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(54) **VESSEL FOR CONTAINING LIQUID**

**BEHÄLTER FÜR FLÜSSIGKEITEN**

**RECIPIENT POUR LIQUIDE**

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## Description

### Technical Field

The present invention relates to a vessel for containing liquid such as water, oil or detergents in liquid form, and more particularly, to an improved liquid-containing vessel, such that the liquid can be smoothly discharged without generating internal low pressure and the resulting, loud gurgling sound.

### Background Art

As shown in FIG. 1 in a conventional vessel for liquid, a liquid discharging portion 12 is formed on the upper portion of a container 11 in which liquid is contained, and a gripping portion 13 is formed in one side of container 11. As shown in FIG.2 as another example, a vessel for containing liquid has a structure in which a cover 24 can be separated from a container 21 having a handle grip 23, and has been widely used.

However, in such a conventional vessel for containing liquid and having the above structures as shown in FIGs. 1 and 2, when liquid 10 (or 20) in container 11 (or 21) is discharged from the vessel, external air must enter the container via liquid discharge portion 12 (or 22) to equalize the pressure difference created. Concurrent with this air intake, the liquid in container 11 (or 21) is being discharged from the vessel. Accordingly, when large amounts of liquid are poured from the vessel, the air intake into container 11 (or 21) is insufficient or becomes blocked altogether. Accordingly, a pressure difference is generated between the interior and exterior of the vessel. Due to this pressure difference, when the liquid is poured, an alternating action ensues, i.e., gushing of the liquid and air intake, such that the liquid flows sporadically and makes a loud gurgling sound.

To overcome the above problem, a vessel for containing liquid has been developed as shown in FIG.3. In FIG.3, on its top portion, the vessel has an air intake portion 35 which is separated from a liquid discharge portion 32 having a spout cap 37. The vessel for containing liquid having such a structure has usually an intake cap 36 for preventing foreign matter from entering the vessel and to prevent spillage during the vessel's transport.

Such a vessel for containing liquid can prevent the liquid from making the loud gurgling sound when poured. However, since air intake portion 35 for air intake is separated from with liquid discharge portion 32, the user is inconvenienced in that intake cap 36 and spout cap 37 should both be opened whenever the liquid is to be discharged.

A prior art container of a similar kind is known from document DE-C-363791. With this container, the liquid discharge portion is placed within the air intake portion.

## Disclosure of the Invention

Therefore, to solve the above problems, it is an object of the present invention to provide an improved vessel for containing liquid in which an air intake portion and a liquid discharge portion are integrally formed, thereby enabling liquid to be smoothly discharged without generating internal low pressure and the resulting, loud gurgling sound when the liquid is discharged without separate air inlet means.

To accomplish the above object of the present invention, according to the present invention, there is provided a vessel for containing liquid comprising:

- a container for containing liquid;
- a gripping portion which is separated from one side of the container and extended upward, having an air intake portion on the top of the gripping portion, wherein air flowing via the air intake portion passes through the gripping portion and communicates with the container; and
- a neck portion which is separated from the other side of the container and extended upward, having a liquid discharge portion for discharging liquid from the container on the top of the neck portion, wherein the neck portion passes through the bottom of the air intake portion formed in the upper portion of the gripping portion and protrudes into the air intake portion.

### Brief Description of the Drawings

The above object and other advantages of the present invention will become more apparent by describing in detail a preferred embodiment of the present invention with reference to the attached drawings in which:

FIG.1 is a cross-sectional view of a conventional vessel for containing liquid;

FIG.2 is a cross-sectional view of another conventional vessel for containing liquid;

FIG.3 is a cross-sectional view of still another conventional vessel for containing liquid having an air intake opening separated from a liquid discharge portion;

FIG.4 is a cross-sectional view showing a vessel for containing liquid according to a first embodiment of the present invention;

FIG.5 is a perspective view of the vessel for containing liquid of FIG.4;

FIG.6 shows a discharging state in the vessel for containing liquid of FIG.4;

FIG.7 is a cross-sectional view showing a vessel for containing liquid according to a second embodiment of the present invention;

FIG.8 is a cross-sectional view showing a vessel for containing liquid according to a third embodiment of

the present invention;

FIG.9 is an exploded cross-sectional view of the vessel of FIG.8;

#### Best Mode for Carrying out the Preferred Embodiments

According to a first embodiment of the invention, as shown in FIGs.4 and 5, a vessel for containing liquid comprises a container 41 for containing liquid (40), a gripping portion 42 which is separated from one side of container 41 and extended upward, having an air intake portion 43 on the top of the gripping portion, wherein air flowing via air intake portion 43 passes through gripping portion 42 and communicates with container 41, and a neck portion 44 which is separated from the other side of container 41 and extended air intake portion 43. Also, gripping portion 42 is designed to have a structure in which external air flowing through a space between air intake portion 43 and liquid discharge portion 45 can pass through gripping portion 42 to thereby enter container 41.

As shown in FIGs.4 and 5, as an example of a means for preventing foreign matter from entering the vessel and to prevent spillage during the vessel's transport, a cap 46 having a hinge structure is provided so as to be capable of simultaneously covering air intake portion 43 and liquid discharge portion 45.

FIG.6 shows a discharging state in connection with the vessel for containing liquid of the above-described first embodiment (FIG.4).

