

THE JOINT EXAMINATION BOARD

PAPER P4

AMENDMENT OF SPECIFICATIONS FOR UNITED KINGDOM
PATENTS/APPLICATIONS IN PROSECUTION, REVOCATION PROCEEDINGS OR
OTHERWISE

Wednesday 31st October 2007

10.00 a.m. – 1.00 p.m.

*Please read the following instructions carefully. Time Allowed – **3 HOURS***

1. Please note the following:
 - a. Enter the Paper Number (P4) and your Examination Number in the appropriate boxes at the top of each sheet of paper.
 - b. The scripts are photocopied for marking purposes. Please write with a **dark inked pen** on one side of the paper only and within the printed margins, and do not use highlighters in your answer.
 - c. Do not state your name anywhere in the answer.
 - d. Write clearly, as examiners cannot award marks to scripts that cannot be read.
2. Under the Examination regulations **you may be disqualified from the examination and have other disciplinary measures taken against you if:**
 - a. you are found with unauthorised printed matter or other unauthorised material in the examination room;
 - b. your mobile phone is found to be switched on;
 - c. you copy the work of another candidate, use an electronic aid, or communicate with another candidate or with anyone outside the examination;
 - d. you continue to write after being told to stop writing by the invigilator(s).

NO WRITING OF ANY KIND IS PERMITTED AFTER THE TIME ALLOTTED TO THIS PAPER HAS EXPIRED.
3. **At the end of the examination assemble your answer sheets IN ORDER and put them in the WHITE envelope provided.** Do not staple or join your answer sheets together in any way. Any answer script taken out of the examination room will not be marked.

This question paper consists of 26 pages (including this instruction sheet)

THE JOINT EXAMINATION BOARD

PAPER P4

Question

A United Kingdom patent application comprising the attached specification (identified as GB 0567812.4) was filed at the UK Intellectual Property Office on **20th December 2005**, without any claim to priority. The UK Intellectual Property Office has now issued the attached Official Letter.

You have received brief comments from your client in letter form, which is also attached.

Your task is to prepare the following:

1. A full response to the UK Intellectual Property Office in response to the Official Letter, accompanied by a set of amended claims, if needed. Note that you are **NOT** required in this examination to make any amendments to the description of the client's patent application.
2. You are also asked to prepare an outline memorandum for your client, explaining the actions you have taken and why. You should provide full reasoning for your actions and provide an outline of future actions that your client could take to secure full protection for their commercial interests as outlined by your client, taking into account that further information may be needed. This future advice should only relate to the invention outlined in the client's letter to you. These notes should also be restricted to patent matters and you are **NOT** required to consider other matters such as copyright or design protection.

Note the following

- (a) You should accept the facts given to you and base your answer on those facts. In particular you should **NOT** make any use of any special knowledge that you may have of the subject-matter concerned, and you must presume that the prior art referred to is exhaustive. Where only extracts of documents are presented to you, you should assume that those extracts contain all relevant matter.
- (b) If the advice to your client includes a suggestion of filing a divisional application(s) you should draft the corresponding independent claim(s) and your memorandum should explain why filing a divisional is advisable. You should **NOT** draft a description or any dependent claims for a divisional application.
- (c) If you submit any amended claim set and/or divisional claim(s) put these at the top of the answer papers when handing in your answer and number the pages accordingly so as to readily identify the claims or claim sets.

DOCUMENT LIST

Client's Letter - 2 pages

Official Letter - 2 pages

Client's application GB 0567812.4 - 5 pages text , 5 pages drawings

US 3,210,123 (Supercovers Inc) – 3 pages text , 3 pages drawings

GB 1183985 (Polytop Corp) – 2 pages text , 1 page drawings

LETTER FROM CLIENT

2-Can, Ltd.

Coker St

Lyme Regis

Mr X S Billing
Patent Attorney
Protection St
Holbourne

Dear Mr Billing,

Please find enclosed an application that I have drafted myself and filed with the UK Intellectual Property Office. The application number is GB 0567812.4 (published as GB 2468642). I tried to draft the application broadly but I am not sure if it covers all that my company does because we sell not only containers but also covers for containers. The UK Intellectual Property Office has now sent me a report and I think I need your assistance to deal with it.

From the report, I see that my idea is not as new as I thought it was. Clearly the concept of a swivelling spout has been thought of before and is mentioned in US 3210123 and GB 1183985. Furthermore, the vent-hole shown in the US document, which makes it easier to suck or pour out of a relatively rigid container, seems to have been anticipated. Pity – I rather liked this feature. However, I still think my design has a neat mechanism for holding the spout in the closed position that advantageously positively prevents leakage from the container when the spout is secured against the top of the lid. I envisaged my cap for use with a beverage container, a simple beaker or a can, as well as with a double-walled heat-insulating beaker.

Incidentally, US 3210123 uses integrally moulded trunnions or hinge projections, instead of my pin. My pin is a straightforward alternative to using trunnions.

I rather like my idea of having the internal straw or pipe which extends into the container and I intend to use this idea in a follow-up product.

Please respond to the Examiner's objections to obtain the best possible protection whilst keeping costs to a minimum at this stage. I can see that the deadline for the response is imminent and I would like to have this matter settled as quickly as possible. Unfortunately, I will be away on business by the time you receive this letter, so I hope you have all the information you need to respond. However, please send a memo for my review when I return outlining what you have done and why.

Yours sincerely,

J Straw

Managing Director

OFFICIAL LETTER**UK Intellectual
Property
Office**

Application No: 0567812.4
Applicant: 2-Can Ltd
Examiner: Davey Jones

Latest date for reply: 1st November 2007

**PATENTS ACT 1977
Examination Report under Section 18(3)****Prior Art cited**

1. The following documents will be referred to throughout this communication:

D1: US 3210123 (Supercovers Inc)	Published: 22 March 1978
D2: GB 1183985 (Polytop Corp)	Published 11 March 1970

Novelty/Obviousness

2. The invention as it appears in claim 1 is not new because of US 3210123 (D1). This document shows a cover assembly for a drinks container, having a cover 14 and a spout 16 that can be pivoted from a closed position to an open position.

