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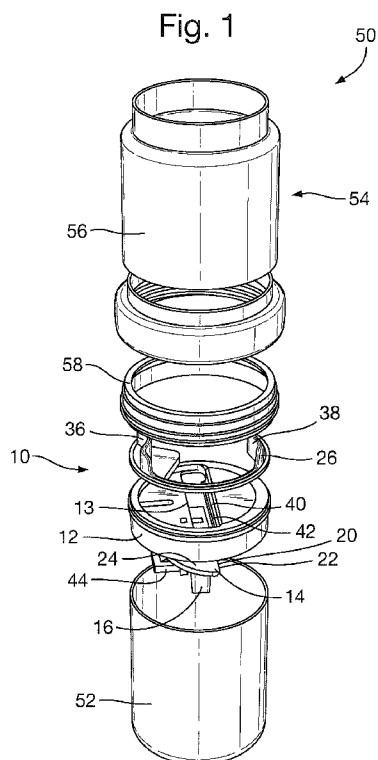
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(54) **Title:** METHOD AND DEVICE FOR EXTRACTING THE CONTENTS OF A SACHET



(57) **Abstract:** In the field of fluid containers there is a need to facilitate access to and removal of the contents of a sachet. An extraction assembly (10) for extracting the contents of a sachet comprises a sachet housing (12) to receive a sachet and an extractor (14). The extractor (14) includes at least one piercing member (16, 18) and an abutment member (20). The extractor (14) is movable relative to the sachet housing (12) between a first inactive position and a second active position. The extraction assembly (10) also includes an actuator (26) which is operable to move the extractor (14) between the first and second positions. The actuator (26) is rotatably coupled with the sachet housing (12), and the actuator (26) and the extractor (14) include mutually co-operable formations (28, 30) to translate rotational movement of the actuator (26) into movement of the extractor (14) between the first and second positions. A sachet is insertable into the sachet housing (12) while the extractor (14) is in the first position. Movement of the extractor (14) towards the second position drives the or each piercing member (16, 18) into a sachet received in the sachet housing (12) and traps a portion of the sachet between the abutment member (20) and the sachet housing (12).



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- 1 -

METHOD AND DEVICE FOR EXTRACTING THE CONTENTS OF A SACHET

5 This invention relates to an extraction assembly, and in particular an extraction assembly to assist a user in removing the contents of a sachet, a dispensing assembly including such an extraction assembly, and a method of extracting the contents of a sachet.

10 It is often desirable to supply fluids such as personal care products, household cleaners, foodstuffs and DIY products, in a sachet as this can reduce the volume of packaging required, and so lessen the impact on the environment.

One drawback with such an arrangement is that it can be difficult firstly to access
15 the contents of the sachet with, e.g. wet hands, and secondly not to waste the contents through inadvertent dispensing from the sachet or leaving residue in the sachet.

There is a need, therefore, to facilitate access to and removal of the contents of a
20 sachet.

According to a first aspect of the invention there is provided an extraction assembly, for extracting the contents of a sachet, comprising:

- a sachet housing to receive a sachet;
- 25 an extractor including at least one piercing member and an abutment member, the extractor being movable relative to the sachet housing between a first inactive position and a second active position; and
- an actuator operable to move the extractor between the first and second positions, the actuator being rotatably coupled with the sachet housing, and the
30 actuator and the extractor including mutually cooperable formations to translate

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rotational movement of the actuator into movement of the extractor between the first and second positions;

a sachet being insertable into the sachet housing while the extractor is in the first position; and

- 5 movement of the extractor towards the second position, in use, driving the or each piercing member into a sachet received in the sachet housing and trapping a portion of the sachet between the abutment member and the sachet housing.
- 10 The provision of an extractor which includes at least one piercing member and an abutment member means that movement of the extractor can perform the dual functions of: (i) piercing a sachet; and (ii) trapping a portion of the sachet between the abutment member and the sachet housing.
- 15 Such an arrangement suitably punctures the sachet to allow removal of its contents, while permitting cooperation between the abutment member and the sachet housing to force out the contents of the remaining portion of the sachet as a user draws the sachet between the abutment member and the sachet housing.
- 20 Accordingly a user is able readily to access the contents of a sachet, as well as efficiently remove the said contents and so minimise any waste.

