(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 617 669 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
27.05.2015 Bulletin 2015/22

(51) Int Cl.:
B65H 37/00 *(2006.01)* ***B65H 57/00*** *(2006.01)*

(21) Application number: **13150774.1**

(22) Date of filing: **10.01.2013**

(54) **Dispensing unit for a thin film dispenser and thin film dispenser having the same**

Spendereinheit für einen Dünnfilmspender und Dünnfilmspender damit

Unité de distribution pour distributeur à couche mince et distributeur à couche mince en disposant

(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: **20.01.2012 TW 101102478**

(43) Date of publication of application:
24.07.2013 Bulletin 2013/30

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Description

1. Field of the Invention

[0001] The present invention relates to a dispensing unit and a thin film dispenser having the same, and more particularly to a dispensing unit having a capability of providing a locking effect to a tape wheel.

2. Description of Related Art

[0002] A conventional thin film dispenser, such as a correction tape dispenser or an adhesive tape dispenser, substantially comprises a housing and a dispensing unit mounted in the housing. The conventional dispensing unit comprises a dispensing head, a wheel assembly and a thin film. The dispensing head is mounted on one end of the dispensing unit. The wheel assembly comprises a tape supplying wheel and a used tape collecting wheel driven to rotate with each other. The thin film is mounted around the wheel assembly and the dispensing head. For environmentally friendly purposes and to reduce cost burden of the user, the housing of the thin film dispenser is in a detachable form to allow a user to replace the used dispensing unit with a new one. Therefore, the dispensing unit for a thin film dispenser is usually individually packaged and sold, and a user can buy a new dispensing unit for replacing a used one.

[0003] With reference to Figs. 12 and 13, a securing card 60 is provided to hold the wheel assembly in position to keep the wheel assembly from rotating during the processes of manufacturing, packaging or transporting such that the thin film can be accordingly prevented from loosening from the wheel assembly. The conventional securing card 60 is made of paper and comprises a bottom board 62 and a positioning tab 64. The positioning tab 64 protrudes from the bottom board 62 and engages a wheel axle of the tape supplying wheel 52 of the wheel assembly. Accordingly, the rotation of the tape supplying wheel 52 can be prevented, and the thin film will not be loosened from the wheel assembly.

[0004] However, the conventional securing card 60 can hold the dispensing unit 50 in position only during the course of packaging and transporting. When the dispensing unit 50 is to be assembled in the housing of a thin film dispenser, the securing card 60 has to be taken out of the dispensing unit 50 and the dispensing unit 50 is unlocked. Therefore, the tape supplying wheel 52 is easily rotated and the thin film is easily loosened from the rotating wheel assembly during the assembling of the dispensing unit 50 with the housing. To assemble the conventional dispensing unit is inconvenient. In addition, the correction tape or adhesive gel on the loosened thin film easily adhere onto another object or user's hand, not only contaminating the environment or the user's hand, but also rendering the loosened thin film no longer useable, causing waste of the thin film.

[0005] Other conventional dispensing units are disclosed in European patent publication No. EP 1 067 075 A2 and PCT publication No. WO 2011/070935 A1. EP 1 067 075 A2 discloses a conventional dispensing unit to prevent the core of a transfer tape replacement cartridge from being rotated and eliminate the sagging of a cartridge transfer and disturbance of a traveling route. WO 2011/070935 A1 discloses a conventional dispensing unit to prevent the advancing reel from rotating when the conventional dispensing unit is not in use.

[0006] To overcome the shortcomings, the present invention is provided in appended claims 1 and 10. The present invention provides a dispensing unit for a thin film dispenser to mitigate or obviate the aforementioned problems.

[0007] The main objective of the invention is to provide a dispensing unit with a locking function for a thin film dispenser and a thin film dispenser having the same to prevent a thin film from being loosened during the course of packaging, transporting and assembling processes. Consequently, replacing and assembling the dispensing unit is convenient to improve the convenience and versatility of use of the dispensing unit.

[0008] The dispensing unit in accordance with the present invention has a base, a wheel assembly, a thin film and a locking device. The wheel assembly is mounted on the base and has a tape supplying wheel and a used tape collecting wheel. The tape supplying wheel and the used tape collecting wheel are mounted rotatably on the base. The thin film is mounted around the wheel assembly. The locking device is resiliently disposed on the base and selectively engages the wheel assembly to prevent the wheel assembly from rotating.

[0009] The thin film dispenser in accordance with the present invention has a housing and a dispensing unit. The housing has a transmission device disposed in the housing. The dispensing unit is mounted in the housing and has a base, a wheel assembly, a thin film and a locking device. The wheel assembly is mounted on the base and has a tape supplying wheel and a used tape collecting wheel. The tape supplying wheel and the used tape collecting wheel are mounted rotatably on the base. The thin film is mounted around the wheel assembly. The locking device is resiliently disposed on the base and selectively engages the wheel assembly to prevent the wheel assembly from rotating.

[0010] With such an arrangement, the locking device can provide a locking effect to the wheel assembly to prevent the wheel assembly from rotating arbitrarily. Accordingly, the thin film can be prevented from being loosened due to the rotation of the wheel assembly during the course of packaging, transporting and assembling processes. The packaging and transporting processes of the dispensing unit can be simplified and the cost therefore can also be reduced. A user can replace the dispensing unit easily and conveniently, and the assembling process of the dispensing unit is convenient. The waste of the thin film can be avoided to improve the utility of the dispensing unit.

[0011] Other objects, advantages and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

IN THE DRAWINGS

[0012]

Fig. 1 is a partially exploded perspective view of a first embodiment of a thin film dispenser with a dispensing unit in accordance with the present invention;
Fig. 2 is a perspective view of the dispensing unit in Fig. 1;
Fig. 3 is an exploded perspective view of the dispensing unit in Fig. 2;
Fig. 4 is an enlarged partial top view of the thin film dispenser in Fig. 1;
Fig. 4A is an enlarged top view of the dispensing unit in Fig. 4;
Fig. 5 is an enlarged operational top view of the thin film dispenser in Fig. 1;
Fig. 5A is an enlarged top view of the dispensing unit in Fig. 5;
Fig. 6 is a perspective view of a second embodiment of a thin film dispenser in accordance with the present invention;
Fig. 7 is an enlarged perspective view of the dispensing unit in Fig. 6;
Fig. 8 is an enlarged partial top view of the thin film dispenser in Fig. 6;
Fig. 9 is an enlarged operational top view of the thin film dispenser in Fig. 6;
Fig. 9A is an enlarged top view of the dispensing unit in Fig. 9;
Fig. 10 is an exploded perspective view of a third embodiment of a thin film dispenser in accordance with the present invention;
Fig. 11 is a perspective view of the dispensing unit in Fig. 10;
Fig. 12 is an exploded perspective of a conventional securing card with a conventional dispensing unit in accordance with the prior art; and
Fig. 13 is an enlarged top view in partial section of the conventional securing card with the dispensing unit in Fig. 12.

[0013] A thin film dispenser in accordance with the present invention may be a correction tape dispenser, an adhesive tape dispenser or the like and includes all kinds of apparatus that can apply coating materials of a thin film onto a desired location. With reference to Fig. 1, the thin film dispenser in accordance with the present invention has a housing 10 and a dispensing unit 20. The housing 10 has a chamber defined in the housing 10 to hold the dispensing unit 20 inside. The housing 10 further has a transmission device. The housing 10 may be composed of at least two casings combined with each other. The casings may be right and left casings as shown in Fig. 1, or front and rear casings, or upper and lower casings or the like. As long as the housing 10 is in a detachable form, the format, number and combination method of the casings are not limited in the present invention. The dispensing unit 20 may be retracted completely into the housing 10 in a normal condition as shown in Fig. 1. In this case, a retracting device 12 is further provided to extend the dispensing unit 20 out of the housing 10 for use. The retracting device 12 may be a button assembly as shown in Fig. 1, a rotatable knob, a pushing assembly or the like. As long as the retracting device 12 has a function of extending the dispensing unit 20 out of the housing 10, the format and structure of the retracting device 12 are not limited in the present invention and the further description of the retracting device 12 is omitted.

[0014] With reference to Figs. 1 to 4, the dispensing unit 20 is retractably mounted in the housing 10, is connected to the retracting device 12 to enable the dispensing unit 20 to be pushed to extend out of or be retracted into the housing 10. The dispensing unit 20 comprises a base 21, a dispensing head 22, a wheel assembly 23, a thin film 26 and a locking device 28. The base 21 may be in a detachable form and is connected with the retracting device 12. The dispensing head 22 is disposed on one end of the base 21 and can be pushed to extend out of the housing 10. The wheel assembly 23 is mounted on the base 21 at an end opposite to the dispensing head 22 and comprises a tape supplying wheel 24 and a used tape collecting wheel 25. The tape supplying wheel 24 and the used tape collecting wheel 25 are respectively mounted rotatably on the base 21 and are connected to and driven by the transmission device in the housing 10 to enable the tape supplying wheel 24 and the used tape collecting wheel 25 to rotate simultaneously. The tape supplying wheel 24 has multiple concave-convex teeth 242 disposed alternately, formed on a side of the tape supplying wheel 24 and arranged in a circle.

[0015] The thin film 26 is mounted around the wheel assembly 23 and the dispensing head 22 and has an unused end mounted around the tape supplying wheel 24 and a used end that is mounted first over and via the dispensing head 22 and then around the used tape collecting wheel 25.

[0016] The locking device 28 is resiliently disposed on the base 21 to prevent the wheel assembly 23 from rotating and selectively engages the wheel assembly 23. Preferably, the locking device 28 engages the tape supplying wheel 24 and may engage one of the concave-convex teeth 242 on the tape supplying wheel 24. With the arrangement of the locking device 28, arbitrary rotation of the wheel assembly 23 is prevented, and the thin film 26 can be kept from being loosened and escaping from the wheel assembly 23. The locking device 28 comprises at least one resilient engaging arm 29 formed on the base 21. Preferably, two resilient engaging arms 29 are implemented. Each resilient engaging arm 29 com-

prises a straight segment 292 and a curved segment 294. The straight segment 292 is integrally and resiliently connected with the base 21 and has a free end opposite to the base 21. The curved segment 294 is connected with the straight segment 292 and has a connecting end and an engaging end. The connecting end is integrally connected with the free end of the straight segment 292. The engaging end is opposite to the connecting end, and an engaging element 296 is formed on the engaging end of the curved segment 294 and selectively engages one of the concave-convex teeth 242 on the tape supplying wheel 24. The engaging element 296 may be a protruding element and engaging one of the concave teeth among the concave-convex teeth 242. Alternatively, the engaging element 296 may be a cavity element and engaging one of the convex teeth among the concave-convex teeth 242. With the engagement between the engaging element 296 and the concave-convex teeth 242, the tape supplying wheel 24 can be prevented from rotating. In addition, a pushed protrusion 298 is formed on and protrudes from the engaging end of the curved segment 294 and is distal from the wheel assembly 23.

[0017] In addition, each resilient engaging arm 29 may only comprise a straight segment 292 integrally and resiliently connected with the base 21 and having an engaging end opposite to the base 21. An engaging element 296 is formed on the engaging end of the straight segment 292 and selectively engages one of the concave-convex teeth 242 on the tape supplying wheel 24. A pushed protrusion 298 is formed on and protrudes from the engaging end of the straight segment 292.

