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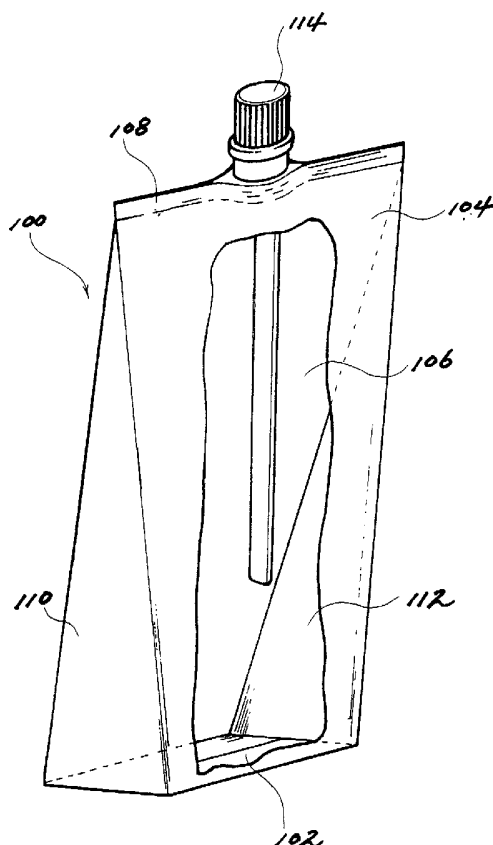
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[Continued on next page]

(54) Title: PENTAHEDRON CONTAINER WITH SPOUT ASSEMBLY



(57) Abstract: A pentahedron container with a spout assembly is disclosed. The pentahedron container includes a rectangular bottom portion, a reverse- trapezoidal front portion, a reverse-trapezoidal rear portion, triangular side portions connecting the front and rear portions, and a top sealing portions. The spout assembly is provided on a predetermined portion of the top sealing portion.



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## PENTAHEDRON CONTAINER WITH SPOUT ASSEMBLY

### TECHNICAL FIELD

The present invention relates to a pentahedron container with a  
5 spout assembly that can contains liquid such as juice, milk or other  
beverages so as to be packaged, transported and sold in the market.

Particularly, the present invention relates to a container having a  
bottom that is sealed in an inline-state and than folded at its both ends  
outside or inside and a top sealed in an inline-state, whereby it has a  
10 shape of, when viewed from a front, a wide-top/narrow-bottom, and  
when viewed from a side, a narrow-top/wide-bottom, thereby  
improving its self-standing ability and aesthetic sense.

In addition, the present invention relates to a container that is  
provided with a spout assembly enabling to make it easy for a user to  
15 suck and dispense the liquid contents.

### BACKGROUND ART

Generally, beverages such as cola, juice, mineral water and other  
drinkable liquid are contained in a variety of containers to be packaged,  
transported and sold in the markets.

As such containers, a cylindrical container such as pet bottles and cans, a square-hexahedron container, and a triangular-tetrahedron containers have been well known and widely used.

In recent years, a pentahedron container having a shape of, when  
5 viewed from a front, a wide-top/narrow-bottom, and when viewed from a side, a narrow-top/wide-bottom, thereby improving its self-standing ability and aesthetic sense has been widely used.

Such conventional containers will be described more in detail herein after.

10 FIG. 3 (Japanese unexamined Patent No. S62-41936) shows a container 1 in which an opening piece 3 is sealed with a sealing portion 2 so that the sealing portion 2 can be easily opened.

However, although the container is designed to be easily opened, it needs additional member such as a straw to drink the beverage.

15 FIG. 4 (Japanese unexamined Utility Model No. 63-581) shows a container 1 provided at its top with a thin film 4 through which a straw can be inserted into the container. This has still a problem of needing the straw and of making it difficult to suck the beverage by vacuum applied in the container due to its rectangular top.

FIG. 5(a,b) (Japanese Utility Model No. 63-13146) shows a container 1 provided with a zipper 5 on a sealing portion to improve the opening and reclose convenience. However, it has also still a problem of needing of additional straw for drinking the beverage.

