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Australian Patent Declaration Form

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Forms 7 and 8

AUSTRALIA

Patents Act 1952

**DECLARATION IN SUPPORT OF A CONVENTION OR NON-CONVENTION
APPLICATION FOR A PATENT OR PATENT OF ADDITION**

Name(s) of Applicant(s) In support of the application made by Yoshino Kogyosho Co., Ltd.

Title for a patent for an invention entitled "MULTILAYER BOTTLE AND A METHOD OF MANUFACTURING THE SAME"

Name(s) and address(es) of person(s) making declaration I/We, Yataro Yoshino of 2-6, Ojima 3-chome, Koto-ku, Tokyo 130, Japan

do solemnly and sincerely declare as follows:—

- 1. I am/we are the applicant(s) for the patent, or authorised by the abovementioned applicant to make this declaration on its behalf.
- 2. The basic application(s) as defined by Section 141 of the Act was/were made in the following country or countries on the following date(s) by the following applicant(s) namely:-

Country, filing date and name of Applicant for the or each basic application

in Japan on August 5, 1991
by Yoshino Kogyosho Co., Ltd.

in Japan on May 11, 1992
by Yoshino Kogyosho Co., Ltd.

- 3. The said basic application(s) was/were the first application(s) made in a Convention country in respect of the invention the subject of the application.
- 4. The actual inventor(s) of the said invention is/are

Name(s) and address(es) of the or each actual inventor

Akira Nishigami and Tetsuzo Nakamura residing at c/o Osaka Plant, Yoshino Kogyosho Co., Ltd., 6-9, Unobe 1-chome, Ibaraki-shi, Osaka 567, Japan, respectively and Masato Honda residing at c/o Fukuoka Plant, Yoshino Kogyosho Co., Ltd., 480, Oaza-Kishii, Buzen-shi, Fukuoka 828, Japan

- 5. The facts upon which the applicant(s) is/are entitled to make this application are as follows:-

See reverse side of this form for guidance in completing this part

The applicant is the assignee of the actual inventors.

DECLARED at Tokyo, Japan this 8th day of April 19 93

Yoshino Kogyosho Co., Ltd.



AU9224153

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BOTTLE OF LAMINATE STRUCTURE AND METHOD OF MAKING SAID BOTTLE
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- (56) Prior Art Documents
EP 182094
AU 12417/92 B65D 35/56 23/02
AU 646126 91625/91 B65D 83/00 B67D 1/00

(57) Claim

1. A multilayer bottle comprising at least two layers including an outer layer and an inner layer, wherein said inner layer and said outer layer adjacent thereto are separable from each other at a body of said bottle, and wherein said inner layer and said outer layer are adhered to each other from a mouth of the bottle to the bottom of the bottle in a zonal fashion.

OPI DATE 02/03/93 APPLN. ID 24153/92
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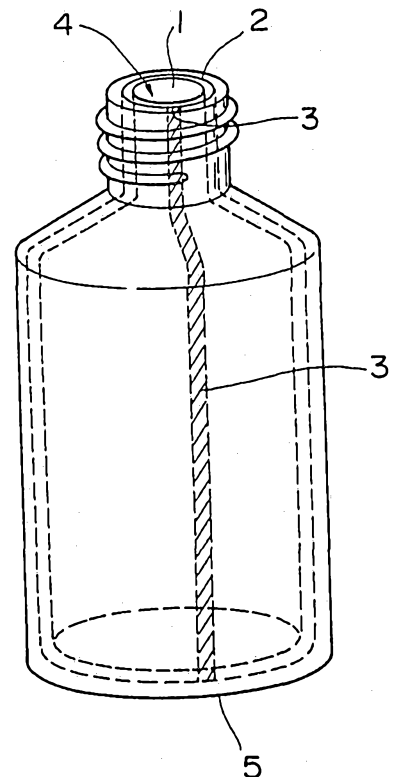
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特許庁の事務に基き、本公報に於ては、国際出願

<p>(51) 国際特許分類 5 B65D 1/00</p>	<p>A1</p>	<p>(11) 国際公開番号 WO 93/02926 (43) 国際公開日 1993年2月18日(18.02.1993)</p>
<p>(21) 国際出願番号 PCT/JP92/00997 (22) 国際出願日 1992年8月5日(05. 08. 92) (30) 優先権データ 特願平 3/195566 1991年8月5日(05. 08. 91) JP 特願平 4/117756 1992年5月11日(11. 05. 92) JP (71) 出願人(米国を除くすべての指定国について) 株式会社 吉野工業所 (YOSHINO KOGYOSHO CO., LTD.)(JP/JP) 〒136 東京都江東区大島3丁目2番6号 Tokyo, (JP) (72) 発明者; および (75) 発明者/出願人(米国についてのみ) 西上 彰(NISHIGAMI, Akira)(JP/JP) 中村哲三(NAKAMURA, Tetsuzo)(JP/JP) 〒567 大阪府茨木市宇野辺1丁目6番9号 株式会社吉野工業所 大阪工場内 Osaka, (JP) 本田正人(HONDA, Masato)(JP/JP) 〒828 福岡県豊前市大字岸井480 株式会社吉野工業所 福岡工場内 Fukuoka, (JP) (74) 代理人 弁理士 遠山 勉, 外(TOYAMA, Tsutomu et al.) 〒103 東京都中央区東日本橋3丁目6番18号 ハニー掘留ビル5階 Tokyo, (JP)</p>	<p>(81) 指定国 AT(欧州特許), AU, BB, BE(欧州特許), BF(OAPI特許), BG, BJ(OAPI特許), BR, CA, CF(OAPI特許), OG(OAPI特許), CH(欧州特許), CI(OAPI特許), OM(OAPI特許), CS, DE(欧州特許), DK(欧州特許), ES(欧州特許), FI, FR(欧州特許), GA(OAPI特許), GB(欧州特許), GN(OAPI特許), GR(欧州特許), HU, IE(欧州特許), IT(欧州特許), KR, LK, LU(欧州特許), MC(欧州特許), MG, ML(OAPI特許), MN, MR(OAPI特許), MW, NL(欧州特許), NO, PL, RO, RU, SD, SE(欧州特許), SN(OAPI特許), TD(OAPI特許), TG(OAPI特許), US. 添付公開書類 国際調査報告書</p> <p style="font-size: 2em; text-align: center;">666324</p>	

(54) Title : BOTTLE OF LAMINATE STRUCTURE AND METHOD OF MAKING SAID BOTTLE

(54) 発明の名称 積層ボトルおよびその製造方法



(57) Abstract

A bottle of laminate structure composed of at least two layers, outer and inner ones, so as not to be crushed when the internal pressure thereof decreases, in which the inner layer of said bottle body is made separable from the adjoining outer layer except at least a part thereof bonded to the outer one. When the internal pressure decreases as a result of volatilization of the content in the bottle or the discharging of the same by a pump, the inner layer exfoliates from the outer layer to form a bag-like shape, thereby causing no deformation of the outer layer.