Meanwhile the inclusion of an actuator allows a user conveniently to move the extractor as desired while reducing the risk of contacting the or each piercing
25 member.

Furthermore, rotational movement of the actuator is readily imparted by a user and helps to maintain a compact extraction assembly.

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The mutually cooperable formations may include a pin and a slot. Such features can be readily manufactured while providing the desired functionality.

5 In a preferred embodiment of the invention the sachet housing includes an abutment formation against which the abutment member of the extractor is abutable to trap a portion of a sachet while the extractor is in the second position.

10 The inclusion of an abutment formation helps to ensure consistent and effective trapping of a portion of a sachet between the abutment member and the sachet housing.

Preferably the abutment formation includes a protrusion extending substantially parallel to the abutment member.

15 The protrusion cooperates with the abutment member to deform a sachet and so further assist in removing the contents of the sachet.

20 Optionally the abutment formation includes a secondary limb against which the or each piercing member is abutable while the extractor is in the second position.

The inclusion of one or more such a secondary limbs helps to further ensure adequate piercing of a sachet.

25 In another preferred embodiment of the invention the abutment member includes a tapered leading profile.

A tapered leading profile facilitates drawing by a user of a sachet between the abutment member and the sachet housing.

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The extractor may be slidably coupled with the sachet housing. Such a feature retains the extractor relative to the sachet housing while allowing desired relative movement.

- 5 Preferably the extractor is slidably coupled with the sachet housing by a secondary fastening member.

The inclusion of a secondary fastening member helps to provide manufacturing flexibility.

10

According to a second aspect of the invention there is provided a dispensing assembly comprising:

an extraction assembly according to any preceding claim in which the sachet housing defines a fluid container including a sachet aperture to receive a sachet; and

15

a dispenser coupled with the extraction assembly and arranged in fluid communication with the fluid container.

Such an arrangement allows for convenient dispensing of the extracted contents of a sachet.

20

Optionally the dispenser is or includes a pump dispenser.

Such a dispenser is hand-operable by a user without the need for an external power source.

25

The dispenser may be selectively separable from the extraction assembly.

Separation of the dispenser from the extraction assembly selectively exposes the sachet aperture to allow insertion of a sachet into the dispensing assembly.

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In a preferred embodiment of the invention the dispenser is sealingly couplable with the extraction assembly in a fluid-tight manner.

- 5 Sealingly coupling the dispenser with the extraction assembly helps to prevent leaking of extracted sachet contents from the fluid container.

Optionally the extraction assembly further includes a collar to sealingly engage with the dispenser.

10

The inclusion of a collar provides sealing engagement that is readily overridden by a user, as desired, when separating the dispenser assembly components.

Preferably the collar further couples an extractor actuator with the sachet housing.

- 15 Such an arrangement avoids the need for a separate coupling assembly and thereby reduces the number of discrete components required in the dispensing assembly.

- 20 The extractor in the extraction assembly may include a second aperture which aligns with the sachet aperture while the extractor is in the second position.

The inclusion of a second aperture provides a pathway for, e.g. a dip tube of the dispenser.

- 25 According to a third aspect of the invention there is provided a method of extracting the contents of a sachet comprising the steps of:

- (a) providing a sachet housing to receive a sachet;
 - (b) providing an extractor including at least one piercing member and an abutment member, the extractor being movable relative to the sachet housing
- 30 between a first inactive position and a second active position;

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(c) providing an actuator operable to move the extractor between the first and second positions, the actuator being rotatably coupled with the sachet housing, and the actuator and the extractor including mutually cooperable formations to translate rotational movement of the actuator into movement of the extractor between the first and second positions;

(d) inserting a sachet into the sachet housing while the extractor is in the first position;

(e) moving the extractor towards the second position to drive the or each piercing member into the sachet and to trap a portion of the sachet between the abutment member and the sachet housing; and

(f) removing the sachet from the sachet housing by drawing the sachet between the abutment member and the sachet housing.

The method of the invention shares the aforementioned benefits associated with the extraction assembly of the invention.