[0018] Alternatively, each resilient engaging arm 29 may only comprise a curved segment 294 integrally and resiliently connected with the base 21 and having an engaging end opposite to the base 21. An engaging element 296 is formed on the engaging end of the curved segment 294 and selectively engages one of the concave-convex teeth 242 on the tape supplying wheel 24. A pushed protrusion 298 is formed on and protrudes from the engaging end of the curved segment 294.

[0019] Further, each resilient engaging arm 29 may comprise two ends integrally and resiliently connected with the base 21 and an engaging segment formed between the ends. An engaging element 296 is formed on the engaging segment and selectively engages one of the concave-convex teeth 242 on the tape supplying wheel 24. A pushed protrusion 298 is formed on and protrudes from the engaging segment.

[0020] With such an arrangement, for a manufacturer, during the processes of packaging and transporting the dispensing unit 20, a conventional securing card additionally disposed for holding the dispensing unit 20 is unnecessary. The processes of packaging and transporting the dispensing unit 20 can be simplified and the cost thereof can also be reduced. For a user, when a user buys a new dispensing unit 20 for replacing a used dispensing unit 20, the wheel assembly 23 can be kept at a locked condition with the locking effect provided by the locking device 28 during the whole assembling process of the dispensing unit 20 with the housing 10. The thin film 26 can be prevented from being loosened, so to assemble the dispensing unit 20 with the housing 10 is convenient and the waste of the thin film 26 caused by loosening can also be prevented. The utility of the dispensing unit 20 is improved.

[0021] In addition, an unlocking device is further disposed on the housing 10 and corresponds to the locking device 28 on the dispensing unit 20 to unlock the wheel assembly 23 from the locking device 28. With reference to Figs. 1, 4, 4A, 5 and 5A, the unlocking device is disposed on an inner surface of the housing 10 and comprises at least one guiding block 16 corresponding respectively to the at least one resilient engaging arm 29. Each guiding block 16 is spaced from and respectively aligns with each resilient engaging arm 29 after the housing 10 is closed. Accordingly, when the dispensing head 22 is pushed to extend out of the housing 10 by the operation of the retracting device 12, the guiding blocks 16 can abut and press on the pushed protrusions 298 on the resilient engaging arms 29. Consequently, the engaging elements 296 on the resilient engaging arms 29 disengage from the concave-convex teeth 242 on the tape supplying wheel 24 and the tape supplying wheel 24 is unlocked and is capable of rotating. Thus, the dispensing unit 20 is in a normal use condition to provide a thin film dispensing function. When the dispensing head 22 of the dispensing unit 20 is retracted into the housing 10 by the operation of the retracting device 12, the pushed protrusions 298 on the resilient engaging arms 29 leave the position where the pushed protrusions 298 abut on the guiding blocks 16. With the resilience of the resilient engaging arms 29, the engaging elements 296 will reengage the concave-convex teeth 242 on the tape supplying wheel 24 to lock the wheel assembly 23 again.

[0022] With reference to Figs. 6 to 9A, in the second embodiment in accordance with the present invention, the housing 10A can be composed of three casings combined with one another and has an unlocking device with the guiding blocks 16A mounted on one of the casings. The casing with the guiding blocks 16A could be opened. The dispensing unit 20A permanently extends out of the housing 10A in a normal condition, and a cap 14 is provided to cover the protruding portion of the dispensing unit 20A out of the housing 10A to keep the dispensing unit 20A from contacting another object while not in use. In this embodiment, the guiding blocks 16A of the unlocking device will directly abut against the pushed protrusions 298A on the resilient engaging arms 29A when the open casing of the housing 10A is closed. Accordingly, the engaging elements 296A on the resilient engaging arms 29A will disengage from the concave-convex teeth 242A on the tape supplying wheel 24A, and the wheel assembly 23A can be unlocked to enable the dispensing unit 20A to be used in a normal condition and provide a thin film dispensing function.

[0023] Furthermore, the locking device 28,28A can en-

gage the used tape collecting wheel 25 of the wheel assembly 23,23A and comprises at least one resilient engaging arm engaging the used tape collecting wheel 25. The at least one resilient arm may have a structure same as those shown in Figs. 1 and 6, but is disposed in a direction reverse to that shown in Figs. 1 and 6. Accordingly, the at least one resilient engaging arm can engage the used tape collecting wheel 25.

[0024] With reference to Figs. 10 and 11, in the third embodiment in accordance with the present invention, the thin film dispenser comprises a housing 10B and a dispensing unit 20B having structures similar to or same with those in the aforementioned embodiments. Only the substantial differences between the structures of this embodiment and the aforementioned embodiments are described as follows.

[0025] The dispensing head 22B is mounted on the housing 10B and is provided for connecting with the dispensing unit 20B. When the dispensing unit 20B is mounted in the housing 10B, an end of the base 21B of the dispensing unit 20B is combined with the dispensing head 22B. The thin film 26B that is mounted around the wheel assembly 23B is mounted around the dispensing head 22B after the dispensing unit 20B is assembled in the housing 10B. The dispensing head 22B will tighten the thin film 26B to enable the thin film 26B to be used in a normal condition.

[0026] The locking device 28B is resiliently disposed on the base 21B to prevent the wheel assembly 23B from rotating. The structure and operation of the locking device 28B is the same as those of the aforementioned embodiments and description thereof are omitted.

[0027] Even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and function of the invention, the disclosure is illustrative only, and changes may be made in detail, especially in matters of shape, size, and arrangement of parts within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

Claims

1. A dispensing unit (20) for a thin film dispenser, comprising:

a base (21);
a wheel assembly (23) mounted on the base (21) and comprising

a tape supplying wheel (24) mounted rotatably on the base (21); and
a used tape collecting wheel (25) mounted rotatably on the base (21);

a thin film (26) mounted around the wheel assembly (23); and
a locking device (28) resiliently disposed on the base (21), having
at least one resilient engaging arm (29) formed on the base (21), and selectively and directly engaging at least one of the tape supplying wheel (24) and the used tape collecting wheel (25) to prevent the wheel assembly (23) from rotating; wherein the dispensing unit (20) is **characterized in that** each one of the at least one resilient engaging arm (29) of the locking device (28) has at least one end connected with the base (21).

2. The dispensing unit as claimed in claim 1, wherein the locking device (28) engages the tape supplying wheel (24).

3. The dispensing unit as claimed in claim 2 further comprising a dispensing head (22) disposed on one end of the base (21).

4. The dispensing unit as claimed in claim 2 or 3, wherein
the tape supplying wheel (24) has multiple concave-convex teeth (242) disposed alternately, formed on a side of the tape supplying wheel (24) and arranged in a circle; and
the at least one resilient engaging arm (29) of the locking device (28) selectively engages one of the concave-convex teeth (242) on the tape supplying wheel (24).

5. The dispensing unit as claimed in claim 1, wherein the at least one resilient engaging arm (29) of the locking device (28) selectively engages the used tape collecting wheel (25).

6. The dispensing unit as claimed in claim 4 or 5, wherein each one of the at least one resilient engaging arm (29) comprises
a straight segment (292) integrally and resiliently connected with the base (21) and having a free end opposite to the base (21);
a curved segment (294) connected with the straight segment (292) and having
a connecting end connected with the free end of the straight segment (292); and
an engaging end opposite to the connecting end;
an engaging element (296) formed on the engaging end of the curved segment (294) and selectively engaging the wheel assembly (23); and
a pushed protrusion (298) formed on and protruding from the engaging end of the curved segment (294).

7. The dispensing unit as claimed in claim 4 or 5, wherein each one of the at least one resilient engaging arm (29) comprises

a straight segment (292) integrally and resiliently connected with the base (21) and having an engaging end opposite to the base (21);
an engaging element (296) formed on the engaging end of the straight segment (292) and selectively engaging the wheel assembly (23); and
a pushed protrusion (298) formed on and protruding from the engaging end of the straight segment (292).

8. The dispensing unit as claimed in claim 4 or 5, wherein each one of the at least one resilient engaging arm (29) comprises
a curved segment (294) integrally and resiliently connected with the base (21) and having an engaging end opposite to the base (21);
an engaging element (296) formed on the engaging end of the curved segment (294) and selectively engaging the wheel assembly (23); and
a pushed protrusion (298) formed on and protruding from the engaging end of the curved segment (294).

9. The dispensing unit as claimed in claim 4 or 5, wherein each one of the at least one resilient engaging arm (29) comprises
two ends securely connected with the base (21);
an engaging segment formed between the ends;
an engaging element (296) formed on the engaging segment and selectively engaging the wheel assembly (23); and
a pushed protrusion (298) formed on and protruding from the engaging segment.

10. A thin film dispenser, comprising:

a housing (10) having a transmission device disposed in the housing (10);
a dispensing unit (20) mounted in the housing (10) and comprising

a base (21);
a wheel assembly (23) mounted on the base (21), connected with the transmission device and comprising

a tape supplying wheel (24) mounted rotatably on the base (21); and
a used tape collecting wheel (25) mounted rotatably on the base (21);

a thin film (26) mounted around the wheel assembly (23);

a dispensing head (22) connected with the dispensing unit (20) and capable of extending out from the housing (10); and
a locking device (28) resiliently disposed on the base (21), having at least one resilient engaging arm (29) formed on the base (21), and selectively and directly engaging at least one of the tape supplying wheel (24) and the used tape collecting wheel (25) to prevent the wheel assembly (23) from rotating,
the thin film dispenser further comprising an unlocking device wherein
the unlocking device is disposed on the housing (10) and corresponding to the locking device (28) to unlock the wheel assembly (23) from the locking device (28) wherein the thin film dispenser is **characterized in that** each one of the at least one resilient engaging arm (29) of the locking device (28) has at least one end connected with the base (21).

11. The thin film dispenser as claimed in claim 10, wherein the locking device (28) engages the tape supplying wheel (24).

12. The thin film dispenser as claimed in claim 11, wherein the dispensing head (22) is disposed on one end of the base (21) of the dispensing unit (20).

13. The thin film dispenser as claimed in claim 12, wherein
the tape supplying wheel (24) has multiple concave-convex teeth (242) formed on a side of the tape supplying wheel (24) and arranged in a circle; and
the locking device (28) comprises at least one resilient engaging arm (29) formed on the base (21) and engaging one of the concave-convex teeth (242) on the tape supplying wheel (24).

14. The thin film dispenser as claimed in claim 10, wherein the at least one resilient engaging arm (29) of the locking device (28) selectively engages the used tape collecting wheel (25).

15. The thin film dispenser as claimed in claim 13 or 14, wherein each one of the at least one resilient engaging arm (29) comprises
a straight segment (292) integrally and resiliently connected with the base (21) and having a free end opposite to the base (21);
a curved segment (294) connected with the straight segment (292) and having
a connecting end connected with the free end of the straight segment (292); and
an engaging end opposite to the connecting end;
an engaging element (296) formed on the engaging end of the curved segment (294) and selectively engaging the wheel assembly (23); and
a pushed protrusion (298) formed on and protruding from the engaging end of the curved segment (294).

16. The thin film dispenser as claimed in claim 13 or 14, wherein each one of the at least one resilient engaging arm (29) comprises

a straight segment (292) integrally and resiliently connected with the base (21) and having an engaging end opposite to the base (21);
an engaging element (296) formed on the engaging end of the straight segment (292) and selectively engaging the wheel assembly (23); and
a pushed protrusion (298) formed on and protruding from the engaging end of the straight segment (292).