5        FIG. 6(a,b) (Japanese Patent No. S62-54698) discloses a container 1 provided with a cutting line 6 on a sealing portion 2 so that a pouring hole can be formed when the cutting line 6 is cut-away. Therefore, it is easy to drink the beverage through the pouring hole by contacting lip on the pouring hole. However, for children and elderly  
10    people, it is not easy to cut the cutting line 6. In addition, it is the most critical disadvantage that the container should be upside-down when the user drinks the beverage and the pouring hole 7 is exposed to the outer air, which causes the hygienic problems.

FIG. 7 (Japanese Utility Model No. S63-15147) discloses a  
15    container 1 provided at its side portion with a cover 8.

FIG. 8 (Japanese Utility Model No. S53-87889) is directed to a container 1 provided at its top with a pouring hole 9 and an air intake hole 10. The top o the container 1 is covered with a cover 11. In use, after the cover 11 is removed, when the container is leaned to one side,

the beverage is poured through the pouring hole 9 while air is intaken through the air intake hole 10.

However, this has also a problem of needing of straw to suck the beverage.

5           FIG. 9 (Korean Utility Model No. 84-1535) discloses a container, one side of which a straw 12 is attached, enabling for the user to drink the beverage through the straw. However, when a predetermined force is applied to the container during the course of inserting the straw 12 into an insertion hole of the container, the contents in the container  
10   may be inadvertently poured out of the container through the straw.

In addition, a thin film 4 formed on the top of the container 1 is exposed to the outside, impurities such as dust can be mixed into the beverage when the straw is inserted through the thin film. Furthermore, when the straw is tightly inserted into the thin film 4, air cannot be  
15   introduced into the container, making it difficult for the user to easily suck the beverage.

FIG. 10 (British Patent No. 2,159,123) is directed to a container 1 having a spout formed on a top-sealing portion 13. It has an advantage of easy drink as the container is designed to be easily contracted while

the user is drinking the beverage.

However, due to the structure of the container, it is difficult for the sealing to be fixed on one side, as a result of which the container may be easily fallen when it is made to be hard or thick.

5           To solve the above problems, a standing pouch container having a bottom gusset sealed with additional material or with an oval-shape has been proposed. The bottom gusset opens such that the pouch container can stand. However, the pouch is made of paper, it is not effect for the manufacturing process or reliability of the contents.

10           FIG. 11 (Korean Utility Model Application No. 99-9222) discloses a container 1 having an integrally formed straw 16 that is inserted through a top hole and bent to one side to seal an air intake hole 17. However, the sealing process of the air intake hole is very difficult, it is not effective for the manufacturing process.

15           FIG. 12 (Korean Utility Model Application No. 2001-19170) is directed to a container 1 provided at its top with a straw 18 so as to provide the drinking convenience. However, the top of the container is formed in a rectangular-shape, the container 1 is not effectively contracted, making it difficult to such the beverage.

FIG. 13 (US. Patent No. 5,108,029) discloses a container 1 provided with a spout 19 on its top. However, the spout is only functioning as a dispenser for dispensing the beverage to another container.

5        FIG. 14 (Tetra Pack of Swedish Company) is directed to a container having an inline top sealed portion and a thin film formed in the vicinity of the sealed portion.

      Since the sealed portion is formed in an inline-shape, when the user sucks the beverage through the straw inserted through the thin film  
10    21, the lower portion of the container is easily contracted, making it easy for the user to drink the beverage through the straw. However, it is still also having a problem of needing of additional straw.

## DISCLOSURE OF INVENTION

15        Therefore, the present invention has been made in an effort to solve the above-described problems of the prior art. It is an objective of the present invention to provide a pentahedron container enabling for a user to suck the beverage and dispense the beverage to another container.

It is another objective of the present invention to provide a container having a bottom that is sealed in an inline-state and than folded at its both ends outside or inside and a top sealed in an inline-state, whereby it has a shape of, when viewed from a front, a wide-top/narrow-bottom, and when viewed from a side, a narrow-top/wide-bottom, thereby improving its self-standing ability and aesthetic sense.

It is another objective of the present invention to provide a container having an inline top sealed portion on which a spout is mounted so that the lower portion of the container can be easily contracted when a user sucks the beverage through the spout, thereby making it easy for the user to drink the beverage.

To achieve the above objectives, the present invention provides a container for storing fluid comprising a bottom sealing portion having a rectangular-shape; a top sealing portion having an inline-shape; front and rear portions each having a reverse trapezoid-shape; left and right side portions connecting the front and rear portions, each of the left and right side portions being formed in a triangular-shape; and a spout for sucking or dispensing the fluid in the container, the spout being fixed the

container.