There now follows a brief description of preferred embodiments of the invention, by way of non-limiting example, with reference to the accompanying drawings in which:

Figure 1 shows an exploded view of a dispensing assembly according to a first embodiment of the invention in an active configuration;

Figure 2 shows a cross-sectional view of the dispensing assembly shown in Figure 1; and

Figure 3 shows an exploded view of the dispensing assembly shown in Figure 1 in an inactive configuration.

An extraction assembly according to a first embodiment of the invention is designated generally by reference numeral 10.

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The extraction assembly 10 includes a sachet housing 12 to receive a sachet (not shown) via a sachet aperture 13, and an extractor 14.

5 In the embodiment shown the extractor 14 includes first and second piercing members 16, 18, each of which includes a blade (not shown). Other embodiments of the invention may include fewer or more than two piercing members.

10 The extractor 14 also includes an abutment member 20 which, in the embodiment shown, has a tapered leading profile 22. In particular, the leading profile tapers towards a first side 24 of the abutment member which lies against the sachet housing 12.

15 The extractor 14 is moveable relative to the sachet housing 12 between a first inactive position in which the abutment member 20 is spaced from the sachet housing 12, as shown in Figure 3; and a second active position in which the abutment member 20 lies in very close proximity to the sachet housing 12, as shown in Figures 1 and 2.

20 In the context of this application "very close proximity" is intended to relate to a situation in which the abutment member 20 is spaced from the sachet housing 12 only sufficiently to accommodate the wall thickness of a sachet received therebetween. In practice the abutment member 20 may be configured to abut the sachet housing 12 while in the second position with manufacturing tolerances within the extraction assembly permitting sufficient movement of the abutment
25 member 20 away from the sachet housing 12 to accommodate but trap a sachet received therebetween.

The extraction assembly 10 also includes an actuator 26 which is operable to move the extractor 14 between the first and second positions.

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In the embodiment shown the actuator 26 is rotatably coupled with the sachet housing 12 and the actuator 26 and the extractor 14 include mutually cooperable formations 28, 30 to translate rotational movement of the actuator 26 into linear movement of the extractor 14 between the first and second positions.

5

The mutually cooperable formations 28, 30 include a pin 32 located on the extractor 14 and a corresponding slot 34 formed in the actuator 26. In other embodiments of the invention (not shown) the location of the pin and the slot may be reversed, or other mutually cooperable formations may be employed.

10

The actuator 26 includes first and second engagement formations 36, 38 which, in use, engage with a user thumb and forefinger to assist in operating the actuator 26.

15 The sachet housing 12 includes an abutment formation 40 against which the abutment member 20 of the extractor 14 lies in very close proximity while the extractor 14 is in the second position.

20 The abutment formation 40 includes a protrusion 42 which extends substantially parallel to the abutment member 20.

In other embodiments of the invention (not shown) the abutment formation 40 may additionally include a secondary limb against which each piercing member 16, 18 abuts while the extractor 14 is in the second position.

25

The extractor 14 is slidably coupled with the sachet housing 12 and, in the embodiment shown, is slidably coupled with the sachet housing 12 by a secondary fastening member 44.

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In use a user inserts a sachet (not shown) into the sachet housing 12 via the sachet aperture 13 while the extractor 14 is in the first inactive position (as shown in Figure 3), i.e. while the sachet aperture 13 is unimpeded by the extractor 14.

- 5 The user then rotates the actuator 26 which, via the cooperating slot 34 and pin 32, moves the extractor 14 from the first inactive position to the second active position (as shown in Figures 1 and 2).

10 Movement of the extractor 14 towards the second position drives each piercing member 16, 18 and associated blade (not shown) into the sachet to puncture the sachet and create a pair of slits through which the contents of the sachet can exit.

15 Movement of the extractor towards the second position also traps a portion of the sachet between the abutment member 20 and the abutment formation 40 of the sachet housing 12.

20 With the extractor 14 in the second position the user draws the remainder of the sachet between the abutment member 20 and abutment formation 40 to force out the contents of the sachet. The protrusion 42 of the abutment formation 40 acts to deform the sachet and cause it to move through a convoluted path which helps to ensure all of the contents of the sachet are removed.

