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(54) **Container-batcher**

(57) A container - batcher includes a tubular body (1,30) with uniform cross-section, for receiving liquid or doughy products (S,S1). A piston (2,20) with cross-section substantially corresponding to the inner cross-section of the tubular body (1,30) defines a first tight closing head and is slidingly introduced in the tubular body (1,30). A second head (3,31) closes the opposite end of

the tubular body (1,30) and has at least one delivery nozzle (3A,30A). The space delimited by the group formed by the tubular body (1,30), the piston (2,20) and the second head (3,31) receives the product (S,S1). The piston (2,20) moves close to the second head (3,31) due to an external action applied to the upper surface (2A, 20A) of the piston (2,20). This make the products (S,S1) leave through the nozzle (3A,30A)

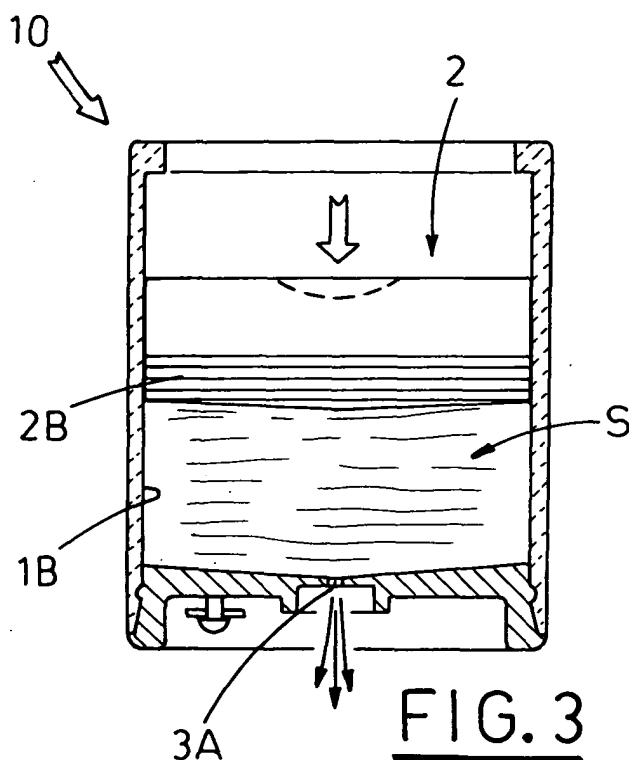


FIG. 3

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Description

[0001] The present invention relates to the technical field concerning the containers, for example for solid, liquid or doughy substances.

[0002] In particular, the present invention relates to a container - batcher for colored pigments for paints, cosmetics or products having similar physical features. With regard to the technical field concerning containers and batchers for coloring substances for paints, at present, products aimed at coloring paints having a suitable basic color are introduced into syringes.

[0003] The syringes have a scale, which allows to measure the delivered quantity of product.

[0004] The syringes are packaged in rigid or flexible envelopes. The rigid envelopes, for example carton packages, allow for an easy storage due to their regular shape and ensure product integrity, yet they take a lot of space.

[0005] Therefore, the storage of the rigid packages requires excessive space with respect to the quantity of contained products.

[0006] The flexible envelopes, e.g. made of cellophane, occupy less space with respect to the rigid ones, but the storage can be difficult because the packages are irregular in shape.

[0007] Moreover, the syringes can be uneasy to use, due to their protrusions, and there are not very shapely.

[0008] As far as containers and batchers for cosmetics are concerned, small jars, sticks or tubes are used.

[0009] The use of small jars is not satisfactory from the hygienic point of view, because, while taking some product, the part thereof which remains inside the jar comes in contact with external environment, as well as with the user's hands.

[0010] The possible use of suitable utensils, such as paddles, avoids the contact between the product remaining in the jar and the user's hands, however it does not prevent the contact with the external environment.

[0011] Although the use of tubes allows the contact between the user's hands and the non used product, it does not allow taking a precisely determined quantity.