The spout is fixed on at least a portion of the top sealing portion or a top sealing corner portion.

5 BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1a is a partly cut-away perspective view of a pentahedron container with a spout according to a first embodiment of the present invention;

FIG. 1b is a perspective view illustrating a bottom-sealing portion of a container depicted in FIG. 1a;

FIG. 1c is a perspective view illustrating another example of a bottom-sealing portion of a container depicted in FIG. 1a;

FIG. 2 is a partly cut-away perspective view of a pentahedron container with a spout according to a second embodiment of the present invention; and

FIGS. 3 to 14 are views illustrating a variety of conventional arts.

BEST MODE FOR CARRYING OUT THE INVENTION

Preferred embodiments of the present invention will be

described more in detail hereinafter in conjunction with the accompanying drawings.

The present invention is described through a couple of embodiment and like reference Nos. are assigned to like parts  
5 throughout the drawings for the description convenience.

In addition, material used for a container of the present invention is formed of a multi-layer film laminated with at least two materials selected from the group consisting of paper, synthetic resin, and aluminum foil.

10 FIGS. 1a to 1c show a pentahedron container with a spout according to a preferred embodiment of the present invention.

As shown in the drawings, to form a container 100 of the present invention, a cylindrical body is first prepared. That is, a lower end of the cylindrical body is first folded and sealed to defining a rectangular  
15 sealing portion 102 and an upper end of the cylindrical body is sealed in an inline-shape to define a sealing portion 108 (see FIG. 1b). Accordingly, front and rear portions 104 and 106 of the container 100 are shaped in a reverse trapezoid. The side portions 110 and 112 connecting the front and rear portions 104 and 106 are shaped in a

triangle.

Accordingly, the overall shape of the container is, when viewed from a front, a wide-top/narrow-bottom, and when viewed from a side, a narrow-top/wide-bottom.

5           In addition, a spout 114 for dispensing or sucking beverage is provided on the upper sealing portion 108.

The spout 114 is fixed in the sealing portion 108 by being disposed in the sealing portion 108 before the sealing portion 108 is sealed.

10           As shown in 1b, when the bottom-sealing portion is formed, both ends of the bottom-sealing portion are folded on the bottom. However, the present invention is not limited to this. That is, the both ends of the bottom-sealing portion can be folded on the side portions 110 and 112.

FIG. 2 shows a pentahedron container according to a second  
15           embodiment of the present invention. In this embodiment, a spout 114 is formed on a top-sealing corner.

In the above-described embodiment, a structure of the spout is not limiting the present invention. Any kinds of spouts that can be used for dispensing and sucking beverage can be used.

As described above, after opening a cap of the spout 114, when the user sucks the beverage container in the container, the beverage is sucked through the pouring hole of the spout. In addition, when the user intends to dispense the beverage to another cup or container, the beverage can be dispensed by overturning the container 100.

As described above, since the pentahedron container has a shape of, when viewed from a front, a wide-top/narrow-bottom, and when viewed from a side, a narrow-top/wide-bottom, thereby enlarging the surface area, which is greater than the hexahedron container. In addition, since the spout is integrally formed, making it easy to suck and dispense the beverage.

Although preferred embodiments of the present invention have been described in detail hereinabove, it should be clearly understood that many variations and/or modifications of the basic inventive concepts herein taught which may appear to those skilled in the present art will still fall within the spirit and scope of the present invention, as defined in the appended claims.

## INDUSTRIAL APPLICABILITY

As is well known from the above-described embodiments, the container of the present invention can be used for storing beverages such as milk and juice so that the user can suck or dispense the beverages. The container can be also used for storing industrial fluid  
5 such as detergent and oil as it is designed to easily pour the contents without spilling them.

