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(54) **Stick-shaped piece drive container and stick-shaped piece supplying cassette**

Behälter mit verstellbarem Stift und Spender-Kassette für die Stifte

Réceptacle avec entraînement pour pièce en forme de barre et cassette distributrice pour pièces en forme de barre

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Description

1. Field of the Invention

[0001] The present invention relates to a drive container for extending or retracting a stick-shaped piece and a storage supply cassette for a stick-shaped piece of material. The drive container comprising an outer cylinder; a screw shaft inserted in said outer cylinder, so as to be axially movable but rotationally fixed with respect to said outer cylinder, said screw shaft having a helical groove; an inner cylinder mounted on said outer cylinder so as to be rotationally movable but axially fixed with respect to said outer cylinder, a portion of said inner cylinder extending beyond a forward end of said outer cylinder; projecting means on an inside surface of said inner cylinder for engaging said helical groove of said screw shaft; a holder formed of a cylindrical elastomer resin holding said stick-shaped piece on said screw shaft for axial sliding movement within said inner cylinder; cap means detachable covering said inner cylinder; and annular projecting sealing means integrally formed on an outside circumference of said holder for sealing between the circumference of said holder and the inside of said inner cylinder.

2. Background Information

[0002] A drive container of this type is known from EP-A-182 655. A disadvantage of such a container is that the stick-shaped piece cannot be replaced easily since before supplying a new stick-shaped piece the remaining stick-shaped piece must be removed from the holder.

[0003] Another example of a conventional drive container for extending or retracting a stick-shaped piece is shown in Fig.7, which has the following construction.

[0004] In the figure, outer cylinder 21 has stick-shaped piece holder 24 provided therein which holds stick-shaped piece 23, such as, for example, a correction rod, with internal screw-thread 24A. Stick-shaped piece holder 24 is mounted for axial movement but is prevented from rotating by key 29 formed on an inside of outer cylinder 21 and keyway 30 formed on a circumference of stick-shaped piece holder 24.

[0005] Stick-shaped piece holder 24 also has internal screw-thread 35 formed on a rear inside thereof. Stick-shaped piece holder 24 further has screw shaft 36 provided therein which has screw groove 36A formed on a circumference thereof to engage internal screw-thread 35. Screw shaft 36 has annular ridge 37, annular ridge 38 on a large-diameter shaft and rear end knob 39 provided around its root, which are axially immovable but are axially rotatable and coupled with the inside of an inward step 40, an annular groove 41 in a large-diameter cylinder of the rear end formed on the inside of outer cylinder 21, respectively.

[0006] That is, annular ridge 37 slidably contacts a forward end beyond inward step 40, which annular ridge 38 fits into annular groove 41. Rear end knob 39 slidably contacts the rear end of outer cylinder 21.

[0007] Cap 28 detachably covers front end 21A of outer cylinder 21; as an example, annular ridge 43 formed on a circumference of front end 21A of outer cylinder 21 fits into annular groove 44 formed on the inside of cap 28.

[0008] The conventional example described above is operated as follows. An operator removes cap 28 from outer cylinder 21, and rotates the rear end knob 39 relative to the outer cylinder 21 to rotate screw shaft 36. A rotation of the screw shaft 36 axially moves the holder 24 having internal screw-thread 35 engaged therewith and the stick-shaped piece 23 retained by the holder 24 with a key 29 of outer cylinder 21 fitted in keyway 30 of the holder 24. Stick-shaped piece 23 thus is projected out of the front end 21A of outer cylinder 21 for use by applying to a portion to be corrected.

[0009] To retract stick-shaped piece 23, the rear end knob 39 is reversely rotated to rotate screw shaft 36 together in the same direction. Rotation of screw shaft 36 axially moves the holder 24 having internal screw-thread 35 engaged with the screw shaft 36 and the stick-shaped piece 23 being retained by the holder 24 in the opposite axial direction, the above one with key 29 of outer cylinder 21 fitted in keyway 30 of the holder 24, thereby retracting the stick-shaped piece 23 into outer cylinder 21.

[0010] After stick-shaped piece 23 is withdrawn, the operator covers the outer cylinder 21 with cap 28 on front end 21A.

[0011] If the stick-shaped piece 23 is completely consumed, rear end knob 39 is rotated until the holder 24 reaches its farthest extended position. Any remaining residual stick-shaped piece 23 is then removed from stick-shaped piece holder 24 before inserting a new stick-shaped piece into the holder 24. After this, rotation of rear end knob 39 is reversed to retract the holder 24 with the stick-shaped piece 23 into front end 21A of outer cylinder 21. This completes supplying of stick-shaped piece 23.

[0012] In order to prevent stick-shaped piece 23 from drying and moisture from evaporating when it is not in use, in the conventional example described above the inward projection 40 is provided with a felt material (not shown) adhered thereto to closely contact the sliding surface of screw shaft 36 facing it. However, such felt material has a disadvantage that it undergoes changes from recurring use due to sliding of screw shaft 36, resulting in poor elasticity. This means that the sealing ability of the felt material gradually deteriorates, so that it cannot prevent stick-shaped piece 23 from drying out by moisture evaporating. The felt material also has the disadvantage that it cannot be easily replaced in view of the construction once the conventional drive container has been assembled.

[0013] The conventional drive container has a further different disadvantage that the stick-shaped piece cannot be easily replaced. That is, the remaining residual stick-shaped piece 23 must be removed from the holder 24 to supply a new stick-shaped piece 23, involving problems of unsanitary, time consuming labor. In fact, the container is generally disposed of in practical use after stick-shaped piece 23 is completely consumed. A storage supply cassette according the preamble of claim 7 is known from GB-A-1 219 926.

SUMMARY OF THE INVENTION

[0014] In view of the foregoing, it is one object of the present invention to provide drive container for a stick-shaped piece capable of fully preventing the stick-shaped piece from drying out by moisture evaporating.

[0015] A second object of the present invention is to provide a storage supply cassette for a stick-shaped piece capable of supplying the stick-shaped piece to the drive container in a simple way while fully preventing the stick-shaped piece from drying out from moisture evaporating.