SPECIFICATION

MULTILAYER BOTTLE AND A METHOD OF MANUFACTURING THE SAME

Technical Field

This invention relates to a multilayer bottle comprising at least two layers, in particular, to a multilayer bottle having an innermost inner layer separable from an outer layer, and to a method of manufacturing the same.

Background Art

There is known a multilayer bottle having at least an outer layer and an inner layer which are adhered entirely throughout an overall circumference to be integrated into one so that the outer layer and the inner layer are not separated from each other.

When a long time has passed after the bottle is filled with a content, for example, oxygen and the like in the content may be volatilized to thereby reduce the pressure in the bottle, even if the bottle is tightly sealed.

There is also known a bottle of the type having a pump attached to a mouth of the bottle, in which the pump is operated to discharge a liquid content contained in the bottle. In this bottle also, the pressure in the bottle is reduced as the liquid content is discharged by the pump.

In such an event, a conventional multilayer bottle is disadvantageous in that an outer layer 2, namely, a bottle body is crushed together with an inner layer 1 to change the external

configuration of the bottle, as illustrated in Fig. 12.
This results in deterioration of a commercial value.

The change in said configuration is indefinite.
In so distorted bottle, the content is liable to remain in
5 an irregular portion formed in the inner layer as a result
of the distortion, even if the mouth is positioned
downwards. Thus, it is difficult to take out the content
quantitatively and efficiently.

Disclosure of the Invention

10 An object of the present invention is to provide
an improved multilayer bottle in which the outermost layer
is not crushed by reduction in the internal pressure of the
bottle or the removal of the bottle's contents, but which
can be manufactured by the adaptation of known techniques.

15 According to the present invention there is
provided a multilayer bottle comprising at least two layers
including an outer layer and an inner layer, wherein said
inner layer and said outer layer adjacent thereto are
separable from each other at a body of said bottle, and
20 wherein said inner layer and said outer layer are adhered
to each other from a mouth of the bottle to the bottom of
the bottle in a zonal fashion.

It is preferred that a hole be formed in the
outer layer of the bottle.

25 Brief Description of the Drawings

Fig. 1 is a view for describing a multilayer
bottle according to a first embodiment of this invention;

Fig. 2 is a sectional view illustrating a
sectional structure of a body of the multilayer bottle
30 according to the first embodiment of this invention;

Fig. 3 is a view for describing a multilayer
bottle according to a second embodiment of this invention;

Fig. 4 is a view for describing a method of
forming a through hole of the multilayer bottle according



to the second embodiment of this invention;

Fig. 5 is a view illustrating a structure of a multilayer bottle according to a third embodiment of this invention;

5 Fig. 6 is a view illustrating a structure of a multilayer

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bottle according to a fourth embodiment of this invention;

Fig. 7 is a view illustrating a structure of a multilayer bottle according to a fifth embodiment of this invention;

Fig. 8 is a schematic sectional view illustrating a structure of a multilayer bottle according to a sixth embodiment of this invention;

Fig. 9 is an enlarged sectional view of a pinch-off work portion of the multilayer bottle according to the sixth embodiment of this invention;

Fig. 10 is a view illustrating a structure of another multilayer bottle;

Fig. 11 is a view illustrating a structure of still another multilayer bottle;

Fig. 12 is a view for describing the distortion of a conventional multilayer bottle; and

Fig. 13 is a view for describing a structure of a mouth of the conventional multilayer bottle.

Best Mode for Embodying the Invention

First Embodiment

Description will be made as regards a first embodiment of this invention with reference to the drawing.

Fig. 1 shows a multilayer bottle comprising two layers including an inner layer 1 and an outer layer 2 according to the first embodiment of this invention. The inner layer 1 and the outer layer 2 are partly adhered to each other through an adhesion layer 3. The outer layer 2 is made of polyethylene. The inner layer 1 is made of nylon. The adhesion layer 3 is made of



Admer (trade name).

It is noted here that Admer is an adhesive comprising modified polyolefin and manufactured by Mitsui Petrochemical Industries, Co., Ltd.

Referring to Figs. 1 and 2, said adhesion layer 3 is formed at a part of the outer circumferential surface of the inner layer 1, namely, the inner circumferential surface of the outer layer 2 and vertically extends from a mouth 4 of the bottle to a bottom 5 of the bottle in a zonal fashion. As a result, the outer layer 2 and the inner layer 1 are adhered through the adhesion layer 3 at a part of the bottle. In other words, the outer layer 2 and the inner layer 1 are separable from each other in an area where the adhesion layer 3 is not present.

The bottle according to this invention is manufactured as follows.

At first, a multilayer parison or a multilayer preform having a section similar to that illustrated in Fig. 2 is molded by extrusion or injection molding. The adhesion layer 3 is formed over the entire length of the multilayer parison or the multilayer preform. Then, the multilayer parison or the multilayer preform is set in a blow mold. The bottle illustrated in Fig. 1 is molded by a blow molding technique.

Upon molding, the mouth is subjected to trimming process in order to finish the mouth. In the trimming process, a polishing and removing trimmer is rotated at the mouth to remove a burr and the like around the mouth. Thus, the mouth is finished. At that time, since the inner layer 1 is adhered to the outer layer



2, the inner layer 1 is prevented from being released by the rotation of the trimmer from the outer layer 2 and from being wound around the trimmer. Accordingly, the mouth 4 of the outer layer 2 and the inner layer 1 can be finely and uniformly finished.

A technique for finishing the mouth of the bottle upon molding is disclosed in U.S. Patent application Ser. No. 103,624 filed on January 4, 1971 corresponding to Japanese Patent Publication No. Sho 45-31397. The disclosure includes a core rod to be inserted into the mouth, and a sleeve formed at the periphery of the core rod for finishing the mouth. When the core rod is inserted in the mouth of the bottle comprising two layers separable from each other, an inner layer is undesirably pulled by the core rod and dislocated. In order to avoid this, the prior art adopts a structure that the inner layer 1 covers the top of the outer layer 2 at the mouth as illustrated in Fig. 13. Thus, an attempt has been made to avoid downward dislocation. Since the inner layer and the outer layer in the bottle of the present invention are adhered at the mouth of the bottle, the inner layer is never dislocated if the core rod is inserted. Accordingly, it is unnecessary to shape the inner layer at the mouth into the form illustrated in Fig. 13, whereby molding is easy.

This bottle is adapted for storing a liquid, which is a substance in the content, of the type being liable to volatilize even if the bottle is tightly sealed. When a long time has passed after such content is filled, for example, oxygen and the like in the content volatilize to thereby reduce a pressure in



the bottle.

In this event, the inner layer 1 is separated from the outer layer 2, so that the inner layer 1 alone is contracted and deformed while the configuration of the outer layer 2, namely, the bottle body is not affected at all.

Second Embodiment

Fig. 3 shows another embodiment of this invention.

In this embodiment, the inner layer 1, the outer layer 2, and the adhesion layer 3 are similar in structure to those illustrated in Fig. 1 in conjunction with the first embodiment.