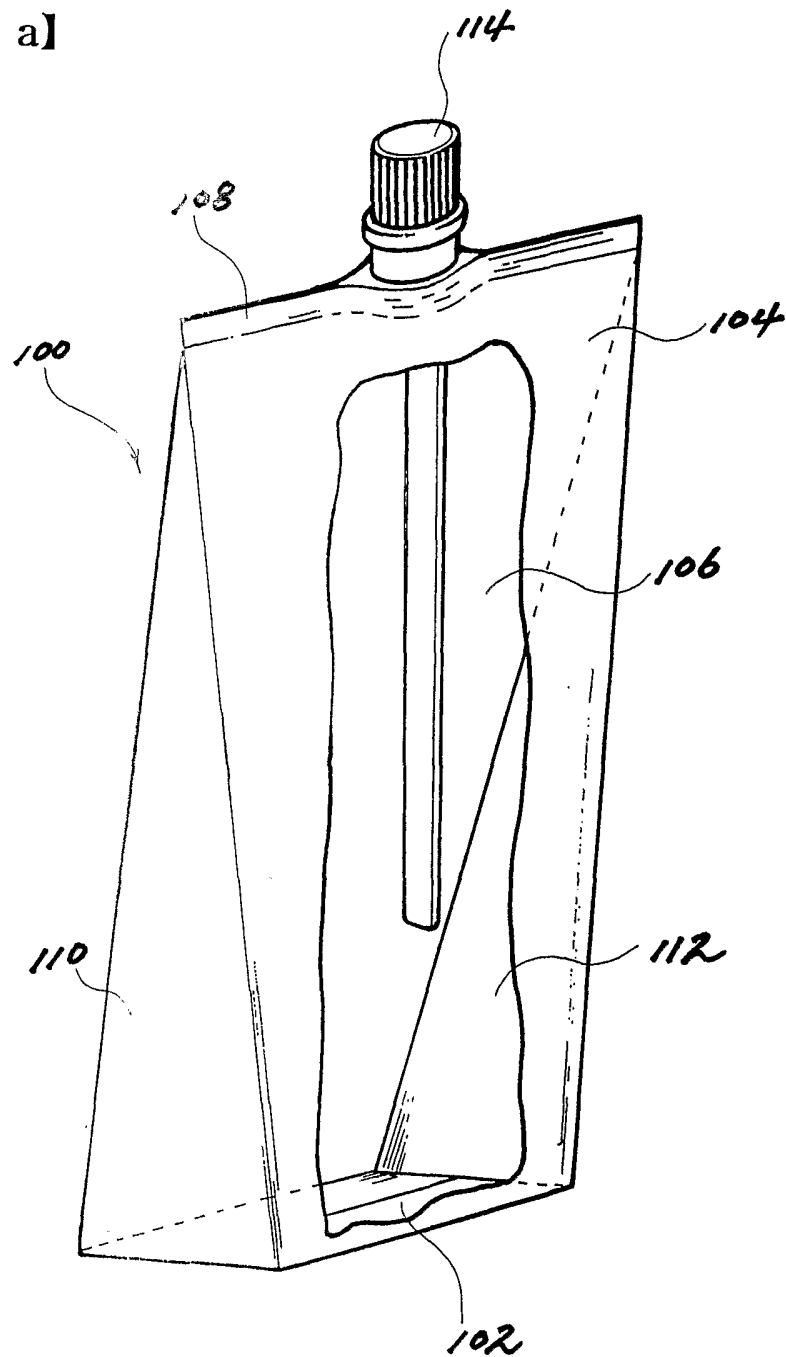
## CLAIMS

1. A container for storing fluid comprising:  
a bottom-sealing portion having a rectangular-shape;  
a top-sealing portion having an inline-shape;  
5 front and rear portions each having a reverse trapezoid-shape;  
left and right side portions connecting the front and rear portions,  
each of the left and right side portions being formed in a  
triangular-shape; and  
a spout for sucking or dispensing the fluid in the container, the  
10 spout being fixed the container.
2. A container of claim 1 wherein the spout is fixed on at least a  
portion of the top-sealing portion.
3. A container of claim1 wherein the spout is fixed on a top  
sealing corner portion.