[0016] Briefly, the foregoing objects are accomplished in accordance with aspects of the present invention by a drive container and stick-shaped a storage piece supplying cassette for a stick-shaped piece. The drive container comprises an outer cylinder; a screw shaft having a helical groove provided on a circumference thereof and a connecting portion provided on a front end thereof, and being inserted in the outer cylinder so as to be axially movable but rotationally fixed with respect to the outer cylinder. An inner cylinder having a projection provided on a rear inside thereof fits in the helical groove, and is immovably mounted in the outer cylinder so it may axially rotate and extend out a forward end. A cylindrical holder made of elastomer rein holding said stick-shaped piece holder is coupled to the connecting portion of the screw shaft for axial sliding movement in the inner cylinder for holding the stick-shaped piece. A cap detachable covering the inner cylinder or the outer cylinder or both. Sealing means integrally formed on a circumference of the holder for sealing the space between the holder and the inside of the inner cylinder.

[0017] The holder has a partition plate for dividing the inside of the holder into two cylindrical portions.

[0018] The storage supply cassette for the stick-shaped piece supplying cassette is comprised of a holder for a stick-shaped piece holder adapted to be coupled with the stick-shaped piece drive container for holding the stick-shaped piece; a casing for removably covering the stick-shaped piece holder; and a sealing member provided on a circumference of the stick-shaped holder for sealing the inside of the casing, and the projection may be formed outside on an elongation of the partition plate.

[0019] If the inner cylinder is rotated relative to the

outer cylinder, the screw shaft and the holder with the stick-shaped piece coupled with the connecting portion of the screw shaft are moved through the inner cylinder in an axial direction as the projection of the inner cylinder fits into the screw groove of the screw shaft and the screw shaft unrotatably fits into the outer cylinder but is moveable in an axial direction. Thus, the stick-shaped piece retained by the holder is extended out of or retracted into the front end of the inner cylinder as the inner cylinder is rotated.

[0020] The sealing member provided on the circumference of the holder closely fits with the inside of the inner cylinder preventing the stick-shaped piece from drying out by evaporation of moisture in cooperation with the cap when the drive container is not in use.

[0021] To supply the stick-shaped piece to the container, the holder with the residual stick-shaped piece is detached and a new stick-shaped piece holder with a new stick-shaped piece is taken out of the storage supply cassette. The holder is then coupled with the connecting portion of the drive container. These procedures allow a stick-shaped piece to be easily supplied in a short time without removal of the remaining residual stick-shaped piece and without staining the hands. The sealing member provided on the circumference of the holder for the stick-shaped piece to closely seal the casing prevents the stick-shaped piece from drying out by evaporating moisture in the storage supply cassette. After the holder is coupled with the stick-shaped piece drive container, the sealing member serves as a sealing means for the inside of the inner cylinder of the drive container. The sealing member thus is in common use, thereby reducing the number of parts. The common use of the sealing member allows the sealing member to be replaced every time a new stick-shaped piece is supplied. The sealing ability of the sealing member is free of adverse effect by the deterioration due to the changes from recurring use.

[0022] Other objects and advantages of the invention will become more apparent from the following portion of this specification and from the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023]

Fig. 1 is a longitudinal cross-sectioned view of a first embodiment of the drive container for a stick-shaped piece not according to the present invention,

Fig. 2(a) is an enlarged longitudinal cross-sectioned side view of the holder for a stick-shaped piece, not according to the present invention,

Fig. 2(b) is a cross-sectional view looking in the direction of the arrow in Fig. 2(a),

Fig. 3(a) is an enlarged longitudinal cross-sectioned side view of a second embodiment of a

holder for a stick-shaped piece holder of the present invention,

Fig. 3(b) is a cross-sectional view looking in the direction of the arrow in Fig. 3(a),

Fig. 4 is an enlarged longitudinal cross-sectioned view of a third embodiment of a holder of the present invention,

Fig. 5 is an enlarged longitudinal cross-sectioned view of a fourth embodiment of a holder of the present invention,

Fig. 6 is a longitudinal cross-sectioned view of an embodiment of a storage supply cassette for a stick-shaped piece not according to the present invention, and

Fig. 7 is a longitudinal cross-sectional view of the construction of one example of a conventional drive container for a stick-shaped piece.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0024] The following describes the embodiments of the present invention by reference to the accompanying drawings. Fig. 1 depicts a longitudinal cross-sectioned view of a first embodiment of the drive container for a stick-shaped piece according to the present invention.

[0025] The embodiments shown in figures 1, 2a, and b comprising separate sealing rings do not form part of the present invention and only serve to improve the understanding of the invention

[0026] First, the construction of an outer cylinder 1 is described below. As shown in Fig. 1, the drive container has an outer cylinder 1 having bottom 1B. A screw shaft 5 embedded in the outer cylinder 1 cannot rotate, but can freely move in an axial direction. Screw shaft 5 has a guide portion 5A integrated with its rear end in the embodiment shown for ease of assembly and to reduce the number of parts. Guide portion 5A has several keyways 5D provided on its periphery and outer cylinder 1 has mating elongated keys 1A provided on its inside surface in its axial direction opposite keyways 5D. Keyways 5D and keys 1A may be reversed in position from each other on screw shaft 5 and outer cylinder 1 if desired.

[0027] The screw shaft 5 has helical groove 5B formed on its circumference, and has a connecting portion 5C formed on its front. An inner cylinder 2 is rotatably mounted in the front of outer cylinder 1, inner cylinder 2 being immovable in an axial direction. That is, the inner cylinder 2 has annular groove 2B formed on its circumference which fits with step 1C formed on an inside surface of outer cylinder 1. The inner cylinder 2 further has a projection 2A formed on its inside surface which fits with the helical groove 5B of screw shaft 5.

[0028] A cap 8 is detachably mounted on the circumference of outer cylinder 1 or inner cylinder 2 (in the embodiment shown) or the circumferences of both. Cap 8 has a front end 8A pressed on the head thereof with

integrated clip 7.

