

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 0 768 275 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
16.04.1997 Bulletin 1997/16

(51) Int Cl.⁶: **B67D 3/02**

(21) Application number: **96307426.5**

(22) Date of filing: **11.10.1996**

(84) Designated Contracting States:
**AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC
NL PT SE**

(30) Priority: **11.10.1995 GB 9520811**

(71) Applicants:
• **Espezel, Anthony Charles**
Shoreham by Sea, Sussex BN4 6LT (GB)
• **Sitar, Drazen**
2775 Carcavelos (PT)

(72) Inventors:
• **Espezel, Anthony Charles**
Shoreham by Sea, Sussex BN4 6LT (GB)
• **Sitar, Drazen**
2775 Carcavelos (PT)

(74) Representative: **Hutchins, Michael Richard et al**
FRY HEATH & SPENCE
The Old College
53 High Street
Horley Surrey RH6 7BN (GB)

(54) **An adaptor for a dispensing device to a bottle**

(57) The invention provides an adaptor 401 for connecting a metering dispensing device to a bottle or other liquid-containing container of a non-refillable type having a security closure in the neck thereof; wherein the metering dispensing device has a liquid-holding metering chamber having transparent walls, and dispensing means for dispensing liquid from the liquid-holding chamber;

the adaptor comprising a hollow body 402, at least a lower portion of which is substantially transparent, the said lower portion having means for connecting the hol-

low body 402 to the metering dispensing device; the hollow body 402 having an upper portion defining a socket formation for receiving a neck of the liquid-containing container, the socket formation having sealing means 405 effective in use to provide a substantially liquid tight seal against the said neck or a security closure disposed therein; the sealing means 405 being so dimensioned that in use, an end portion of the security closure protrudes downwardly beyond the socket formation so as to be visible through a transparent wall portion of said lower portion of the hollow body 402.

EP 0 768 275 A1

Description

The present invention relates to an adaptor for dispensing devices and to dispensing devices fitted with such adaptors. More particularly, the invention provides an adaptor for use with a dispensing device for dispensing spirits such as whisky, gin, vodka, brandy etc.

In many parts of the world, and in particular the Mediterranean countries of Europe, as well as South America and South Africa, the majority of bottles containing alcoholic spirits such as whisky, gin etc are fitted with a closure which does not allow the bottle to be refilled. Such closures typically take the form of a stopper containing a one way valve which permits liquid to be poured from the bottle, but prevents the bottle from being refilled.

The purpose of the closure is to prevent dilution of the product with water or an inferior grade of spirit thereby ensuring that members of the public are not deceived as to the origin or quality of the spirits that they are purchasing. A major manufacturer of such closures is Guala of Italy, and stoppers of the "Guala" (RTM) type have become well known. In general, it is not possible to remove such closures without destroying them, and thus the absence of a closure on a bottle of spirits in many countries is in itself an indication that the spirits may have been adulterated.

A major problem however with such closures, which will be referred to hereinafter as security closures, is that they cannot easily be connected directly to conventional pouring devices or metering dispensing devices such as the "optic" device commonly used in the UK and in many other countries.

Insofar as "optic" devices are concerned, attempts have been made to provide such devices with connection means for connecting to spirits bottles containing security closures, see for example GB-A-1148085. A problem with the arrangement shown in GB 1148085 however is that it is intended to be used with a security closure of a particular type, and is not suited for use with more modern types of security closures. More recently, adaptors have been devised which comprise an elongate opaque plastics sleeve which is clamped to the optic at its lower end, and which fits relatively loosely about the neck of the spirits bottle. Such an arrangement suffers from several disadvantages. Firstly, it is believed that such adaptors have a tendency to leak as a result of the loose fit between the bottle neck and the adaptor sleeve; secondly, some evaporation of the contents of the bottle may occur due to the loose fit; thirdly the loose fit provides a possible route of entry for contaminants; and fourthly the opacity of the sleeve means that the customer cannot see whether the bottle from which the spirit is being dispensed has a security closure or not.

One object of the present invention is to provide an adaptor which can be used to connect a metering device such as an "optic" device to a wide range of bottles of different sizes and having different types of security clo-

sure therein.

The present invention is also concerned with adaptors for connecting pouring devices to bottles fitted with security closures. Pouring devices are known which have a stem portion which is inserted into the neck of a bottle, a sealing member, for example a sealing sleeve having a plurality of circumferential sealing ribs disposed about the stem, being provided for removably sealing the device into the neck of the bottle. The stem can contain a flow restrictor valve which prevents flow of liquid out of the pouring nozzle when the bottle is fully inverted, but allows liquid to pass out through the nozzle when the bottle is inclined at an angle to the vertical. Such pouring devices typically have an air passage passing from the nozzle along the stem in order to allow the bottle to be vented as liquid is poured therefrom.

As will be appreciated, the presence of security closures in the necks of spirits bottles means that pouring devices of this type cannot be used. A further object of the invention therefore is to provide an adaptor which enables such pouring devices to be connected to bottles or other containers fitted with a security closure.

A still further problem with many security closures, in addition to their inability to be connected to pouring and metering dispensing devices, is that the retaining collars typically used to secure the closure in the neck of the bottle are often fitted insufficiently tight and thus a leak path is created between the collar and the external surface of the bottle neck with the result that over a period, leakage of the bottle contents can occur leading in many cases to a sticky residue being created on the outer surface of the upper part of the bottle.

A further object of the present invention therefore is to overcome the aforementioned leakage problem.

In a first aspect therefore, the invention provides a connector for connecting a dispensing device to a bottle or other liquid-containing container of a non-refillable type having a security closure in the neck thereof, wherein the dispensing device has a liquid-holding chamber having transparent walls and a dispensing nozzle containing a valve or flow restrictor allowing liquid to be dispensed from the liquid-holding chamber;

the connector comprising a substantially transparent hollow body having a first hollow body portion defining a socket formation at one end thereof for receiving a neck of the said container, the socket formation having sealing means to provide a substantially liquid-tight seal against the said container neck; the connector having air inlet means which cooperate with the said dispensing device to allow air to pass into or out of the said liquid-holding chamber during dispensing of the liquid.

In another aspect the invention provides an adaptor for connecting a dispensing device to a bottle or other liquid-containing container of a non-refillable type having a security closure in a neck thereof, the adaptor comprising a substantially transparent hollow body having a first hollow body portion defining a socket formation at one end thereof for receiving the neck of the said con-

tainer; and a second hollow body portion defining a liquid receiving chamber; the socket formation having sealing means to provide a substantially liquid-tight seal against the said container neck; the liquid-receiving chamber being separated from the socket formation by a wall having a first central opening therein, the width of the opening being less than the width of the chamber; the chamber having a second opening at the end remote from the first opening for allowing liquid to pass to the dispensing device; and means for connecting the second hollow body portion to the dispensing device.