3. Moreover the features of claims 2-4 and 6-8 are also shown in D1; see:

Claim 2 Blocking configuration, Figure 4A

Claim 3 Position of trunnion 28

Claim 4 Compare figures 4A and 4B

Claim 6 See well 18 in Figure 2

Claim 7 Vent 26 and holes 32, 34 in Fig. 4B

Claim 8 Seal afforded by screwing cover 14 on to flask 10

4. D2 also appears to anticipate all the features of claim 1 at least in that the document discusses a rotatable spout dispensing closure used with containers where the spout member 14 may be located in closure top 12 by trunnions 40 which allow for movement of the spout between open and closed positions.

5. Claim 5 does not seem to be inventive: making the enlarged end cylindrical would appear to be an obvious modification, given the rotating action described in D1 and D2.

dti

Clarity/ Support

6. The use of the word "cylinder" in claim 5 has no antecedent and therefore renders the claim unclear.

Yours faithfully,

Davey Jones

Examiner

dti

Cap and Tube Apparatus

The present invention relates to a cap and tube apparatus, in particular a cap and drinking straw apparatus for application to a bottle or can.

5 It is known to penetrate the cap of a container with a drinking straw in order to suck up a drink or indeed to insert a straw into the open top of a can, cup or flask for the same purpose.

This has disadvantages in that once opened the container cannot in many cases be resealed with the original lid or seal and the contents therefore have a limited life once opened. Furthermore, drinks vessels, once opened, are liable to spillage, and even in the
10 case of bottles that are resealable there is some inconvenience in having to remove the straw and replace the lid between drinks.

It is therefore an aim of the present invention to provide a straw apparatus in particular for a beverage container which advantageously combines the features of a straw and a seal so that the can or bottle may be easily resealed, avoiding spillage and leakage while
15 providing an efficient means of withdrawing the contents of the vessel.

According to the present invention there is provided a cap for covering the opening of a container, in which the cap has a through-hole and an open-ended tube extending from the outer end of the through-hole, the tube being movable between a first configuration and a second configuration, wherein in the first configuration of the tube the bore of the
20 tube is continuous with the through-hole and in the second configuration of the tube the through-hole is blocked.

Advantageously the cap is provided with a container-sealing means around its periphery and is adapted to fit in a sealed manner over a drinking vessel such as a can, cup or bottle, and provides an airtight seal when the tube is in the second configuration and the
25 through-hole is closed, and access to the contents of the vessel via the tube and the through-hole when the tube is in the first configuration. Advantageously the cap is provided with a pipe that extends downwardly from the through-hole into the contents of the vessel so that suction on the tube when in the first position causes the contents to transfer up the pipe and the tube and out of the vessel.

30 In a preferred arrangement the tube is rotatable about its end adjacent the through-hole. In an exemplary embodiment the tube is rotatable through approximately 90° so that in a vertical orientation relative to the cap the bore of the tube is co-axial with the through-hole

and forms a continuous path with the through-hole and the pipe through which contents of a vessel can pass. The tube may be rotated through 90° so as to lie in a horizontal position, the wall of the tube in the region of the pivot end acting to block the upper end of the through-hole thereby preventing the exit of the contents of the drinking vessel.

Advantageously the cap is provided with a groove adapted to the shape of the tube so that when in the horizontal position the tube fits into the groove. In one arrangement, the groove and tube are rectangular in section.

A further advantageous feature is a means of keeping the tube in its blocking position by including a means for retaining the tube horizontal within the groove.

The invention is also directed to a container including a cap and a means of attaching and sealing the cap to the container.

The invention is also directed to a method of converting an existing container to a sealed one by applying the cap and tube apparatus.

For a better understanding of the invention and to show how the same may be put in effect, reference will now be made, by way of example, to the accompanying drawings, in which:

Fig. 1 is a perspective view of an embodiment of the invention;

Fig. 2 is a view of the invention from above showing the cap with the tube in the lowered position;

Fig. 3 is a sectional view of the invention showing the tube in the lowered position;

Fig. 4 is a view from above showing the tube in its raised position;

Fig. 5 is a sectional view showing the tube in its raised position;

Fig. 6 is a perspective view of a can and the cap in accordance with the invention; and

Fig. 7 is a perspective view of a cup and the cap in accordance with the invention.

Referring first to **Figure 1**, a cap 2 in accordance with the present invention is shown in relation to a simple drinking vessel. The cap 2 may be applied to the vessel 1 so that the rim of the vessel 1 and a channel in the cap 2 mate firmly and sealably to prevent the cap 2 coming off and to prevent leakage of the contents of the vessel 1 from around the periphery of the cap.

The cap 2 is provided with a rectangular groove 21 in its upper surface, which extends from one end to the peripheral edge of the cap 2 and is open, and at the other end terminates within the bounds of the cap 2 and is closed. At its closed end the groove 21 is provided with a deeper concave section, the opposite side walls of which are provided with corresponding positioning holes 22 adapted each to receive the ends of a pin 23.

In the base of the concave section of the groove 21 is provided a bore 25 which penetrates the cap 2. At the lower end of the bore 25 is arranged a spigot 26 which mates detachably with an elongate tube or pipe 27, which is an optional feature. However, the elongate tube may be a feature that is formed integrally with the cap or any other type of cap having a spout and which is arranged to extend downwardly from the cap 2 and into the vessel 1. The length of the tube 27 may vary to match the dimensions of the container to enable the whole depth of the contents of the container to be sucked up through the tube as using the internal tube 27 makes it possible to drink from the container whilst holding it upright.