[0012] The sticks allow a more precise determination of the taken quantity, however, they expose also the part of not used product to the external environment.

[0013] An object of the present invention is to propose a container - batcher, which can be used for colored pigments for paints, cosmetics and other products having similar physical features, and which delivers the product contained therein in an adjustable and precise way.

[0014] Another object of the present invention is to propose a container - batcher, having a regular shape and simple use, which can be easily personalized and which allows easy filling and delivers the product contained therein in a complete way.

[0015] The above mentioned objects are obtained in accordance with the contents of the claims.

[0016] The characteristic features of the invention, as

they result from the claims, will be pointed out in the following description of some preferred but not exclusive embodiments, with reference to the enclosed figures, in which:

- Figure 1 is a schematic, longitudinal section of the container - batcher according to a first embodiment;
- Figure 2 is a schematic, top view of the container - batcher of Figure 1;
- Figure 3 is a schematic, longitudinal section of the container - batcher of Figure 1 obtained according to another embodiment;
- Figure 4 is a schematic, top view of the container - batcher of Figure 3;
- Figure 5 is a schematic, prospective view of the main elements of the container - batcher shown in the previous Figures;
- Figure 6 is a schematic, section view of the container - batcher according to a second embodiment;
- Figure 7 is a longitudinal section view of a container - batcher obtained according to a third embodiment;
- Figure 8 is a longitudinal section view of a particular of Figure 7, in an embodiment of the container - batcher;
- Figure 9 is a section view, taken along IX-IX of Figure 8.

[0017] With reference to the Figures from 1 to 5, the reference number (10) indicates a container - batcher obtained according to a first embodiment.

[0018] The container - batcher (10) includes a body (1), tubular or anyway having constant cross-section, hollow inside.

[0019] The tubular body (1) is aimed at receiving a liquid or doughy product (S), e.g. pigments for coloring paints.

[0020] A piston (2), disc-like or anyway in form of a plate for a body (1) having a shape different from the cylindrical one, is slidingly introduced inside the body (1).

[0021] The piston (2) defines a first product-tight head and has, in the lower part of its side surface, a seal (2B) made of rubber, aimed at keeping in touch with the inner surface (1B) of the tubular body (1).

[0022] A second head (3) is snap fitted to an end of the tubular body (1) and has a delivery nozzle (3A) covered by a cap (4).

[0023] The opposite end of the tubular body (1) has an edge (1A), which protrudes toward the inside of the tubular body (1) to reduce its cross-section in this point.

[0024] The contact between the edge (1A) and the sliding disc (2) defines the maximum capacity of the container - batcher (10).

[0025] A graduated scale (G) is situated on the outer lateral surface (1C) of the tubular body (1) to measure the quantities of pigments (S) which are released through the nozzle (3A).

[0026] The second head (3) can also have a beak, not shown for sake of simplicity, situated near the nozzle (3A) and aimed at facilitating the pigments (S) batching operations.

[0027] According to a second embodiment of the invention, shown in Figure 6, a container - batcher is formed by a tubular body (30), inside which a disc (20) slides and has a seal 20B, arranged along its perimeter, and defines a first head, forming a single body with a second head (31), having a nozzle (30A).

[0028] A pressure on the upper surface (20A) of the disc (20), makes this latter move close to the second head (31) and consequently, the product (S1), contained inside the tubular body (30) goes out through the nozzle (30A).

[0029] Now, the operation of the invention will be described briefly, because it is easily understandable.

[0030] The tubular body (1) is filled with the product (S) in a very simple way, after the introduction and positioning of the disc (2) and before application of the second head (3).

[0031] Once the pigments have been introduced into the tubular body (1), the sliding disc (2) moves close to the second head (3) due to the external action on the upper surface (2A) of the disc (2), for example a pressure performed manually by the thumbs of the user's hand.

[0032] This makes the pigments leave through the nozzle (3A).