17. The thin film dispenser as claimed in claim 13 or 14, wherein each one of the at least one resilient engaging arm (29) comprises
a curved segment (294) integrally and resiliently connected with the base (21) and having an engaging end opposite to the base (21);
an engaging element (296) formed on the engaging end of the curved segment (294) and selectively engaging the wheel assembly (23); and
a pushed protrusion (298) formed on and protruding from the engaging end of the curved segment (294).

18. The thin film dispenser as claimed in claim 13 or 14, wherein each one of the at least one resilient engaging arm (29) comprises
two ends securely connected with the base (21);
an engaging segment formed between the ends;
an engaging element (296) formed on the engaging segment and selectively engaging the wheel assembly (23); and
a pushed protrusion (298) formed on and protruding from the engaging segment.

19. The thin film dispenser as claimed in any one of claims 13 to 18, wherein the unlocking device is disposed on an inner surface of the housing (10) and comprises
at least one guiding block (16) corresponding respectively to the at least one resilient engaging arm (29) and spaced from and respectively aligning with the at least one resilient engaging arm (29) after the housing (10) is closed.

20. The thin film dispenser as claimed in any one of claims 13 to 18, wherein the unlocking device is disposed on an inner surface of the housing (10A) and comprises
at least one guiding block (16A) corresponding respectively to the at least one resilient engaging arm (29A) and abutting respectively against the at least one resilient engaging arm (29A) after the housing (10A) is closed.

Patentansprüche

1. Spendereinheit (20) für einen Dünnfilmspender, umfassend:
eine Basis (21);
eine Radbaugruppe (23), die an der Basis (21) befestigt ist und umfasst
ein Bandversorgungsrad (24), das rotierbar an der Basis (21) befestigt ist; und ein Sammelrad (25) für verwendetes Band, das rotierbar an der Basis (21) befestigt ist;
einen Dünnfilm (26), der um die Radbaugruppe (23) herum befestigt ist; und
eine Feststellvorrichtung (28), die federnd an der Basis (21) angeordnet ist und die wenigstens einen federnden Einrastarm (29) aufweist, der an der Basis (21) gebildet ist und der selektiv und direkt mit wenigstens einem von dem Bandversorgungsrad (24) und dem Sammelrad (25) für verwendetes Band einrastet, um zu verhindern, dass die Radbaugruppe (23) rotiert, wobei die Spendereinheit (20) **dadurch gekennzeichnet ist, dass** jeder von dem wenigstens einen federnden Einrastarm (29) der Feststellvorrichtung (28) wenigstens ein Ende aufweist, dass mit der Basis (21) verbunden ist.

2. Spendereinheit gemäß Anspruch 1, wobei die Feststellvorrichtung (28) mit dem Bandversorgungsrad (24) einrastet.

3. Spendereinheit gemäß Anspruch 2, weiterhin umfassend einen Spenderkopf (22), der an einem Ende der Basis (21) angeordnet ist.

4. Spendereinheit gemäß Anspruch 2 oder 3, wobei das Bandversorgungsrad (24) mehrere konkav-konvexe Zähne (242) aufweist, die abwechselnd angeordnet, an einer Seite des Bandversorgungsrads (24) gebildet und in einem Kreis angeordnet sind; und
der wenigstens eine federnde Einrastarm (29) der Feststellvorrichtung (28) abwechselnd mit einem der konkav-konvexen Zähne (242) an dem Bandversorgungsrad (24) einrastet.

5. Spendereinheit gemäß Anspruch 1, wobei der wenigstens eine federnde Einrastarm (29) der Feststellvorrichtung (28) selektiv mit dem Sammelrad (25) für verwendetes Band einrastet.

6. Spendereinheit gemäß Anspruch 4 oder 5, wobei jeder von dem wenigstens einen federnden Einrastarm (29) umfasst:

ein gerades Segment (292), das integral und federnd mit der Basis (21) verbunden ist und gegenüber der Basis (21) ein freies Ende aufweist;
ein gekrümmtes Segment (294), das mit dem geraden Segment (292) verbunden ist und aufweist:

ein Verbindungsende, das mit dem freien Ende des geraden Segments (292) verbunden ist; und
ein Einrastende gegenüber dem Verbindungsende;

ein Einrastelement (296), das an dem Einrastende des gekrümmten Segments (294) gebildet ist und das selektiv mit der Radbaugruppe (23) einrastet; und
ein Schiebevorsprung (298), der an dem Einrastende des gekrümmten Segments (294) gebildet ist und von diesem hervorsteht.

7. Spendereinheit gemäß Anspruch 4 oder 5, wobei jeder von dem wenigstens einen federnden Einrastarm (29) umfasst:

ein gerades Segment (292), das integral und federnd mit der Basis (21) verbunden ist und gegenüber der Basis (21) ein Einrastende aufweist;
ein Einrastelement (296), das an dem Einrastende des gerade Segments (292) gebildet ist und das selektiv mit der Radbaugruppe (23) einrastet; und
ein Schiebevorsprung (298), der an dem Einrastende des geraden Segments (292) gebildet ist und von diesem hervorsteht.

8. Spendereinheit gemäß Anspruch 4 oder 5, wobei jeder von dem wenigstens einen federnden Einrastarm (29) umfasst:

ein gekrümmtes Segment (294), das integral und federnd mit der Basis (21) verbunden ist und gegenüber der Basis (21) ein Einrastende aufweist;
ein Einrastelement (296), das an dem Einrastende des gekrümmten Segments (294) gebildet ist und das selektiv mit der Radbaugruppe (23) einrastet; und
ein Schiebevorspnmg (298), der an dem Einrastende des gekrümmten Segments (294) gebildet ist und von diesem hervorsteht.

9. Spendereinheit gemäß Anspruch 4 oder 5, wobei jeder von dem wenigstens einen federnden Einrastarm (29) umfasst:

zwei Enden, die fest mit der Basis (21) verbunden sind;
ein Einrastsegment, das zwischen den Enden gebildet ist;
ein Einrastelement (296), das an dem Einrastsegment gebildet ist und das selektiv mit der Radbaugruppe (23) einrastet; und
ein Schiebevorsprung (298), der an dem Einrastsegment gebildet ist und von diesem hervorsteht.

10. Dünnfilmspender, umfassend:

ein Gehäuse (10) mit einem Übertragungsende, das in dem Gehäuse (10) angeordnet ist;
eine Spendereinheit (20), die in dem Gehäuse (10) befestigt ist und eine Basis (21) umfasst;
eine Radbaugruppe (23), die an der Basis (21) befestigt ist, mit der Übertragungsvorrichtung verbunden ist und umfasst:

ein Bandversorgungsrad (24), das rotierbar an der Basis (21) befestigt ist; und
ein Sammelrad (25) für verwendetes Band, das rotierbar an der Basis (21) befestigt ist;

einen Dünnfilm (26), der um die Radbaugruppe (23) herum befestigt ist;
einen Spenderkopf (22), der mit der Spendereinheit (20) verbunden ist und fähig ist sich aus dem Gehäuse (10) heraus zu erstrecken; und
eine Feststellvorrichtung (28), die federnd an der Basis (21) angeordnet ist und die wenigstens einen federnden Einrastarm (29) aufweist, der an der Basis (21) gebildet ist und der selektiv und direkt mit wenigstens einem von dem Bandversorgungsrad (24) und dem Sammelrad (25) für verwendetes Band einrastet, um zu verhindern, dass die Radbaugruppe (23) rotiert, wobei der Dünnfilmspender weiterhin eine Entsperrungsvorrichtung umfasst, wobei
die Entsperrungsvorrichtung an dem Gehäuse (10) angeordnet ist und der Feststellvorrichtung (28) entspricht, um die Radbaugruppe (23) von der Feststellvorrichtung (28) zu entsperren; wobei der Dünnfilmspender **dadurch gekennzeichnet ist, dass** jeder von dem wenigstens einen federnden Einrastarm (29) der Feststellvorrichtung (28) wenigstens ein Ende aufweist, dass mit der Basis (21) verbunden ist.

11. Dünnfilmspender gemäß Anspruch 10, wobei die Feststellvorrichtung (28) mit dem Bandversorgungsrad (24) einrastet.

12. Dünnfilmspender gemäß Anspruch 11, wobei der Spenderkopf (22) an einem Ende der Basis (21) der Spendereinheit (20) angeordnet ist.

13. Dünnmfilmspender gemäß Anspruch 12, wobei
das Bandversorgungsrad (24) mehrere konkav-konvexe Zähne (242) aufweist, die an einer Seite des Bandversorgungsrads (24) gebildet und in einem Kreis angeordnet sind; und
die Feststellvorrichtung (28) wenigstens einen federnden Einrastarm (29) umfasst, der an der Basis

(21) gebildet ist und mit einem der konkav-konvexe Zähne (242) an dem Bandversorgungsrad (24) einrastet.

14. Dünnfilmspender gemäß Anspruch 10, wobei der wenigstens eine federnde Einrastarm (29) der Feststellvorrichtung (28) selektiv mit dem Sammelrad (25) für verwendetes Band einrastet

15. Dünnfilmspender gemäß Anspruch 13 oder 14, wobei jeder von dem wenigstens einen federnden Einrastarm (29) umfasst:

ein gerades Segment (292), das integral und federnd mit der Basis (21) verbunden ist und gegenüber der Basis (21) ein freies Ende aufweist;
ein gekrümmtes Segment (294), das mit dem geraden Segment (292) verbunden ist und aufweist:

ein Verbindungsende, das mit dem freien Ende des geraden Segments (292) verbunden ist; und
ein Einrastende gegenüber dem Verbindungsende;

ein Einrastelement (296), das an dem Einrastende des gekrümmten Segments (294) gebildet ist und das selektiv mit der Radbaugruppe (23) einrastet; und
ein Schiebevorsprung (298), der an dem Einrastende des gekrümmten Segments (294) gebildet ist und von diesem hervorsteht.

16. Dünnfilmspender gemäß Anspruch 13 oder 14, wobei jeder von dem wenigstens einen federnden Einrastarm (29) umfasst:

ein gerades Segment (292), das integral und federnd mit der Basis (21) verbunden ist und gegenüber der Basis (21) ein Einrastende aufweist;
ein Einrastelement (296), das an dem Einrastende des gerade Segments (292) gebildet ist und das selektiv mit der Radbaugruppe (23) einrastet; und
ein Schiebevorsprung (298), der an dem Einrastende des geraden Segments (292) gebildet ist und von diesem hervorsteht

17. Dünnfilmspender gemäß Anspruch 13 oder 14, wobei jeder von dem wenigstens einen federnden Einrastarm (29) umfasst:

ein gekrümmtes Segment (294), das integral und federnd mit der Basis (21) verbunden ist und gegenüber der Basis (21) ein Einrastende aufweist;
ein Einrastelement (296), das an dem Einrastende des gekrümmten Segments (294) gebildet ist und das selektiv mit der Radbaugruppe (23) einrastet; und
ein Schiebevorsprung (298), der an dem Einrastende des gekrümmten Segments (294) gebildet ist und von diesem hervorsteht.

18. Dünnfilmspender gemäß Anspruch 13 oder 14, wobei jeder von dem wenigstens einen federnden Einrastarm (29) umfasst:

zwei Enden, die fest mit der Basis (21) verbunden sind;
ein Einrastsegment, das zwischen den Enden gebildet ist;
ein Einrastelement (296), das an dem Einrastsegment gebildet ist und das selektiv mit der Radbaugruppe (23) einrastet; und
ein Schiebevorsprung (298), der an dem Einrastsegment gebildet ist und von diesem hervorsteht.