A rectangular tube for use as a drinking straw 24 is provided which has a bore 243 which extends throughout the length of the straw 24 and is open at either end. The tube or straw 24 has a length greater than the radius of the cap and is adapted to lie in the groove 21. It is provided with an enlarged section 24a which fits into the concave section of the groove 21. A hole 242 is provided in the enlarged section, through which a hinge pin 23 passes. The hinge pin 23 is inserted at either end into positioning holes 22 in the concave section so that the straw 24 is rotatable about the hinge pin axis between a vertical orientation and a horizontal orientation (lying in the groove 21). The enlarged section 24a and the deeper concave section of the groove 21 have a substantially cylindrical shape on whose axis is located hinge pin 23, to allow smooth rotation of the straw 24 about the hinge pin 23. In the vertical orientation the bore 243 of the straw is continuous with the bore through the cap 2. However, in the horizontal orientation, the wall of the enlarged section 24a blocks the bore 25 at its entrance thereby sealing it against the flow of the contents of the vessel 1.

The straw 24 is further provided with a projection 241 located at a position roughly half-way between the pivot pin 23 and the end, which is adapted to mate with an air hole 28 provided in the base of the groove 21. The air hole 28 extends right through the cap 2 and when the straw 24 is in its vertical position is open to allow the flow of air between the vessel and the exterior. When the straw 24 is closed, however, the projection 241 snap fits into the air hole 28 and plugs and seals it, thereby preventing spillage from the container.

In **Figures 2 and 3**, the invention is shown with the straw 24 folded down so that it is positioned horizontally in the groove 21. The projection 241 on the straw 24 is shown inserted into the air hole 28 in the groove 21 of the cap 2. By this means the straw 24 is held in its horizontal position and may only be raised by the exertion of some positive force thereby preventing the inadvertent opening of the bore 25. In this horizontal position the wall of the enlarged section 24a is shown to be blocking the bore 25, preventing any flow through the bore 25 while the flow of air through the air hole is prevented by the projection 241.

In **Figures 4 and 5**, the straw 24 is shown rotated through approximately 90° about the hinge pin 23 so that the straw 24 is in a vertical position in relation to the cap 2. When the straw 24 is in this position, the bore-tube 243 is continuous with the bore 25 of the cap 2 and allows the flow of the contents of the vessel 1 through the cap 2. To facilitate the sucking of the contents through bores 26 and 243, the air hole 28 in this orientation is open and acts as a pressure equalising hole to allow the contents of the vessel to be sucked out easily.

In **Figures 6 and 7**, the invention is shown in application to a can 30 and a mug 40. However, the cap in accordance with the invention may be dimensioned so as to be applied to any vessel. Furthermore, the cap has been described to be attachable to a container by means of a resilient mating of a groove in the cap 2 and the rim of the container. However, it is envisaged that the cap may be secured to the container by means of a suitably dimensioned screw fitting.

CLAIMS:

1. A container having a cap for covering a mouth of the container, said cap having a through-hole and an open-ended tube extending from the outer end of the through-hole, the tube being movable between a first configuration and a second configuration wherein in the first configuration of the tube its bore is continuous with the through-hole, and in the second configuration of the tube the through-hole is blocked.
2. A container and cap according to claim 1 in which in the second configuration of the tube the through-hole is blocked by the wall of the tube.
3. A container and cap according to claim 1 or 2 in which the tube is rotatable about its end adjacent the through-hole.
4. A container and cap according to claim 3 in which the angular displacement between the first position of the tube and the second position of the tube is approximately 90° .
5. A container and cap according to claim 3 or 4 in which the end of the tube adjacent the through-hole has an enlarged section of substantially cylindrical shape, the axis of the cylinder being perpendicular to the axis of the tube so as to afford the said rotation of the tube and so that, in the second configuration of the tube, the cylinder wall blocks the through-hole.
6. A container and cap according to any preceding claim in which the tube, in its second configuration, lies in a groove provided in the cap.
7. A container and cap according to any preceding claim, in which an air hole is provided through the cap, said air hole being open when the tube is in the first configuration and blocked when the tube is in the second configuration.
8. A container and cap according to any preceding claim in which the cap has a seal adapted to fit over the rim of the container.

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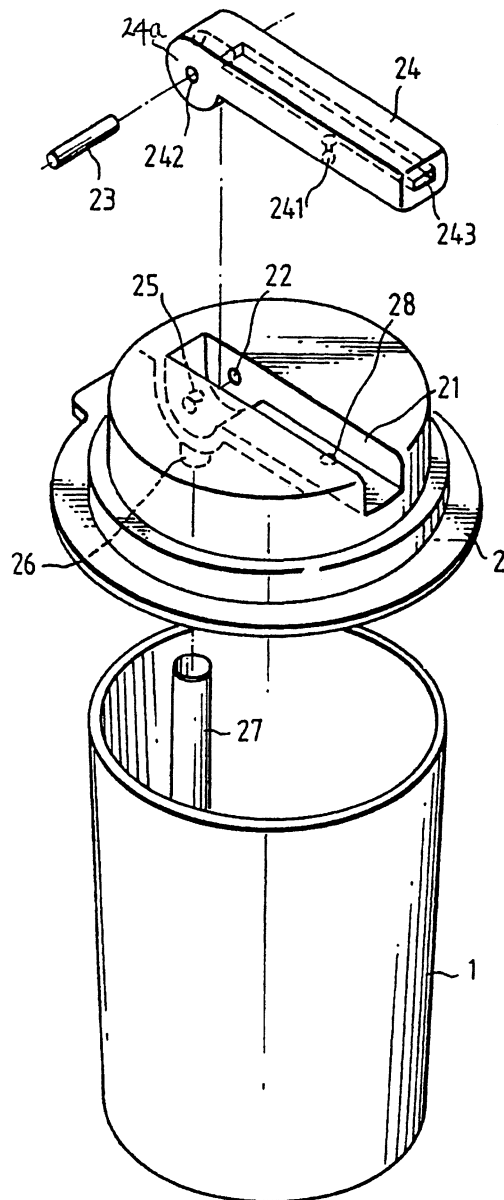