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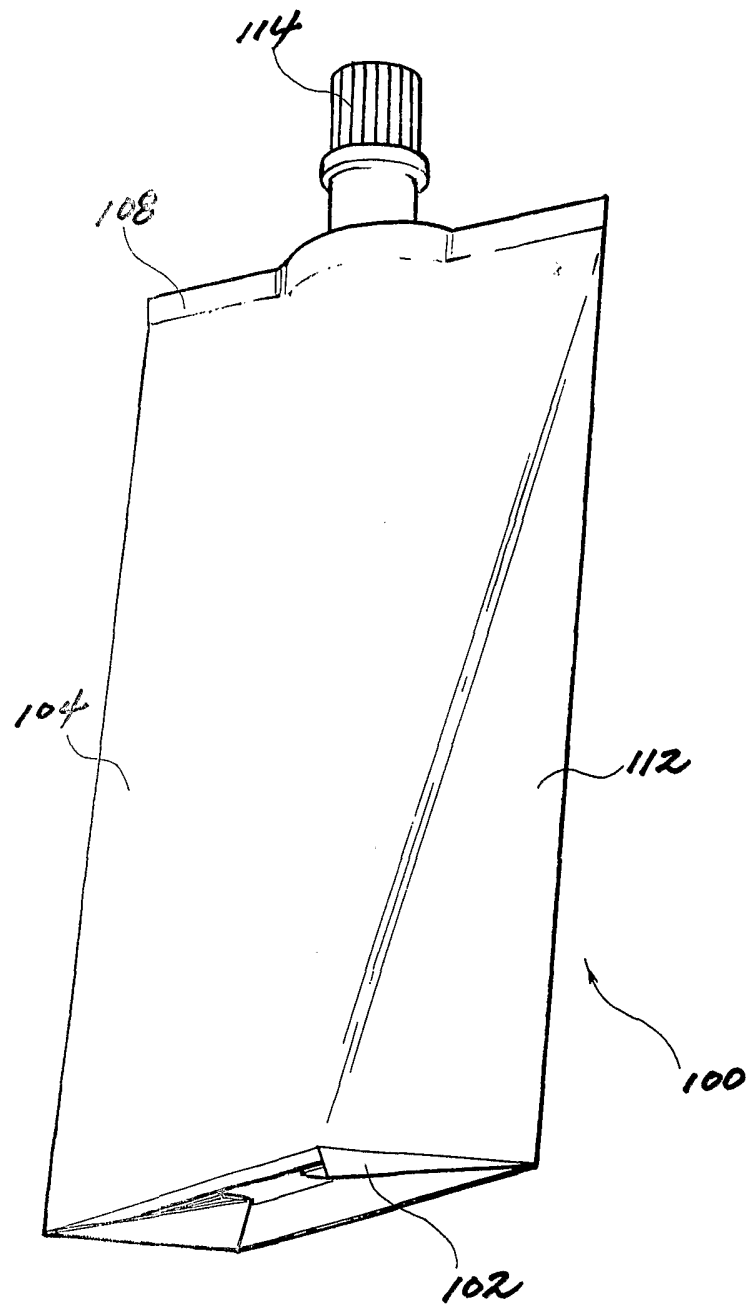
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【FIG 1 a】



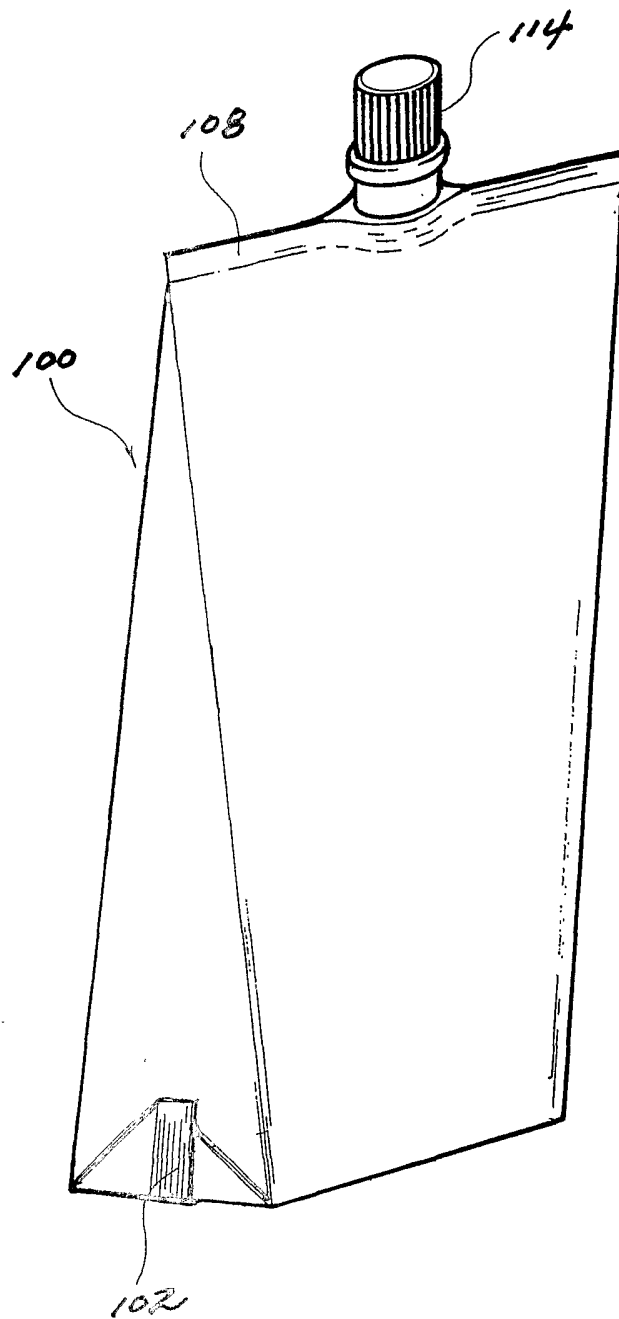
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【FIG 1 b】