[0033] The precise measuring of the quantity of pigments (S) leaving through the nozzle (3A) is possible by using the scale (G).

[0034] The height of the tubular body (1) allows the complete delivery of the pigments (S) by the action of the user's thumbs on the disc (2).

[0035] It is easy to deduce from the above that the described container - batcher allows an extremely precise delivery of the product (S) contained therein, because the combined action of the user's hands thumbs on the upper surface (2A) of the piston (2) allows to perform a uniform pressure, which can be easily varied.

[0036] Moreover, the regular form of the proposed container - batcher, together with the absence of the appendixes protruding therefrom, allow the best storage.

[0037] The regular shape of the container - batcher allows its easy use, as well as easy reading of the scale (G).

[0038] Further, the regular shape of the proposed container - batcher allows it to be easily personalized in relation to the type of product contained therein, and consequently the container is very pleasant from the

aesthetic point of view.

[0039] The introduction of the product (S) into the proposed container - batcher is easy, since, once the disc (2) has been introduced and positioned, a filling mouth is very big, corresponding to the whole cross-section of the tubular body (1).

[0040] Moreover, the proposed container - batcher can be used in the cosmetics field; actually it is possible to deliver precisely the desired quantity of product (S), for example a cream, preventing the rest of the product from coming to contact with the outer environment, as well as with the user's hands.

[0041] It is particularly advantageous in this field that many aesthetically attractive configurations of the container - batcher can be obtained.

[0042] With reference to Figure 7, a third embodiment of the container - batcher (10) is described. According to this embodiment, a piston (22) has a threaded through hole (25).

[0043] The container - batcher (10) includes also driving means (40), aimed at facilitating the sliding of the piston (22) inside the tubular body (1).

[0044] In particular, the driving means (40) include a screw (41), situated longitudinally inside the tubular body (1) and concentric therewith.

[0045] A knob (42) is fastened to a proximal end of the screw (41), while the distal end thereof is free and does not, interfere with the nozzle (3A).

[0046] A closing plate (43), having a through hole (44), is fastened to the proximal end of the tubular body (1).

[0047] The hole (44) has a diameter not smaller than the diameter of the screw (41), which is received precisely thereby, so that the knob (42) protrudes slightly from the tubular body (1).

[0048] The screw (41) has also axial constraint means (45), which according to the embodiment shown in Figure 7, include a ring-like abutment made near the proximal end (41a) of the screw (41), so as to go in abutment against the inner surface of the closing plate (43), in order to prevent the screw (41) from going out.

[0049] According to an embodiment shown in Figures 8 and 9, the axial constraint means (46) include an elastic washer, aimed at engaging with a corresponding groove made in the screw (41).

[0050] The screw (41) is introduced in a threaded through hole (25) made in the piston (22), with the respective threaded sections mutually coupled to make the piston 22 slide longitudinally, due to the screw rotation.

[0051] The piston (22) has also means (26) for preventing rotation, including a seal of elastic material, situated in the contact area between the inner lateral wall of the tubular body (1) and the lateral surface of the piston (22).

[0052] According to a variant of the rotating preventing means (26), not shown in Figures, one or more longitudinal ribs are made on the lateral surface of the pis-

ton (22), and corresponding grooves are made in the inner lateral wall of the tubular body (1).

[0053] According to another way to prevent the piston (22) from rotating as a consequence of the rotation of the screw (41), the latter and the through hole (25) of the piston (22) are out of alignment with respect to the axis of the tubular body (1).

[0054] The operation of the above described embodiment of the container - batcher (10) is wholly understandable.

[0055] The piston (22) is made slide axially, close to or far from the first head (3) by rotating the knob (42) manually in one direction or the other.

[0056] The above described solution allows advantageously to operate the piston (22) without effort up to any depth of the tubular body (1).