In another aspect, the invention provides an adaptor device for connecting a pouring nozzle to a bottle or other liquid container, wherein the liquid container is of the non-refillable type fitted with a security closure, and the pouring nozzle is of the type which has a stem portion for inserting into the neck of a bottle or other container;

the adaptor comprising a first hollow body portion, the first hollow body portion having a socket formation for receiving and gripping the neck of the liquid container and having sealing means for providing a liquid-tight seal against the neck of the liquid container;

and a second hollow body portion connected to or formed integrally with the first hollow body portion, the second hollow body portion being adapted to be connected to the pouring nozzle in a liquid-tight manner such that the said stem portion of the pouring nozzle extends into the interior of the second hollow body portion.

The first and second hollow body portions of the pouring nozzle adaptor are preferably separated by a wall having a first opening therein for permitting liquid flow therebetween and at least one further opening provided with one-way valve means permitting airflow from the second body portion to the first body portion but preventing liquid flow through the said further opening or openings in the reverse direction.

In a still further aspect, the invention provides an adaptor for connecting a metering dispensing device to a bottle or other liquid-containing container of a non-refillable type having a security closure in the neck thereof, wherein the metering dispensing device has a liquid-holding metering chamber having transparent walls, and dispensing means for dispensing liquid from the liquid-holding chamber;

the adaptor comprising a substantially transparent hollow body having a first hollow portion defining a socket formation at one end thereof for receiving a neck of the said liquid-containing container, the socket formation having sealing means to provide a substantially liquid-tight seal against the said neck; an opposite end of the substantially transparent hollow body having means for connecting the hollow body to the metering dispensing device; the adaptor having air inlet means which co-

operate with the said dispensing device to allow air to pass into the said liquid-holding chamber during dispensing of the liquid.

The means for connecting the hollow body to the metering dispensing device can be, for example, an annular flange which is held in place by clamping means on the metering dispensing device.

In each of the aforesaid aspects, the sealing means is preferably an elastomeric sealing element which provides a seal between the neck of the container and socket formation of the hollow body. Preferably, the socket formation is provided with further sealing means which seal against an axial end surface of the container neck and/or a retaining collar of the security closure, the arrangement being such as to prevent liquid from passing between the said retaining collar and the neck of the container. The leakage problem referred to above is thereby overcome.

In a further aspect, the invention provides an adaptor for connecting a metering dispensing device to a bottle or other liquid-containing container of a non-refillable type having a security closure in the neck thereof; wherein the metering dispensing device has a liquid-holding metering chamber having transparent walls, and dispensing means for dispensing liquid from the liquid-holding chamber;

the adaptor comprising a hollow body, at least a lower portion of which is substantially transparent, the said lower portion having means for connecting the hollow body to the metering dispensing device; the hollow body having an upper portion defining a socket formation for receiving a neck of the liquid-containing container, the socket formation having sealing means effective in use to provide a substantially liquid tight seal against the said neck or a security closure disposed therein; the sealing means being so dimensioned that in use, an end portion of the security closure protrudes downwardly beyond the socket formation so as to be visible through a transparent wall portion of said lower portion of the hollow body.

The sealing means may take the form of a generally cylindrical body formed of an elastomeric material such as a silicone rubber, the cylindrical body having a socket formation extending downwardly from the upper end thereof, the socket formation having towards its lower end thereof a downwardly tapering frustoconical portion, and the lower end of the body having a radially inwardly oriented flange for sealing against an end portion of the neck of a bottle of like liquid-containing container and/or a security closure disposed in said neck.

The downwardly tapering frustoconical portion and the radially inwardly extending flange may be connected by an intermediate portion having generally parallel walls or walls which taper downwardly to a lesser extent than the said frustoconical portion.

Preferably the socket formation has one or more annular ridges or protrusions extending radially inwardly at a location or locations above the said frustoconical

portion. For example, the socket formation may have two or three, and preferably three, such annular ridges or protrusions. The annular ridges or protrusions provide an additional sealing effect, and in addition serve to grip the neck of the bottle.

In a still further aspect, the invention provides a liquid dispensing apparatus, comprising a dispensing device in combination with an adaptor or connector as hereinbefore defined.

In yet another aspect, the invention provides a dispensing apparatus for liquids, and in particular drinks, comprising a bottle or other liquid-containing container in combination with a dispensing device and an adaptor or connector as hereinbefore defined.

The invention will now be illustrated by reference to the accompanying drawings of which:

Figure 1 is a sectional elevation through a pouring device fitted with an adaptor according to one embodiment of the invention;

Figure 2 is an exploded view illustrating the component parts of the adaptor illustrated in Figure 1;

Figure 3 is a partial sectional elevation through a metering dispensing device fitted with an adaptor according to a second embodiment of the invention;

Figure 4 is an exploded view of the component parts of the adaptor shown in Figure 3;

Figure 5 is a sectional elevation through an adaptor according to a third embodiment of the invention;

Figure 6 is a side view of a metering dispensing device fitted with an adaptor according to a fourth embodiment of the invention;

Figure 7 is a sectional elevation through the adaptor shown in Figure 6; and

Figure 8 is an enlarged sectional elevation through the sealing means used in the adaptor of Figures 6 and 7.

Referring now to the drawings, Figure 1 illustrates a pouring device 1 to which is attached an adaptor, generally designated by the numeral 2. Pouring device 1 is of known type, one example of which is known as "Correct Pour". Pouring device 1 comprises a plastics pouring tube having a nozzle portion 3 and a stem portion 5. Nozzle portion 3 is seated in a recess 4a in cap 4 and is held securely in place by means of a retaining collar 6 inside the cap 4. Retaining collar 6 has an annular recess 6a which engages an annular ridge 5a on the stem portion to provide a snap fit. A passageway 7 extends along the interior of the nozzle portion 3 and the stem portion 5, the passageway 7 being divided into two

chambers 7a and 7b by a restricted opening 7c. Inside the cap 4 the stem 5 is surrounded by a sealing sleeve 8 which extends from and is formed integrally with the retaining collar 6. An annular space 40 is provided between the outer wall of stem portion 5 and the sealing sleeve 8 and this provides a liquid flow path between the interior of the adaptor 2 and the interior of the pouring tube via opening 41 in the wall of stem 5.

Sealing sleeve has a plurality of annular sealing ribs 8a extending around its circumference. When used in conjunction with a refillable bottle, i.e. a bottle having no obstructing element in the neck, the sealing ribs 8a serve to provide a liquid-tight seal when the stem is inserted into the bottle neck.

The nozzle 3 is provided with an air inlet 9 communicating with an air conduit 10 which runs along the length of the stem 5.