As shown in FIG.6, if the vessel is tilted after opening cap 46 which is located on the upper end of the vessel, the liquid 40 in container 41 is discharged via liquid discharge portion 45, as indicated by arrow "A," and external air flows into the vessel via gripping portion 42 from air intake portion 43, as indicated by arrow "B." Here, since the intake of the external air into the vessel is not interrupted by the liquid being discharged, the internal pressure of the vessel maintains the same level as the surrounding atmosphere. Accordingly, liquid can be smoothly poured from the vessel. Also, since liquid discharge portion 45 and air intake portion 43 are in the same position, when the liquid is to be discharged, the opening of a single cap (cap 46 only) is sufficient. Accordingly, contrary to the conventional vessel for containing liquid of FIG.3, a separate air intake opening 35 and intake cap 36 are not needed.

FIG.7 shows a second embodiment of the present invention. In FIG.7, a gripping portion 72 is extended upward from the upper surface of one side of a container 71, and bent so as to be substantially parallel to the upper surface of container 71. A neck portion 74 is extended upward from the upper surface of the other side of container 71, and is shorter than that of neck portion 44 of the first embodiment (FIG.4). Liquid discharge portion 75 for discharging liquid 70, which is located on the top of neck portion 74, passes through the lower surface of air intake portion 73 and protrudes

outwardly. Here, cap 76 is provided so as to simultaneously cover air intake portion 73 and liquid discharge portion 75.

FIG.8 is a cross-sectional view showing a vessel for containing liquid according to a third embodiment of the present invention. FIG.9 is an exploded cross-sectional view of the vessel of FIG.8.

Differently from FIG.4, the top portion of neck portion 84 communicates with the lower surface of air intake portion 83 which is located on the top portion of gripping portion 82. Here, a separate liquid discharge portion 85 is designed to be attachably and detachably fixed to the top portion of neck portion 84. Such a structure alleviates the considerable difficulties of the manufacturing of the first and second embodiments in which the neck portion and the liquid discharge portion are integrally formed and the liquid discharge portion passes through the bottom of the air intake portion, respectively.

Also, liquid discharge portion 85 for discharging liquid 80 of container 81 has a size corresponding to that of the top of air intake portion 83. Also, liquid discharge portion 85 has a flange 87 which is connected with the top portion of air intake portion 83, on the upper end of liquid discharge portion 85. In this case, flange 87 has at least one air intake opening 88 on its top surface, so that external air may enter the vessel.

In this embodiment, it is preferred that the lower portion of liquid discharge portion 85 is made of an elastic material such as rubber, so that liquid discharge portion 85 can be easily attached to and detached from neck portion 84. Here, cap 86 is provided so as to cover air intake portion 83 and/or flange 87.

#### **Claims**

##### **1. A vessel for containing liquid comprising:**

a container (41,71,81) for containing liquid;  
a gripping portion (42,72,82) which is separated from one side of said container and extended upward, having an air intake portion (43,73,83) on the top of said gripping portion, wherein air flowing via said air intake portion passes through said gripping portion and communicates with said container; and  
a neck portion (44,74,84) which is separated from the other side of said container and extended upward, having a liquid discharge portion (45,75,85) for discharging liquid from said container on the top of said neck portion, wherein said neck portion passes through the bottom of said air intake portion in said gripping portion and protrudes into said air intake portion.

##### **2. The vessel for containing liquid according to claim 1, wherein said liquid discharge portion (85) is**

formed separately with respect to said neck portion (84) so as to be attachably and detachably fitted to the top portion of said neck portion (84).

3. The vessel for containing liquid according to claim 2, wherein said liquid discharge portion (85) comprises a flange (87) which is located on the top portion of said liquid discharge portion and connected with the top portion of said air intake portion (83), said flange (87) comprising at least one air intake opening (88) through which external air enter the vessel. 5
4. The vessel for containing liquid according to claim 1, further comprising a cap (46,76,86) for simultaneously covering said air intake portion and said liquid discharge portion. 10
5. The vessel for containing liquid according to claim 2, further comprising a cap (46,76,86) for simultaneously covering said air intake portion and said liquid discharge portion. 15
6. The vessel for containing liquid according to claim 3, further comprising a cap (46,76,86) for simultaneously covering said air intake portion and said liquid discharge 20

#### Patentansprüche

1. Gefäß zur Aufnahme von Flüssigkeit, mit 30
  - einem Behälter (41,71,81) zur Aufnahme von Flüssigkeit,
  - einem Griffabschnitt (42, 72, 82), der von einer Seite des Behälters getrennt ist und nach oben verläuft, mit einem Lufteinlaß-Abschnitt (43, 73, 83) am oberen Ende des Griffabschnitts, in welchem Luft, die durch den Lufteinlaß-Abschnitt strömt, den Griffabschnitt passiert und mit dem Behälter in Verbindung steht, und einem Halsabschnitt (44, 74, 84), der von der anderen Seite des Behälters getrennt ist und nach oben verläuft, mit einem Flüssigkeitsabgabe-Abschnitt (45, 75, 85) zum Ausgehen von Flüssigkeit aus dem Behälter am oberen Ende des Halsabschnitts, wobei der Halsabschnitt durch den Boden des Lufteinlaß-Abschnitts in dem Griffabschnitt hindurch verläuft und in den Lufteinlaß-Abschnitt hineinragt. 40
2. Gefäß zur Aufnahme von Flüssigkeit nach Anspruch 1, bei dem der Flüssigkeitsabgabe-Abschnitt (85) in bezug auf den Halsabschnitt (84) getrennt so ausgebildet ist, daß er am oberen Abschnitt des Halsabschnitts (84) befestigbar und abnehmbar angebracht werden kann. 45