25 Further rotation of the actuator 26, and/or rotation of the actuator 26 in a reverse direction, moves the extractor 14 from the second position back to the first inactive position wherein the extraction assembly 10 is ready to be used again.

In each of Figures 1 to 3 the aforementioned extraction assembly 10 is shown as part of a dispensing assembly 50.

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In the dispensing assembly 50 shown the sachet housing 12 of the extraction assembly 10 defines a fluid container and, in particular, includes a container 52 which is removably coupled therewith.

5 The dispensing assembly 50 also includes a dispenser 54 which is coupled with the extraction assembly 10 and arranged in fluid communication with the container 52.

10 In the embodiment shown the dispenser 54 is a pump dispenser 56 which is arranged in fluid communication with the container 52 by a dip tube (not shown).

The pump dispenser 56 is selectively separable from the extraction assembly 10 so as to provide a user with access to the sachet aperture 13. Such selective separation is provided while sealingly coupling the pump dispenser 56 with the
15 extraction assembly 10 in a fluid-tight manner.

The extraction assembly 10 further includes a collar 58 to sealingly engage with the pump dispenser 56 and couple the extractor 14 actuator 26 with the sachet housing 12.
20

In the embodiment shown the extractor 14 includes a second aperture 60 which aligns with the sachet aperture 13 while the extractor 14 is in the second active position. In this manner the second aperture 60 and sachet aperture 13 together define a conduit through which, e.g. a dip tube (not shown), is able to pass so as
25 to fluidly connect the pump dispenser 56 and the container 52.

In use of the dispensing assembly 50 a user first separates the pump dispenser 56 from the extraction assembly 10.

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This provides access to the sachet aperture 13 through which the user is able to insert a sachet (not shown) into the sachet housing 12 and container 52 coupled therewith.

5 In a preferred embodiment of the invention the length of the sachet and the depth of the container 52 are chosen so that when the sachet is fully inserted into the sachet housing 12 and container 52 (i.e. when one end of the sachet abuts the bottom of the container 52) a small portion of the sachet protrudes from the sachet housing 12 to be gripped by a user.

10

The user then rotates the actuator 26 to move the extractor 14 into the second active position, and in so doing punctures the sachet and traps a portion of the sachet between the abutment member 20 and the abutment formation 40 of the sachet housing 12.

15

The user grips the protruding portion of the sachet and draws the remainder of the sachet between the abutment member 20 and abutment formation 40 to remove the contents of the sachet.

20 The expelled contents of the sachet are received in the container 52.

These contents may be personal care products such as liquid soap, shampoo, body wash, and hand-sanitisers. The contents may also include household cleaners, such as surface cleaners, fabric fresheners, and ironing aids, as well as
25 foodstuffs or DIY products.

Optionally the user may then, as desired, add water or another fluid to the dispensed contents of the sachet lying in the container 52.

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The user then passes the dip tube (not shown) of the pump dispenser 56 through the aligned sachet and second apertures 13, 60 to sit in the dispensed sachet contents, and then reconnects the pump dispenser 56 to the extraction assembly 10.

5

The user is then able to dispense the contents of the container 52 via operation of the pump dispenser 56.

10 Once the contents of the container 52 are exhausted the user may remove the pump dispenser 56 and return the extractor 14 to its first inactive position in readiness for inserting a new sachet into the sachet housing 12.

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CLAIMS:

1. An extraction assembly, for extracting the contents of a sachet, comprising:

5 a sachet housing to receive a sachet;

an extractor including at least one piercing member and an abutment member, the extractor being movable relative to the sachet housing between a first inactive position and a second active position; and

10 an actuator operable to move the extractor between the first and second positions, the actuator being rotatably coupled with the sachet housing, and the actuator and the extractor including mutually cooperable formations to translate rotational movement of the actuator into movement of the extractor between the first and second positions;

15 a sachet being insertable into the sachet housing while the extractor is in the first position; and

movement of the extractor towards the second position, in use, driving the or each piercing member into a sachet received in the sachet housing and trapping a portion of the sachet between the abutment member and the sachet housing.

20

2. An extraction assembly according to Claim 1 wherein the mutually cooperable formations include a pin and a slot.

25 3. An extraction assembly according to Claim 1 or Claim 2 wherein the sachet housing includes an abutment formation against which the abutment member of the extractor is abutable to trap a portion of a sachet while the extractor is in the second position.