Towards the inner end of the stem 5, an orifice 11 of restricted diameter is provided and this acts as a valve seat for ball-bearing 12 which can travel freely along the interior bore of the stem 5 but is prevented from passing into chamber 7a in the nozzle 3 by the restricted opening 7c. The purpose of valve 11, 12 is to prevent liquid from draining back into a bottle when the bottle and pouring device are in an upright position. On the innermost side of the orifice 11 is disposed another ball-bearing 13 which acts to close the orifice 11 when the container to which the dispensing nozzle is connected is fully inverted.

The pouring device is connected to the adaptor 2, the sealing sleeve 8 providing a liquid-tight union between the dispenser and adaptor 2.

Adaptor 2 comprises a generally hollow body portion 20 (hereinafter referred to as "the second hollow body portion") formed of a transparent plastics material, such as a transparent acrylic material. Second hollow body portion 20 is of generally cylindrical form but has a reduced diameter opening at its outermost end 21 the inner surface 22 of the reduced diameter portion interacting with sealing member 7 to form a liquid-tight seal, and a stepped or reduced diameter portion 23 engaging the cap 4 in a friction fit to hold the cap 4 in place.

Connected to the second hollow body portion 20 or formed integrally therewith, is hollow body portion 24 (hereinafter referred to as "the first hollow body portion"). First hollow body portion 24 has a wall 25 at one end thereof which serves to separate the first hollow body portion from the interior of the second hollow body portion. End wall 25 is provided with a stepped portion of reduced external diameter which engages the radially inner surface of the end of first body portion 20 thereby allowing the two body portions to be fitted together in a spigot-socket type arrangement.

Body portion 24 has a central spigot portion 27 which permits liquid flow between the two body portions. The internal diameter of the spigot portion 27 is just smaller than the diameter of the ball-bearing 13, and thus acts as a valve seat in a one-way valve which pre-

vents liquid flow back between the second and first hollow body portions when the bottle is stood in an upright position.

Axial face 28 of the wall portion 25 has a plurality of holes 29 which surround the spigot portion 27. A hollow-backed metal annulus 30 sits about the spigot and, when the bottle is stood in an upright position, sits over the holes 29 preventing liquid from passing from the second hollow body portion into the first hollow body portion. However, when the bottle is tipped up, the metal annulus lifts away from the axial face 28 thereby permitting air to pass between the second and first hollow body portions.

The radially innermost side of the wall of body portion 24 is lined with an elastomeric sealing element 31 which may be formed from a suitable elastomeric material such as a silicone rubber. The elastomeric sealing element is provided with annular ribs 31a to improve its gripping and sealing qualities. The elastomeric sealing element 31 is held in place by radially inwardly oriented flange 32. A second sealing element, 33 is positioned within the sealing element 31 and abuts against the innermost side of the wall 25. In use, the end of a bottle (not shown) which is fitted with a security closure held in place by means of a retaining collar is inserted into the first hollow body portion 24. The sealing member 31 seals against the sides of the neck and security closure, whilst the sealing member 33 provides a seal against an end surface of the bottle or security closure thereby preventing liquid from passing around the end of the retaining collar and along the gap between the retaining collar and the bottle neck.

In use, a bottle fitted with a dispenser pourer and adaptor according to the invention is first inverted such that the chamber within second hollow body portion 20 becomes filled with liquid. Once the chamber has filled to the level of the end of the air conduit 10a further filling is prevented. The bottle is then restored to an upright position to prime the pourer dispenser, and then partially re-inverted to enable liquid to be poured through the nozzle.

Figures 3 and 4 illustrate an adaptor device in accordance with a second embodiment of the invention.

Figures 3 and 4 illustrate a metering dispensing device of the type commonly known in the trade as an "optic" which is adapted to be connected to the neck of an inverted bottle such that metered amounts of the contents of the bottle are dispensed by gravity feed. The metering dispensing device comprises a metering chamber 101 having an upper wall 102 surrounding a central orifice 103 through which liquid flows from the bottle into the chamber 101. To one side of the orifice 103 and extending through a smaller opening in the wall 102 is a venting element 104 which is slidable in a socket 105. A compression spring 106 located in the upper part of the socket 105 biases the venting element inwardly of the chamber. Towards the upper end of the socket, is provided an opening 107. Venting element 104 has ex-

tending along both sides thereof grooves 108, the grooves together with the opening 107 defining an air leakage path when the venting element is at or towards the upper limit of its travel in socket 106.

Disposed centrally within the chamber 101 is a valve arrangement comprising a stem 110 which is slidable in a vertical plane and is biased by means of a suitable biasing spring (not shown) in a downwards direction.

At the upper end of the stem 110 is a valve member 111 in a form of a disc mounted on a plunger 112. Plunger 112 is slidable within stem 110 and is biased upwardly of the stem by means of a biasing spring (not shown). Stem 110 also has an annular abutment surface 113 the purpose of which will be described below.

Stem 110 is slidable in a bore defined by the lower portion 115 of the housing, biasing means within the lower portion 115 serving to bias the stem in a downwards direction. The lower portion of the stem 110 is formed from metal tube having a plurality of orifices (in this case 4) around its circumference. When the stem is in the rest position, i.e. is biased downwardly into the lower body portion of the dispenser, the orifices 116 remain hidden below the level of the chamber 101 and thus are not in fluid communication with the chamber interior.

At the lower end of the metering dispensing device, there is provided a dispensing head 117 having three arms 118 arranged at angles of 120° apart, the dispensing head having a central opening 119 for dispensing liquid into a receptacle such as a glass. In use, as is well known, the user pushes a glass upwardly against the arms 118 thereby urging the stem 110 upwardly such that the orifices 116 come into fluid communication with the chamber 101 interior. Thus liquid in the metering chamber can pass out of the chamber and out through dispensing opening 119. At the same time, the disc-like valve member 111 covers the central opening 106 thereby preventing further liquid from entering the metering chamber. Also at the same time, the abutment surface 113 comes into contact with venting element 108 forcing it upwards and into a position whereby an air leakage path is created. The entry of air into the chamber assists the chamber to be drained correctly. Thus far, the operation of the metering dispenser is entirely conventional.

On the upper surface of wall 102, there is provided a boss or spigot portion 120 over which a recess or socket-like formation in the base 122 of adaptor 121 can fit. The base portion of adaptor 121 has an annular flange 123 provided with cut-outs 124 to accommodate retaining screws 125. Flange 123 also has a groove or cut-away 128 in its lower edge which is aligned with the opening 107 in the dispenser. The groove or cut-out constitutes the air-inlet means referred to above. The adaptor 121 is clamped in place against the dispenser by means of clamping ring 130 which has a side arm 131 for mounting the bottle and dispenser assembly on a conventional dispenser support. Clamping ring 130 is fastened to the main body of the metering dispensing

device by means of the screws 125.