3. Gefäß zur Aufnahme von Flüssigkeit nach Anspruch 2, bei dem der Flüssigkeitsabgabe-Abschnitt (85) einen Flansch (87) aufweist, der am oberen Bereich des Flüssigkeitsabgabe-Abschnitts angebracht und mit dem oberen Bereich des Lufteinlaß-Abschnitts (83) verbunden ist, wobei der Flansch (87) wenigstens eine Lufteinlaßöffnung (88) aufweist, durch welche Außenluft in den Gefäß strömt.
4. Gefäß zur Aufnahme von Flüssigkeit nach Anspruch 1, das ferner eine Kappe (46, 76, 86) zum gleichzeitigen Abdecken des Lufteinlaß-Abschnitts und des Flüssigkeitsabgabe-Abschnitts aufweist.
5. Gefäß zur Aufnahme von Flüssigkeit nach Anspruch 2, das ferner eine Kappe (46, 76, 86) zum gleichzeitigen Abdecken des Lufteinlaß-Abschnitts und des Flüssigkeitsabgabe-Abschnitts umfaßt.
6. Gefäß zur Aufnahme von Flüssigkeit nach Anspruch 3, das ferner eine Kappe (46, 76, 86) zum gleichzeitigen Abdecken des Lufteinlaß-Abschnitts und des Flüssigkeitsabgabe-Abschnitts aufweist.

#### Revendications

1. Récipient pour contenir du liquide comprenant : 30
  - un conteneur (41, 71, 81) pour contenir du liquide;
  - une partie de préhension (42, 72, 82) qui est séparée par rapport à un côté du conteneur et s'étend vers le haut, munie d'une partie d'admission d'air (43, 73, 83) ménagée sur le dessus de la partie de préhension, dans laquelle de l'air s'écoulant par l'intermédiaire de la partie d'admission d'air passe à travers la partie de préhension et communique avec le conteneur; et
  - une partie formant col (44, 74, 84) qui est séparée par rapport à l'autre côté du conteneur et s'étend vers le haut, munie d'une partie (45, 75, 85) d'évacuation de liquide pour évacuer du liquide provenant du conteneur sur le dessus de la partie formant col, dans laquelle la partie formant col passe à travers le dessous de la partie d'admission d'air dans la partie de préhension et fait saillie dans la partie d'admission d'air.
2. Récipient pour contenir du liquide selon la revendication 1, dans lequel la partie (85) d'évacuation de liquide est formée séparément par rapport à la partie (84) formant col de façon à pouvoir être placée

en étant attachée ou détachée sur la partie de dessus de la partie formant col (84).

3. Récipient pour contenir du liquide selon la revendication 2, dans lequel la partie d'évacuation de liquide (85) comprend un flasque (87) qui est placé sur la partie de dessus de la partie d'évacuation de liquide et relié à la partie de dessus de la partie d'admission d'air (83), le flasque (87) comprenant au moins une ouverture d'admission d'air (88) à travers laquelle de l'air extérieur pénètre dans le récipient. 5 10
4. Récipient pour contenir du liquide selon la revendication 1, comprenant de plus un capuchon (46, 76, 86) pour couvrir simultanément la partie d'admission d'air et la partie d'évacuation de liquide. 15
5. Récipient pour contenir du liquide selon la revendication 2, comprenant de plus un capuchon (46, 76, 86) pour couvrir simultanément la partie d'admission d'air et la partie d'évacuation de liquide. 20
6. Récipient pour contenir du liquide selon la revendication 3, comprenant de plus un capuchon (46, 76, 86) pour couvrir simultanément la partie d'admission d'air et la partie d'évacuation de liquide. 25