In order to improve the separability of the outer layer 2, this embodiment adopts a structure as follows.

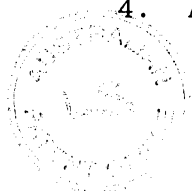
In addition to the above-mentioned structure, the outer layer 2 has a through hole 6 formed at a part thereof.

By the provision of the through hole 6, an air easily enters between the inner layer 1 and the outer layer 2. Accordingly, 2. It is possible to reliably prevent the deformation of the external configuration due to a close contact between these layers.

In this embodiment, the outer layer 2 is made of polyethylene (trade name: CALP) containing calcium carbonate while the inner layer 1 is made of nylon. With this structure, separability is further improved.

Next referring to Fig. 4, description will be made as regards a process of forming the through hole 6.

At first, a flexible pipe 7 is inserted through the mouth 4. At this time, a cylindrical nozzle guide 8 having a diameter



smaller than the mouth 4 may be mounted to guide the insert direction of the flexible pipe 7.

A suction pad 10 is formed at the front end of the flexible pipe 7. By a vacuum pump (not shown) connected to the rear end of the flexible pipe 7, the suction pad 10 is capable of providing suction under a predetermined negative pressure.

Said suction pad 10 is guided to the inner side surface of the bottle to be brought into contact with a part of the inner layer 1. At this time, the contact position of the suction pad 10 is selected at a position where no adhesion layer 3 is present.

As a method for inserting the suction pad 10 through the mouth 4 and for guiding it in a lateral direction, the suction pad 10 may be made of a metal material having a predetermined weight, the bottle body may be laid by its side and the flexible pipe 7 is inserted through the mouth 4, and then the suction pad 10 may be landed onto the inner layer 1 by a gravitational force.

Alternatively, the nozzle guide 8 may be provided with a guide hole (not shown) for guiding the bending direction to the lateral side of the flexible pipe 7 to bring the suction pad 10 into contact with the inner layer 1.

While the suction pad 10 is brought into contact with the inner layer 1 as described above, suction is performed to forcibly separate a part of the inner layer 1 from the outer layer 2.

A separated part, which is obtained in such a manner as described above, is subjected to boring by means of a drill from the outside of the outer layer 2. Thus, the through hole 6 is



formed.

Third Embodiment

Fig. 5 shows still another embodiment.

In this embodiment, the adhesion layer 3 is formed at each of a shoulder and an area adjacent to the inner bottom of the bottle.

When, in this embodiment, a pressure in the bottle is reduced as such a center portion of the body of the inner layer 1 is concavely deformed. Accordingly, the inner layer 1 is prevented from being deformed into an indefinite shape. Thus, the shape of the deformation can be specified.

By controlling the deformation into a specific shape as such, it is possible to efficiently take out the content through the mouth 4 when the bottle is turned upside down.

Fourth Embodiment

Fig. 6 shows yet another embodiment.

In this embodiment, the adhesion layers 3 are formed in an endless circular fashion at the mouth 4 and at the inner circumferential surface of the area adjacent to the inner bottom of the bottle.

When a pressure in the bottle reduces, the center portion of the body of the inner layer 1 is concavely deformed throughout the entire circumference. Accordingly, it is possible to more efficiently take out the content in this embodiment.

Fifth Embodiment

Fig. 7 shows a further embodiment.

In this embodiment, the adhesion layer 3 is formed at the



mouth 4. Furthermore, the inner layer 1 is fixed at a pinch-off work portion 11 formed on the inner bottom of the bottle.

In this embodiment, the pinch-off work portion 11 function substantially as the adhesion layer 3 and the inner layer 1 is fixed to the outer layer 2 at two regions together with said mouth 4.

Thus, in this embodiment, one adhesion layer 3 can be formed simultaneously with the pinch-off work. This improves efficiency in a manufacturing process.

Since the inner layer 1 is fixed at the mouth 4 and at the bottom, taking out the content is also easy.

In each Figure shown in each of said embodiments, only the configuration of the bottle is shown. It is noted, however, that the mouth of the bottle may be closed by a cap made of synthetic resin and a pump mechanism may be provided to extract a liquid which is the content. When the pump mechanism is provided, an inner pressure in the bottle is rapidly reduced into a negative pressure by operation of the pump, so that the deformation of the external configuration of the bottle is a particular concern. However, according to each of the foregoing embodiments, the external appearance is not affected at all since the inner layer 1 alone is deformed.

Sixth Embodiment

Fig. 8 shows a sixth embodiment of this invention. The multilayer bottle comprises two layers including the inner layer 1 and the outer layer 2. The inner layer 1 and the outer layer 2 are adhered to each other through the adhesion layer 3 formed on



the mouth 4. The outer layer 2 is made of polyethylene. The inner layer 1 is made of nylon. The adhesion layer 3 is made of Admer (trade name).

At the bottom 5 of the bottle, there is formed the pinch-off portion 11 as illustrated in Fig. 9. At the pinch-off work portion 11, both sides of the inner layer 1 are integrated together to close the interior of the bottle. The outer layer 2 is located outside of the inner layer 1. An overlapped section 11a of the inner layer 1 and the outer layer 2 is downwardly projected to be brought into contact with the air.

The bottle according to this embodiment is manufactured as follows.

At first, a multilayer parison of a cylindrical shape comprising the outer layer 2, the adhesion layer 3, and the outer layer 2 is molded by extrusion molding. That is, the extrusion-molded multilayer parison is set in a mold for use in blow molding and is molded by blow molding.

In this event, the multilayer parison is extruded and enclosed in the mold from both sides and an air is blown to perform molding. In the process of closing the mold, said multilayer parison is cut at the bit-off portion of the mold. When the portion bit off by the bit-off work portion is further cut, the pinch-off work portion 11 is formed on the bottom 5 of the bottle, at which pinch-off work portion the overlapped section 11a of the inner layer 1 and the outer layer 2 is exposed outside. Thus, the bottle having the shape of this embodiment is obtained.



This bottle is adapted for storing a liquid, which is a substance in the content, of the type being liable to volatilize even if the bottle is tightly sealed. When a long time has passed after such content is filled, for example, oxygen and the like in said content volatilize to thereby reduce a pressure in the bottle.

In this event, the air enters into the separated part through the exposed overlapped section 11a of the inner layer 1 and the outer layer 2, and the inner layer 1 is readily separated from the outer layer 2. Thus, the inner layer 1 alone is contracted and deformed while the configuration of the outer layer 2, namely, the bottle body is not affected at all.

In this embodiment, the outer layer 2 is made of polyethylene (trade name: CALP) containing calcium carbonate while the inner layer 1 is made of nylon. With this structure, excellent separability is obtained.

Such pinch-off portion 11 is applicable to the bottles illustrated in Figs. 1 and 2. As illustrated in Figs. 10 and 11, it is also applicable to the bottles in the third and the fourth embodiments described above.

Industrial Applicability

This invention is useful as a container for accommodating a content including a volatile component, for example, as a bottle for accommodating agricultural chemicals which may possibly be decreased in volume due to volatilization and the like, or a container for accommodating cosmetics, medicines and the like. As described above, this invention is also useful as a container



with a discharge pump, which is attached to the mouth, for pumping up and discharging the content therein.



THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A multilayer bottle comprising at least two layers including an outer layer and an inner layer, wherein said inner layer and said outer layer adjacent thereto are separable from each other at a body of said bottle, and wherein said inner layer and said outer layer are adhered to each other from a mouth of the bottle to the bottom of the bottle in a zonal fashion.
2. A multilayer bottle as claimed in claim 1, wherein in said outer layer a hole is formed at a position which is not adhered to said inner layer.
3. A multilayer bottle as claimed in Claim 1, wherein an overlapped section of said inner layer and said outerlayer is exposed in the exterior of said bottle.
4. A multilayer bottle as claimed in Claim 3, wherein an overlapped section of said inner layer and said outer layer is exposed in the exterior of said bottle at a pinch-off work portion formed on a body of said bottle.
5. A multilayer bottle according to claim 1 substantially as hereinbefore described with reference to drawings 1 to 11.

DATED THIS 30TH DAY OF NOVEMBER 1995

YOSHINO KOGYOSHO CO., LTD.

By its Patent Attorneys

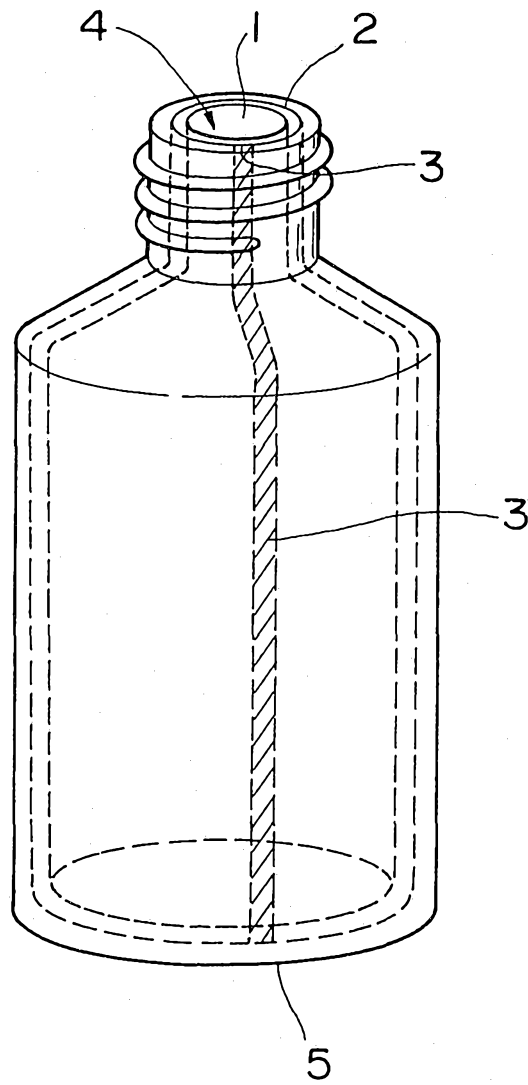
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Fellows Institute of Patent Attorneys
of Australia



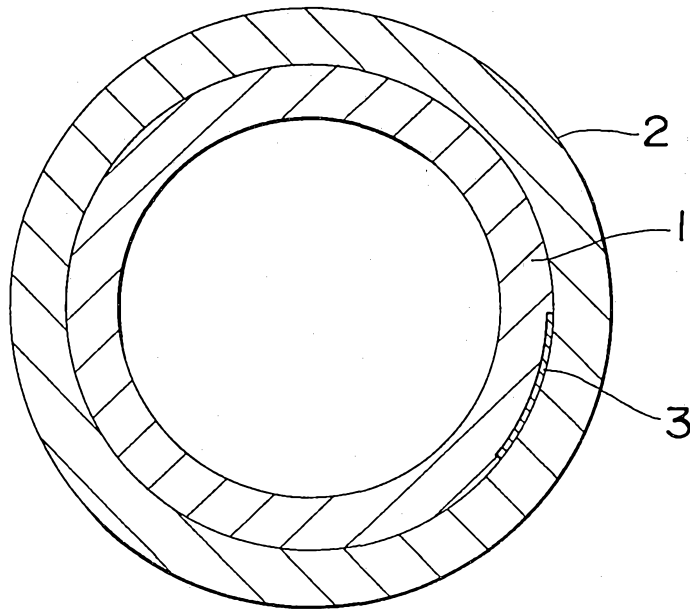
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FIG. 1



(2/13)