FIG. 1

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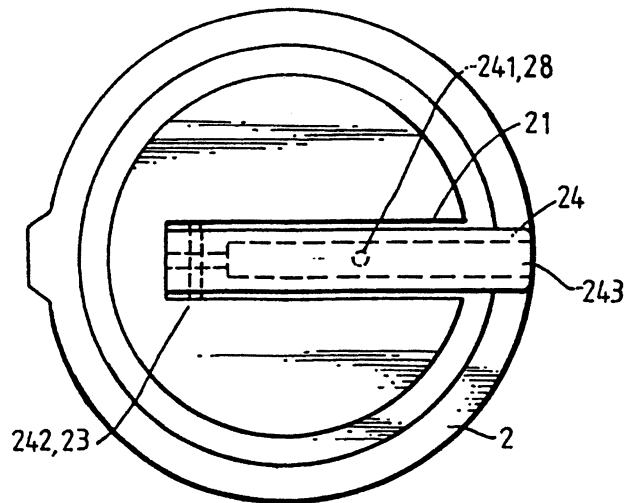


FIG. 2

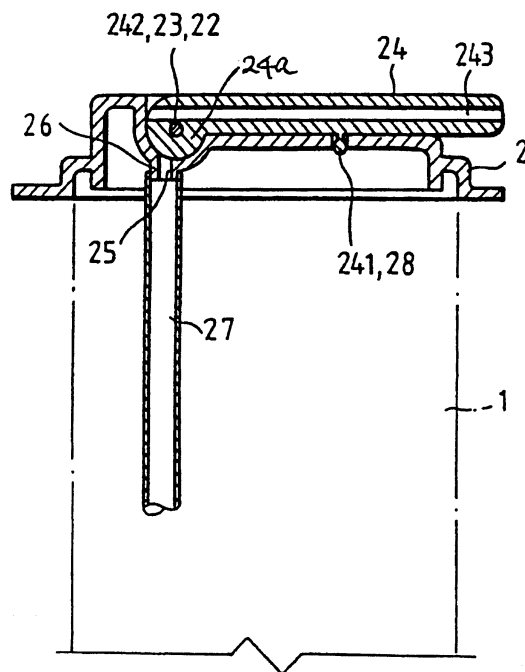


FIG. 3

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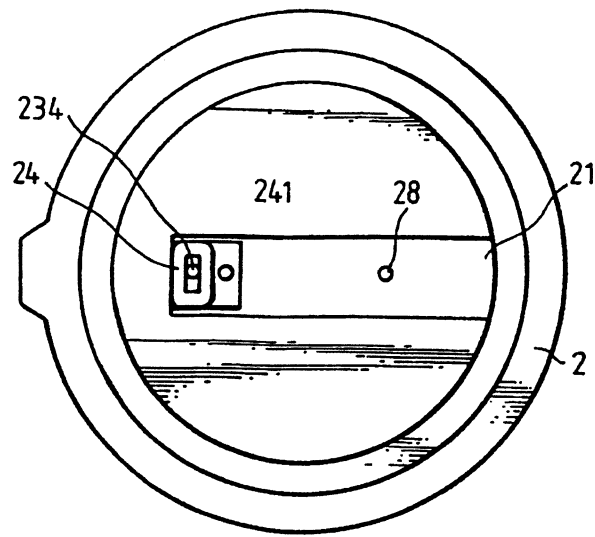


FIG. 4

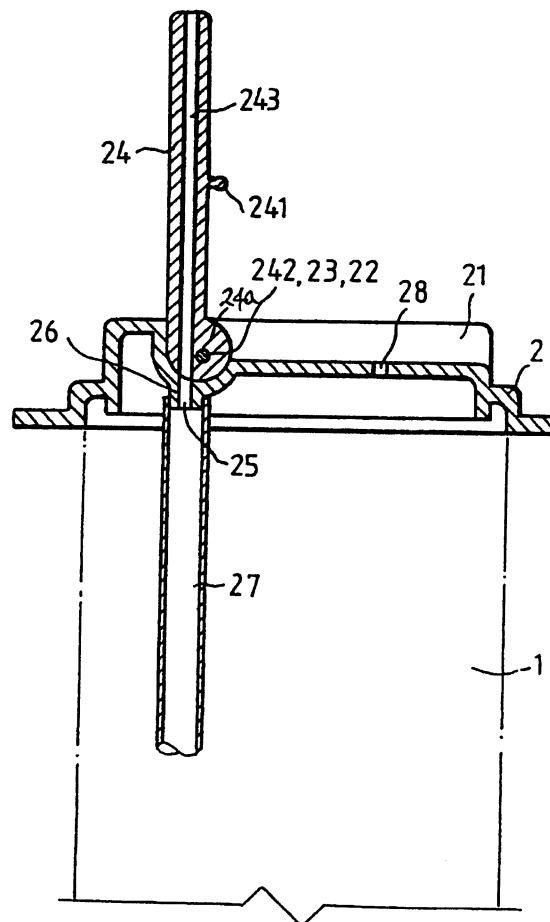


FIG. 5

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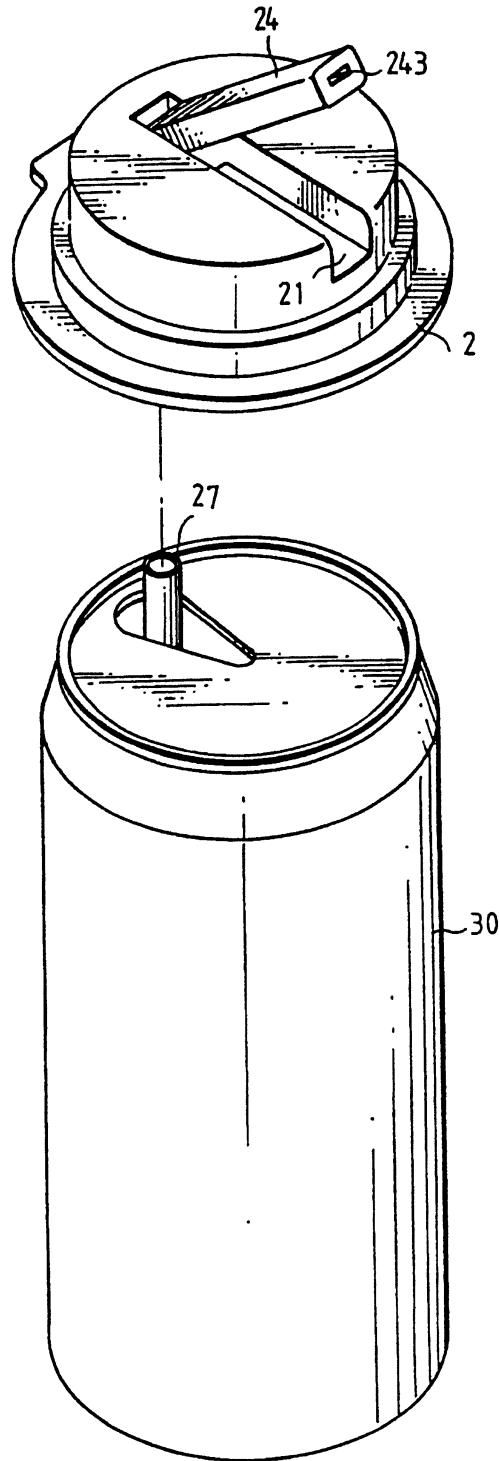