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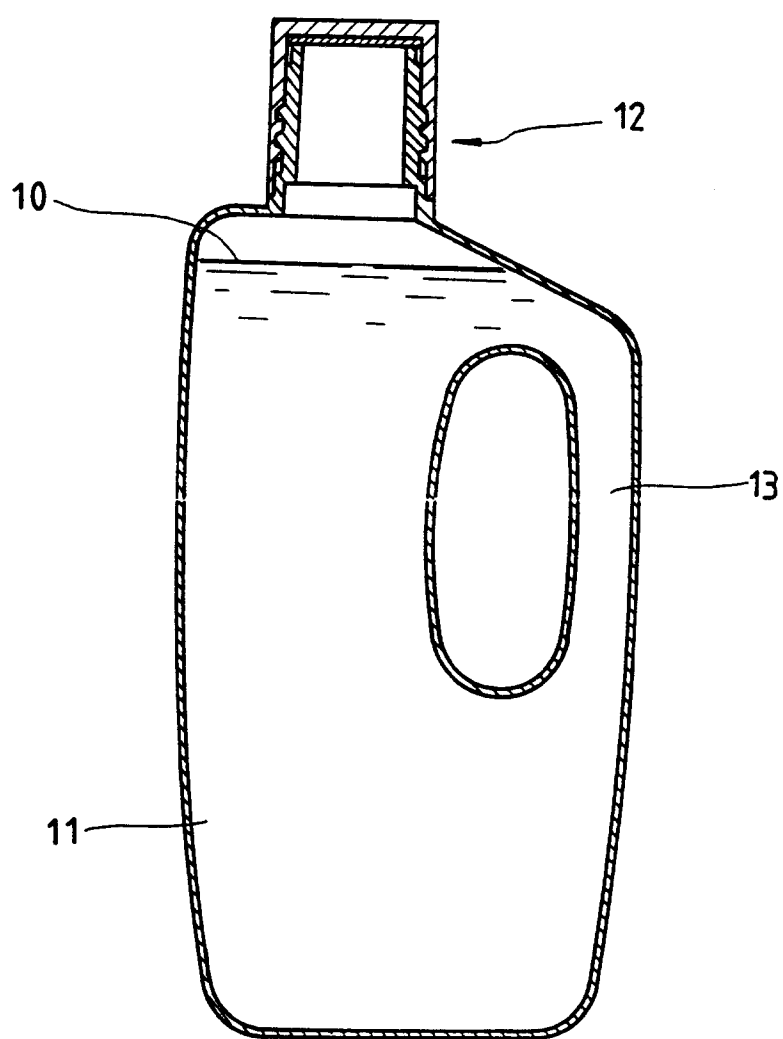
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50