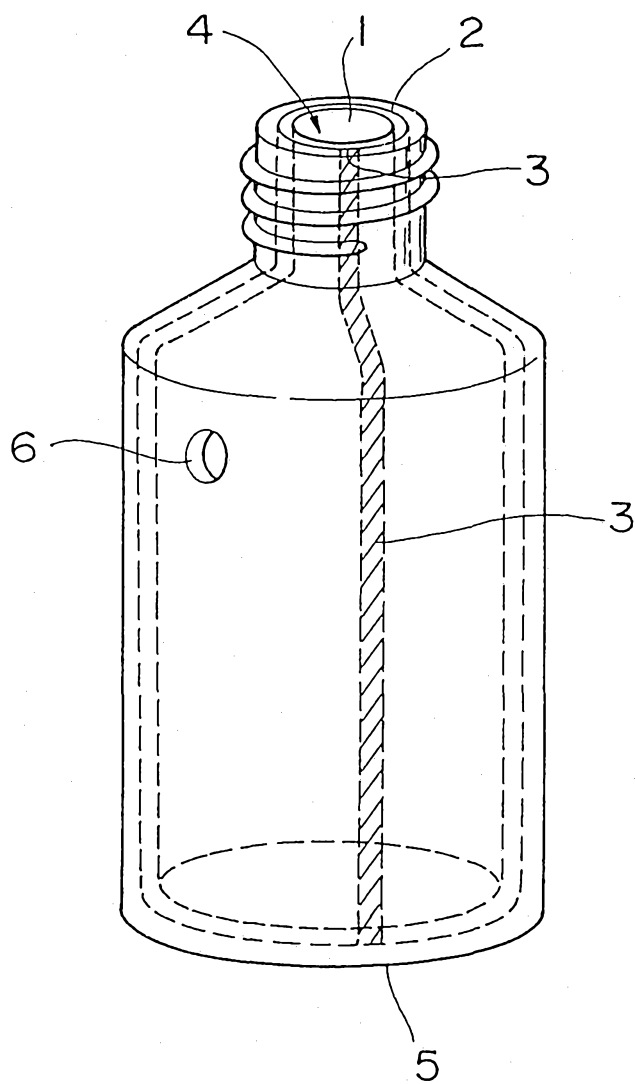
FIG.2



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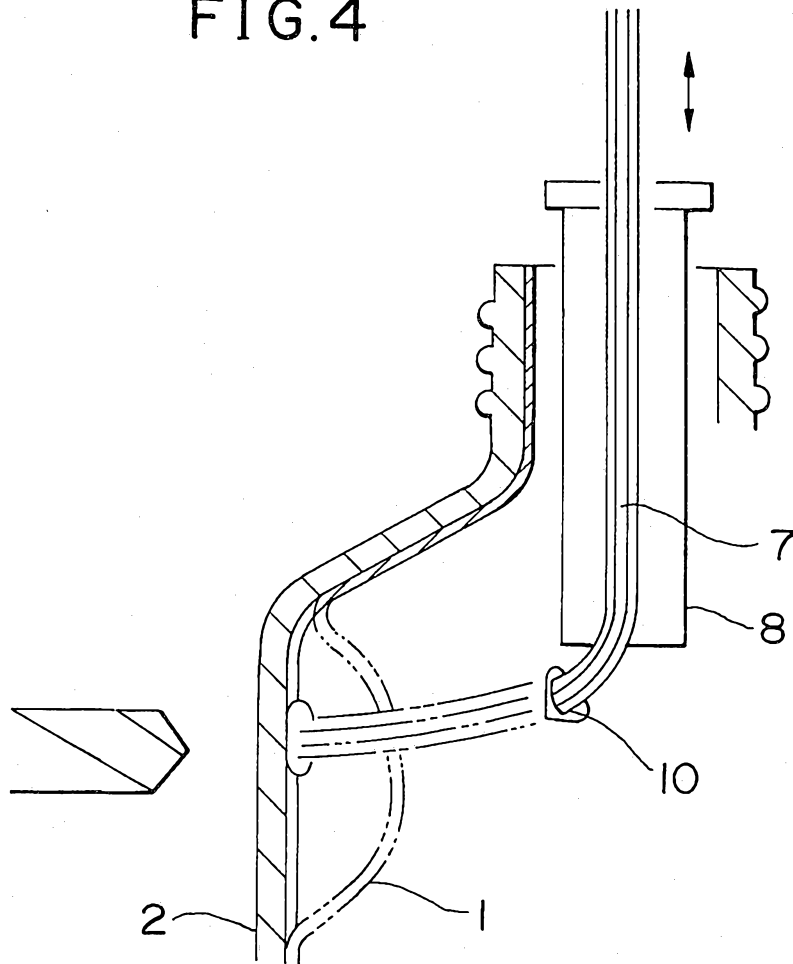
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FIG. 3



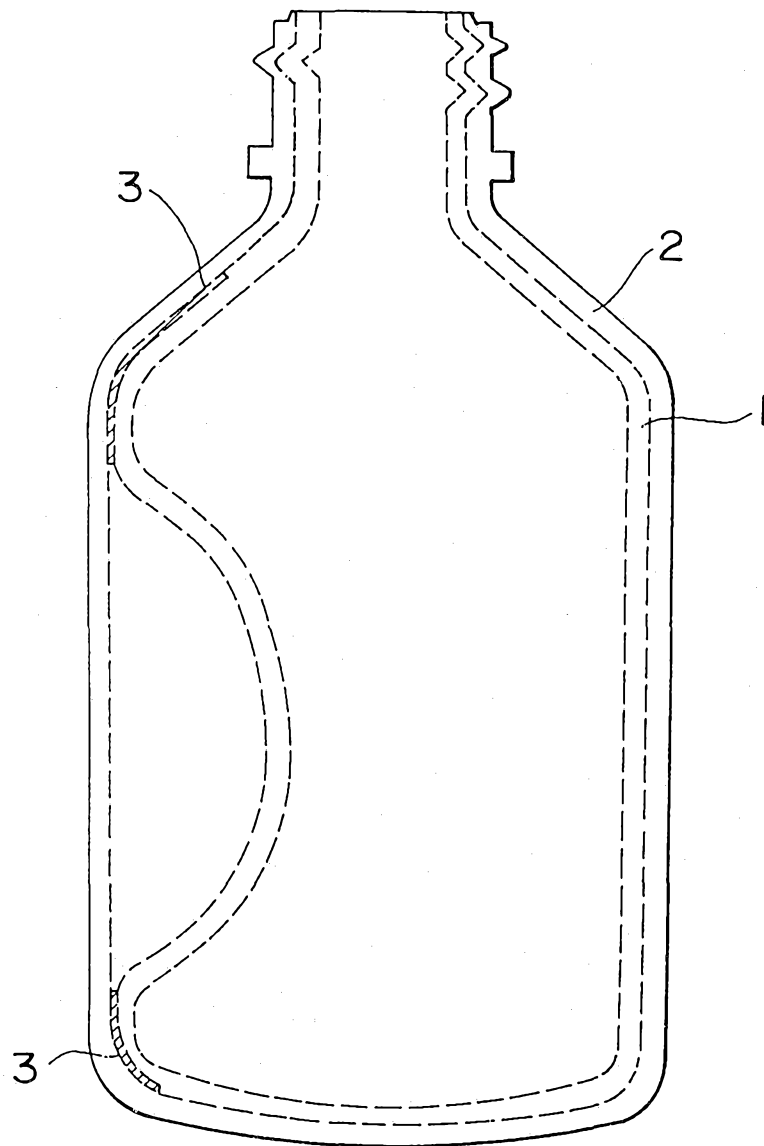
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FIG.4



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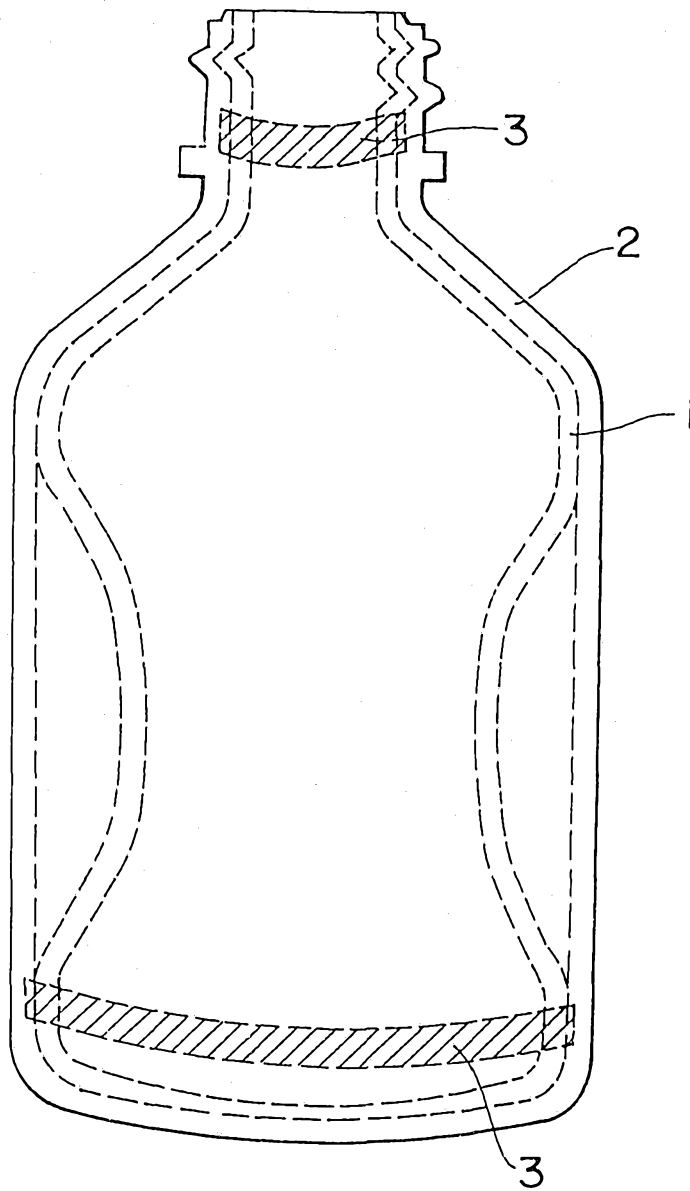
FIG. 5