19. Dünnfilmspender gemäß einem der Ansprüche 13 bis 18, wobei die Entsperrungsvorrichtung an einer Innenfläche des Gehäuses (10) angeordnet ist und umfasst:

wenigstens einen Führungsblock (16), der jeweils dem wenigstens einen federnden Einrastarm (29) entspricht und der von dem wenigstens einen federnden Einrastarm (29) beabstandet ist und jeweils mit dem wenigstens einen federnden Einrastarm (29) fluchtet, nachdem das Gehäuse (10) geschlossen ist.

20. Dünnfilmspender gemäß einem der Ansprüche 13 bis 18, wobei die Entsperrungsvorrichtung an einer Innenfläche des Gehäuses (10A) angeordnet ist und umfasst:

wenigstens einen Führungsblock (16A), der jeweils dem wenigstens einen federnden Einrastarm (29A) entspricht und der jeweils an den wenigstens einen federnden Einrastarm (29A) anliegt, nachdem das Gehäuse (10A) geschlossen ist.

Revendications

1. Unité distributrice (20) pour un distributeur de film fin, comprenant :

une base (21) ;
un montage de roues (23) monté sur la base (21) et comprenant
une roue distributrice d'adhésif (24) montée en

rotation sur la base (21) ;
et
une roue collectrice d'adhésif usagé (25) montée en rotation sur la base (21) ;
un film fin (26) monté autour du montage de roues (23) ; et
un dispositif de verrouillage (28) disposé de façon résiliente sur la base (21), présentant
au moins un bras d'engagement résilient (29) formé sur la base (21), et engageant de façon sélective et directe au moins l'une de la roue distributrice d'adhésif (24) et de la roue collectrice d'adhésif usagé (25) pour éviter que le montage de roues (23) ne tourne ; sachant que l'unité distributrice (20) est **caractérisée en ce que** chacun des au moins un bras d'engagement résilient (29) du dispositif de verrouillage (28) présente au moins une extrémité reliée à la base (21).

2. Unité distributrice selon la revendication 1, dans laquelle le dispositif de verrouillage (28) engage la roue distributrice d'adhésif (24).

3. Unité distributrice selon la revendication 2, comprenant en outre une tête distributrice (22) disposée sur une extrémité de la base (21).

4. Unité distributrice selon la revendication 2 ou 3, dans laquelle la roue distributrice d'adhésif (24) présente de multiples dents concaves-convexes (242) disposées en alternance, formées sur un côté de la roue distributrice d'adhésif (24) et agencées en un cercle ; et
l'au moins un bras d'engagement résilient (29) du dispositif de verrouillage (28) engage de façon sélective une des dents concaves-convexes (242) sur la roue distributrice d'adhésif (24).

5. Unité distributrice selon la revendication 1, dans laquelle l'au moins un bras d'engagement résilient (29) du dispositif de verrouillage (28) engage de façon sélective la roue collectrice d'adhésif usagé (25).

6. Unité distributrice selon la revendication 4 ou 5, dans laquelle chacun de l'au moins un bras d'engagement résilient (29) comprend
un segment droit (292) relié de façon intégrale et résiliente à la base (21) et présentant une extrémité libre opposée à la base (21) ;
un segment incurvé (294) relié au segment droit (292) et présentant
une extrémité de liaison reliée à l'extrémité libre du segment droit (292) ; et
une extrémité d'engagement opposée à l'extrémité de liaison ;
un élément d'engagement (296) formé sur l'extrémité d'engagement du segment incurvé (294) et engageant le montage de roues (23) de façon sélective ; et
une saillie poussée (298) formée sur et, faisant saillie de, l'extrémité d'engagement du segment incurvé (294).

7. Unité distributrice selon la revendication 4 ou 5, dans laquelle chacun de l'au moins un bras d'engagement résilient (29) comprend
un segment droit (292) relié de façon intégrale et résiliente à la base (21) et présentant une extrémité d'engagement opposée à la base (21) ;
un élément d'engagement (296) formé sur l'extrémité d'engagement du segment droit (292) et engageant le montage de roues (23) de façon sélective ; et
une saillie poussée (298) formée sur et, faisant saillie de, l'extrémité d'engagement du segment droit (292).

8. Unité distributrice selon la revendication 4 ou 5, dans laquelle chacun de l'au moins un bras d'engagement résilient (29) comprend
un segment incurvé (294) relié de façon intégrale et résiliente à la base (21) et présentant une extrémité d'engagement opposée à la base (21) ;
un élément d'engagement (296) formé sur l'extrémité d'engagement du segment incurvé (294) et engageant le montage de roues (23) de façon sélective ; et
une saillie poussée (298) formée sur et, faisant saillie de, l'extrémité d'engagement du segment incurvé (294).

9. Unité distributrice selon la revendication 4 ou 5, dans laquelle chacun de l'au moins un bras d'engagement résilient (29) comprend
deux extrémités reliées fixement à la base (21) ;
un segment d'engagement formé entre les extrémités ; un élément d'engagement (296) formé sur le segment d'engagement et engageant le montage de roues (23) de façon sélective ; et
une saillie poussée (298) formée sur le, et faisant saillie du segment d'engagement.

10. Distributeur de film fin, comprenant :

un logement (10) présentant un dispositif de transmission disposé dans le logement (10) ;
une unité distributrice (20) montée dans le logement (10) et comprenant une base (21) ;
un montage de roues (23) monté sur la base (21), relié au dispositif de transmission et comprenant
une roue distributrice d'adhésif (24) montée en rotation sur la base (21) ; et
une roue collectrice d'adhésif usagé (25) montée en rotation sur la base (21) ;

un film fin (26) monté autour du montage de roues (23) ;
un tête distributrice (22) reliée à l'unité distributrice (20) et capable de s'étendre hors du logement (10) ;
un dispositif de verrouillage (28) disposé de façon résiliente sur la base (21), présentant
au moins un bras d'engagement résilient (29) formé sur la base (21), et engageant de façon sélective et directe au moins l'une de la roue distributrice d'adhésif (24) et de la roue collectrice d'adhésif usagé (25) pour éviter que le montage de roues (23) ne tourne ; le distributeur de film fin comprenant en outre un dispositif de déverrouillage, sachant que
le dispositif de déverrouillage est disposé sur le logement (10) et correspond au dispositif de verrouillage (28) pour déverrouiller le montage de roues (23) du dispositif de verrouillage (28), sachant que le distributeur de film fin est **caractérisé en ce que** chacun des au moins bras d'engagement résilient (29) du dispositif de verrouillage (28) présente au moins une extrémité reliée à la base (21).

11. Distributeur de film fin selon la revendication 10, dans lequel le dispositif de verrouillage (28) engage la roue distributrice d'adhésif (24).

12. Distributeur de film fin selon la revendication 11, dans lequel la tête distributrice (22) est disposée sur une extrémité de la base (21) de l'unité distributrice (20).

13. Distributeur de film fin selon la revendication 12, dans lequel
la roue distributrice d'adhésif (24) présente de multiples dents concaves-convexes (242) formées sur un côté de la roue distributrice d'adhésif (24) et agencées en un cercle ;
et le dispositif de verrouillage (28) comprend au moins un bras d'engagement résilient (29) formé sur la base (21) et engageant une des dents concaves-convexes (242) sur la roue distributrice d'adhésif (24).

14. Distributeur de film fin selon la revendication 10, dans lequel l'au moins un bras d'engagement résilient (29) du dispositif de verrouillage (28) met en prise de façon sélective la roue collectrice d'adhésif usagé (25).

15. Distributeur de film fin selon la revendication 13 ou 14, dans lequel chacun des au moins un bras d'engagement résilient (29) comprend
un segment droit (292) relié de façon intégrale et résiliente à la base (21) et présentant une extrémité libre opposée à la base (21) ;
un segment incurvé (294) relié au segment droit (292) et présentant
une extrémité de liaison reliée à l'extrémité libre du segment droit (292) ; et
une extrémité d'engagement opposée à l'extrémité de liaison ;
un élément d'engagement (296) formé sur l'extrémité d'engagement du segment incurvé (294) et engageant le montage de roues (23) de façon sélective ; et
une saillie poussée (298) formée sur et, faisant saillie de, l'extrémité d'engagement du segment incurvé (294).

16. Distributeur de film fin selon la revendication 13 ou 14, dans lequel chacun des au moins un bras d'engagement résilient (29) comprend
un segment droit (292) relié de façon intégrale et résiliente à la base (21) et présentant une extrémité d'engagement opposée à la base (21) ;
un élément d'engagement (296) formé sur l'extrémité d'engagement du segment droit (292) et engageant le montage de roues (23) de façon sélective ; et
une saillie poussée (298) formée sur et, faisant saillie de, l'extrémité d'engagement du segment droit (292).

17. Distributeur de film fin selon la revendication 13 ou 14, dans lequel chacun des au moins un bras d'engagement résilient (29) comprend
un segment incurvé (294) relié de façon intégrale et résiliente à la base (21) et présentant une extrémité d'engagement opposée à la base (21) ;
un élément d'engagement (296) formé sur l'extrémité d'engagement du segment incurvé (294) et engageant le montage de roues (23) de façon sélective ; et
une saillie poussée (298) formée sur et, faisant saillie de, l'extrémité d'engagement du segment incurvé (294).

18. Distributeur de film fin selon la revendication 13 ou 14, dans lequel chacun de l'au moins un bras d'engagement résilient (29) comprend
deux extrémités reliées fixement à la base (21) ;
un segment d'engagement formé entre les extrémités ;
un élément d'engagement (296) formé sur le segment d'engagement et engageant le montage de roues (23) de façon sélective ; et
une saillie poussée (298) formée sur le, et faisant saillie du segment d'engagement.

19. Distributeur de film fin selon l'une quelconque des revendications 13 à 18, dans lequel le dispositif de déverrouillage est disposé sur une surface intérieure du logement (10) et comprend

au moins un bloc de guidage (16) correspondant respectivement à l'au moins un bras d'engagement résilient (29) et espacé de, et s'alignant respectivement avec, l'au moins un bras d'engagement résilient (29) après que le logement (10) est fermé.

20. Distributeur de film fin selon l'une quelconque des revendications 13 à 18, dans lequel le dispositif de déverrouillage est disposé sur une surface intérieure du logement (10A) et comprend
au moins un bloc de guidage (16A) correspondant respectivement à l'au moins un bras d'engagement résilient (29A) et étant adjacent respectivement contre l'au moins un bras d'engagement résilient (29A) après que le logement (10A) est fermé.