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4. An extraction assembly according to Claim 3 wherein the abutment formation includes a protrusion extending substantially parallel to the abutment member.

5 5. An extraction assembly according to Claim 3 or Claim 4 wherein the abutment formation includes a secondary limb against which the or each piercing member is abutable while the extractor is in the second position.

6. An extraction assembly according to any of Claims 3 to 5 wherein the
10 abutment member includes a tapered leading profile.

7. An extraction assembly according to any preceding claim wherein the extractor is slidably coupled with the sachet housing.

15 8. An extraction assembly according to Claim 7 wherein the extractor is slidably coupled with the sachet housing by a secondary fastening member.

9. A dispensing assembly comprising:

an extraction assembly according to any preceding claim in which the
20 sachet housing defines a fluid container including a sachet aperture to receive a sachet; and

a dispenser coupled with the extraction assembly and arranged in fluid communication with the fluid container.

25 10. A dispensing assembly according to Claim 9 wherein the dispenser is or includes a pump dispenser.

11. A dispensing assembly according to Claim 9 or Claim 10 wherein the dispenser is selectively separable from the extraction assembly.

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12. A dispensing assembly according to Claim 11 wherein the dispenser is sealingly couplable with the extraction assembly in a fluid-tight manner.

13. A dispensing assembly according to Claim 12 wherein the extraction
5 assembly further includes a collar to sealingly engage with the dispenser.

14. A dispensing assembly according to Claim 13 wherein the collar further couples an extractor actuator with the sachet housing.

10 15. A dispensing assembly according to any of Claims 9 to 10 wherein the extractor in the extraction assembly includes a second aperture which aligns with the sachet aperture while the extractor is in the second position.

16. A method of extracting the contents of a sachet comprising the steps of:

15 (a) providing a sachet housing to receive a sachet;
(b) providing an extractor including at least one piercing member and an abutment member, the extractor being movable relative to the sachet housing between a first inactive position and a second active position;

20 (c) providing an actuator operable to move the extractor between the first and second positions, the actuator being rotatably coupled with the sachet housing, and the actuator and the extractor including mutually cooperable formations to translate rotational movement of the actuator into movement of the extractor between the first and second positions.

25 (d) inserting a sachet into the sachet housing while the extractor is in the first position;

(e) moving the extractor towards the second position to drive the or each piercing member into the sachet and to trap a portion of the sachet between the abutment member and the sachet housing; and

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(f) removing the sachet from the sachet housing by drawing the sachet between the abutment member and the sachet housing.

17. An extraction assembly generally as herein described with reference to
5 and/or as illustrated in the accompanying drawings.

18. A dispensing assembly generally as herein described with reference to and/or as illustrated in the accompanying drawings.

10 19. A method of extracting the contents of a sachet generally as herein described with reference to and/or as illustrated in the accompanying drawings.