FIG. 6

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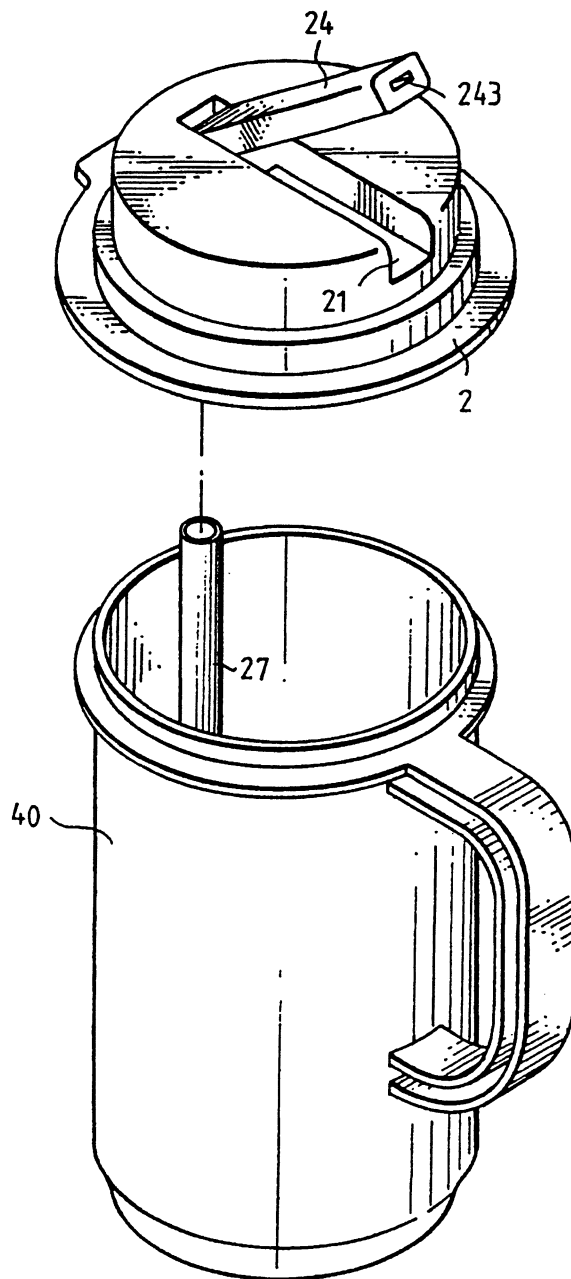


FIG. 7

US 3210123

CONTAINER CLOSURE

The present invention relates to a cover assembly for a container such as a flask or drinks can which has a pivoting spout that in the closed position lies flat on, or
5 preferably flush within, the cover, and in the open position projects from the cover for dispensing drink or other liquid.

The movable spout in the assembly of the present invention is held more positively in its open and closed positions by the snap action of an over-centre leaf spring that engages trunnions (supporting cylindrical projections) extending outwardly from the spout.

10 The cover assembly of the invention will be described in conjunction with a vacuum flask by way of example.

The dispensing spout may be closed into the plane of the cover thereby closing all orifices and openings through the cover; or it may be moved to its upright position thereby opening dispensing holes and vents in the cover to permit contents to be freely
15 poured through the dispensing openings, or to permit a drinking straw to be inserted through the openings.

For a better understanding of the invention, embodiments of it will now be described, by way of example, with reference to the accompanying drawings, in which:

FIG. 1 is a side view of a vacuum flask which may be constructed to incorporate the
20 teachings of the present invention;

FIG. 2 is a top plan view of the cover of the vacuum flask of FIG. 1;

FIG. 3 is a bottom view of the flask of FIG. 2;

FIGS. 4A and 4B are cross-sectional views taken along the line 4--4 of FIG. 3 and showing the dispensing spout respectively in its open and closed positions;

25 FIGS. 5A and 5B are cross-sectional views taken along the line 5--5 of FIG. 3 and also showing the spout respectively in its open and in its closed positions;

and

FIG. 6 is a bottom view, partially cut away, of the cover shown in FIG. 3.

The bottle includes a body section 10 and a top 12 which is screwed onto the body section. The body section may have a double-wall construction as is usual in vacuum flasks.

5 An inner cover 14 is screwed into the open top of the body 10. A spout 16 is mounted in a well 18 in the cover 14. The spout 16 may be turned between an upright open position, as shown, and it also may be turned down into the well 18 to a closed position.

The spout 16 includes a dispensing opening 20 which extends from one end of the spout to the other, and it also includes a vent opening 22 which likewise extends from one end of the spout to the other. The cover 14 has a dispensing opening 24 (FIG. 6),
10 and it also has a vent opening 26, visible in a cut-away view. When the spout 16 is in the upright position shown in FIGS. 2, 4B and 5B its dispensing opening 20 is aligned with the dispensing opening 24 in cover 14, and its vent 22 is aligned with the vent 26 in the cover.