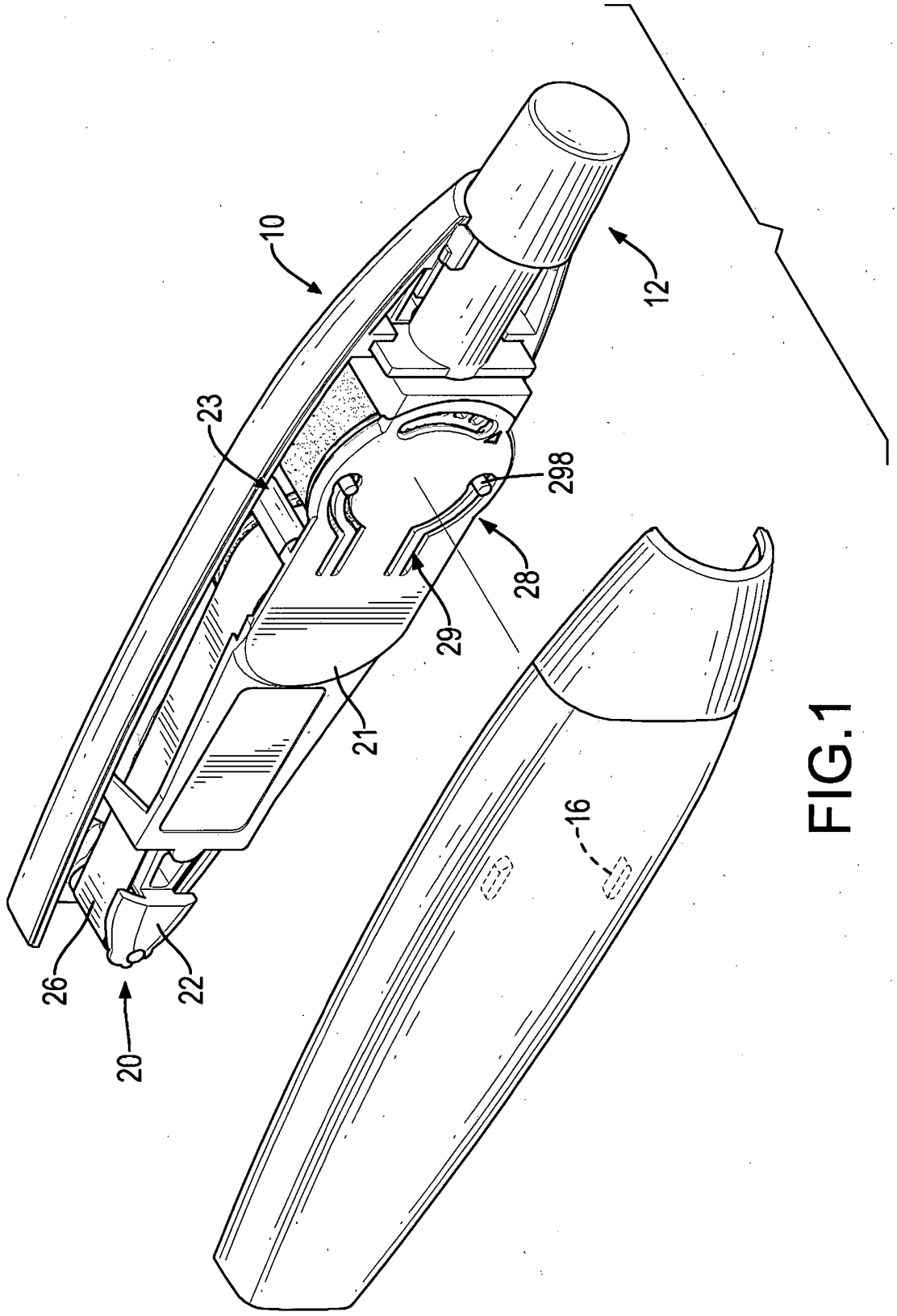

FIG.1

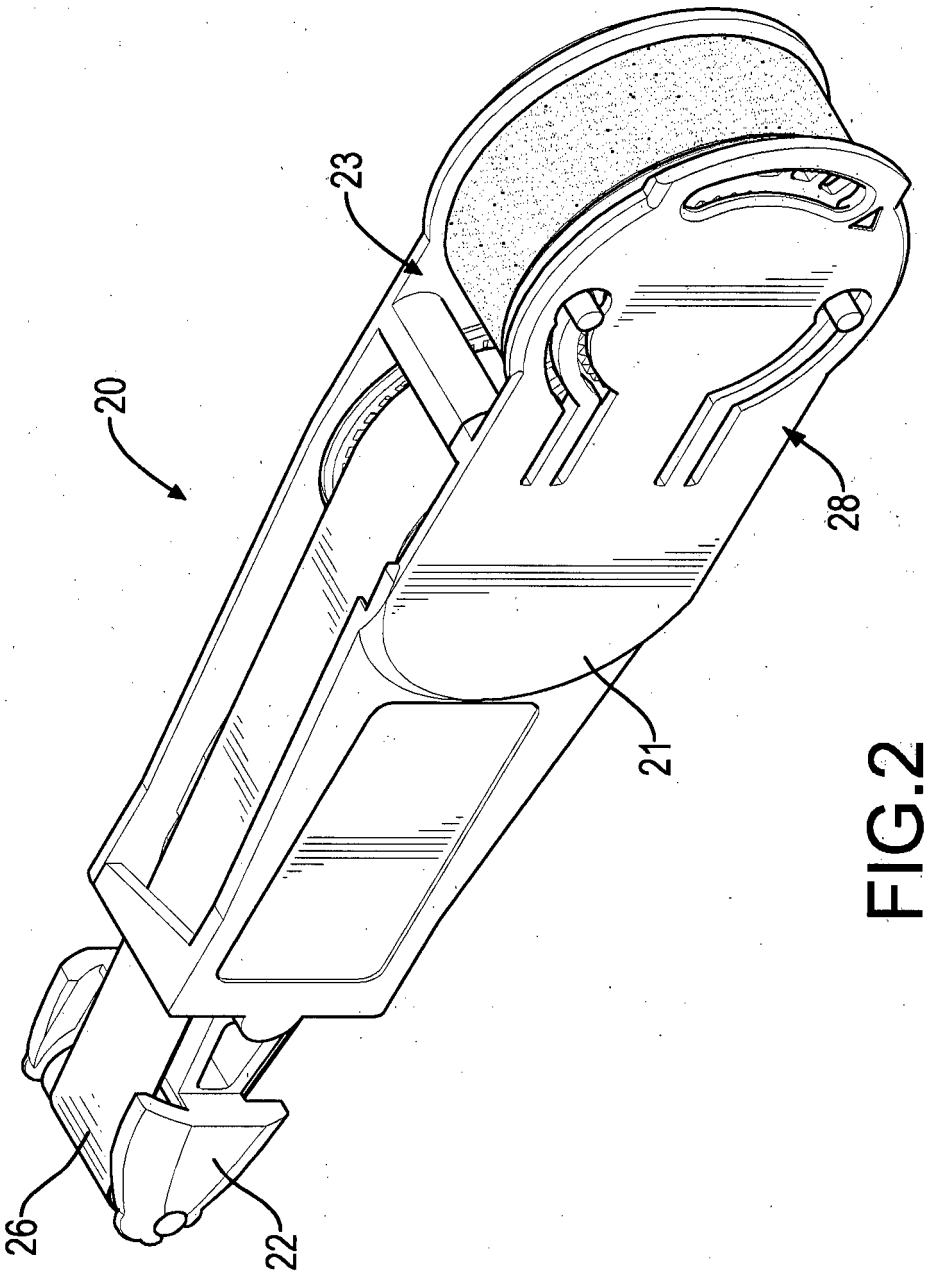

FIG.2

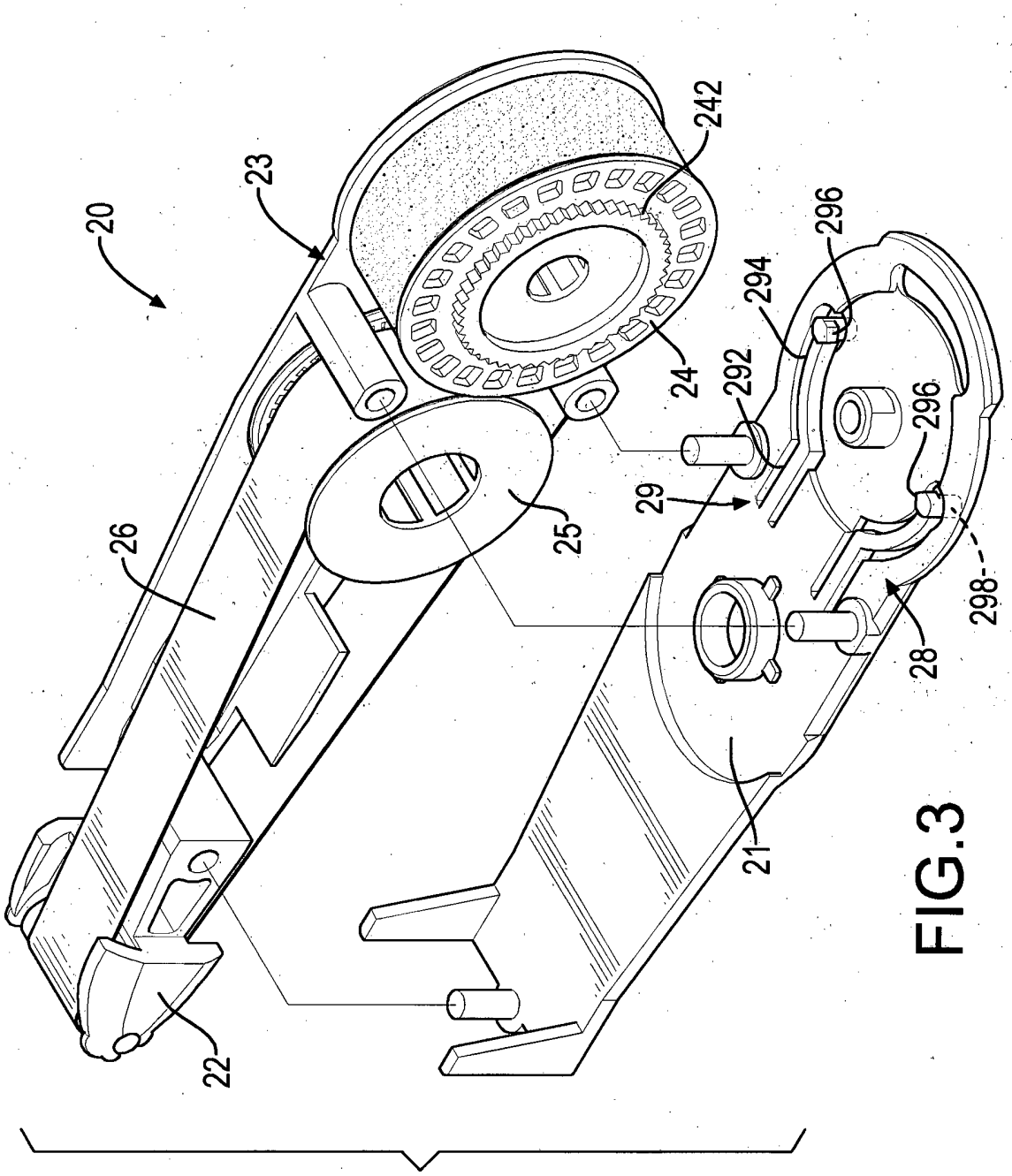

FIG.3

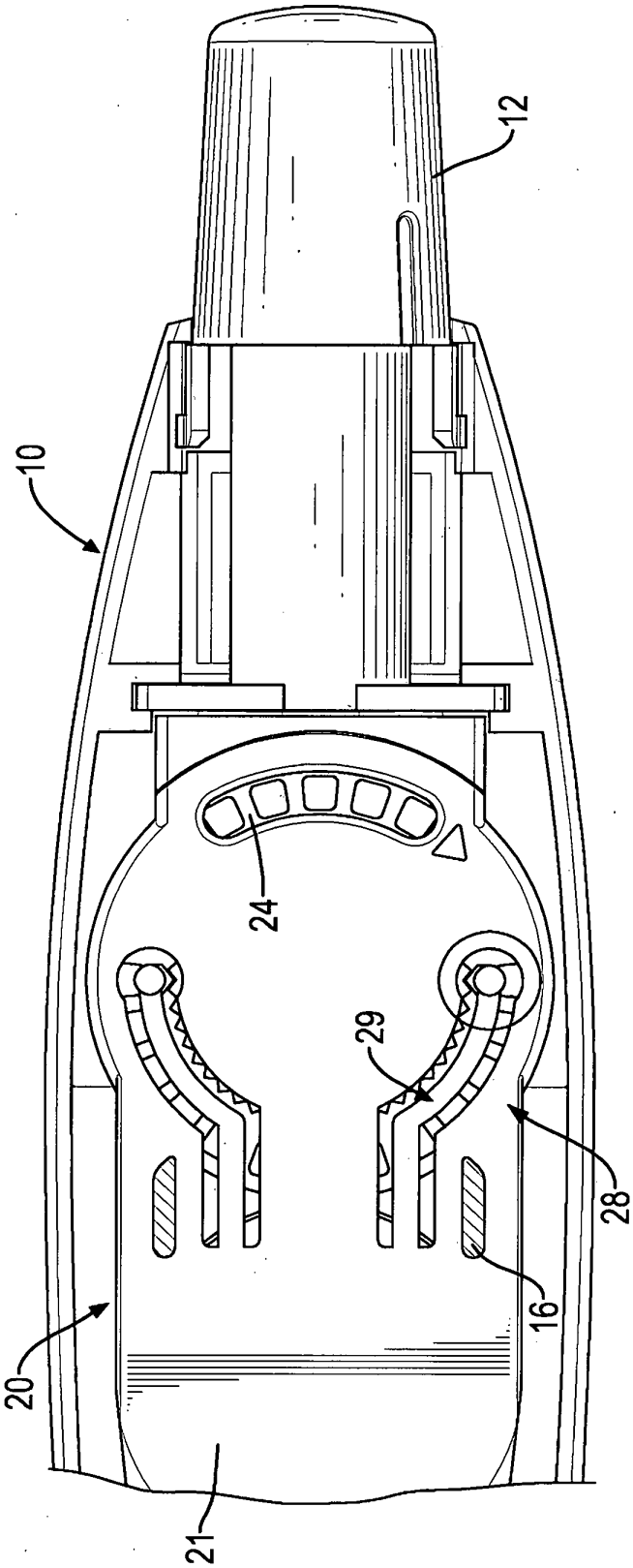

FIG.4

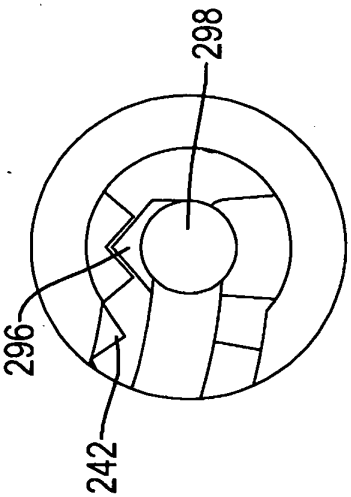

