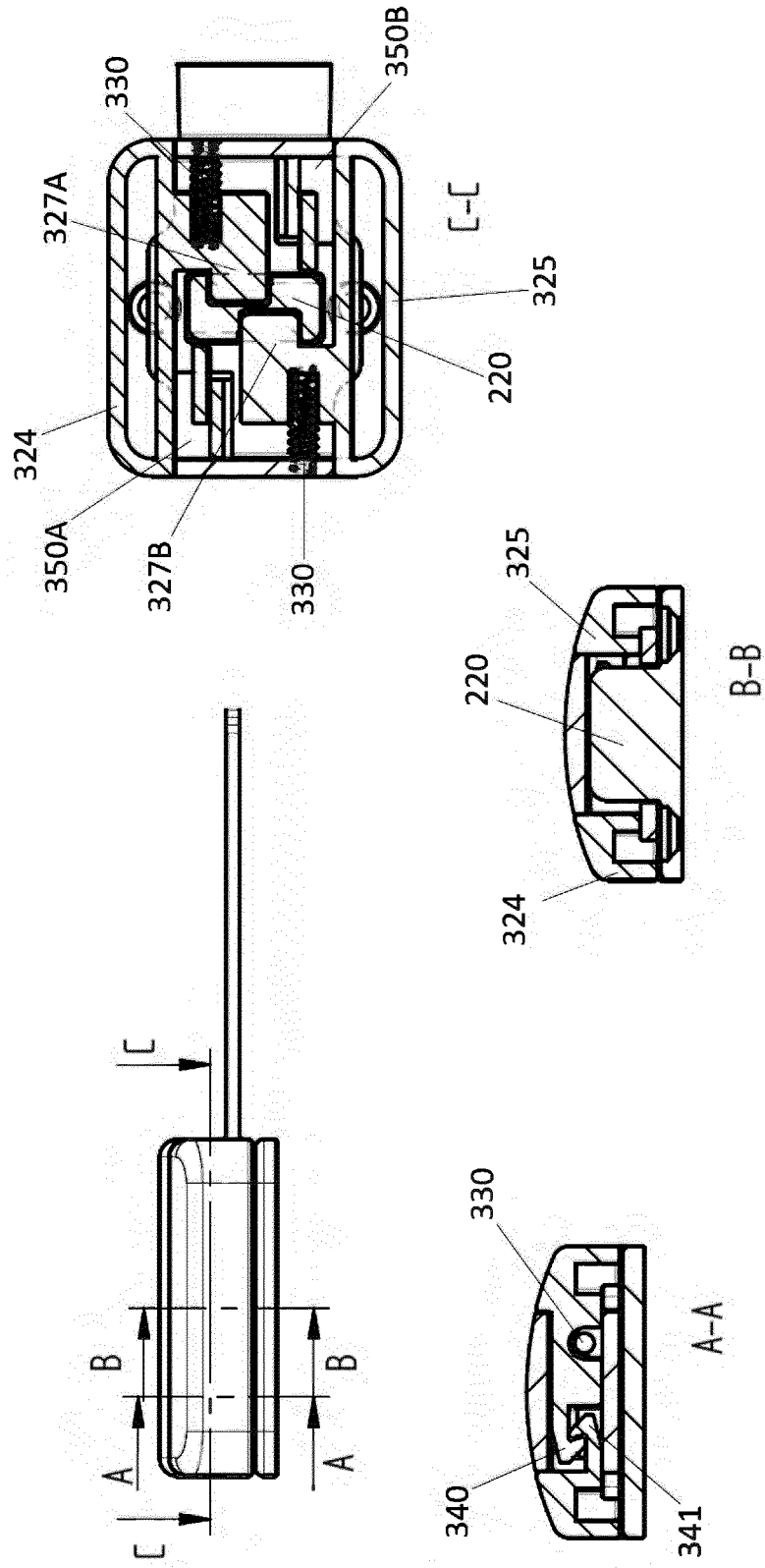


Fig. 8

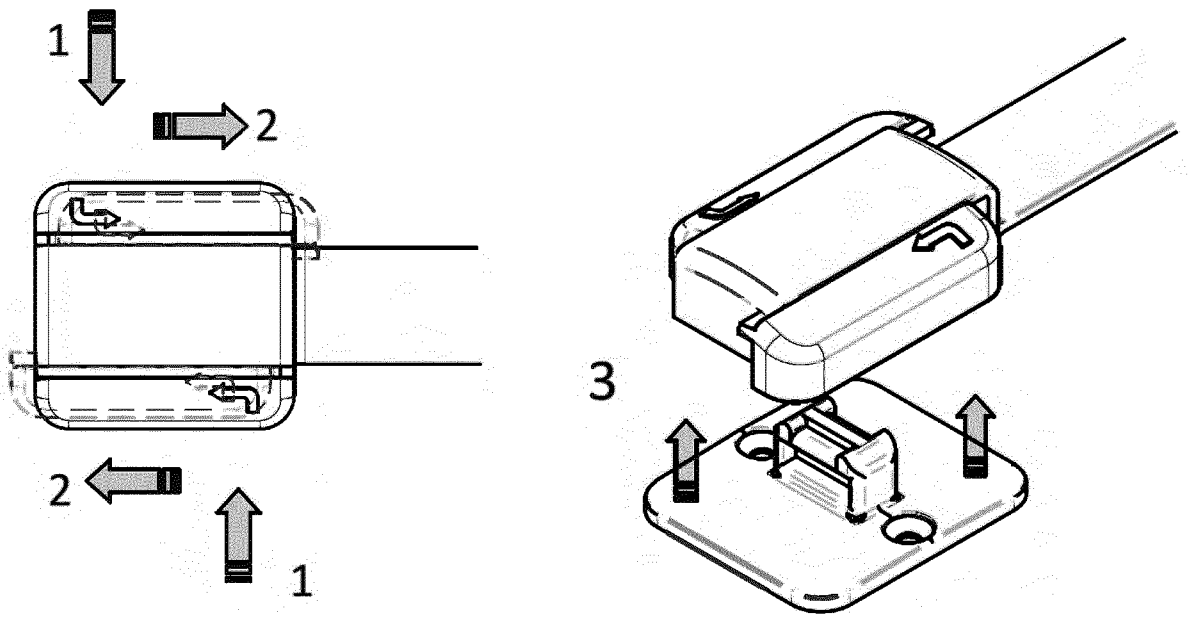