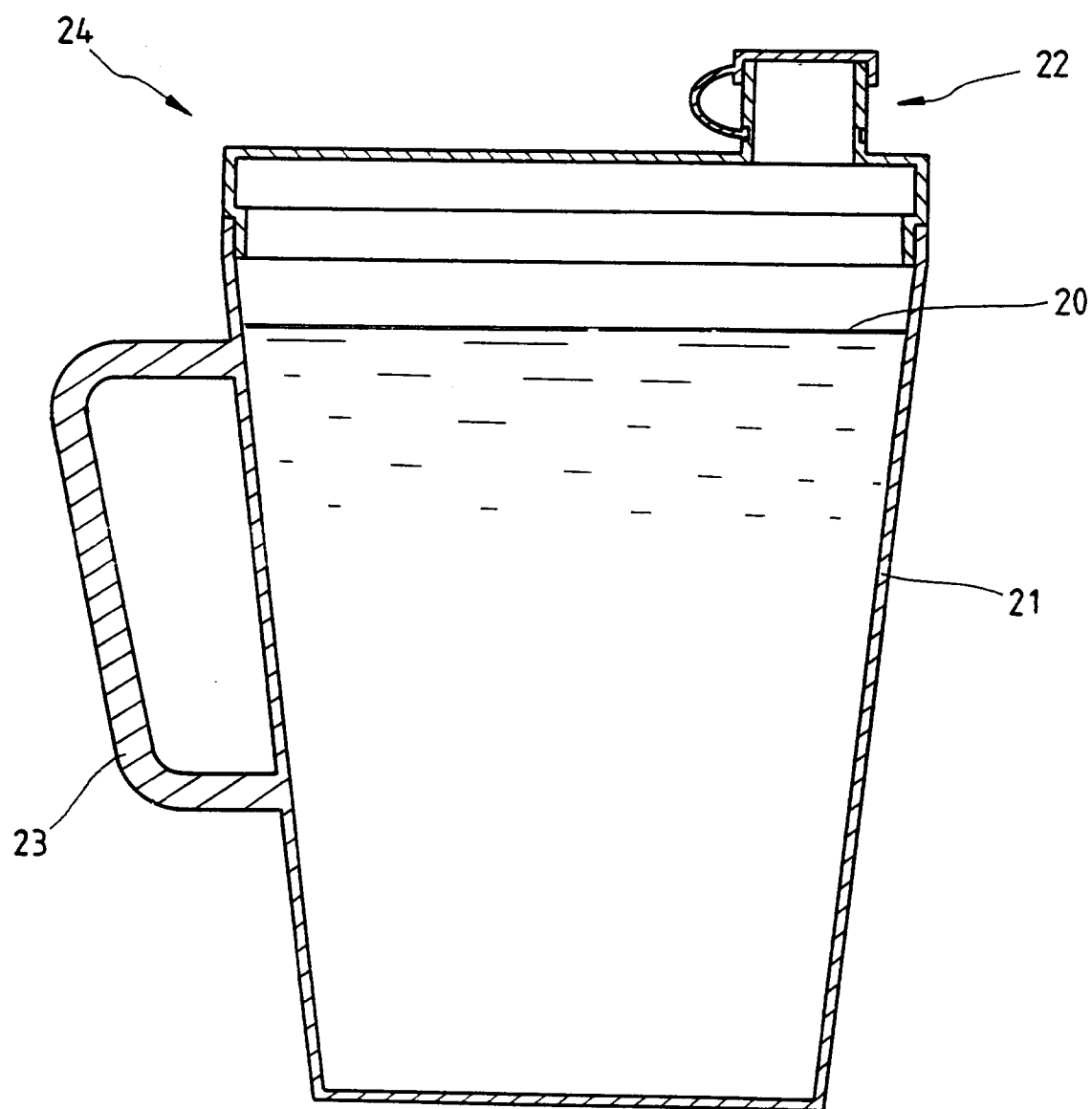
55

FIG. 1



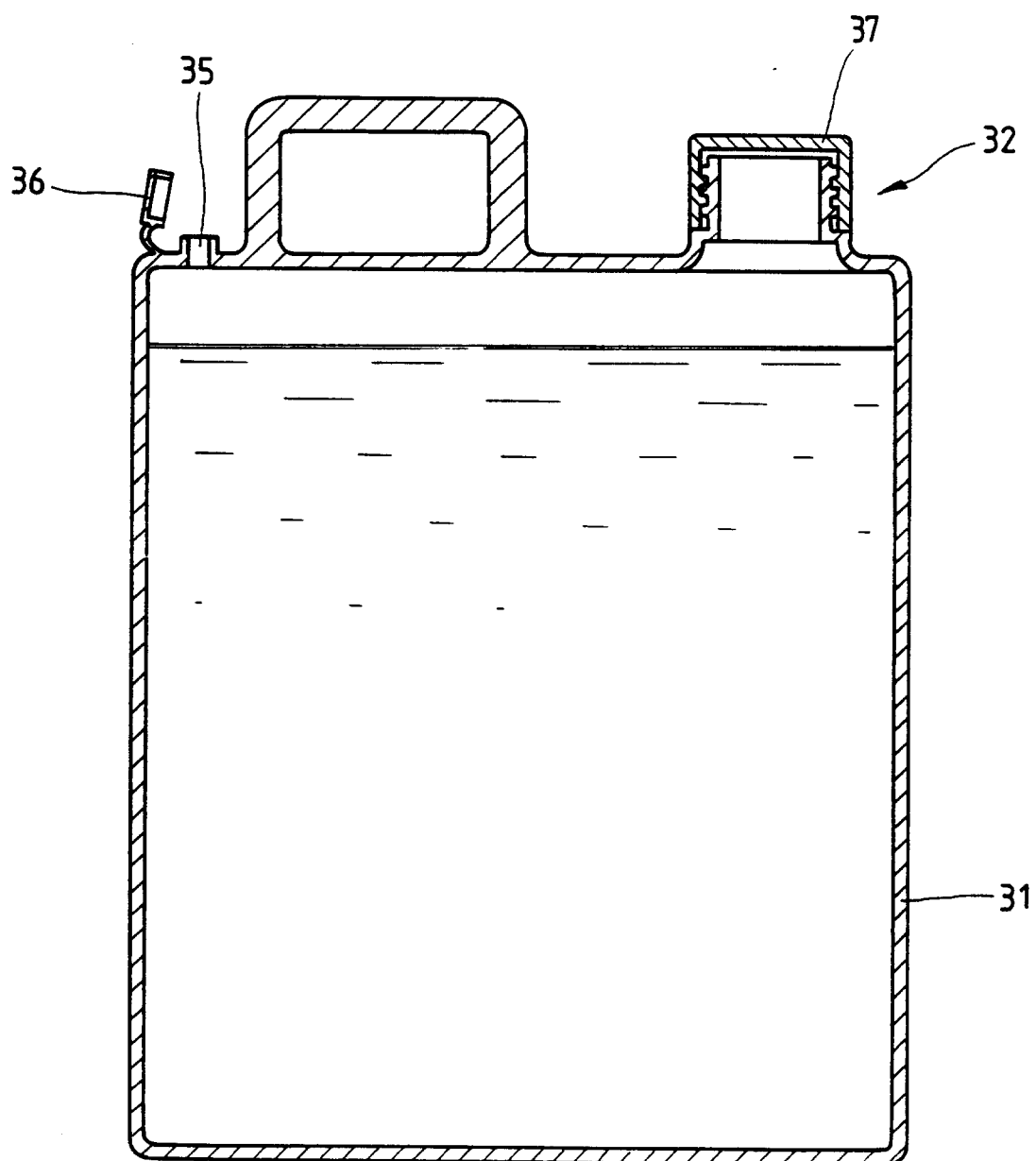
PRIOR ART