Claims

1. Container - batcher for liquid or doughy products, **characterized in that** it includes a tubular body (1) with uniform cross-section, for receiving said products (S); a substantially plate-like piston (2,22) having the cross-section substantially corresponding to the inner cross-section of the tubular body (1), said piston (2,22) defining a first tight head, introduced slidingly into said tubular body (1); a second head (3), closing a distal end of said tubular body (1) and having at least one delivery nozzle (3A), with the space delimited by the group formed by said tubular body (1), said piston (2,22) and said second head (3) being designed to receive said product (S); said plate-like piston (2,22) moving close to or far from said second head (3) due to an external action applied to said plate-like piston (2,22).
2. Container - batcher, as claimed in claim 1, **characterized in that** said second head (3) is snap fitted to an end of said tubular body (1).
3. Container - batcher, as claimed in claim 1, **characterized in that** an end of said tubular body (1) has an edge (1A), which protrudes toward the inside of the tubular body (1) to reduce its cross-section; said edge (1A) defining, when coming in contact with said piston (2), the maximum capacity of said container - batcher (10).
4. Container - batcher, as claimed in claim 1, **characterized in that** said second head (3) has a cap (4), situated near said delivery nozzle (3A) for avoiding undesired leaks of the product (S), as well as entrance of foreign matter into said tubular body (1).
5. Container - batcher, as claimed in claim 1, **characterized in that** the height of said tubular body (1) is such that the product (S) is completely delivered by

the action of the user's thumbs on the piston (2).

6. Container - batcher, as claimed in claim 1, **characterized in that** said tubular body (1) has a graduated scale (G) for measuring the quantity of product (S) going out of said nozzle (3A).
7. Container - batcher, as claimed in claim 1, **characterized in that** said second head (31) and said tubular body (30) are one body.
8. Container - batcher, as claimed in claim 1, **characterized in that** said second head (3) has a beak, situated near said nozzle (3A) for facilitating the product (S) batching operations.
9. Container - batcher, as claimed in claim 1, **characterized in that** said tubular body (1), said piston (2) and said second head (3) have a circular cross-section.
10. Container - batcher, as claimed in claim 1, **characterized in that** said piston (2) has a seal (2B), situated at its edge for tightly touching the inner surface (1B) of the tubular body (1).
11. Container - batcher, as claimed in claim 1, **characterized in that** it includes also driving means (40) for acting on said plate-like piston (22) to make the latter slide inside the tubular body (1).
12. Container - batcher, as claimed in claim 11, **characterized in that** said driving means (40) include: a screw (41) situated longitudinally inside said tubular body (1) and having, at its proximal end (41a), a knob (42) for operating said screw (41) into rotation; a closing plate (43), fastened to the proximal end of said tubular body (1) and having a through hole (44) for the passage of said screw (41); axial constraint means (45,46) made in said screw (41) for preventing the latter from going out of the tubular body (1); said screw (41) being introduced in a threaded through hole (25) made in said plate-like piston (22), with respective threaded sections mutually coupled.
13. Container - batcher, as claimed in claim 12, said axial constraint means (45) include a ring-like abutment made near the proximal end (41a) of the screw (41) for striking against the inner surface of the closing plate (43).
14. Container - batcher, as claimed in claim 12, **characterized in that** said axial constraint means (46) include an elastic washer, engaging with a corresponding ring-like groove made near the proximal end (41a) of said screw (41).

15. Container - batcher, as claimed in claim 12, **characterized in that** said screw (41) and threaded through hole (25) are concentric with said tubular body (1).

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16. Container - batcher, as claimed in claim 1, **characterized in that** said screw (41) and threaded through hole (25) are out of alignment with respect to said tubular body (1).