Fig. 9

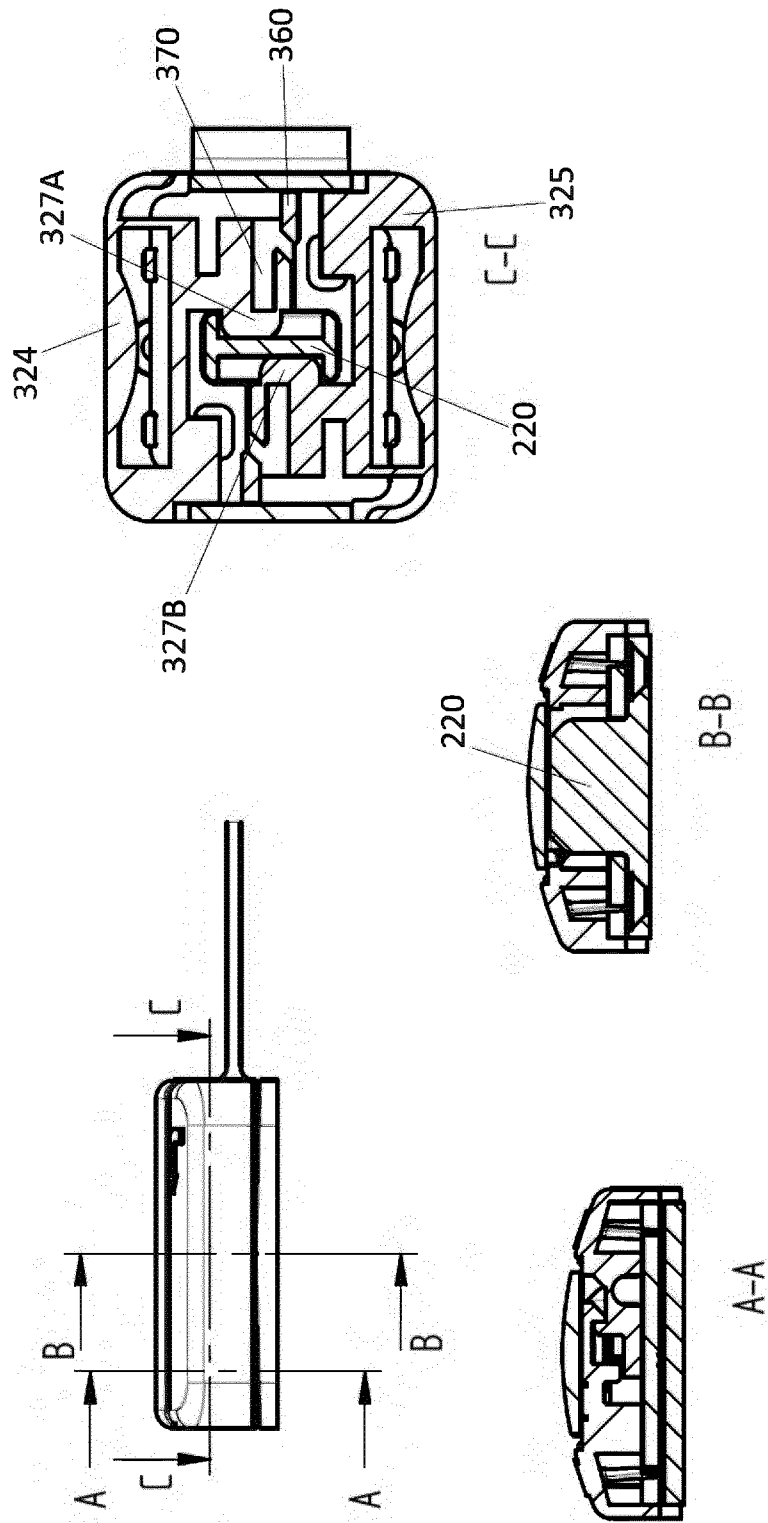


Fig. 10