[0029] A connecting portion 5C of the screw shaft 5 is detachably coupled to a holder 4 holding a stick-shaped piece 3 and is embedded in inner cylinder 2. Figs. 2 (a) and (b) are enlarged views of the holder 4. Fig. 2(a) is a longitudinal cross-sectioned side view of the holder 4 while Fig. 2(b) is a cross-sectional view looking in the direction of the arrow in Fig. 2(a). The holder 4 is divided into a holding portion 4B and a screw shaft coupling portion 4C by partition plate 4A formed therein. The holding portion 4B has internal screw-thread 4E to hold the stick-shaped piece 3 in position. The coupling portion 4C, on the other hand, has four slots on its circumference to provide elasticity to allow the screw shaft coupling portion 4C to expand outward. This allows screw shaft coupling portion 4C to be easily coupled with connecting portion 5C as it can expand outward.

[0030] The coupling portion 4C has annular groove 4D formed on its circumference to receive a sealing ring 9A that fits therein. Sealing ring 9A is larger than the circumference surface of the holder 4, but compressed by the inside of inner cylinder 2 to closely fit the inside.

[0031] In turn, an operation of the first embodiment constructed as described above is described below.

[0032] In operation, with the cap 8 removed from inner cylinder 2 and inner cylinder 2 rotated relative to outer cylinder 1 or outer cylinder 1 rotated relative to inner cylinder 2, the holder 4 coupled with screw shaft 5 at the connecting portion 5C moves in an axial direction. Projection 2A will then move along the helical groove 5B because the projection 2A of the inner cylinder 2 fits into the helical groove 5B of screw shaft 5 and because the key 1A of the outer cylinder 1 fits keyway 5D of guide portion 5A. The stick-shaped piece 3 retained by the holder 4 is extended from the front end of inner cylinder 2 for use.

[0033] When retracting stick-shaped piece 3, an operator reverses the rotation of the outer cylinder 1 or inner cylinder 2. The projection 2A then moves along screw groove 5B in the opposite direction and at the same time, the holder 4 connected with screw shaft 5 at connecting portion 5C moves in the opposite direction. Stick-shaped piece 3 held by the holder 4 is retracted into the front end of the inner cylinder 2.

[0034] When the container is not in use, evaporation of moisture of the stick-shaped piece 3 can be prevented by the close contact of the periphery portion of inner cylinder 2 with the inside of cap 8 and by close contact of a portion of sealing ring 9a provided on the circumference of the holder 4 with inner cylinder 2. This can keep stick-shaped piece 3 from drying over a long period.

[0035] In addition, sealing ring 9A provides frictional resistance between the inside of inner cylinder 2 and stick-shaped piece holder 4. The friction prevents rotation of the holder 4 that might be caused by a torque on stick-shaped piece 3 when in use. This overcomes

the historical problem of idle rotation of the holder 4 and stick-shaped piece 3 in use conventionally associated with the lower resistance of stick-shaped piece 3 with inner cylinder 2 when stick-shaped piece 3 becomes short.

[0036] In turn, Figs. 3(a) and (b) depict a second embodiment of sealing member 9 of the present invention. In this second embodiment, the holder 4 is formed of an elastomer resin. The elastomer resins available include olefine resins such as, for example, thermoplastic elastomer commercially available and registered as "Santoprene". Further annular projection 9B is integrated into the outside as an elongation of partition plate 4A of stick-shaped piece holder 4.

[0037] As described above, even with the use of such a holder 4, elastic projection 9B close fits the inside of inner cylinder 2, thereby providing the same effect as with the first embodiment. Projection 9B also provides the advantage of allowing use of the elasticity of partition plate 4A provided in the elongated direction of the partition plate 4A. The projection 9B further provides the additional advantage of reducing the number of parts by being integrated with the holder 4.

[0038] To form the holder 4, it can be struck from a mold because of its entire elasticity without using a split-mold nevertheless projection 9B protrudes out from the body of holder 4. This provides the advantage of easy fabrication of the holder 4. In addition, the holder 4 does not need the special slots 4F shown in Fig. 2 because the coupling portion 4c itself is so elastic that it will easily couple with connecting portion 5C of the screw shaft 5.

[0039] In turn, Fig. 4 depicts a third embodiment of the present invention. The third embodiment has a projection 9C, instead of the projection 9B as shown in Fig. 3, provided on the circumference of the holder 4 of the stick-shaped holding portion 4B rather than as an extension of partition plate 4A. This construction provides the same effect as the sealing ring 9A or the projection 9B shown in Figs. 2 and 3.

[0040] Fig. 5 depicts a fourth embodiment of the present invention. The fourth embodiment has a projection 9D formed as a thicker portion on the outward end of the holding portion 4B of the holder 4 instead as the projection 9B or projection 9C in Figs. 3 and 4. This construction provides the same effect as sealing ring 9A or projections 9B and 9C in Figs. 2, 3, and 4 respectively. In addition, the holder 4 can be more easily removed from a mold in production. This construction also provides another beneficial effects. Projection 9D prevents solution forming the stick-shaped piece material from leaking out of a clearance between a cylinder and the holder 4 when the stick-shaped piece 3 is typically formed by a solution filling and solidified in the holder 4 in the cylinder.

[0041] In turn, Fig. 6 depicts one embodiment of a storage supply cassette for the stick-shaped piece of the present invention. The supplying cassette is com-

prised of a casing 10 containing the stick-shaped piece 3, and a holder 4 and a cover 11 detachably mounted on casing 10. The casing 10 has a taper 10A on an inside end thereof to facilitate loading stick-shaped piece 3 and holder 4. The holder 4 has a close-fitting member (sealing ring 9A in the figure) provided on the circumference thereof to tightly fit against the inside of casing 10, thereby preventing stick-shaped piece 3 from drying out by evaporating moisture.

[0042] The following describes procedures for supplying the holder 4 into a drive container using the storage supplying cassette.