Accordingly, when the spout is in its upright position, the contents of the bottle may be
15 freely poured through the aligned dispensing openings 24 and 20, while air enters through the vent 22, continuing through the corresponding vent opening 26 in the cap, through the holes 34 and 32 and into the body of the bottle. When the spout is turned down to the closed position shown in FIGS. 3, 4A and 5A it covers the openings 24 and 26 in the cover, effectively closing those openings. The spout 16 has a pair of integral
20 trunnions 28, as best shown in FIGS. 5A and 5B, which engage the arms of a bifurcated resilient leaf spring 30.

The spout 16 has a rectangular section, so that when it is turned from its closed position shown in FIGS. 3, 4A and 5A to its open position shown in FIGS. 2, 4B and 5B the trunnions move upwardly against the arms of the leaf spring element 30, forcing the
25 arms upwardly until the spout reaches the upright position of FIG. 2, at which time the arms move downwardly in an off-centre action causing the spout to be held securely in its open position.

On the other hand, when the spout is turned down from its open position of FIGS. 2, 4B and 5B to its closed position of FIGS. 3, 4A and 5A the trunnions 28 again move
30 upwardly against the arms of leaf spring element 30 until the spout reaches a particular angular position at which time the trunnions move downwardly, under the bias pressure of the arms of leaf spring 30, and the spout then moves to its closed position. The spout

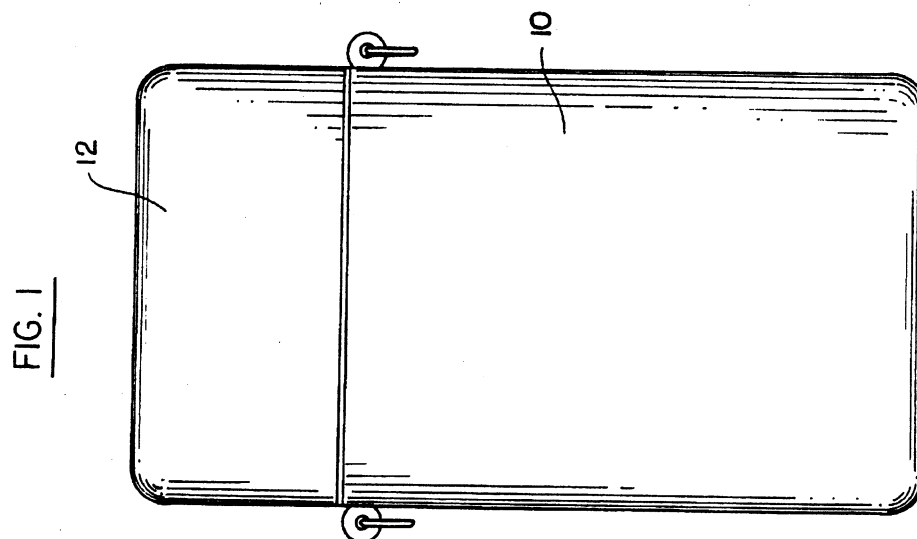
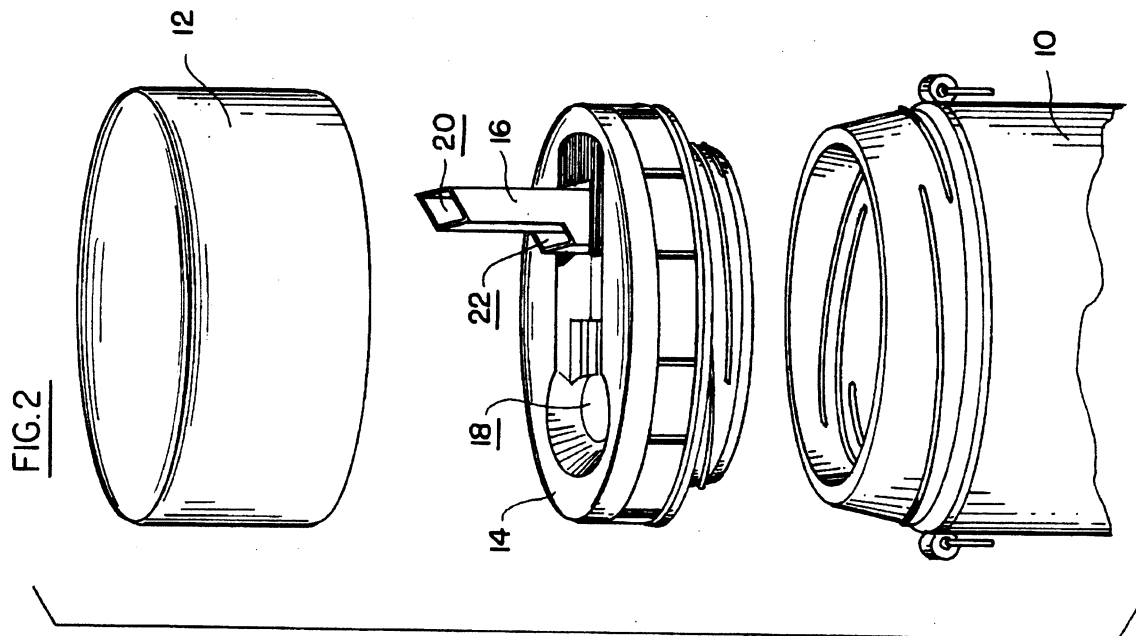
is securely held in either its closed position or its open position by the resilient force of the arms of leaf spring 30.