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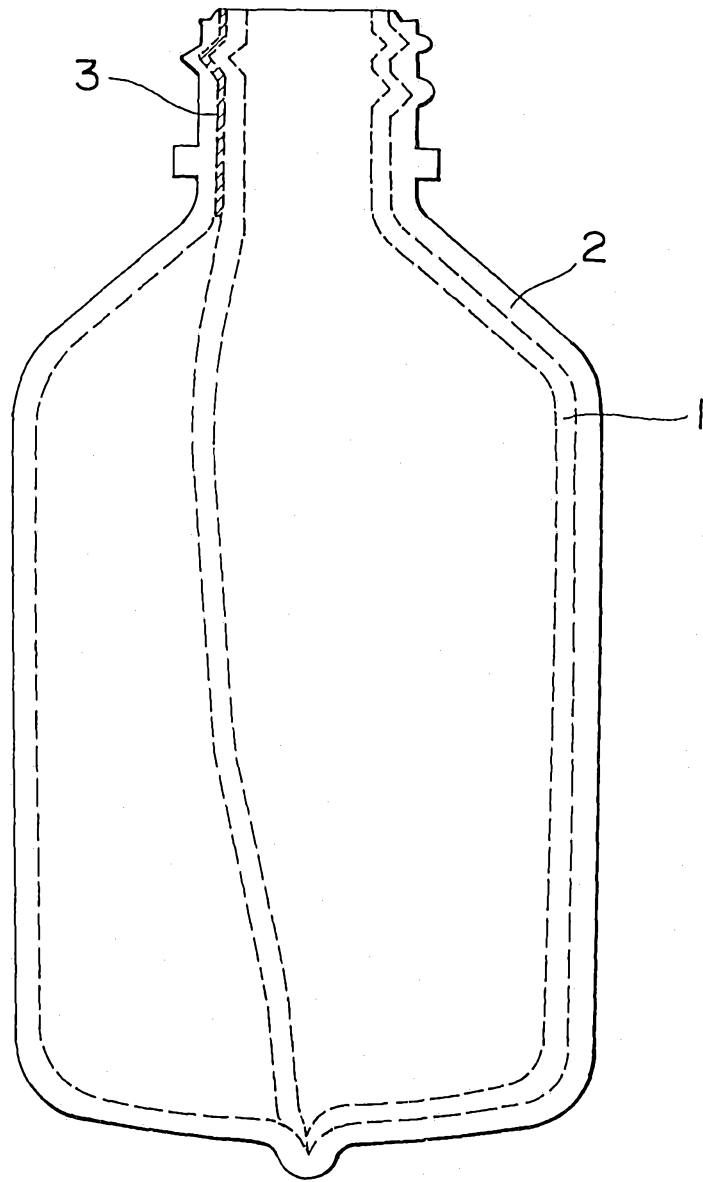
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FIG. 6



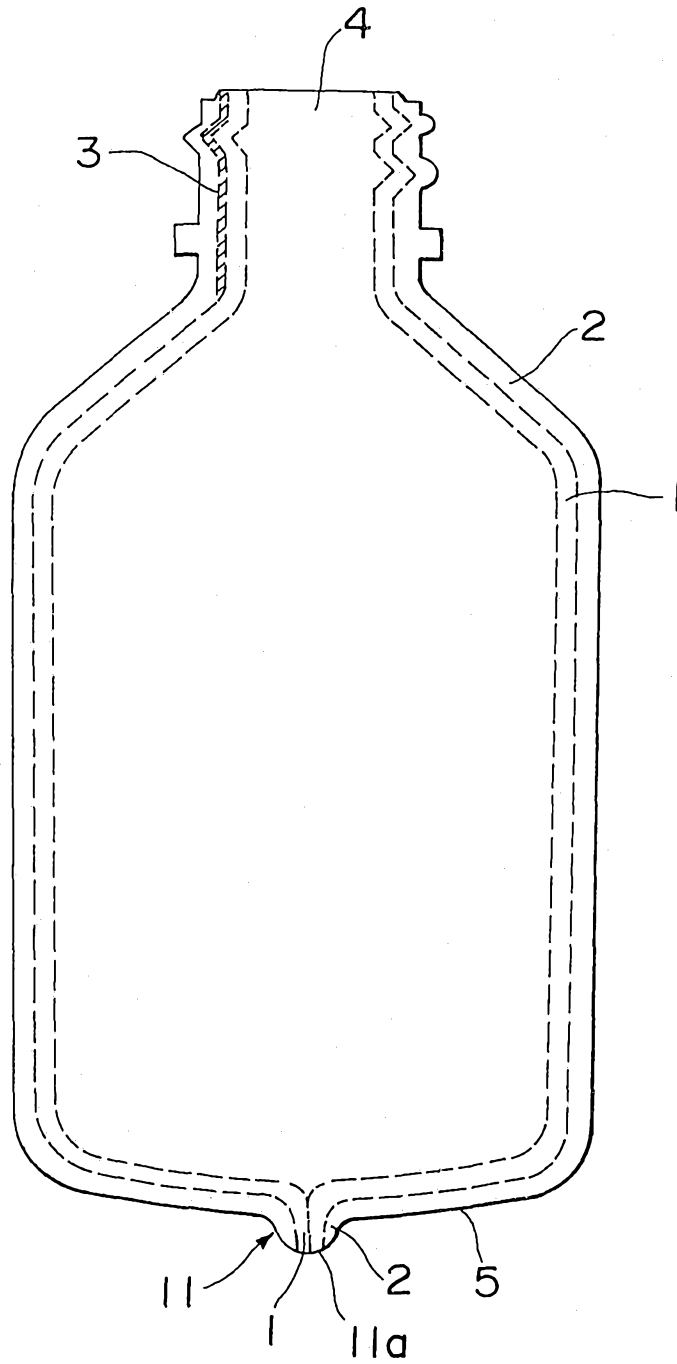
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FIG. 7