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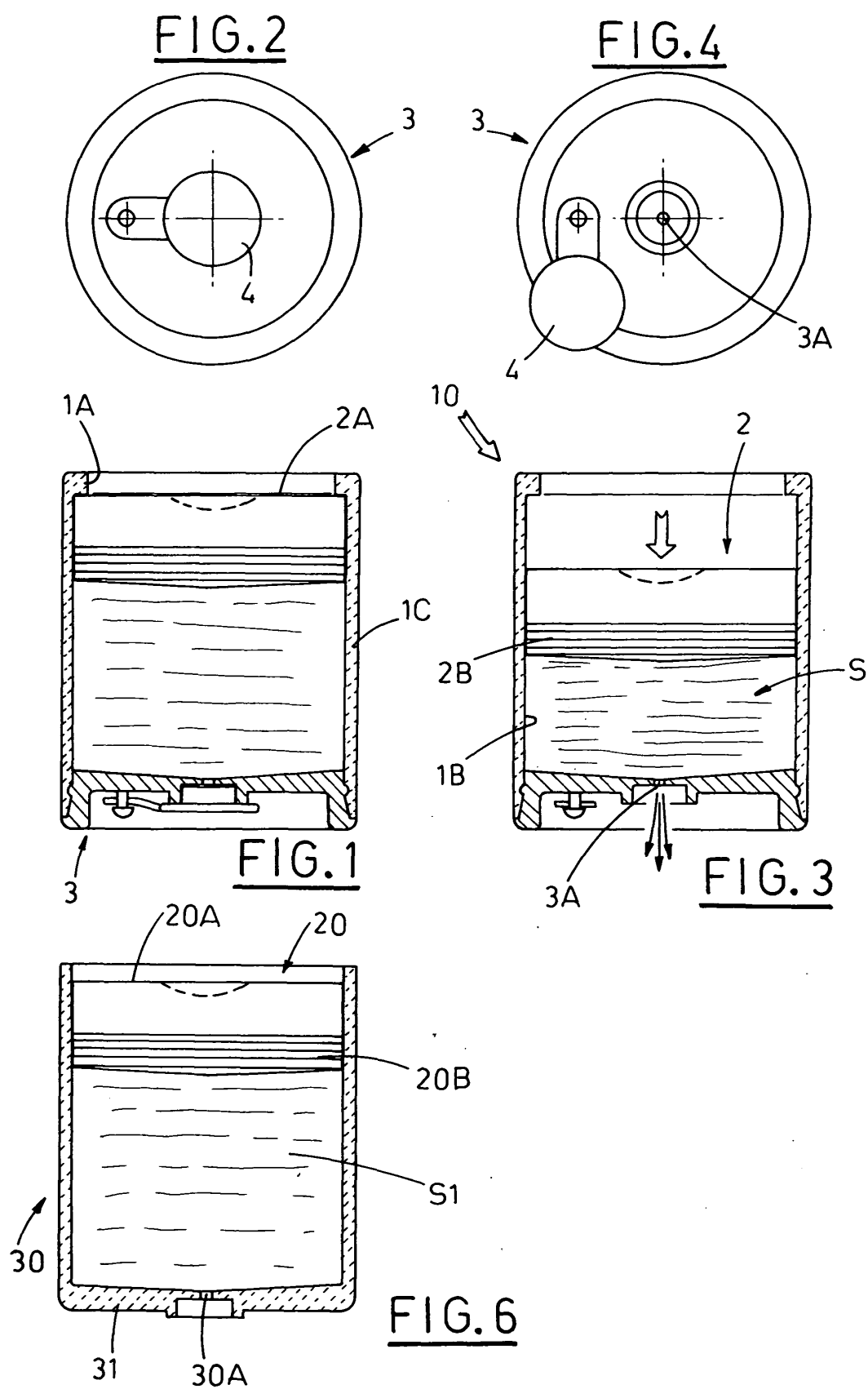