The adaptor 121 has a lower hollow body portion 132 and an upper hollow body portion 133 separated by a wall 134. Wall 134 has a central opening 135 through which liquid from the bottle can pass towards the dispenser and a plurality of air holes (in this case three air holes) 136 surrounding the central opening 135. The lower surface of the wall 134 is inclined towards the opening 136 so as to form a seat for ball-bearing 138 which is located within the lower hollow body portion 132. The purpose of ball-bearing 138 is to act as a valve preventing flow of liquid out of the dispenser when a fresh bottle of liquid is being attached to the dispenser, i.e. when the dispenser assembly is in an inverted position. Upper hollow portion 133 has a socket formation 140 which is lined with an elastomeric sleeve 141 for sealing against the neck of a bottle inserted therein. By means of the elastomeric sleeve 141 the adaptor can accommodate bottles of varying neck size and configuration without leakage occurring. Furthermore, the annular sealing member 142 seals against the end face of the bottle or an end face of any security closure in the bottle thereby providing a seal against the end face and preventing leakage between any retaining collar on the bottle and the neck of the bottle itself.

Figure 5 illustrates an alternative embodiment which is similar in many respects to the adaptor shown in Figures 3 and 4. Thus, the adaptor 300 has a flange 301 enabling it to be held by a clamping ring (not shown) in the same manner as embodiment of Figures 3 and 4. Also in a manner analogous to Figures 3 and 4, the flange has a groove 303 on its lower surface which co-operates with an air passage leading into the metering chamber. Groove 303 constitutes an air-inlet means as hereinbefore defined. Adaptor 300 has a generally cylindrical outer surface, the interior of the cylindrical form being divided into lower 306 and upper 307 chambers by means of a wall 305. Both chambers 306 and 307 are wider than they are deep. Wall 305 has a central opening 308 through which liquid may pass, the central opening being surrounded by a plurality of air holes 309. The radially inner surface of upper chamber 307 is threaded to engage the complementary thread on the neck of a bottle. It will be appreciated that the dispenser of Figure 5 would be intended to be fitted only to bottles having a particular thread-engaging arrangement whereas the embodiment of Figures 3 and 4 is intended to be of more universal applicability.

Figures 6 to 8 illustrate an adaptor according to a fourth embodiment of the invention.

As shown in Figure 7, the adaptor 401 is constituted by a hollow body 402 formed from a transparent plastics material. At the lower end thereof, hollow body 402 has a radially outwardly extending flange 403 which allows the adaptor 401 to be clamped to a metering dispensing device 404, as shown in Figure 6. Flange 403 may have a cutaway 403a corresponding to the cutaway 128 in the embodiment illustrated in Figure 3. The mode of con-

nection of the flange 403, and the internal workings of the dispensing device, are substantially the same as shown in Figure 3.

At about the mid point of the hollow body 402, is disposed a radially inwardly extending annular flange 404, which is formed integrally with the hollow body, for example by moulding or by machining from a suitable blank.

The radially inwardly extending flange 404 provides a seat upon which is mounted the sealing member 405. Sealing member 405 comprises a generally tubular body formed from an elastomeric material such as a silicone rubber, and preferably a substantially transparent silicon rubber. Tubular body 405 has an enlarged bore portion defined by wall 406. Enlarged bore portion 406 has a plurality, in this case three, of annular ridges 407 which are moulded integrally with the cylindrical body, and serve to provide an additional sealing and gripping action against the neck of a bottle. At the lower end of enlarged diameter portion 406, is a tapering region defined by frustoconical surface 408. Frustoconical surface 408 in turn leads into the generally parallel walled cylindrical region 409, at the lower end of which is disposed radially inwardly extending flange 410.

The adaptor body is completed by a casing or sleeve 411 formed from a generally rigid material and having a metallic or chrome coating for decorative purposes. Sleeve or casing 411 is mounted on the upper edge 412 of the walls of the body 402 and serves to prevent retraction of the sealing member 405 when a bottle is removed therefrom.

In use, a bottle B is inverted, and the neck end inserted into the socket like formation defined by sealing member 405. The bottle is pushed downwardly such that the neck end is sealingly engaged by the sealing means 405. However, the inner diameter D of the radially inwardly extending flange 410 is such as to allow the security closure (e.g. a "Guala") to protrude through the sealing member such that it is visible through the transparent wall in the lower portion of the adaptor. In this way, a customer wishing to purchase a drink can see at a glance that the bottle is provided with a security closure, and can therefore be reasonably sure that the contents of the bottle have not been adulterated.

A sealing member of the type shown in Figure 8 may also be used in conjunction with the dispenser pourer shown in Figure 1. In this case, it would replace the sealing member 31.

The adaptors of the present invention are simple to fabricate and can be made in a unitary form, or by separately fabricating and connecting together, e.g. by adhesive or by welding, individual components. The adaptors are advantageously formed from a plastics material such as an acrylic plastics material. Thanks to the transparency of the plastics material, the customer can satisfy himself that the bottle to which the dispenser and adaptor are connected still has a secure closure such as a "Guala" type closure and can therefore be reas-

sured that the contents of the bottle have not been diluted or otherwise adulterated.

It will readily be apparent that numerous modifications and alterations may be made to the adaptors shown in the drawings without departing from the principles underlying this invention, and all such modifications and alterations are intended to be embraced by this Application.

Claims

1. An adaptor for connecting a metering dispensing device to a bottle or other liquid-containing container of a non-refillable type having a security closure in the neck thereof; wherein the metering dispensing device has a liquid-holding metering chamber having transparent walls, and dispensing means for dispensing liquid from the liquid-holding chamber;

the adaptor comprising a hollow body, at least a lower portion of which is substantially transparent, the said lower portion having means for connecting the hollow body to the metering dispensing device; the hollow body having an upper portion defining a socket formation for receiving a neck of the liquid-containing container, the socket formation having sealing means effective in use to provide a substantially liquid tight seal against the said neck or a security closure disposed therein; the sealing means being so dimensioned that in use, an end portion of the security closure protrudes downwardly beyond the socket formation so as to be visible through a transparent wall portion of said lower portion of the hollow body.

2. A connector for connecting a dispensing device to a bottle or other liquid-containing container of a non-refillable type having a security closure in the neck thereof, wherein the dispensing device has a liquid-holding chamber having transparent walls and a dispensing nozzle containing a valve or flow restrictor allowing liquid to be dispensed from the liquid-holding chamber;

the connector comprising a substantially transparent hollow body having a first hollow body portion defining a socket formation at one end thereof for receiving a neck of the said container, the socket formation having sealing means to provide a substantially liquid-tight seal against the said container neck; the connector having air inlet means which cooperate with the said dispensing device to allow air to pass into or out of the said liquid-holding chamber during dispensing of the liquid.