[0043] If stick-shaped piece 3 is completely used up in the drive container, the operator pulls the holder 4 with the remaining stick-shaped piece 3 out of the connecting portion 5C. He then prepares a new supplying cassette by removing the cover 11 before coupling the new holder 4 with the connecting portion 5C, and rotates inner cylinder 2 to retract the new holder 4 coupled with screw shaft 5 inward. These procedures allow pulling the stick-shaped piece out of casing 10 and replacing it in inner cylinder 2 without contaminating the hands. In these procedures, the sealing member 9 provided on the circumference of holder 4 keeps the holder 4 and the stick-shaped piece 3 from dropping out of the cassette, or prevents careless failure of supplying, because of the friction resistance between sealing member 9 and casing 10 even if the supplying cassette is pointed downward with the holder 4 turned down and the cover 11 removed.

[0044] As described so far, with the use of the drive container and the supplying cassette, holder 4 and sealing member 9 effectively prevent the stick-shaped piece from drying from evaporating moisture as they can be used in common. By the common use of holder 4 and sealing member 9, sealing ability of sealing member 9 does not deteriorate due to its periodic use as sealing member 9 also is replaced every time the stick-shaped piece 3 is replaced.

[0045] As described above, the present invention effectively provides a sealing member on the circumference of the holder for retaining the stick-shaped piece making the holder detachable, can prevent the stick-shaped piece in a drive container and a supplying cassette from drying out by evaporating moisture.

[0046] Also, the present invention provides the advantage that some part are in common use for the stick-shaped piece drive container and stick-shaped piece supplying cassette.

[0047] Further, the present invention effectively provides a stick-shaped piece that can be easily supplied to the drive container from the supplying cassette.

Claims

1. A drive container for extending or retracting a stick-shaped piece (3) comprising;

an outer cylinder (1); a screw shaft (5) inserted in said outer cylinder (1), so as to be axially movable but rotationally fixed with respect to said outer cylinder (1) in said outer cylinder (1), said screw shaft (5) having a helical groove (5B); an inner cylinder (2) mounted in said outer cylinder (1) so as to be rotationally movable but axially fixed with respect to said outer cylinder (1), a portion of said inner cylinder (2) extending beyond a forward end of said outer cylinder (1), projecting means (2A) on an inside surface of said inner cylinder (2) for engaging said helical groove (5B) of said screw shaft (5); a holder (4) formed of a cylindrical elastomer resin holding said stick-shaped piece (3) on said screw shaft (5) for axial sliding movement within said inner cylinder (2); cap means (8) detachable covering said inner cylinder (2); and annular projecting sealing means (9B, 9C, 9D) integrally formed on an outside circumference of said holder (4) for sealing between the circumference of said holder (4) and the inside of said inner cylinder (2); characterized in that

the holder (4) has a partition plate (4A) dividing the inside of said holder (4) into a cylindrical connecting portion (4C) and a cylindrical holding portion (4B), said screw shaft (5) has a connecting portion (5C) which is detachable coupled to said cylindrical connecting portion (4C) of the holder (4), said cylindrical connecting portion (4C) of the holder (4) has an inlet that is smaller in diameter than a connecting portion (5C) of said screw shaft (5) and having an elasticity so that a connecting portion (5C) of the screw shaft (5) expands said cylindrical connecting portion when the two are connected.

2. The container according to Claim 1 wherein said sealing means (9) comprises a compressible projecting annular ridge (9B, 9C, 9D) formed on an outside surface of said stick-shaped piece holder (4).
3. The container according to Claim 2 wherein said compressible projecting ridge (9B) being coextensively formed with said partition plate (4A) of said holder (4).
4. The container according to Claim 2 wherein said compressible projection annual ridge (9C) being formed on an outside surface of the cylindrical holding portion (4B) of said stick-shaped holder (4).
5. The container according to claim 2 wherein, said compressible projecting annular ridge (9D) being a thickened portion on the forward end of said holder (4).

6. The container according to Claim 1 wherein said cylindrical connecting portion (4C) of said holder (4) is deformable for deformably coupling with said connecting portion (5C) of said screw shaft (5).

7. A storage supply cassette for a stick-shaped piece of material (3) for use with a drive container according to claim 1 comprising;

a casing (10); a holder (4) holding the stick-shaped piece of material (3); retaining means (9) for retaining said holder (4) with the stick-shaped material in said casing; characterized in that

said retaining means including compressible annular projecting sealing means (9B, 9C, 9D) integrally formed on an outside circumference of said holder (4) for sealing between the circumference of said holder (4) and the inside of said casing (10) and for frictionally retaining said holder (4) with said stick-shaped material (3) in said casing (10);

the holder (4) is formed of a cylindrical elastomer resin and has a partition plate (4A) dividing the inside of said holder into a cylindrical connecting portion (4C) for coupling with a screw shaft (5) of a drive container and a cylindrical holding portion (4B) for holding the stick-shaped piece (3), said cylindrical connection portion (4C) of the holder (4) has an inlet that is smaller in diameter than a connecting portion (5C) of said screw shaft (5) and having an elasticity so that a connecting portion (5C) of said screw shaft (5) expands said cylindrical connection portion (4C) of said holder (4) when the two are connected.

8. The cassette according to Claim 7 wherein said sealing means comprises a compressible projecting annular ridge (9B, 9C, 9D) formed on an outside surface of said holder (4).
9. The cassette according to Claim 8 wherein said compressible projecting ridge (9B) being coextensively formed with said partition plate (4A).
10. The cassette according to Claim 8 wherein said compressible projection annual ridge (9C) being formed on an outside surface of the forward section of said holder (4).
11. The cassette according to Claim 8 wherein, said compressible projecting annular ridge (9D) being a thickened portion on the forward end of said holder (4).
12. The cassette according to Claim 7 including a cover (11) detachably secured to said casing (10); said

cover fitting over said holder (4) in said casing.