US Patent

Mar. 22, 1978

Sheet 1 of 3

3,210,123



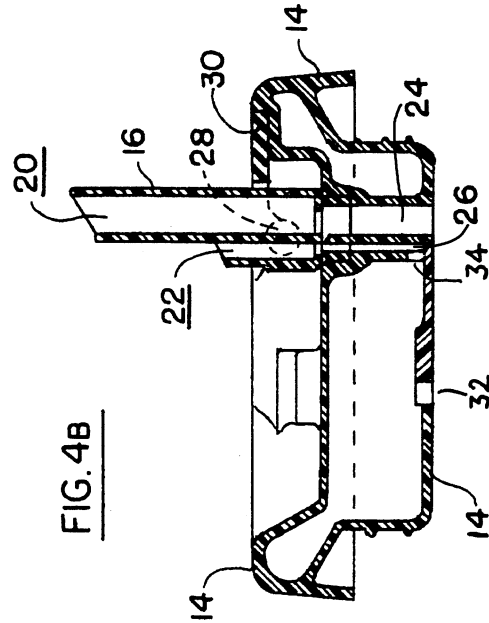
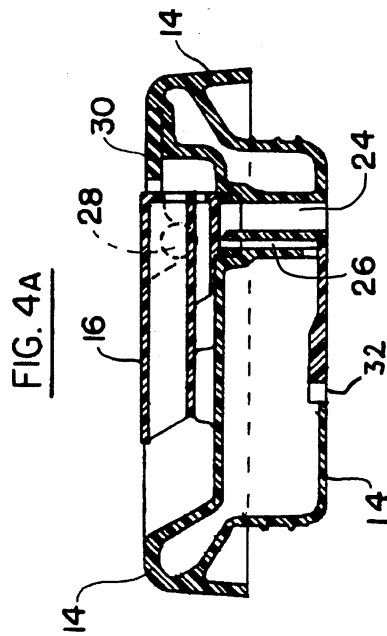
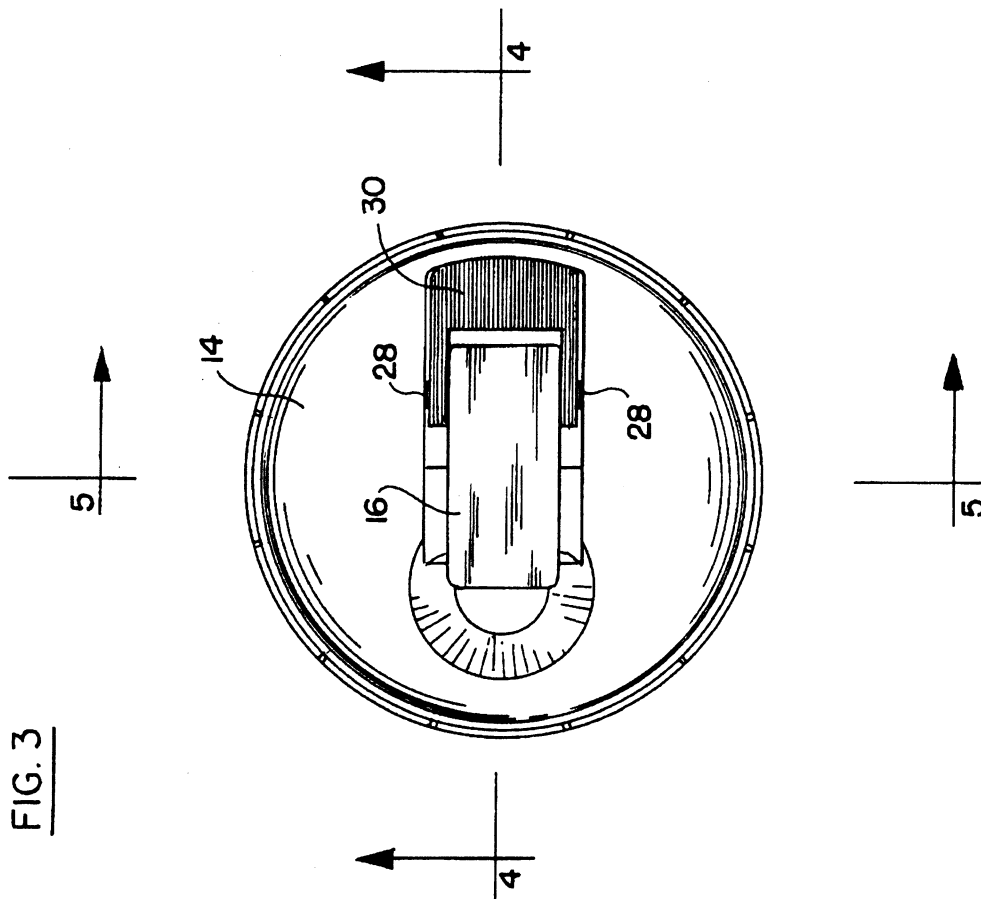


FIG. 6

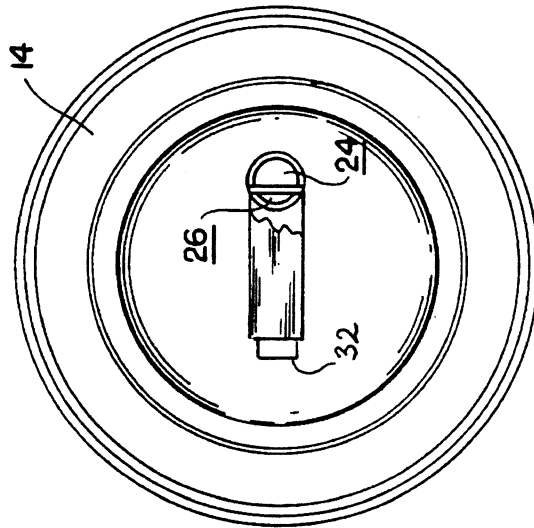


FIG. 5A

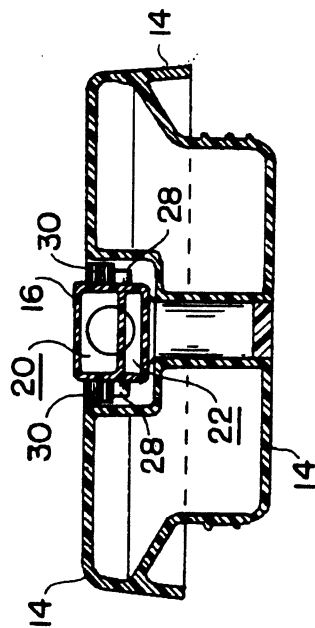
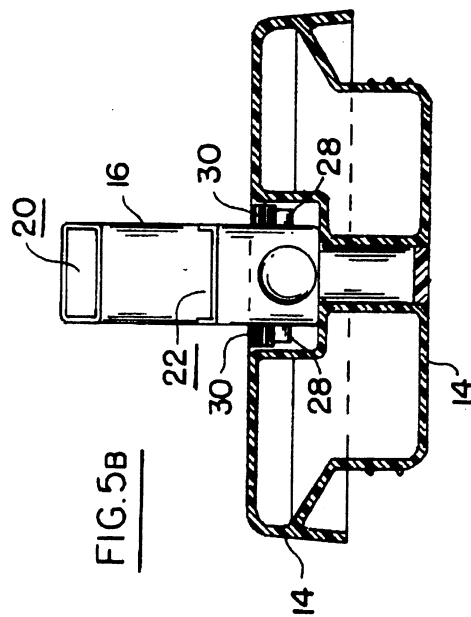