Fig. 1

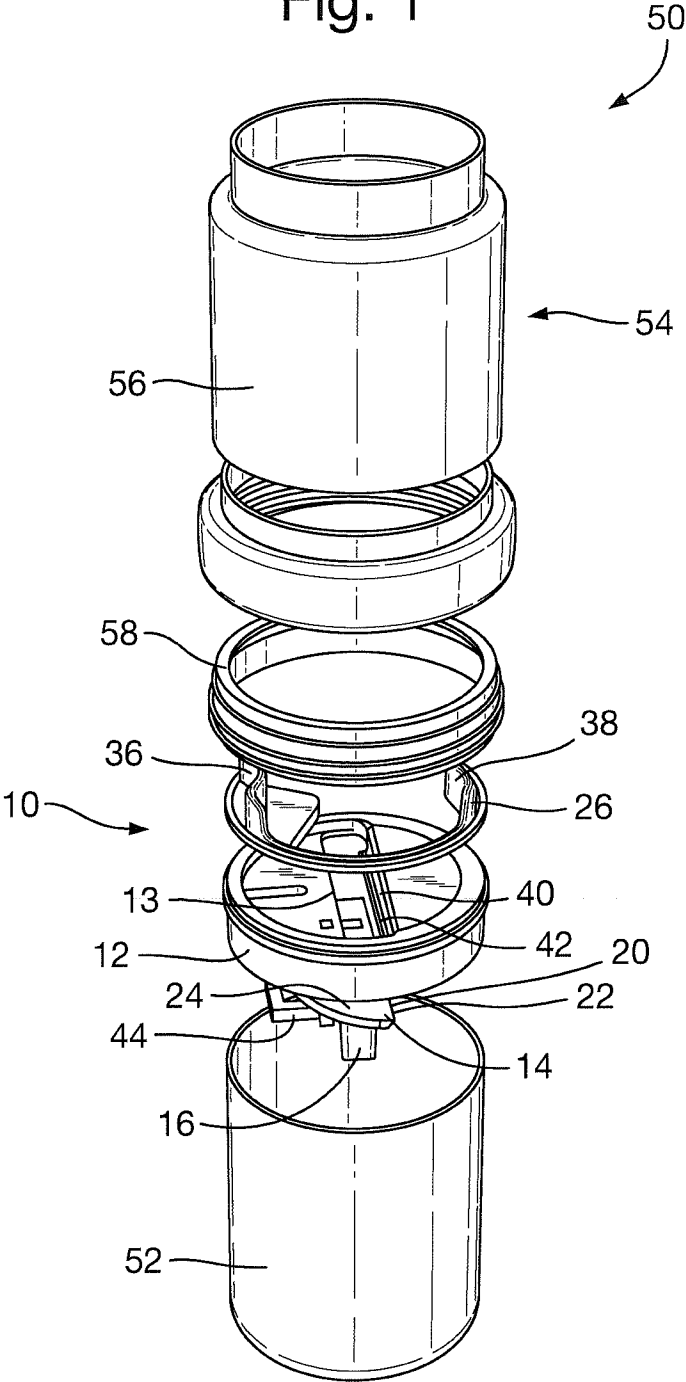
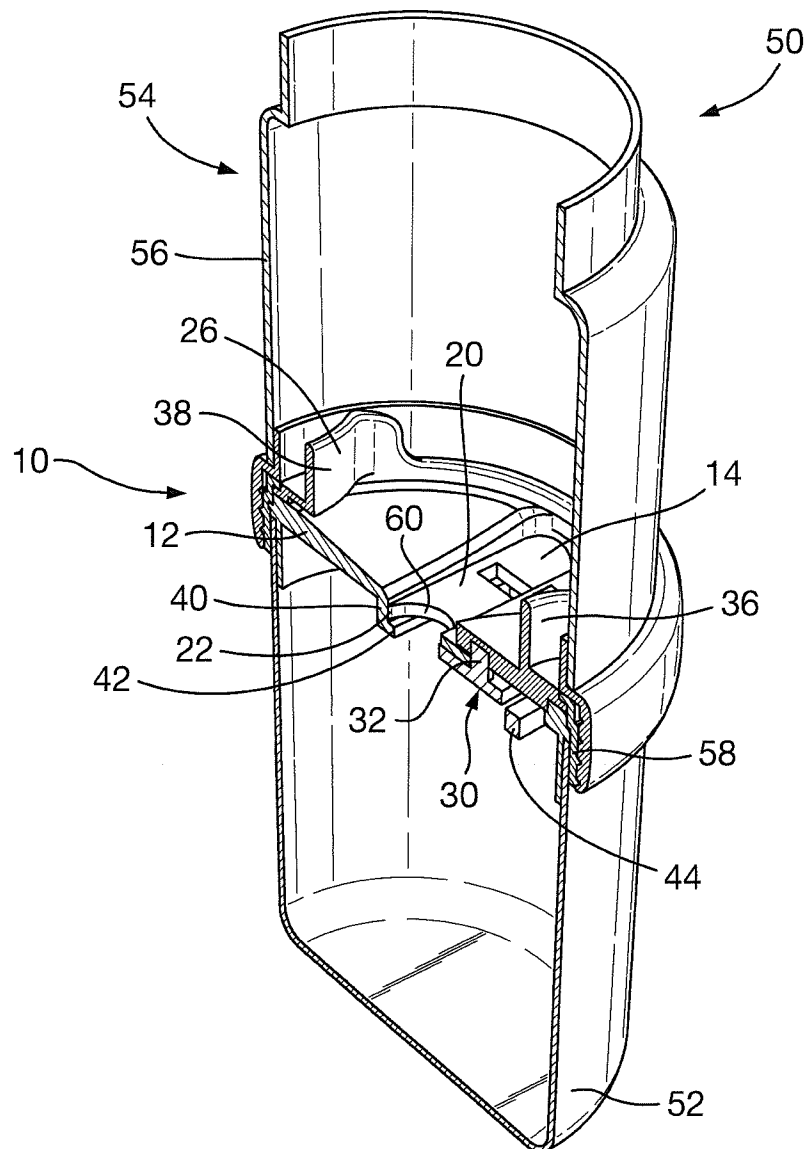
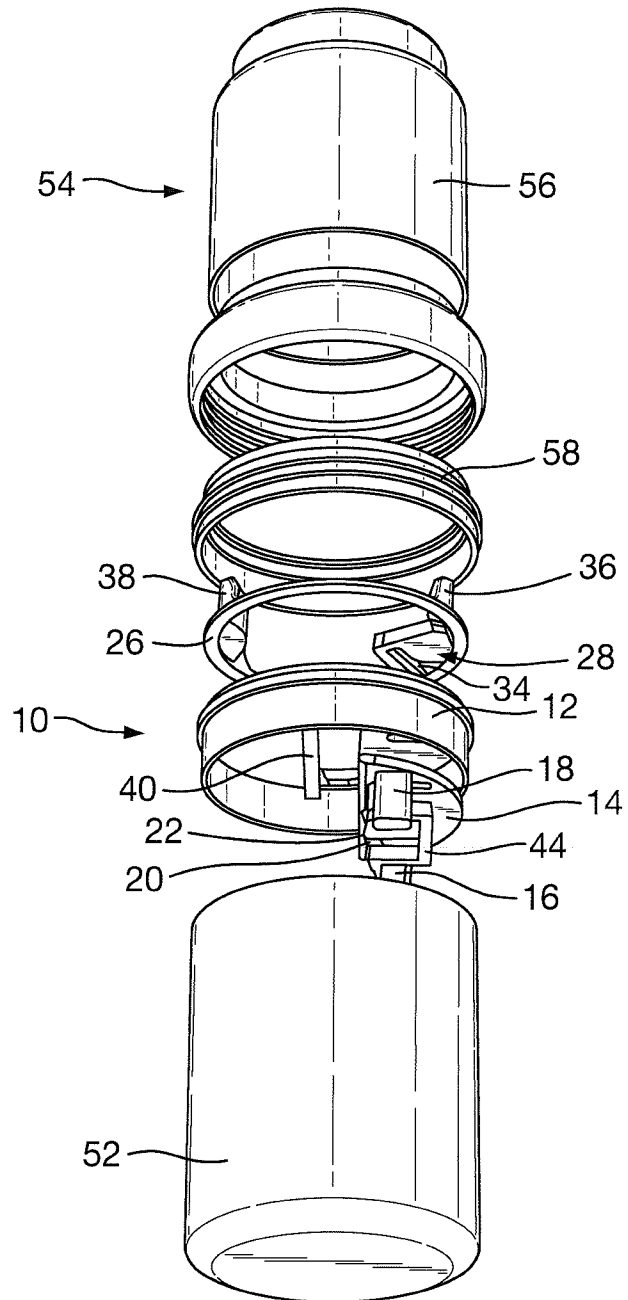


Fig. 2



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Fig. 3



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2011/072789

A. CLASSIFICATION OF SUBJECT MATTER
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ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B65B B67B B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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A	US 2010/243671 A1 (B. PRITCHARD) 30 September 2010 (2010-09-30) page 2, column 1, line 1 - line 22; figures	1,9,16
A	WO 2005/113358 A1 (SHIN NIHON MACHINE) 1 December 2005 (2005-12-01) abstract; figures	1,9,16
A	US 2010/215294 A1 (R. BERMAN) 26 August 2010 (2010-08-26) page 1, column 2, line 1 - page 2, column 1, line 48; figures	1,9,16
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Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

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INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2011/072789

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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