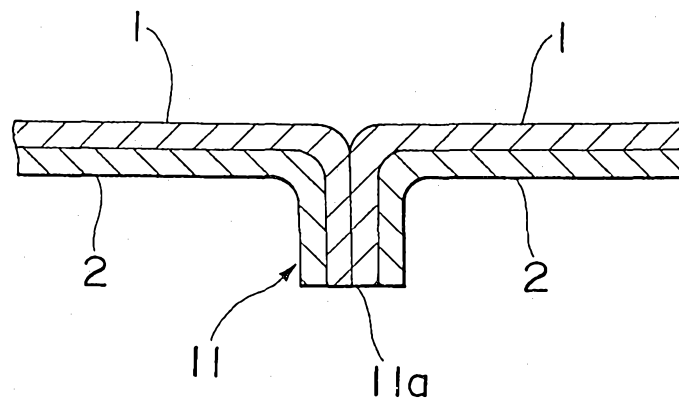
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FIG. 8



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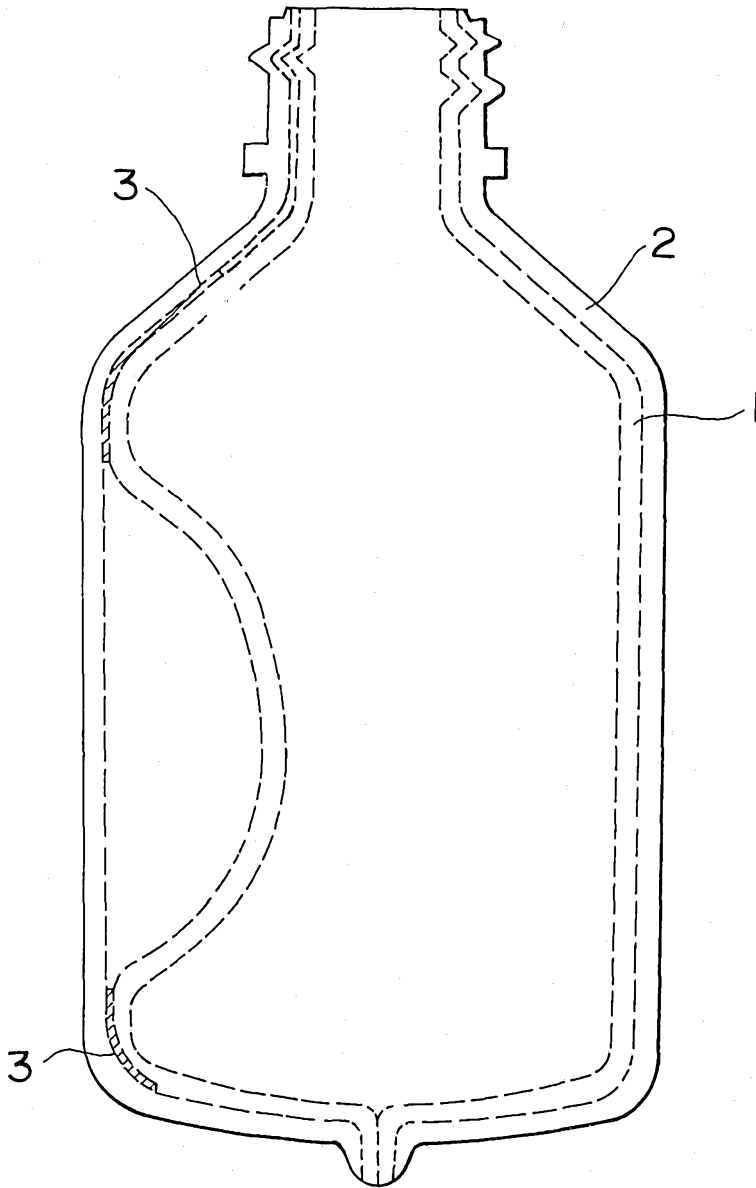
FIG. 9



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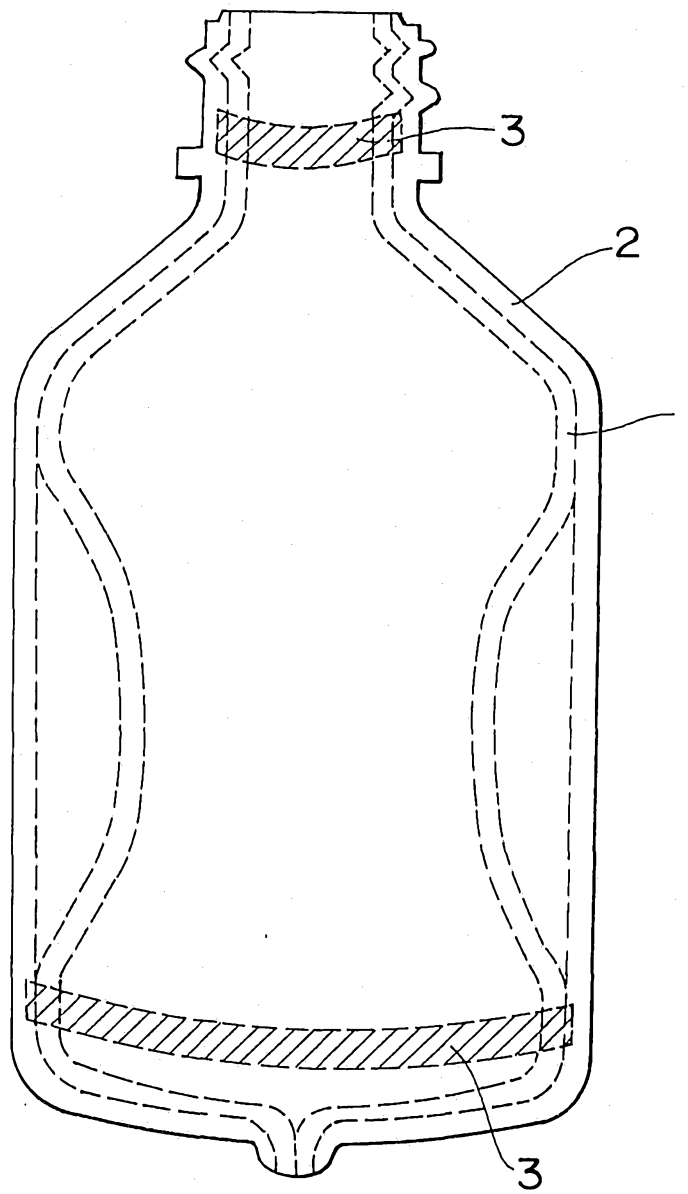
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FIG.10