FIG. 5

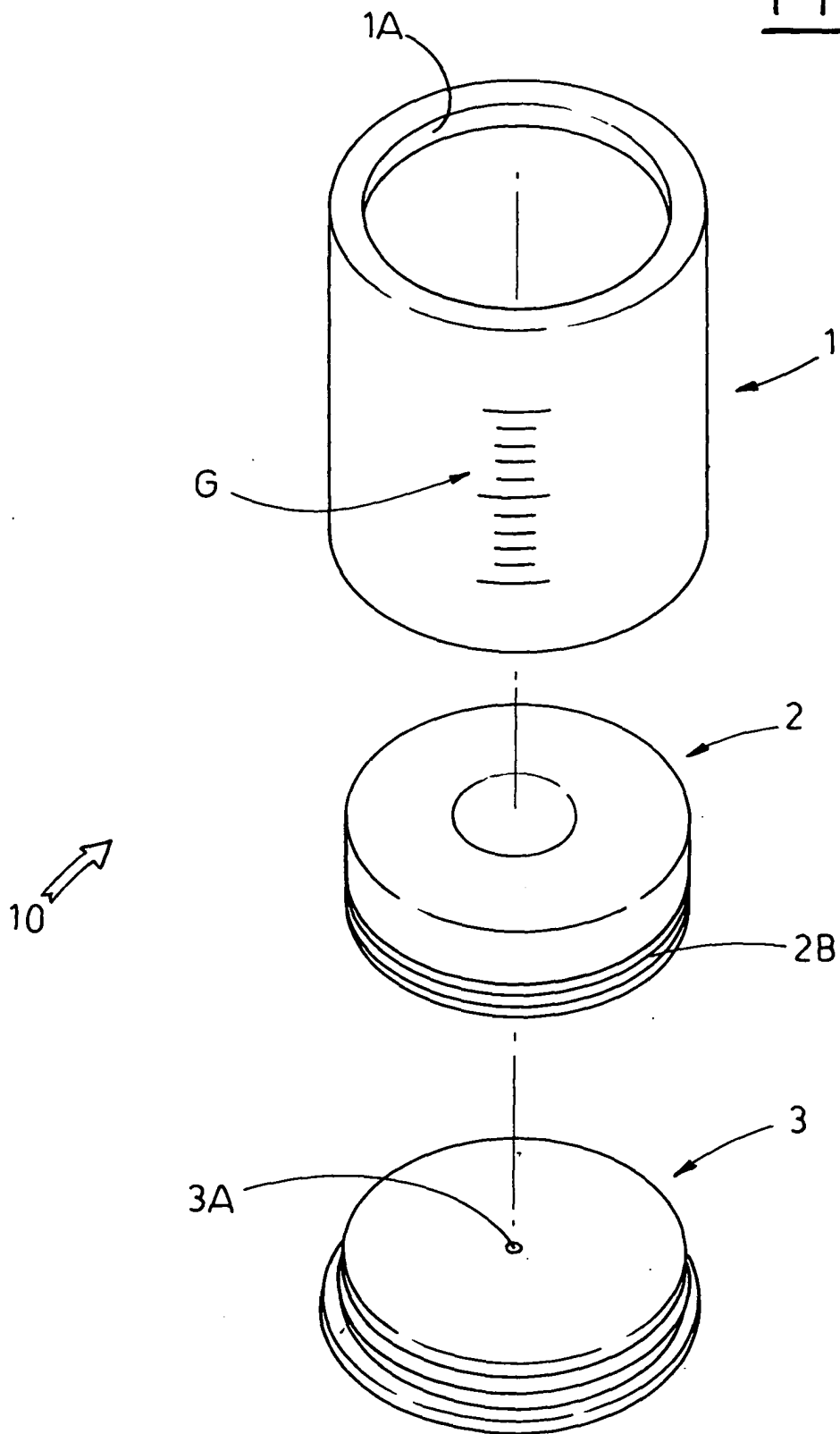


FIG.8

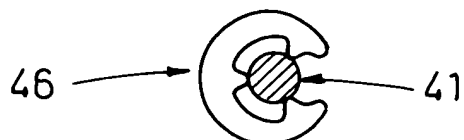