FIG. 5B



Complete Specification Published: 11 March, 1970

A Rotatable Spout Dispensing Closure

This invention relates to dispensing closures of the rotatable spout type primarily used in packaging and dispensing a number of different types of goods. Such closures must not only be inexpensive, but they must also be reliable and easy to use. Also when used on a package containing a fluid, there should be little or substantially no chance of these closures leaking. The invention is directed to dispensing closures used with squeezable containers made from injection-moulded thermoplastics, which avoids the need for venting the container as venting can be achieved by air returning through the dispensing spout itself after the dispense operation.

In order that the invention may be well understood there will now be described one embodiment thereof, given by way of example only, reference being had to the accompanying drawings, in which:

Fig. 1 is an isometric view of a dispensing closure embodying the invention;

Fig. 2 is a cross-sectional view taken at line 2-2 of Fig. 1;

Fig. 3 is a cross-sectional view of the closure top with the spout member removed, this view being taken in the same direction as line 2-2 of Fig. 1, and

Fig. 4 is a perspective view of the spout member.

In Fig. 1 there is shown a complete, assembled dispensing closure 10 having two pieces, a closure top 12 and a spout member 14. Preferably the closure top is formed out of a somewhat resilient, somewhat deformable material capable of being temporarily deformed and returning to an initial configuration when present in relatively thin parts or members. This may be the same or of a different type of thermoplastic than the container itself.

The closure top 12 includes a top 16 proper and a conventional skirt 18 used in attaching the entire closure top 12 to a container. Within the top 16 there is located a centrally located cavity 20 of generally rectilinear configuration. From one side of the cavity 20 a slot

22 extends to the periphery of the top 16 adjacent to the juncture of this top 16 and the skirt 18. Within the bottom of the cavity 20 an opening 24 passes through a bottom wall into the interior of the skirt 18. This opening 24 is used for dispensing purposes.

Within the cavity 20 the wall 26 preferably carries an integrally formed, projecting sealing ring 28 capable of temporary deformation during the assembly and use of the complete dispensing closure 10. The particular sealing ring 28 shown extends in a circular path coaxially around the opening 24. In cross-section it has the appearance of an inverted V, the centermost wall of which is aligned with and forms a continuation of the wall of the opening 24.

The opening 24 and the sealing ring 28 are located midway between side walls 30 of the cavity 20. From these side walls 30 there extends within the top 12 identical bearing recesses 32.

Tapered walls 36 extending along the cavity 32 receive trunnions 40 located on the base of the spout 14. This construction is designed so that the spout member 14 may be inserted within the closure top 12 by merely locating the trunnions 40 generally upon the upper areas of the tapered walls 36, and then by applying pressure to the spout member 14 so as to force the trunnions 40 through an entrance formed by the tapered walls 36 so they sit in the cavity 32. As this occurs the portion 46 engages and deforms the sealing ring 28 by contact with it. This seal exists when the spout member 14 is in a closed position as indicated in Figs. 1 and 2 of the drawing as well as when the spout member 14 is in an open position as indicated in phantom in Fig. 2 of the drawing. The spout member 14 may be rotated easily and conveniently between these two positions.

Fig.1.

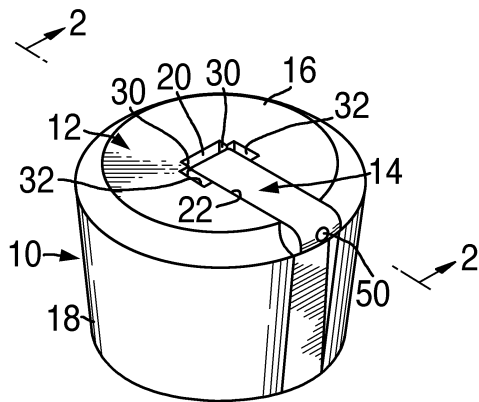


Fig.2.

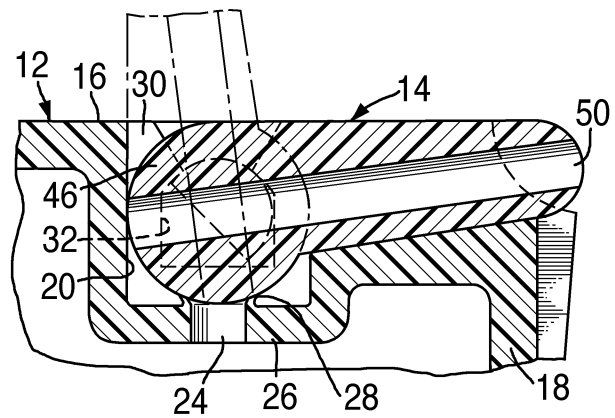


Fig.3.

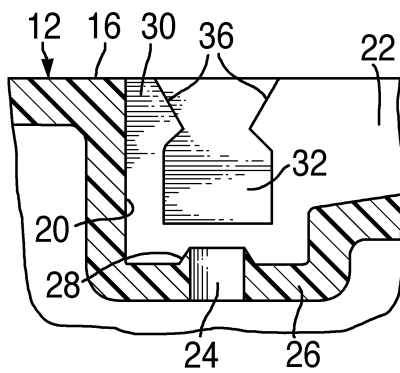


Fig.4.