FIG.2



PRIOR ART

FIG.3



PRIOR ART

FIG. 4

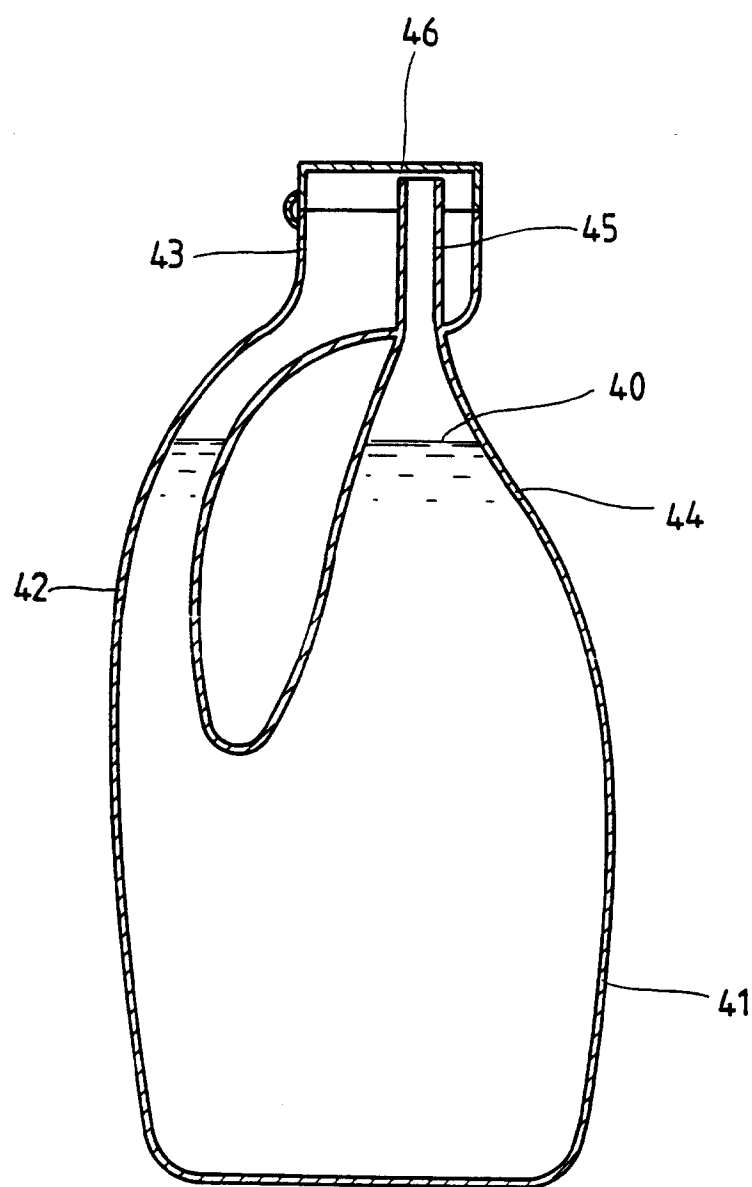


FIG.5