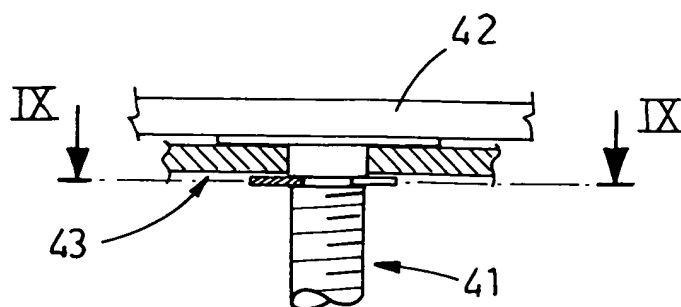


FIG.9

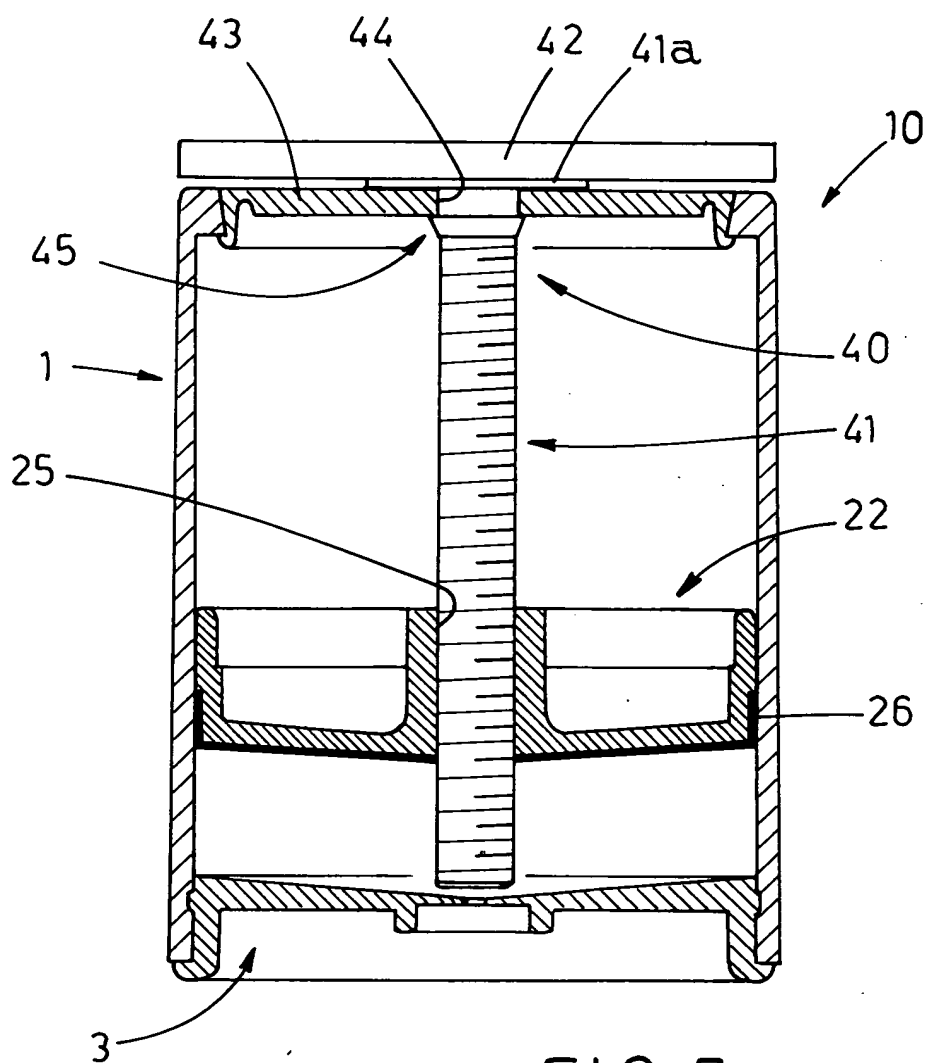


FIG.7