Patentansprüche

1. Behälter zum Vorschieben und Zurückziehen eines stangenförmigen Gegenstandes (3) mit: einem Außenzylinder (1); einer in diesen Außenzylinder (1) eingesetzten Gewindestange (5), die gegenüber dem Außenzylinder (1) axial verschiebbar, nicht aber in Umfangsrichtung drehbar ist und eine Gewindenut aufweist; einem in dem Außenzylinder (1) eingesetzten Innenzylinder (2), der gegenüber dem Außenzylinder (1) in Umfangsrichtung drehbar, aber axial ortsfest ist; einem Abschnitt des Innenzylinders (2), der über das vordere Ende des Außenzylinders (1) hinaus vorsteht; auf einer Innenfläche des Innenzylinders (2) angeordnete Vorsprungmittel (2A) zum Zusammenwirken mit der Gewindenut (5B) der Gewindestange (5); einer Halterung (4) aus zylinderförmigem Elastomerharz zum Halten des stangenförmigen Gegenstandes (3) gegenüber der Gewindestange (5) für axiale Verstellbewegungen innerhalb des Innenzylinders (2); einem abnehmbaren Kappenmittel (8) zum Abdecken des Innenzylinders (2); und ringförmigen vorspringenden Dichtungsmitteln (9B, 9C, 9D) in einstückiger Ausbildung auf einem Außenumfang der Halterung (4) zur Abdichtung zwischen der Außenfläche der Halterung (4) und der Innenfläche des Innenzylinders (2),
dadurch gekennzeichnet, dass
 die Halterung (4) eine Trennplatte (4A) aufweist, die den Innenraum der Halterung in einen zylindrischen Innenteilraum als Verbindungsabschnitt (4c) und einen zylindrischen Innenteilraum als Halteabschnitt (4B) unterteilt, dass die Gewindestange (5) einen Verbindungsteil (5C) aufweist, der trennbar mit dem zylindrischen Verbindungsabschnitt (4C) der Halterung (4) verbunden ist und dass der zylindrische Verbindungsabschnitt (4C) der Halterung (4) einen Einlaß aufweist, dessen Durchmesser kleiner ist als ein Verbindungsabschnitt (5C) der Gewindestange (5) und eine Elastizität besitzt, sodass ein Verbindungsabschnitt (5C) der Gewindestange (5) den zylindrischen Verbindungsteil aufweist, wenn die beiden miteinander verbunden sind
2. Behälter nach Anspruch 1, bei dem das Dichtungsmittel (9) eine komprimierfähige vorstehende Ringrippe (9B, 9C, 9D) auf der Außenfläche der Halterung (4) für den stangenförmigen Gegenstand aufweist.
3. Behälter nach Anspruch 2, bei dem die komprimierfähige vorstehende Ringrippe (98) mit der Trennwand (4A) der Halterung (4) verbunden ist.
4. Behälter nach Anspruch 2, bei dem die komprimierfähige vorstehende Ringrippe (9C) auf der äußeren Oberfläche des zylindrischen Halteabschnitts (4B) der Halterung (4) für den stangenförmigen Gegenstand ausgebildet ist.
5. Behälter nach Anspruch 2, bei dem die komprimierfähige vorstehende Ringrippe (9D) ein verdickter Abschnitt im Bereich des vorderen Endes der Halterung (4) ist.
6. Behälter nach Anspruch 1, bei dem der zylindrische Verbindungsabschnitt (4C) der Halterung (4) deformierbar ist, um eine deformierbare Verbindung mit dem Verbindungsabschnitt (5C) der Gewindestange (5) zu bilden.
7. Speicher- und Zuführungskassette für ein stangenförmiges Materialstück zur Verwendung in Verbindung mit einem Behälter zum Vorschieben und Zurückziehen des stangenförmigen Materialstückes nach Anspruch 1 mit einem Behältnis (10); einer Halterung (4) zur speichernden Aufnahme des stangenförmigen Materialstückes und mit einem Haltemittel (9) zum Festlegen der Halterung mit dem stangenförmigen Materialstück in dem Behältnis;
dadurch gekennzeichnet, dass
 das Haltemittel ein kompressibles ringförmiges, vorspringendes Dichtungsmittel (9B, 9C, 9D) in einstückiger Ausbildung mit einer Außenumfangsfläche der Halterung (4) als Abdichtung zwischen dem Umfang der Halterung (4) und der Innenfläche des Behältnisses (10) und zum reibschlüssigen Festlegen der Halterung (4) mit dem stangenförmigen Material (3) in dem Behältnis (10) einschließt; das Haltemittel (4) aus einem zylindrischen Elastomerharz besteht und eine Trennplatte (4A) zum Unterteilen der Innenfläche der Halterung in einen zylindrischen Verbindungsabschnitt (4C) zum Verbinden mit einer Gewindestange (5) eines Antriebsbehälters und einen zylindrischen Aufnahmeabschnitt (4B) zur Aufnahme des stangenförmigen Materialstückes (3) aufweist, wobei der zylindrische Verbindungsabschnitt (4C) der Halterung (4) einen Einlaß aufweist, dessen Durchmesser kleiner ist als der eines Verbindungsabschnitts (5C) der Gewindestange (5) und eine solche Elastizität hat, dass ein Verbindungsabschnitt (5C) der Gewindestange (5) den zylindrischen Verbindungsabschnitt (4C) der Halterung (4) aufweitet, wenn beide miteinander zusammenwirken.
8. Kassette nach Anspruch 7, bei der das Dichtungsmittel eine kompressible, vorspringende Ringrippe (9B, 9C, 9D) aufweist, die auf der Außenseite der Halterung ausgebildet ist.

9. Kassette nach Anspruch 8, bei der die kompressible, vorspringende Rippe (9B) koaxial zur Trennplatte (4A) ausgebildet ist.