FIG.4A

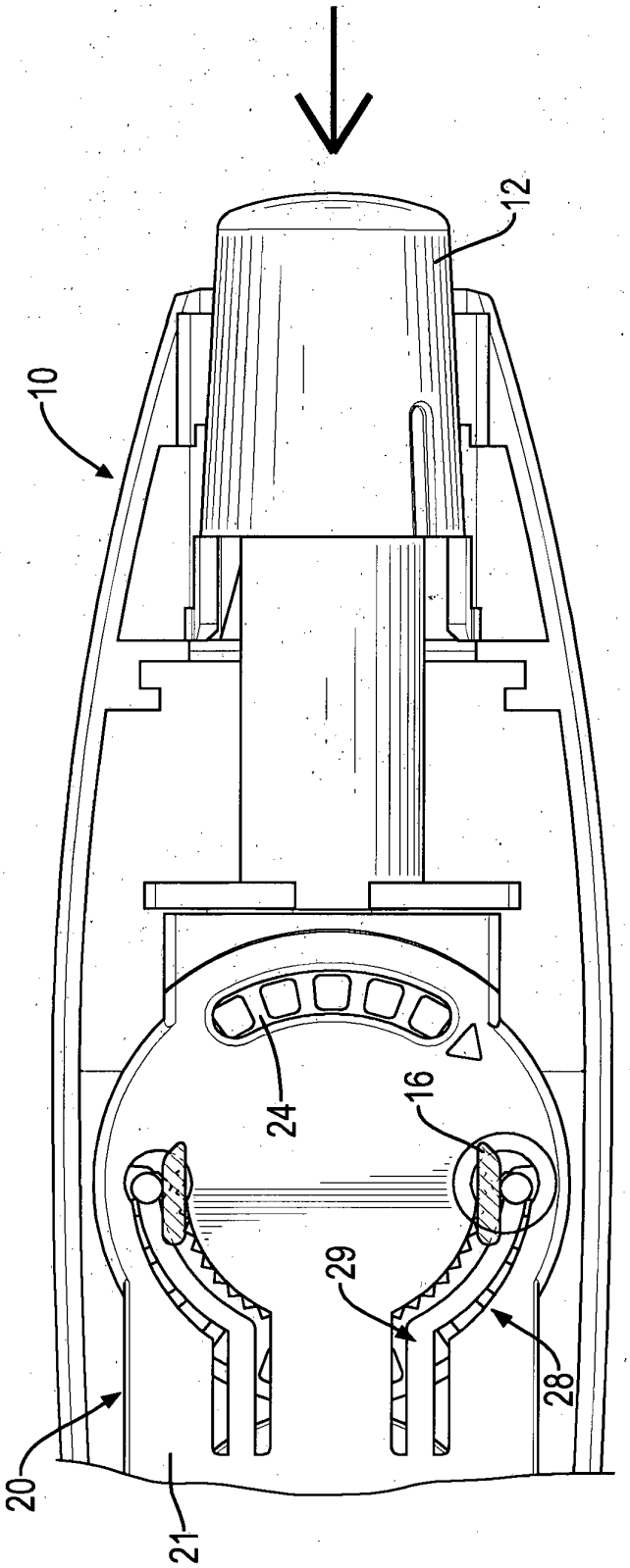

FIG.5

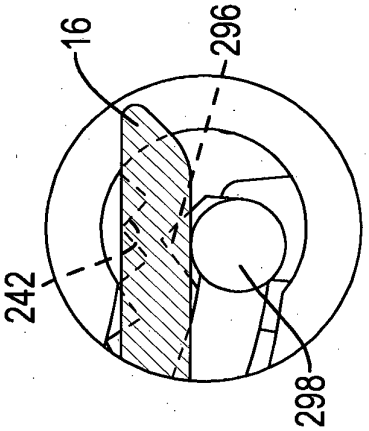

FIG.5A

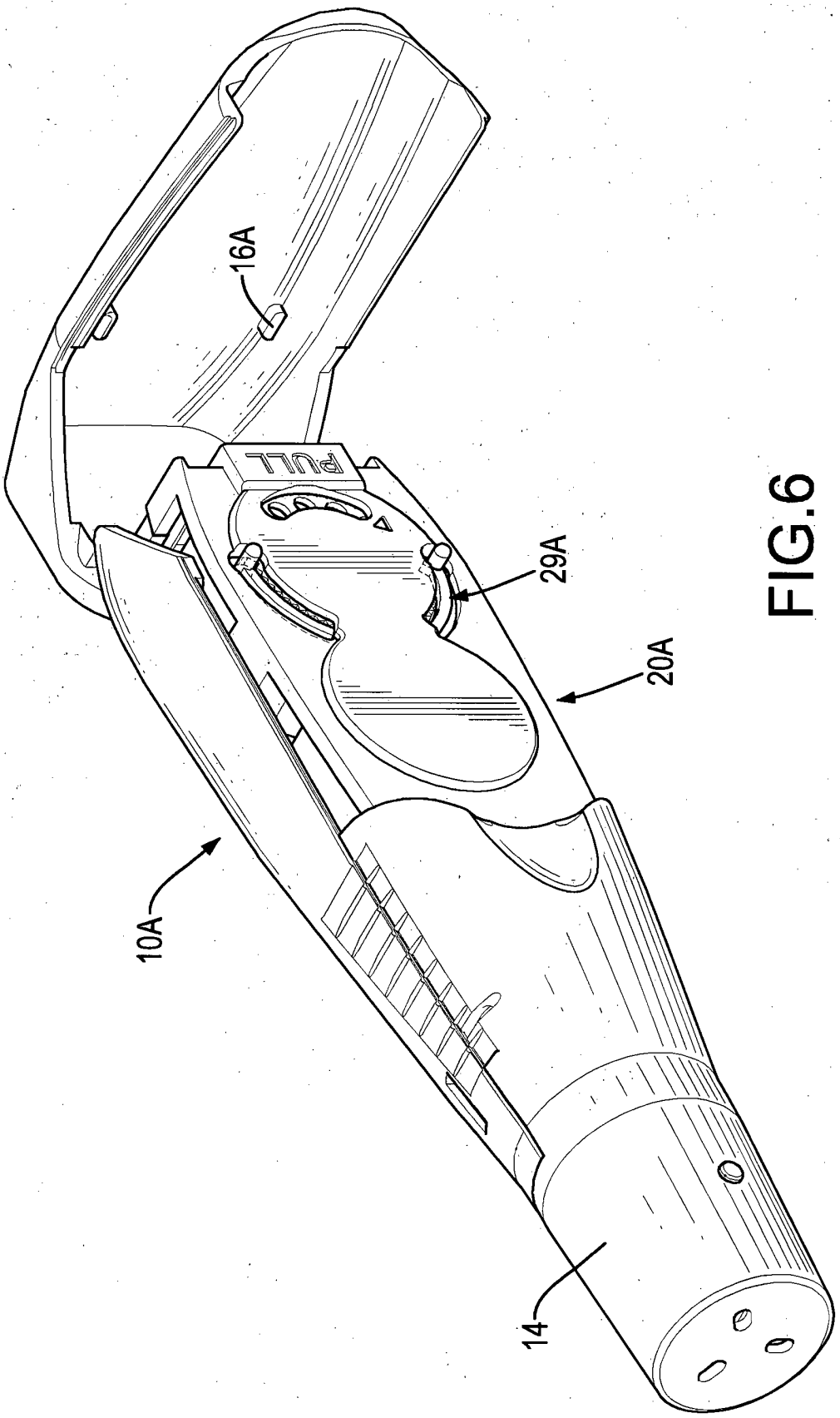

FIG.6

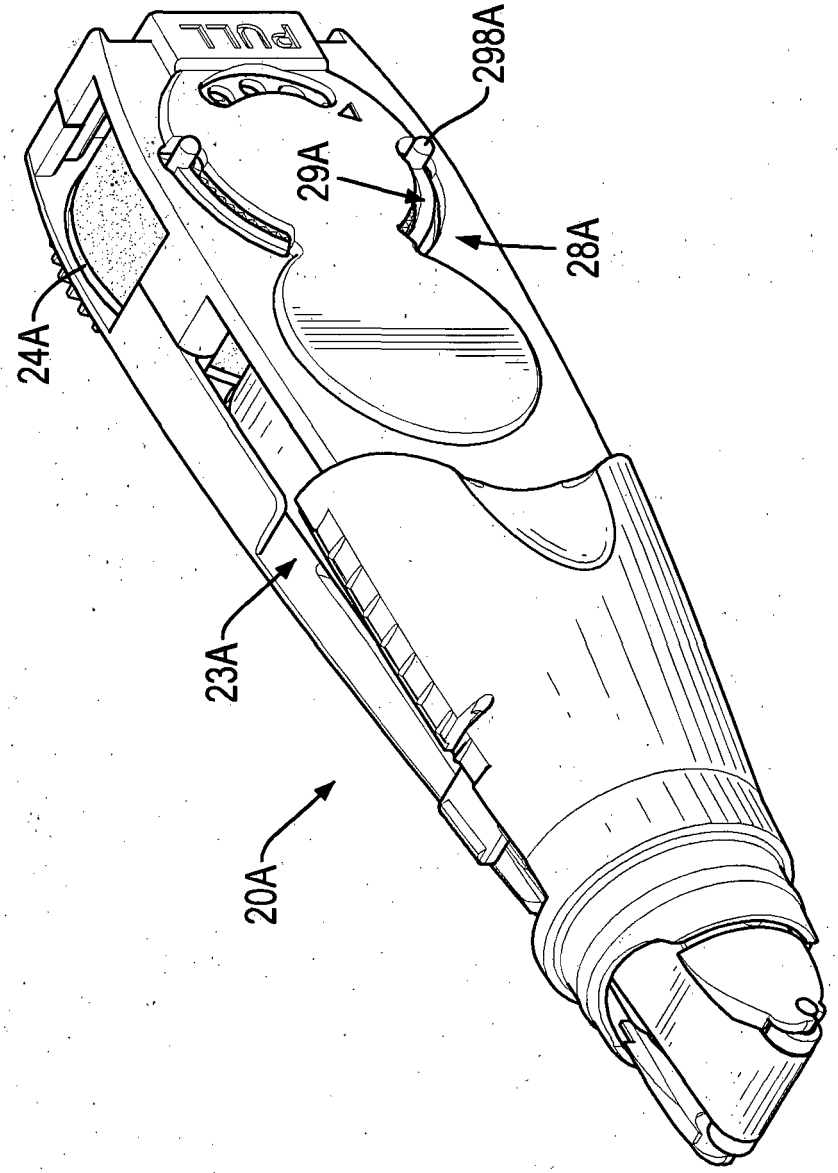

FIG.7

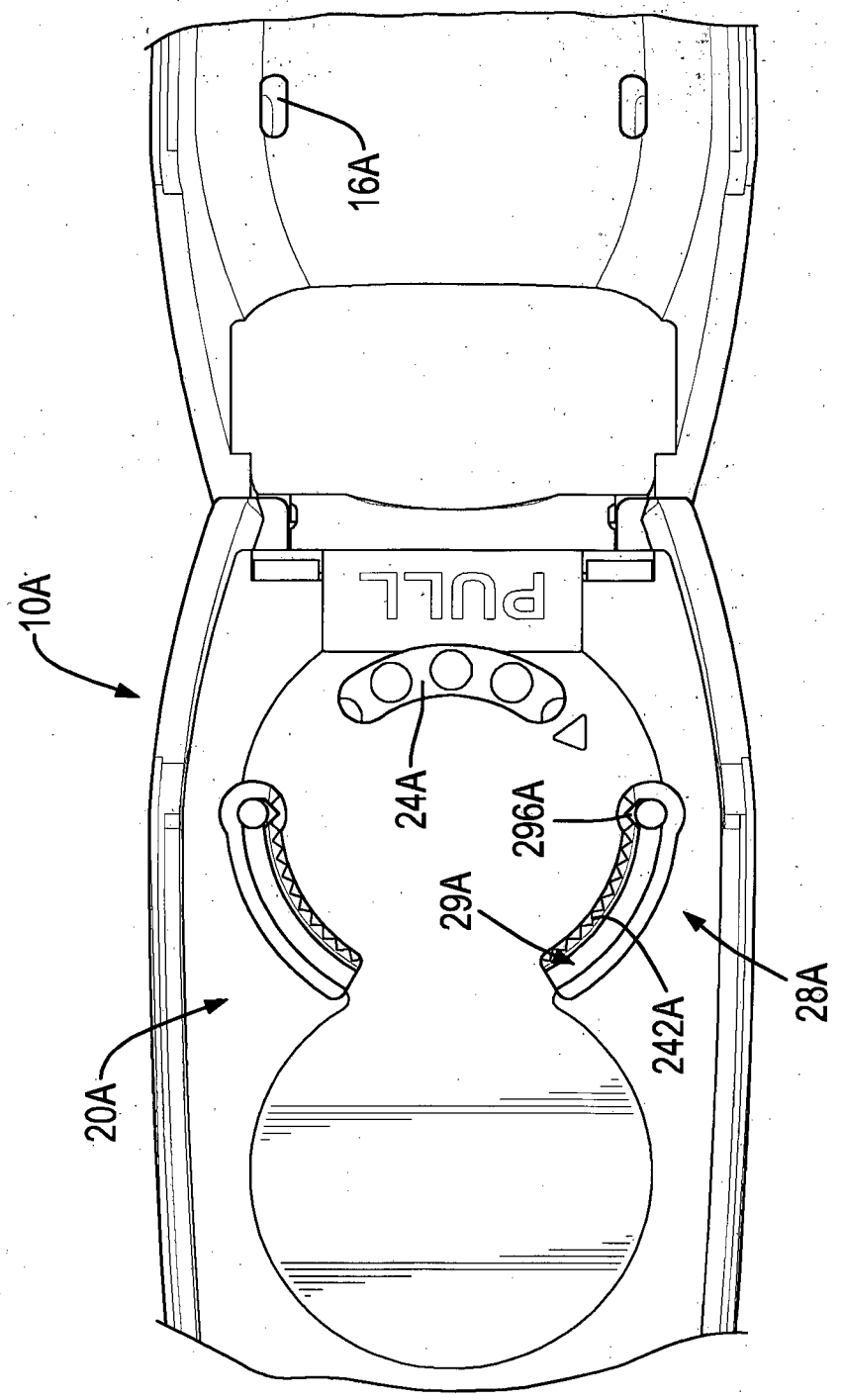