3. An adaptor for connecting a dispensing device to a bottle or other liquid-containing container of a non-refillable type having a security closure in a neck

thereof, the adaptor comprising a substantially transparent hollow body having a first hollow body portion defining a socket formation at one end thereof for receiving the neck of the said container; and a second hollow body portion defining a liquid receiving chamber; the socket formation having sealing means to provide a substantially liquid-tight seal against the said container neck; the liquid-receiving chamber being separated from the socket formation by a wall having a first central opening therein, the width of the opening being less than the width of the chamber; the chamber having a second opening at the end remote from the first opening for allowing liquid to pass to the dispensing device; and means for connecting the second hollow body portion to the dispensing device.

4. An adaptor for connecting a metering dispensing device to a bottle or other liquid-containing container of a non-refillable type having a security closure in the neck thereof, wherein the metering dispensing device has a liquid-holding metering chamber having transparent walls, and dispensing means for dispensing liquid from the liquid-holding chamber;

the adaptor comprising a substantially transparent hollow body having a first hollow portion defining a socket formation at one end thereof for receiving a neck of the said liquid-containing container, the socket formation having sealing means to provide a substantially liquid-tight seal against the said neck; an opposite end of the substantially transparent hollow body having means for connecting the hollow body to the metering dispensing device; the adaptor having air inlet means which cooperate with the said dispensing device to allow air to pass into the said liquid-holding chamber during dispensing of the liquid.

5. An adaptor according to any one of claims 2 to 4 wherein at least a lower portion thereof is substantially transparent.

6. An adaptor according to anyone of claims 1, 3, 4 and 5 wherein the means for connecting the hollow body to the metering dispensing device is an annular flange which is held in place by clamping means on the metering dispensing device.

7. An adaptor according to any one of the preceding claims wherein the sealing means is an elastomeric sealing element which provides a seal between the neck of the container and socket formation of the hollow body.

8. An adaptor according to claim 7 wherein the socket formation is provided with further sealing means which seal against an axial end surface of the container neck and/or a retaining collar of the security

closure, the arrangement being such as to prevent liquid from passing between the said retaining collar and the neck of the container.

9. An adaptor according to claim or claim 8 wherein the sealing means takes the form of a generally cylindrical body formed of an elastomeric material such as a silicone rubber, the cylindrical body having a socket formation extending downwardly from the upper end thereof, the socket formation having towards its lower end thereof a downwardly tapering frustoconical portion, and the lower end of the body having a radially inwardly oriented flange for sealing against an end portion of the neck of a bottle of like liquid-containing container and/or a security closure disposed in said neck. 5 10 15
10. An adaptor according to claim 9 wherein the downwardly tapering frustoconical portion and the radially inwardly extending flange is connected by an intermediate portion having generally parallel walls or walls which taper downwardly to a lesser extent than the said frustoconical portion. 20
11. An adaptor according to claim 9 or claim 10 wherein the socket formation has one or more annular ridges or protrusions extending radially inwardly at a location or locations above the said frustoconical portion. 25 30
12. A liquid dispensing apparatus, comprising a dispensing device in combination with an adaptor as defined in any one of the preceding claims.
13. A dispensing apparatus for liquids, and in particular drinks, comprising a bottle or other liquid-containing container in combination with a dispensing device and an adaptor as defined in any one of the preceding claims. 35 40
14. An adaptor device for connecting a pouring nozzle to a bottle or other liquid container, wherein the liquid container is of the non-refillable type fitted with a security closure, and the pouring nozzle is of the type which has a stem portion for inserting into the neck of a bottle or other container; 45

the adaptor comprising a first hollow body portion, the first hollow body portion having a socket formation for receiving and gripping the neck of the liquid container and having sealing means for providing a liquid-tight seal against the neck of the liquid container; 50
and a second hollow body portion connected to or formed integrally with the first hollow body portion, the second hollow body portion being adapted to be connected to the pouring nozzle in a liquid-tight manner such that the said stem 55

portion of the pouring nozzle extends into the interior of the second hollow body portion.

15. An adaptor device according to claim 14 wherein the first and second hollow body portions of the pouring nozzle adaptor are separated by a wall having a first opening therein for permitting liquid flow therebetween and at least one further opening provided with one-way valve means permitting airflow from the second body portion to the first body portion but preventing liquid flow through the said further opening or openings in the reverse direction.