10. Kassette nach Anspruch 8, bei der die kompressible, vorspringende Ringrippe (9C) auf der Außenfläche des vorderen Teils der Halterung (4) ausgebildet ist. 5

11. Kassette nach Anspruch 8, bei der die kompressible, vorspringende Ringrippe (9D) eine Verdickung auf dem vorderen Ende der Halterung (4) ist. 10

12. Kassette nach Anspruch 7, die eine Abdeckung (11) einschließt, die dem Behältnis (10) abnehmbar zugeordnet ist und mit geringem Spiel die im Behältnis befindliche Halterung übergreift. 15

Revendications

1. Récipient avec entraînement destiné à étendre ou à rétracter un élément en forme de bâton (3) comprenant : 20

un cylindre extérieur (1), un axe de vis (5) inséré dans ledit cylindre extérieur (1), de façon à être mobile axialement mais fixe en rotation par rapport audit cylindre extérieur (1) dans ledit cylindre extérieur (1), ledit axe de vis (5) comportant une gorge hélicoïdale (5B), un cylindre intérieur (2) monté dans ledit cylindre extérieur (1) de façon à être mobile en rotation mais fixe axialement par rapport audit cylindre extérieur (1), une partie dudit cylindre intérieur (2) s'étendant au-delà d'une extrémité vers l'avant dudit cylindre extérieur (1), un moyen en saillie (2A) sur une surface intérieure dudit cylindre intérieur (2) en vue d'une venue en prise avec ladite gorge hélicoïdale (5B) dudit axe de vis (5), un support (4) formé d'une résine d'élastomère cylindrique retenant ledit élément en forme de bâton (3) sur ledit axe de vis (5) en vue d'un déplacement coulissant axial à l'intérieur dudit cylindre intérieur (2), un moyen de bouchon (8) amovible recouvrant ledit cylindre intérieur (2), et un moyen d'étanchéité en saillie annulaire (9B, 9C, 9D) formé de façon intégrée sur une circonférence extérieure dudit support (4) en vue de l'étanchéité entre la circonférence dudit support (4) et l'intérieur dudit cylindre intérieur (2), caractérisé en ce que 45

le support (4) comporte une plaque de séparation (4A) divisant l'intérieur dudit support (4) en une partie de liaison cylindrique (4C) et une partie de retenue cylindrique (4B), ledit axe de vis (5) comporte une partie de liaison (5C) qui est reliée de façon amovible à ladite partie de 55

liaison cylindrique (4C) du support (4), ladite partie de liaison cylindrique (4C) du support (4) comporte un orifice d'entrée qui est de diamètre plus petit qu'une partie de liaison (5C) dudit axe de vis (5) et présentant une élasticité de sorte qu'une partie de liaison (5C) de l'axe de vis (5) prolonge ladite partie de liaison cylindrique lorsque les deux sont reliés.

2. Récipient selon la revendication 1, dans lequel ledit moyen d'étanchéité (9) comprend une nervure annulaire en saillie compressible (9B, 9C, 9D) formée sur la surface extérieure dudit support de l'élément en forme de bâton (4).

3. Récipient selon la revendication 2, dans lequel ladite nervure en saillie compressible (9B) est formée suivant la même extension que ladite plaque de séparation (4A) dudit support (4).

4. Récipient selon la revendication 2, dans lequel ladite nervure annulaire en saillie compressible (9C) est formée sur une surface extérieure de la partie de retenue cylindrique (4B) dudit support en forme de bâton (4).

5. Récipient selon la revendication 2 dans lequel, ladite nervure annulaire en saillie compressible (9D) est une partie épaissie de l'extrémité vers l'avant dudit support (4).

6. Récipient selon la revendication 1, dans lequel ladite partie de liaison cylindrique (4C) dudit support (4) est déformable en vue d'une liaison déformable avec ladite partie de liaison (5C) dudit axe de vis (5).

7. Cassette distributrice destinée à un élément en forme de bâton d'un matériau (3) en vue d'une utilisation avec un récipient avec entraînement selon la revendication 1 comprenant :

un boîtier (10), un support (4) contenant l'élément en forme de bâton du matériau (3), un moyen de retenue (9) destiné à retenir ledit support (4) avec le matériau en forme de bâton dans ledit boîtier, caractérisé en ce que ledit moyen de retenue comprend un moyen d'étanchéité à saillie annulaire compressible (9B, 9C, 9D) formé de façon intégrée sur une circonférence extérieure dudit support (4) en vue de l'étanchéité entre la circonférence dudit support (4) et l'intérieur dudit boîtier (10) et en vue de retenir par frottement ledit support (4) avec ledit matériau en forme de bâton (3) dans ledit boîtier (10), le support (4) est formé d'une résine d'élastomère cylindrique et comporte une plaque de

séparation (4A) divisant l'intérieur dudit support en une partie de liaison cylindrique (4C) destinée à la liaison avec un axe de vis (5) d'un récipient avec entraînement et une partie de retenue cylindrique (4B) destinée à retenir l'élément en forme de bâton (3), ladite partie de liaison cylindrique (4C) du support (4) comporte un orifice d'entrée qui est de diamètre plus petit qu'une partie de liaison (5C) dudit axe de vis (5) et présentant une élasticité de sorte qu'une partie de liaison (5C) dudit axe de vis (5) prolonge ladite partie de liaison cylindrique (4C) dudit support (4) lorsque les deux sont reliés.

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8. Cassette selon la revendication 7, dans laquelle ledit moyen d'étanchéité comprend une nervure annulaire en saillie compressible (9B, 9C, 9D) formée sur une surface extérieure dudit support (4).

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9. Cassette selon la revendication 8, dans laquelle ladite nervure en saillie compressible (9B) est formée suivant la même extension que ladite plaque de séparation (4A).

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10. Cassette selon la revendication 8, dans laquelle une nervure annulaire (9C) est formée sur une surface extérieure de la section vers l'avant dudit support (4).

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11. Cassette selon la revendication 8, dans laquelle, ladite nervure annulaire en saillie compressible (9D) est une partie épaissie sur l'extrémité vers l'avant dudit support (4).

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12. Cassette selon la revendication 7, comprenant un couvercle (11) amovible fixé audit boîtier (10), ledit couvercle s'adaptant sur ledit support (4) dans ledit boîtier.