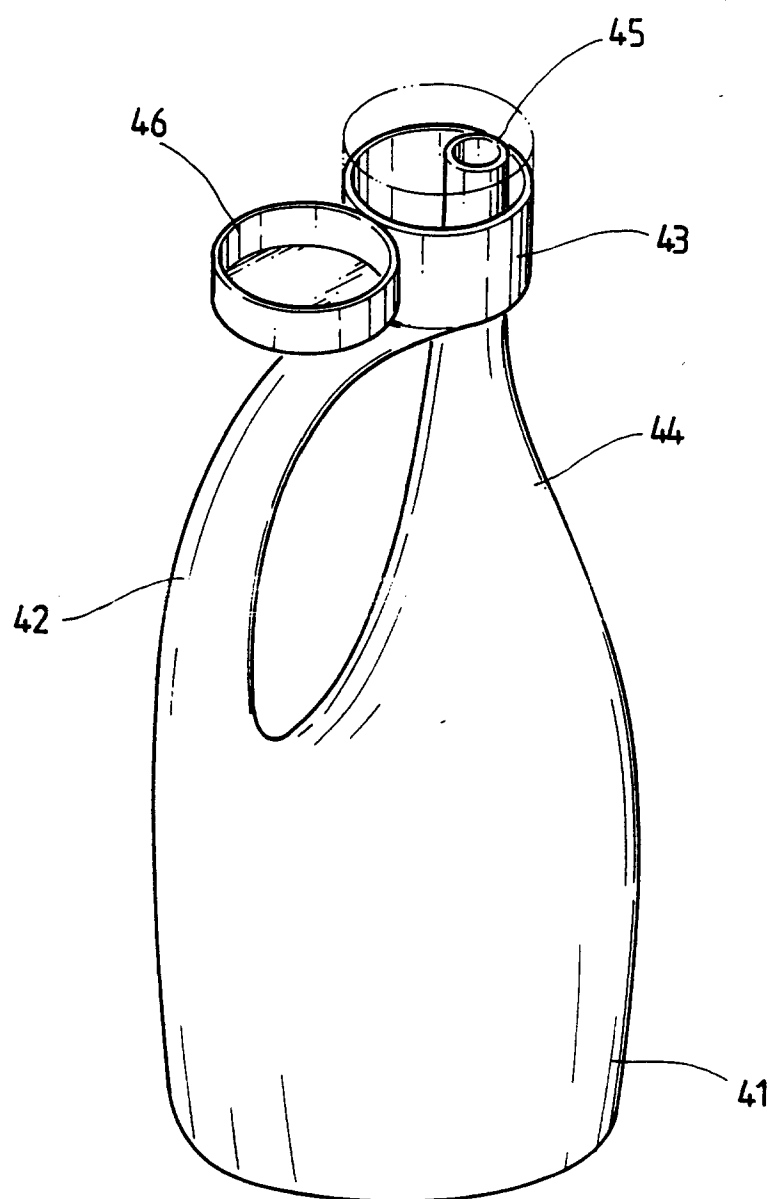


FIG. 6

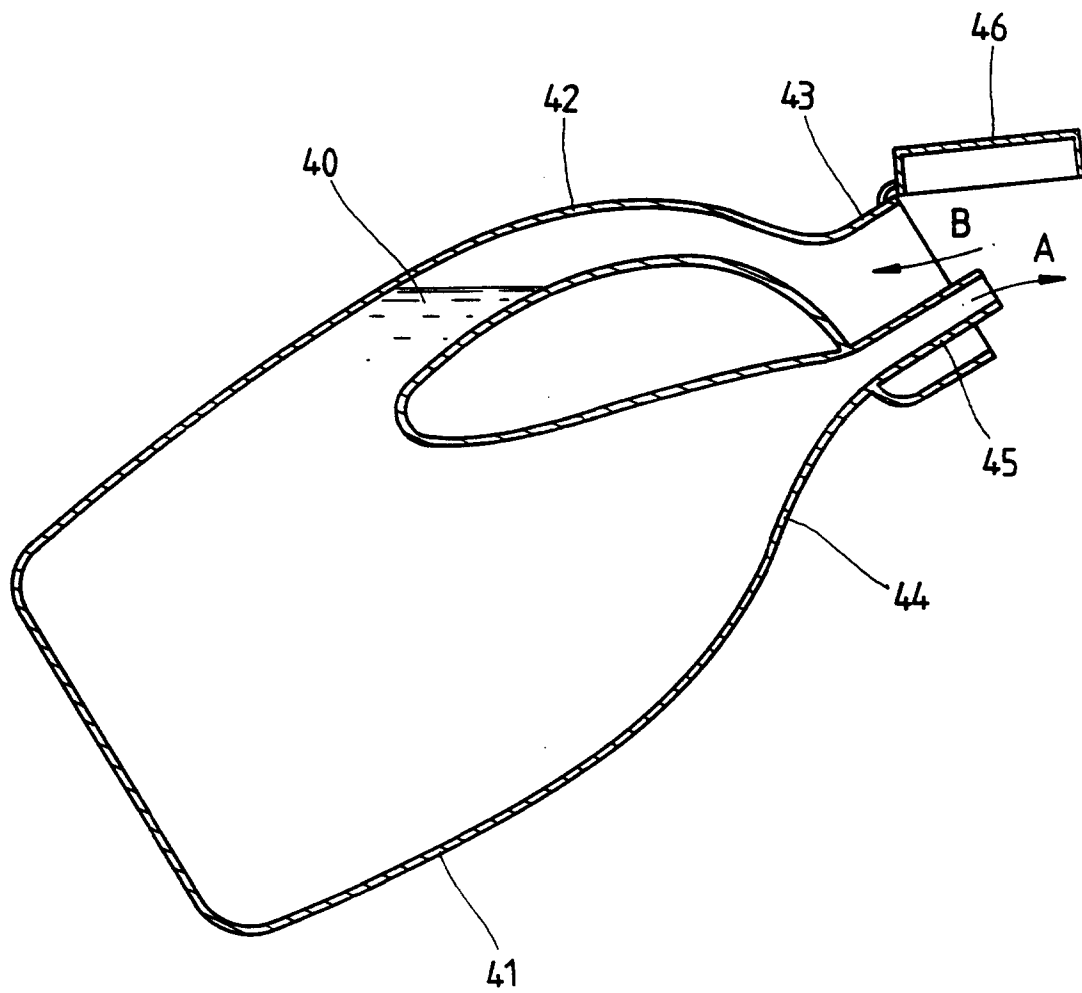


FIG.7