FIG.8

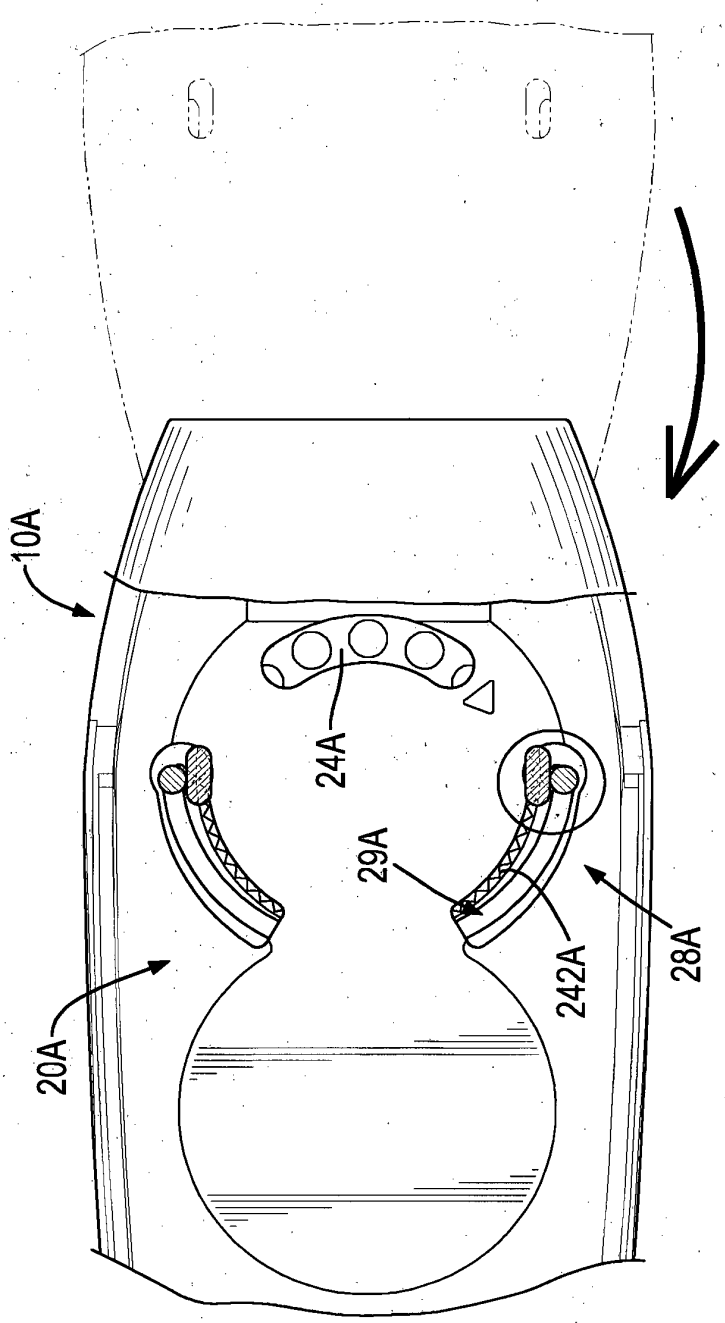

FIG.9

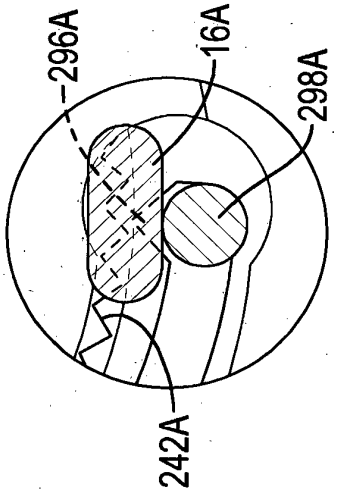

FIG.9A

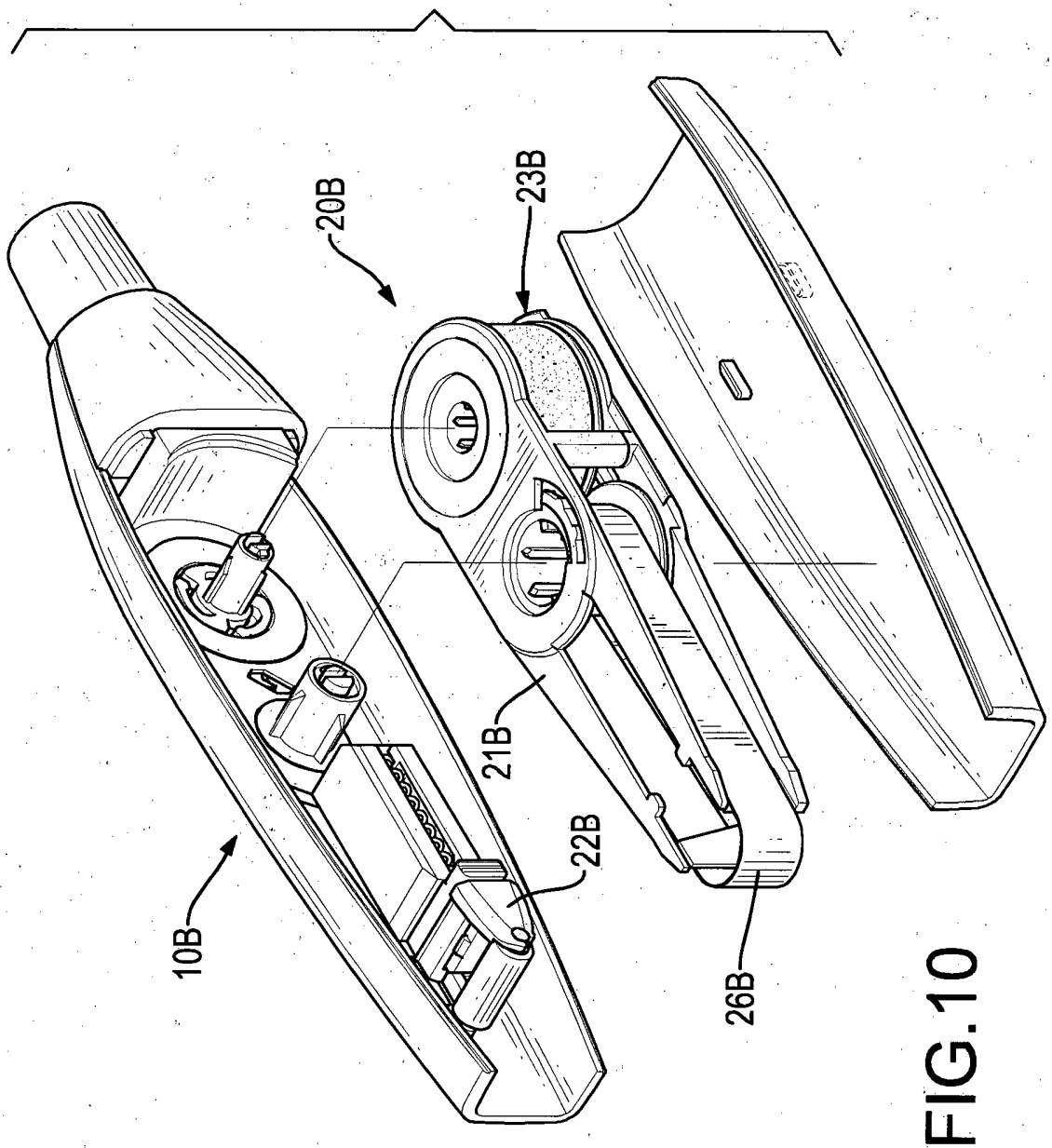

FIG.10

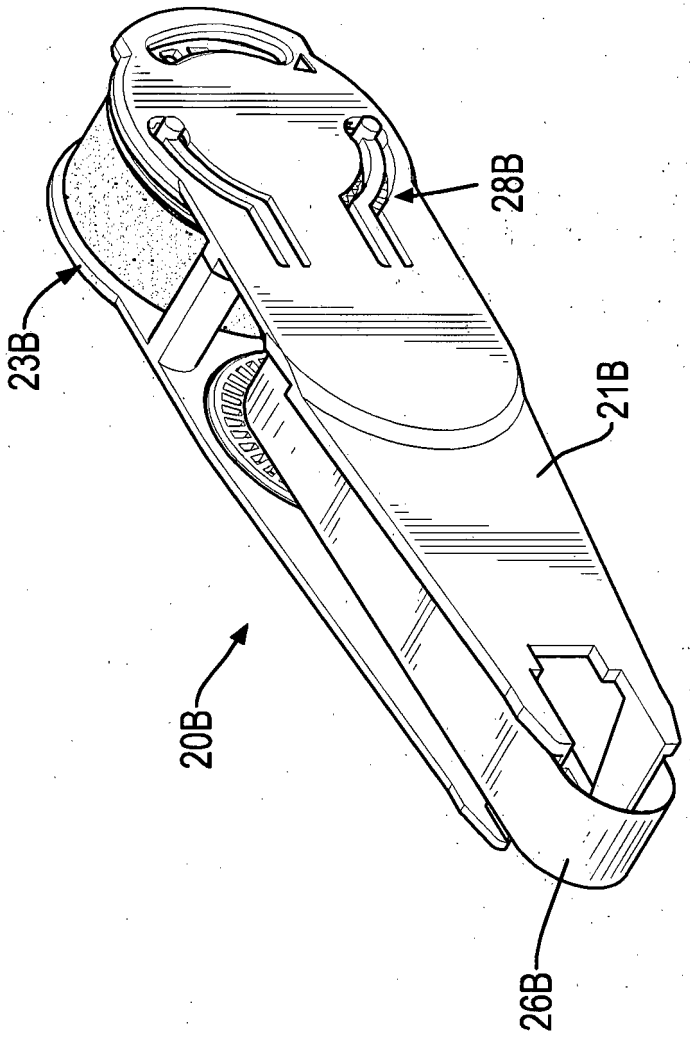

FIG.11

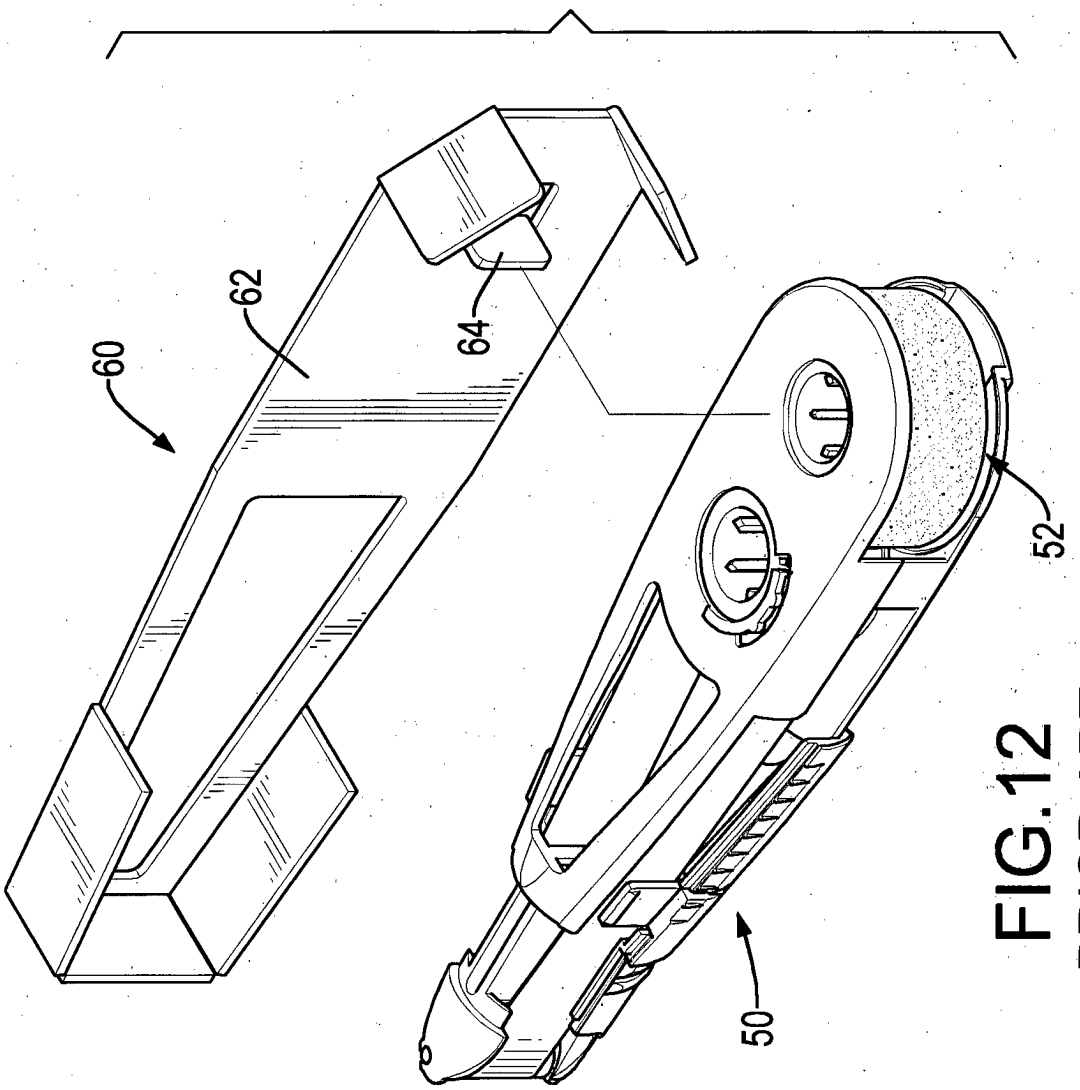