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FIG. 1

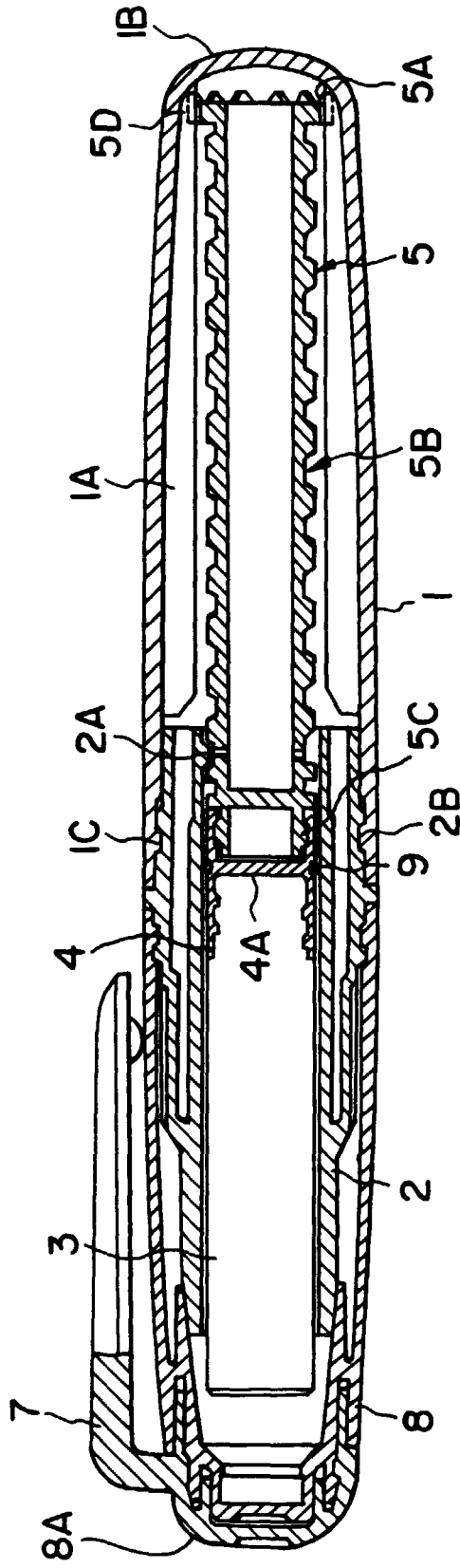


FIG. 2(a)

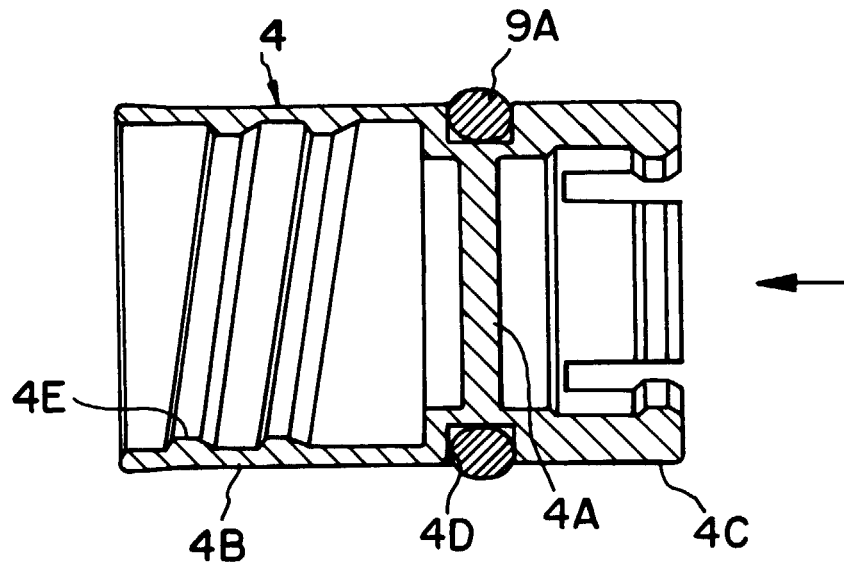


FIG. 2(b)

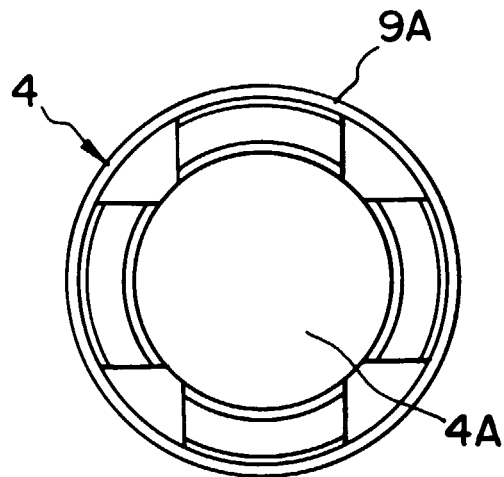


FIG. 3(a)

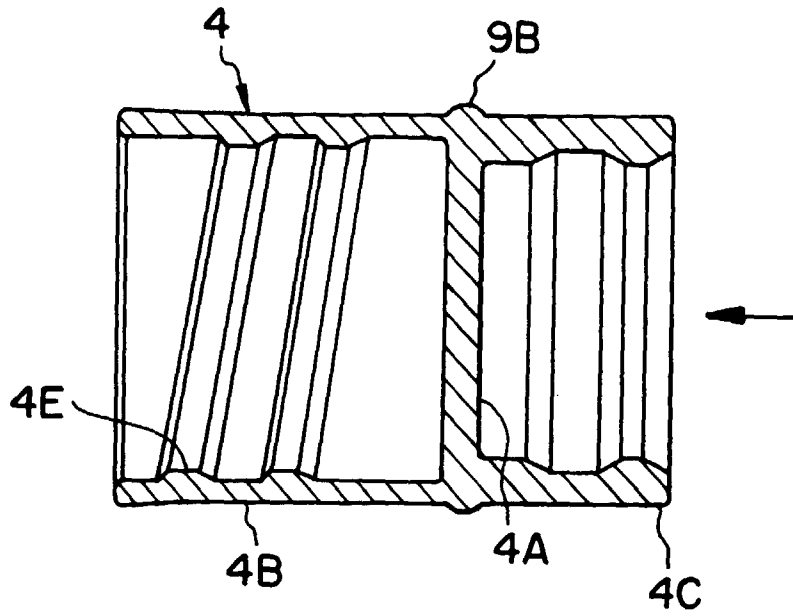


FIG. 3(b)