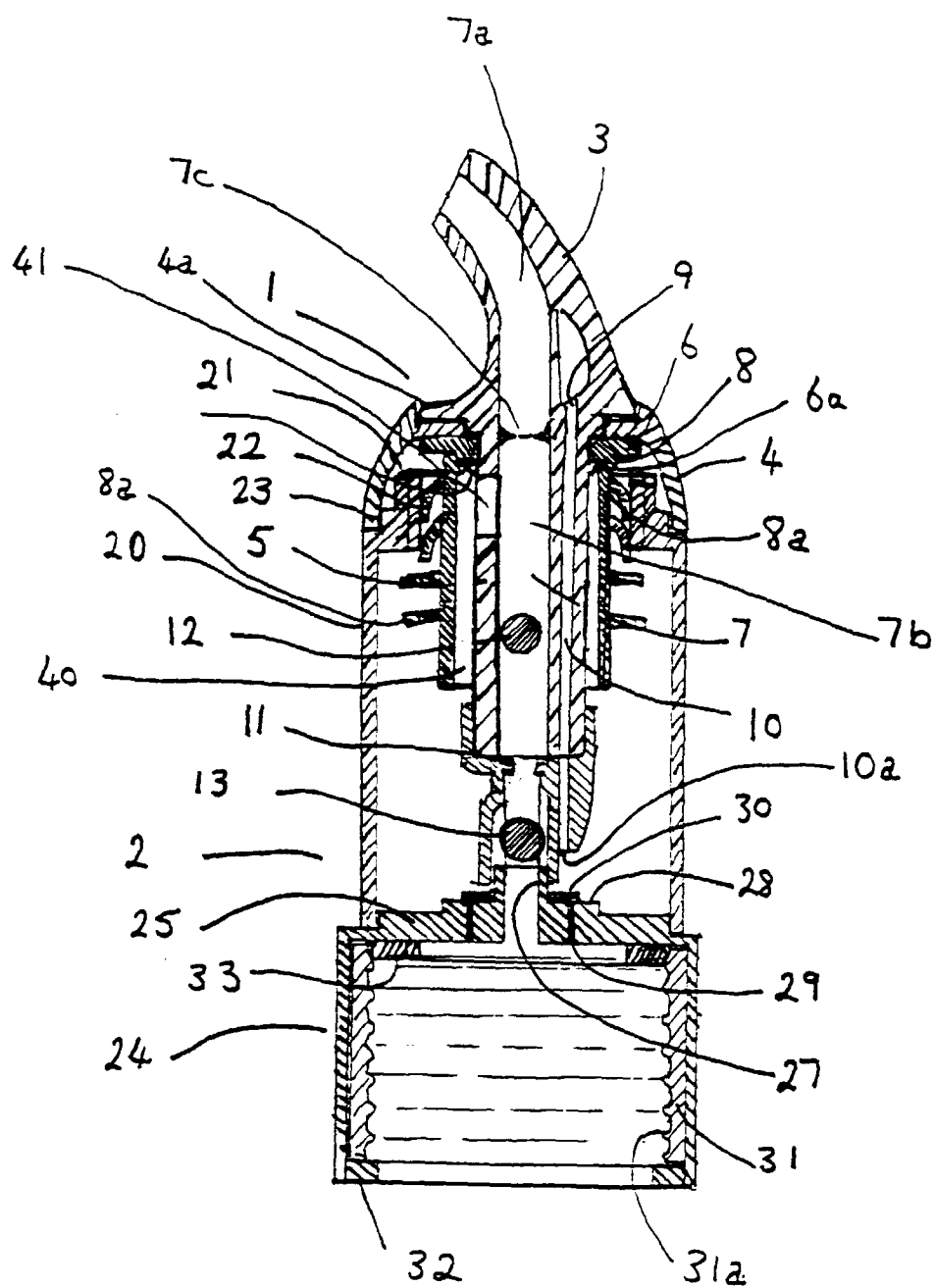


FIG. 1

FIG. 4

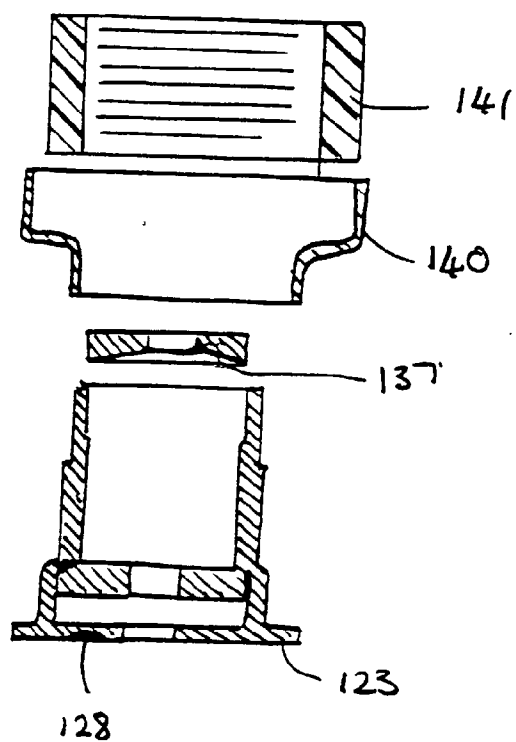
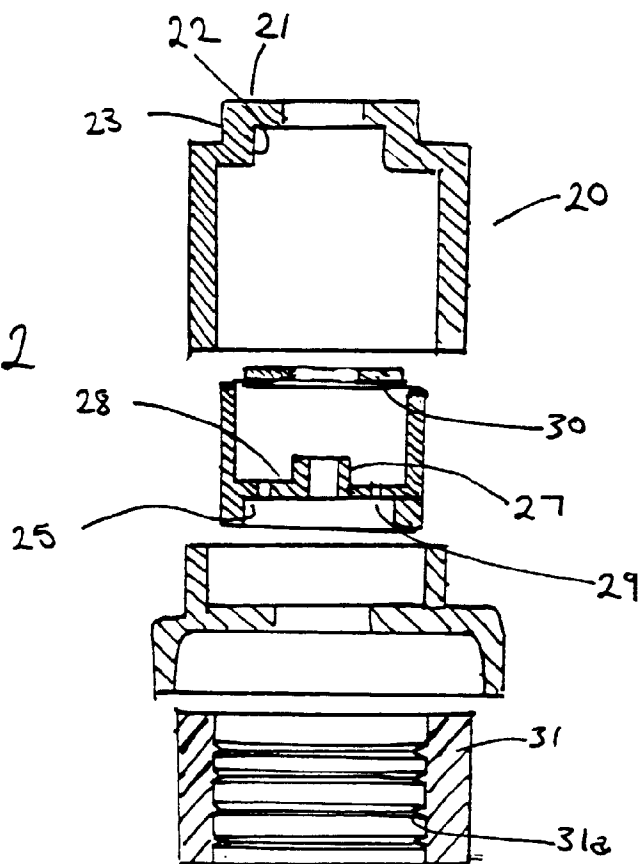
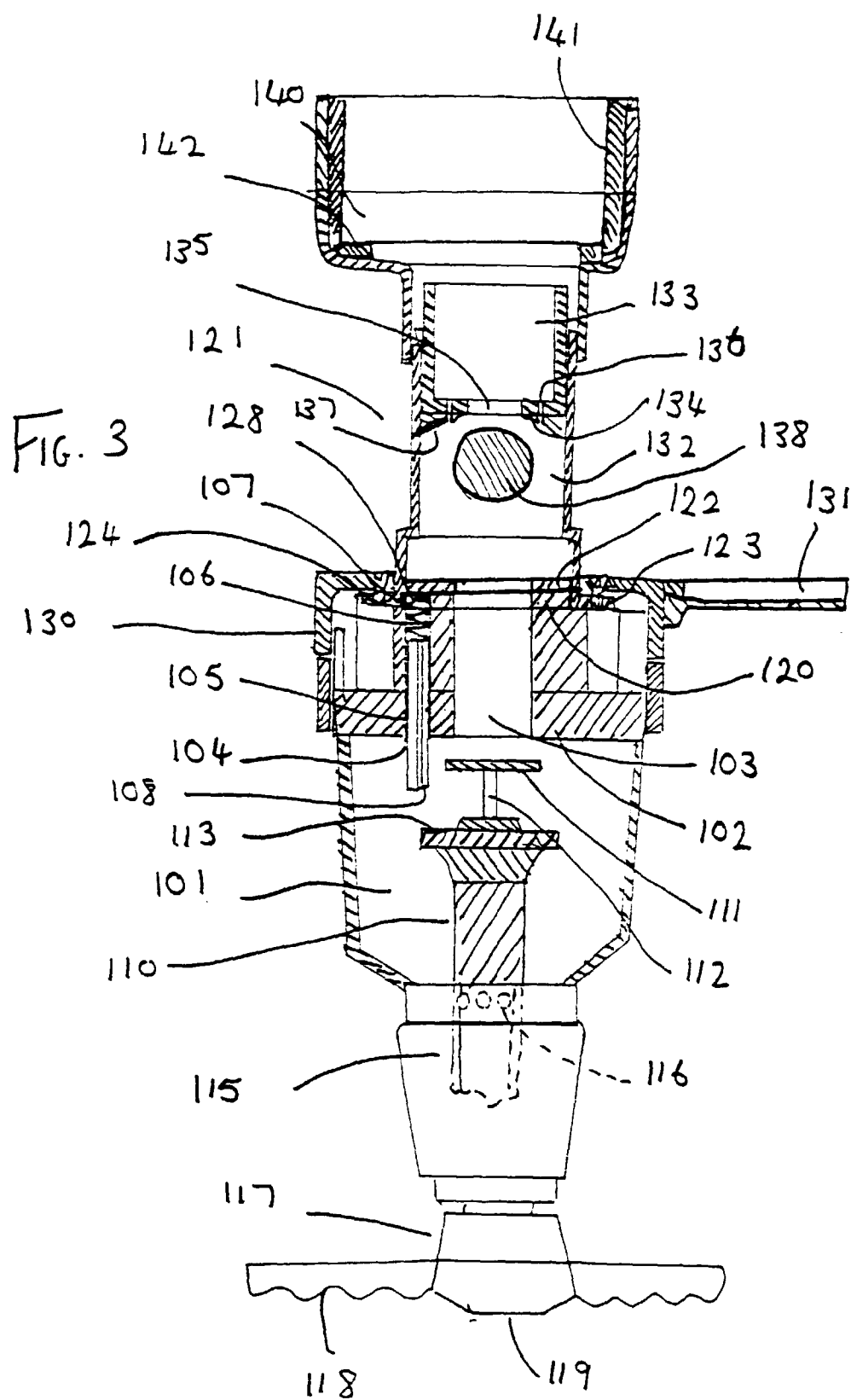