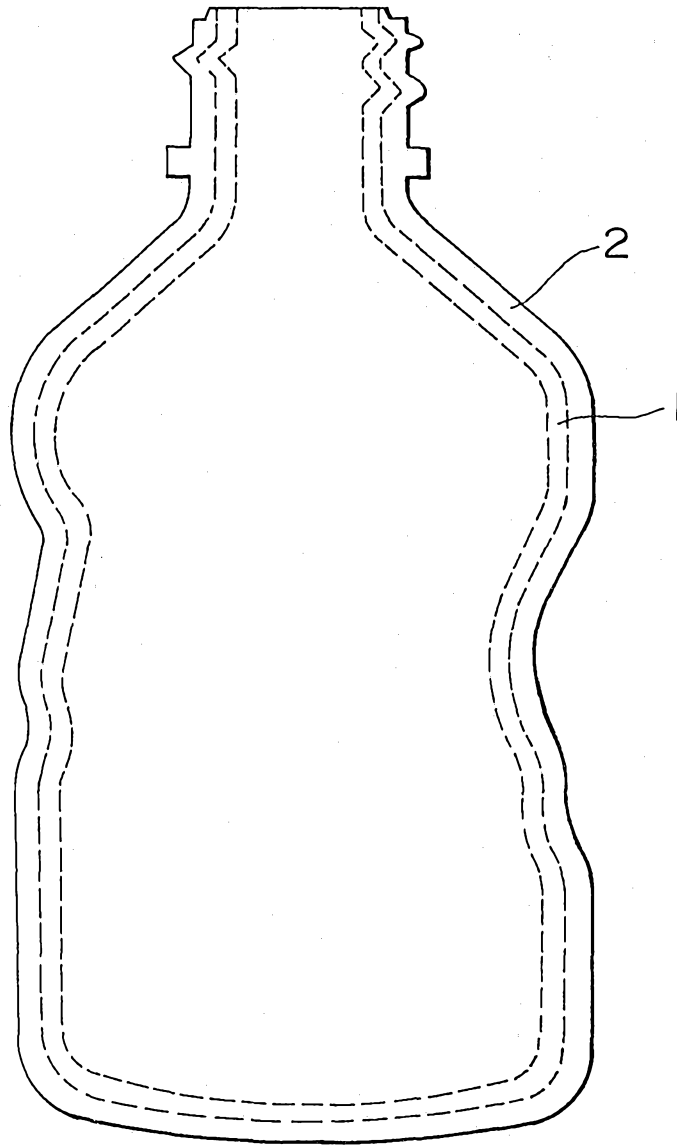
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FIG.11



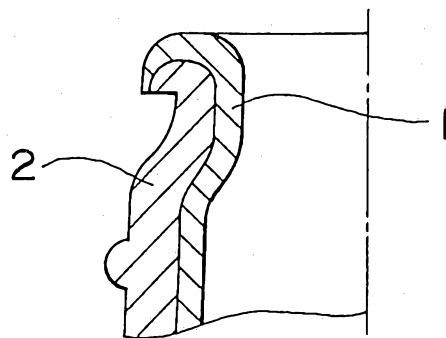
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FIG.12



(13/13)

FIG.13



INTERNATIONAL SEARCH REPORT

International Application No PCT/JP92/00997

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) ⁵				
According to International Patent Classification (IPC) or to both National Classification and IPC				
Int. Cl ⁵ B65D1/00				
II. FIELDS SEARCHED				
Minimum Documentation Searched ⁷				
Classification System	Classification Symbols			
IPC	B65D1/00, B65D77/06, B65D5/40			
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸				
Jitsuyo Shinan Koho	1926 - 1991			
Kokai Jitsuyo Shinan Koho	1971 - 1991			
III. DOCUMENTS CONSIDERED TO BE RELEVANT ⁹				
Category ⁹	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³		
X	JP, U, 2-8764 (Kirin Brewery Co., Ltd.), January 19, 1990 (19. 01. 90), Page 1, Figs. 1 to 15 (Family: none)	1-10		
X	JP, U, 53-141778 (Mitsui Toatsu Chemicals, Inc.), December 9, 1978 (09. 12. 78), Page 1, Fig. 1 (Family: none)	1-10		
X	JP, U, 1-176066 (Kirin Brewery Co., Ltd.), December 14, 1989 (14. 12. 89), Page 1, Figs. 1 to 16 (Family: none)	1-10		
Y	JP, A, 63-272528 (Yoshino Kogyosho Co., Ltd.), November 10, 1988 (10. 11. 88), Page 1, Figs. 1 to 10 (Family: none)	14		
<p>¹⁰ Special categories of cited documents:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </td> <td style="width: 50%; border: none;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"S" document member of the same patent family</p> </td> </tr> </table>			<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"S" document member of the same patent family</p>
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IV. CERTIFICATION				
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report			
October 29, 1992 (29. 10. 92)	December 1, 1992 (01. 12. 92)			
International Searching Authority	Signature of Authorized Officer			
Japanese Patent Office				

国際調査報告

国際出願番号 PCT/JP 92 / 00997

I. 発明の属する分野の分類		
国際特許分類 (IPC) Int. Cl. ⁸ B 65 D 1 / 0 0		
II. 国際調査を行った分野		
調査を行った最小限資料		
分類体系	分類記号	
IPC	B 65 D 1 / 0 0, B 65 D 7 7 / 0 6, B 65 D 5 / 4 0	
最小限資料以外の資料で調査を行ったもの		
日本国実用新案公報 1926-1991年		
日本国公開実用新案公報 1971-1991年		
III. 関連する技術に関する文献		
引用文献の ※ カテゴリー	引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示	請求の範囲の番号
X	JP, U, 2-8764 (麒麟麦酒株式会社), 19. 1月. 1990 (19. 01. 90), 第1頁, 第1-15図, (ファミリーなし)	1-10
X	JP, U, 53-141778 (三井東圧化学株式会社), 9. 12月. 1978 (09. 12. 78), 第1頁, 第1図, (ファミリーなし)	1-10
X	JP, U, 1-176066 (麒麟麦酒株式会社), 14. 12月. 1989 (14. 12. 89), 第1頁, 第1-16図, (ファミリーなし)	1-10
Y	JP, A, 63-272528 (株式会社 吉野工業所), 10. 11月. 1988 (10. 11. 88), 第1頁, 第1-10図, (ファミリーなし)	14
<p>※ 引用文献のカテゴリー</p> <p>「A」 特に関連のある文献ではなく、一般的技術水準を示すもの</p> <p>「E」 先行文献ではあるが、国際出願日以後に公表されたもの</p> <p>「L」 優先権主張に疑義を提起する文献又は他の文献の発行日若しくは他の特別な理由を確立するために引用する文献 (理由を付す)</p> <p>「O」 口頭による開示、使用、展示等に言及する文献</p> <p>「P」 国際出願日前で、かつ優先権の主張の基礎となる出願の日の後に公表された文献</p> <p>「T」 国際出願日又は優先日の後に公表された文献であって出願と矛盾するものではなく、発明の原理又は理論の理解のために引用するもの</p> <p>「X」 特に関連のある文献であって、当該文献のみで発明の新規性又は進歩性がないと考えられるもの</p> <p>「Y」 特に関連のある文献であって、当該文献と他の1以上の文献との、当業者にとって自明である組合せによって進歩性がないと考えられるもの</p> <p>「&」 同一パテントファミリーの文献</p>		
IV. 認 証		
国際調査を完了した日	29. 10. 92	国際調査報告の発送日
		01. 12. 92
国際調査機関	権限のある職員	3 E 7 4 4 5
日本国特許庁 (ISA/JP)	特許庁審査官	伏見隆夫