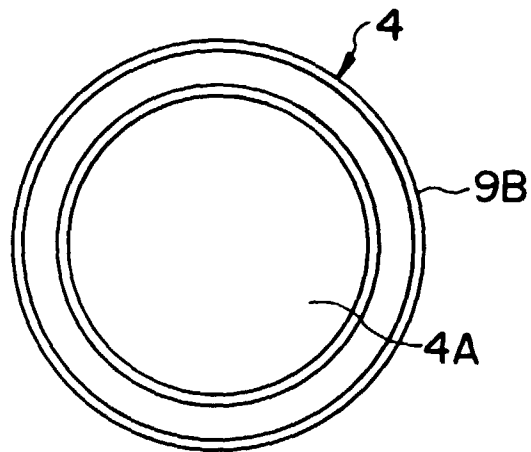


FIG. 4

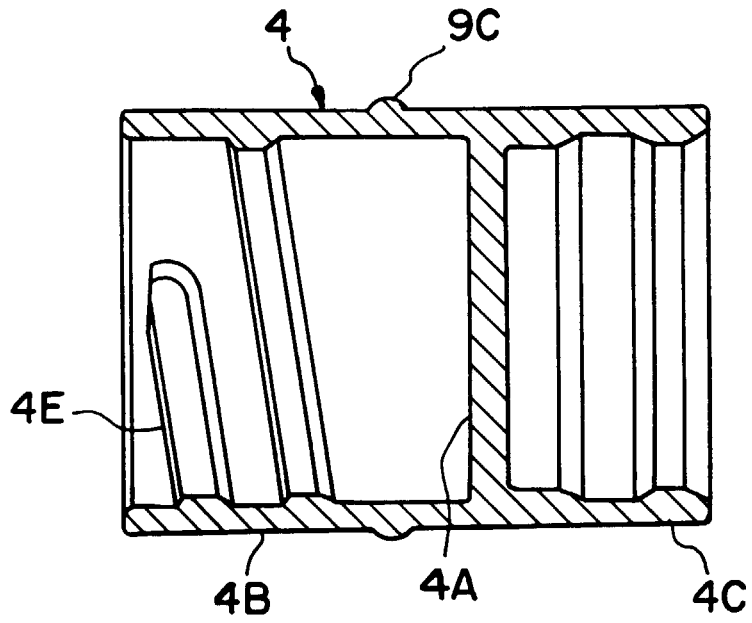


FIG. 5

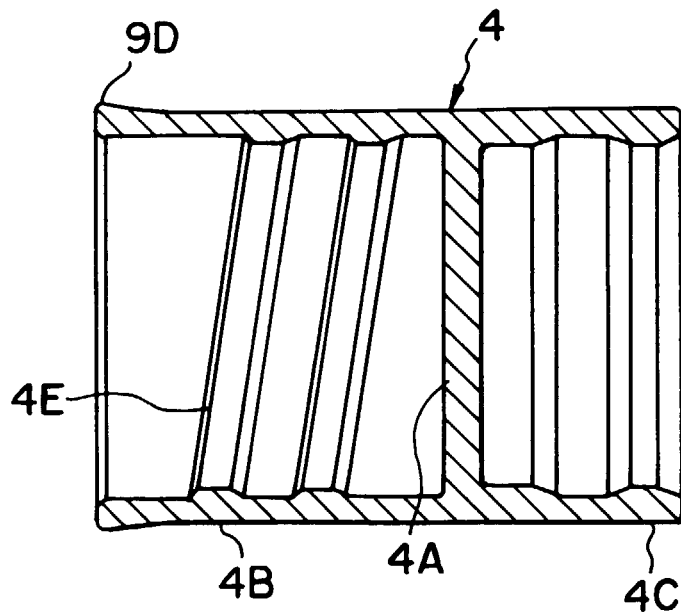


FIG. 6

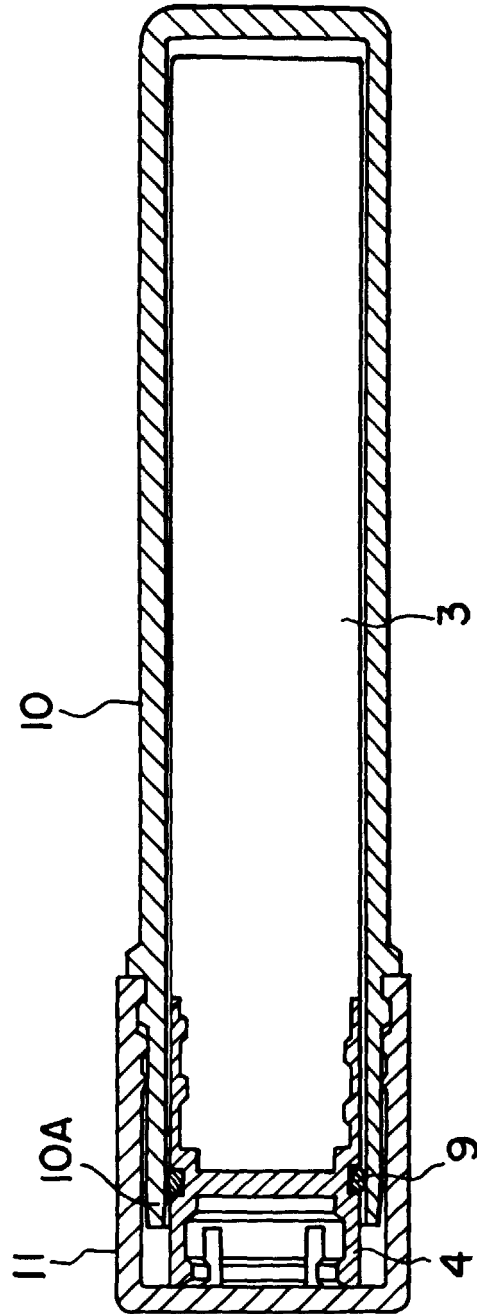


FIG. 7