FIG. 2





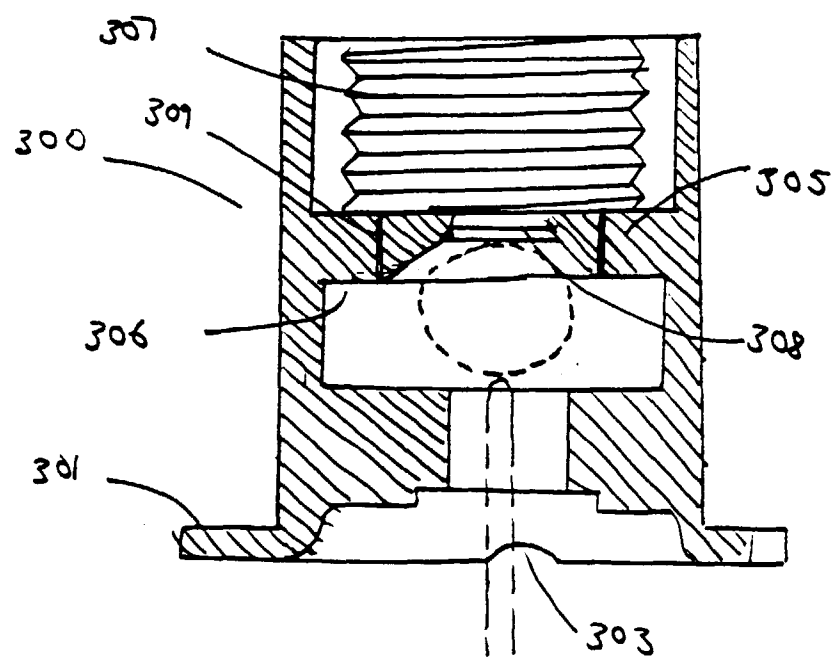


FIG. 5

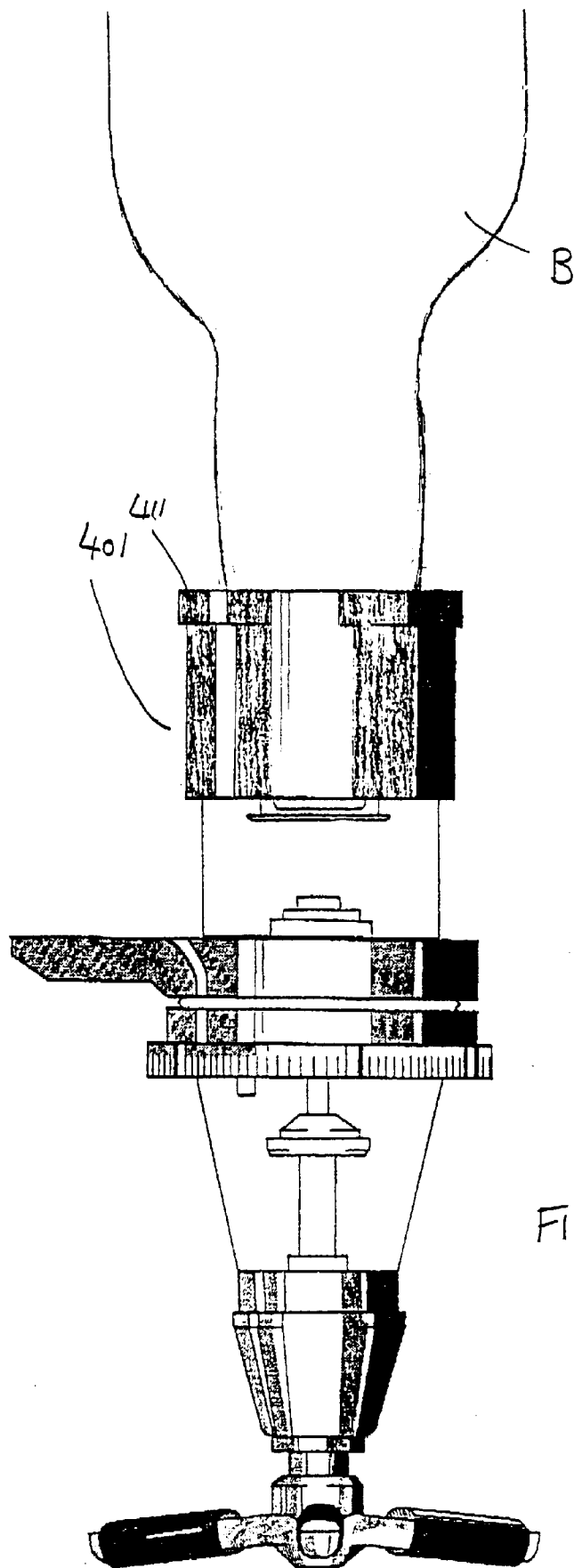


FIG. 6

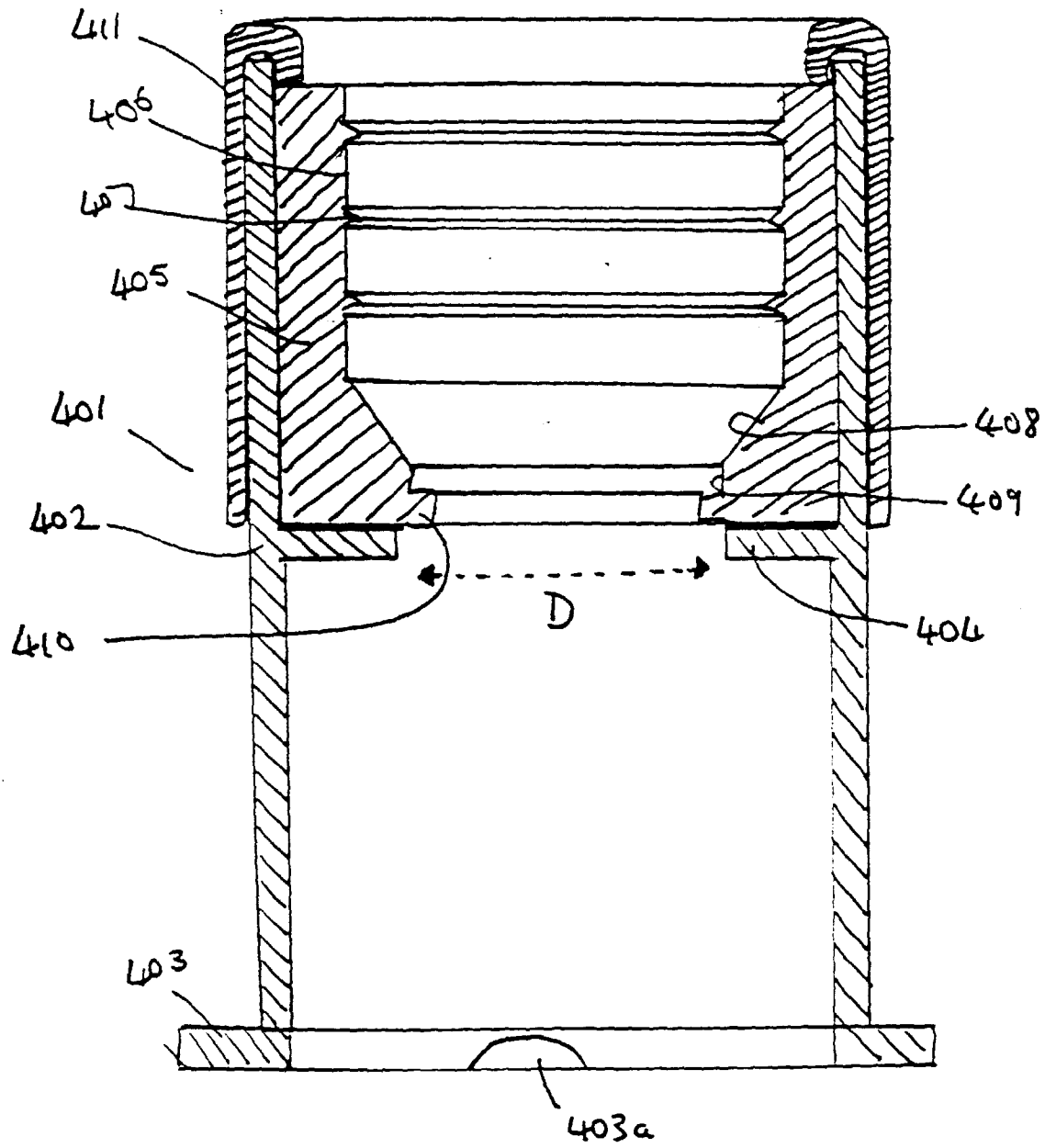
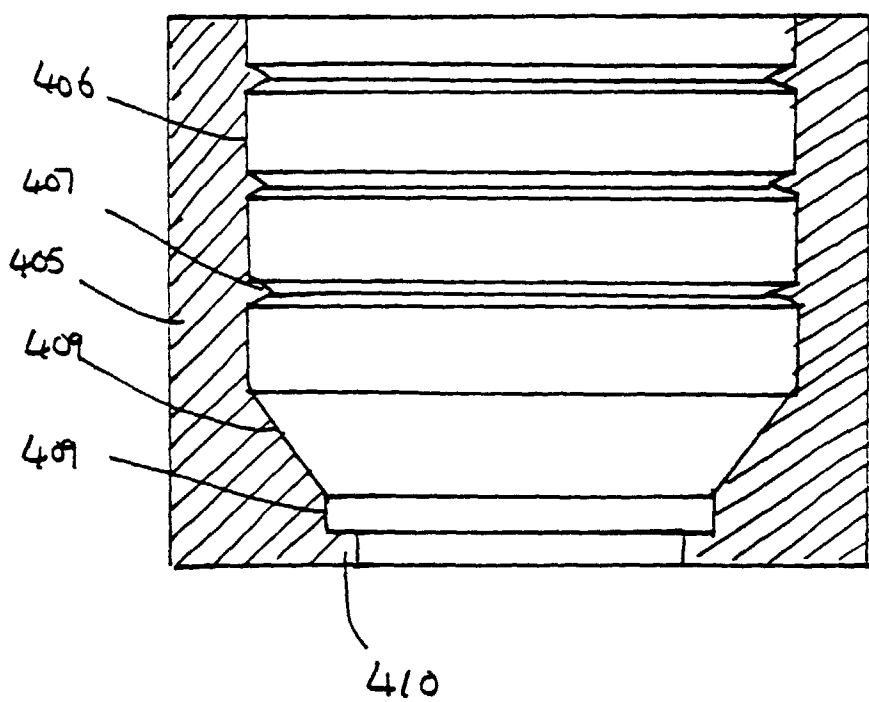


FIG. 7

FIG. 8





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 96 30 7426

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CL.6)
A	DE 43 33 236 A (TH. PETER) * the whole document * ---	1-4,6,7, 12-14	B67D3/02
A	GB 2 140 391 A (ANGELO GUALA SPA) * the whole document * ---	1-4,6, 12-14	
D,A	GB 1 148 085 A (GASKELL & CHAMBERS (NON-DRIP MEASURE) LIMITED) * the whole document * -----	1-4, 12-14	
			TECHNICAL FIELDS SEARCHED (Int.CL.6)
			B67D G01F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 20 January 1997	Examiner Smolders, R
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P04C01)