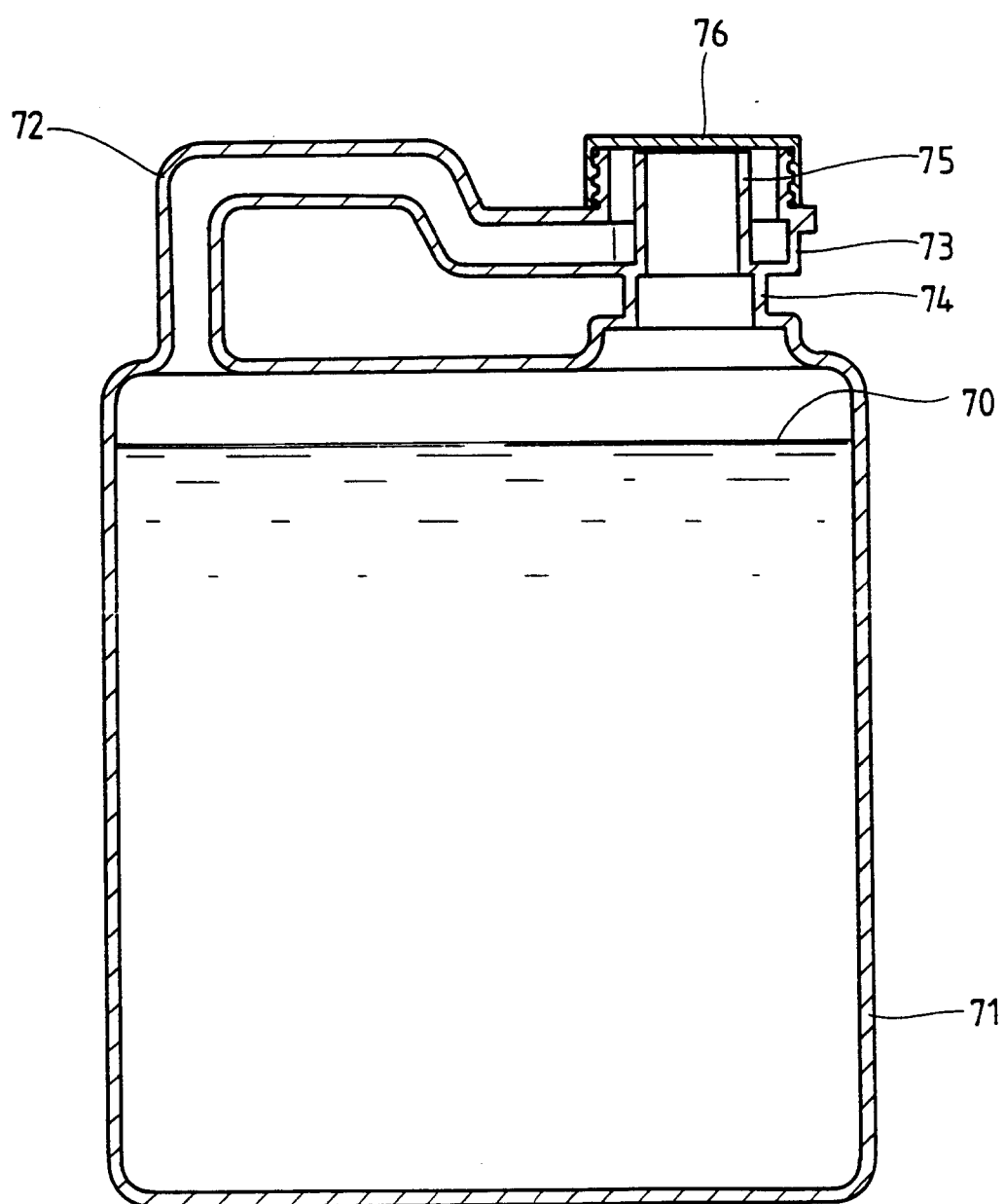


FIG.8

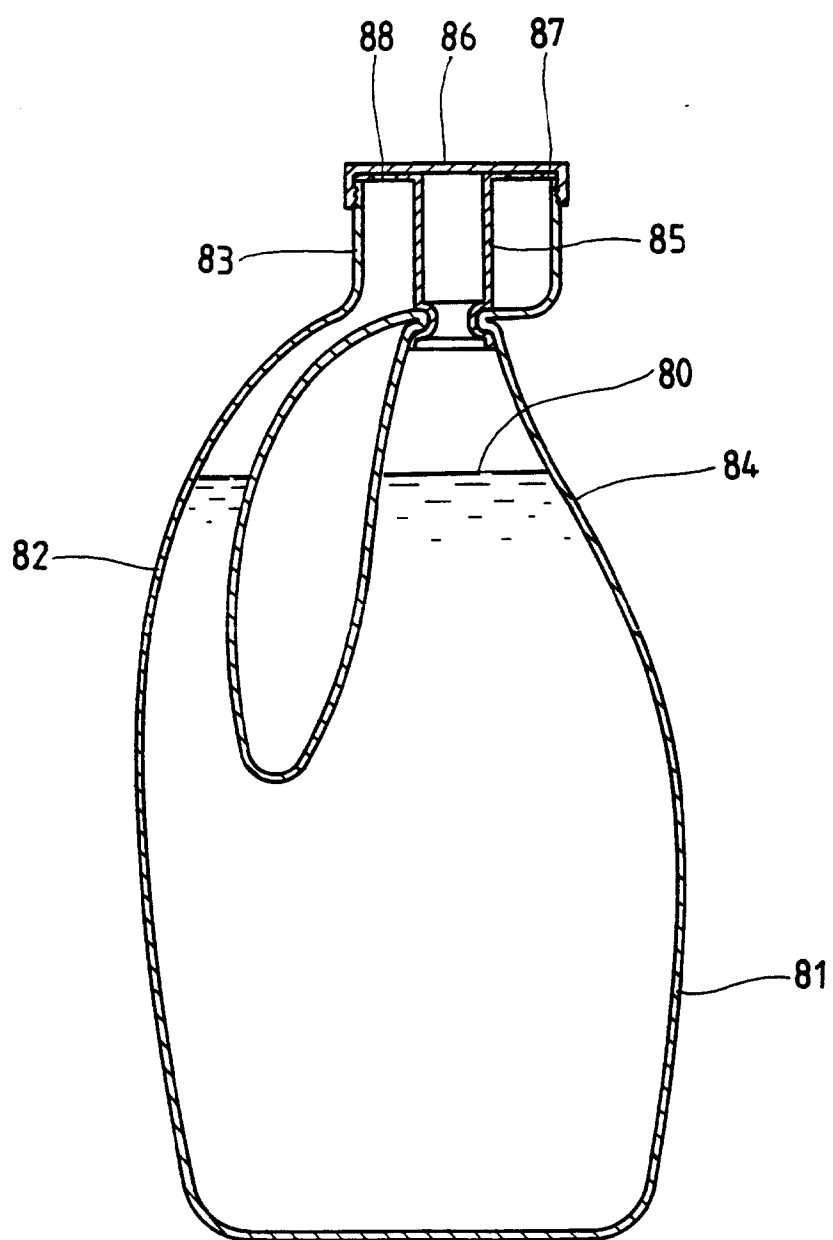


FIG. 9