FIG.12
PRIOR ART

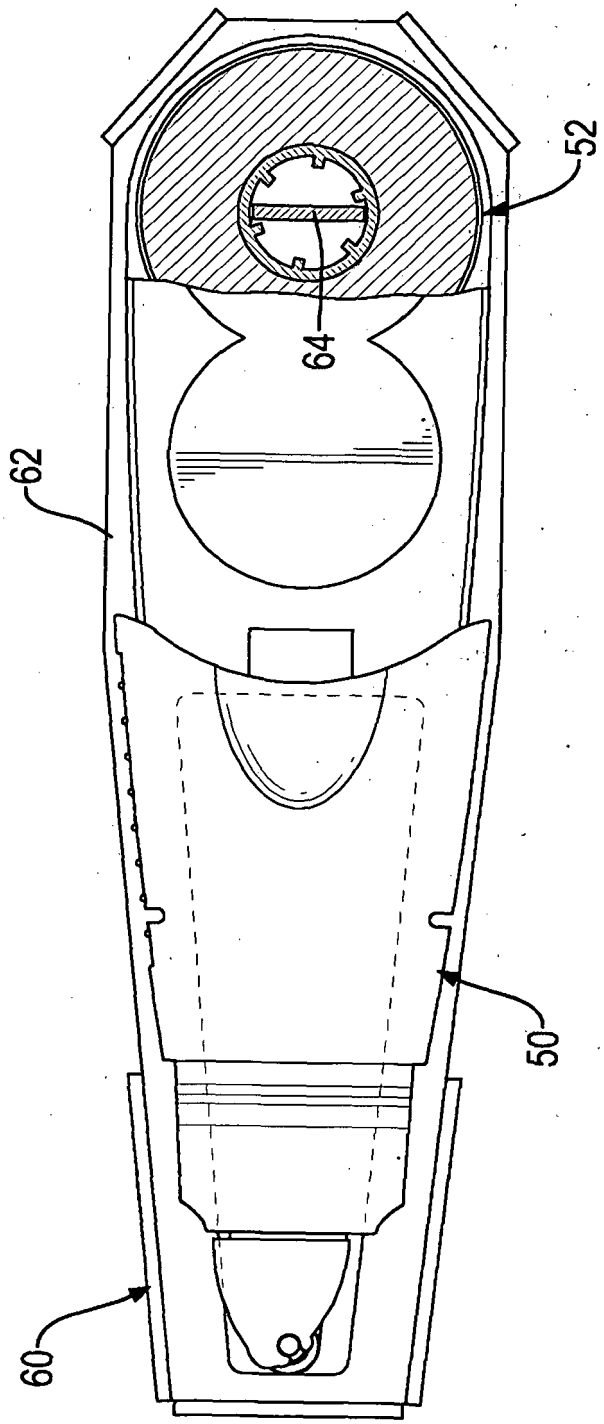

FIG.13
PRIOR ART

REFERENCES CITED IN THE DESCRIPTION

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- EP 1067075 A2 **[0005]**
- WO 2011070935 A1 **[0005]**