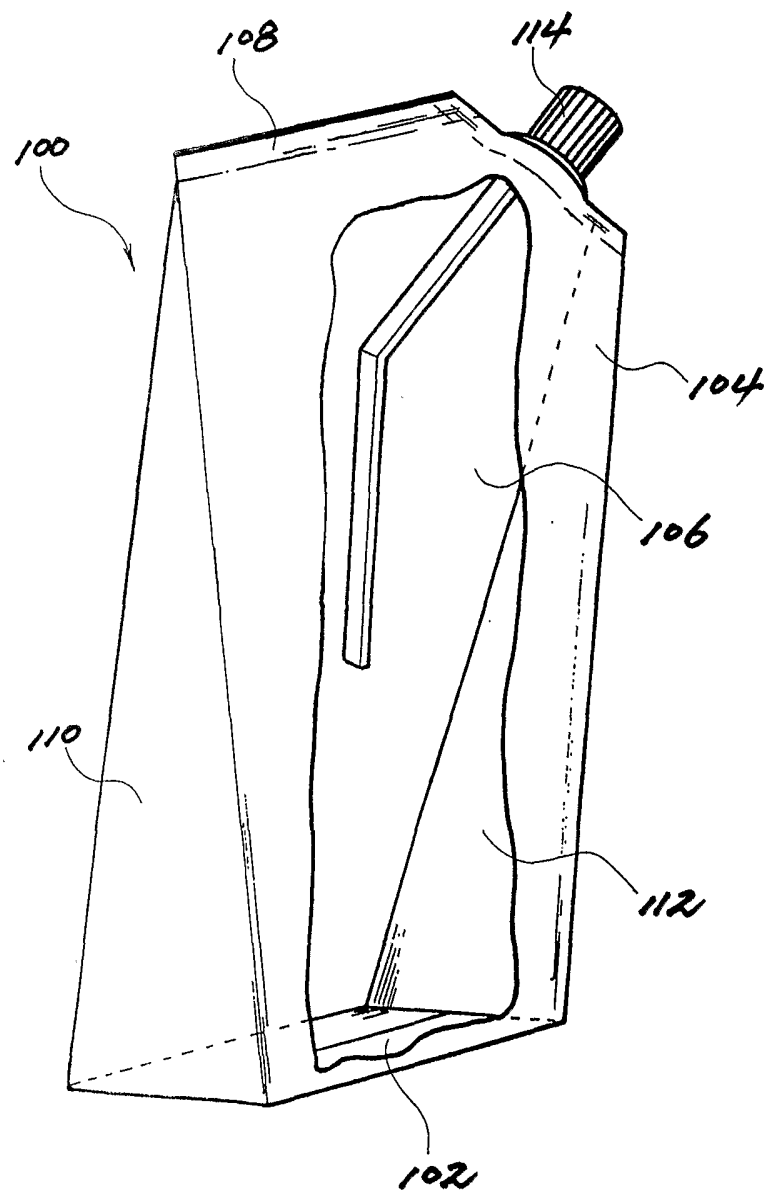
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【FIG 1 c】

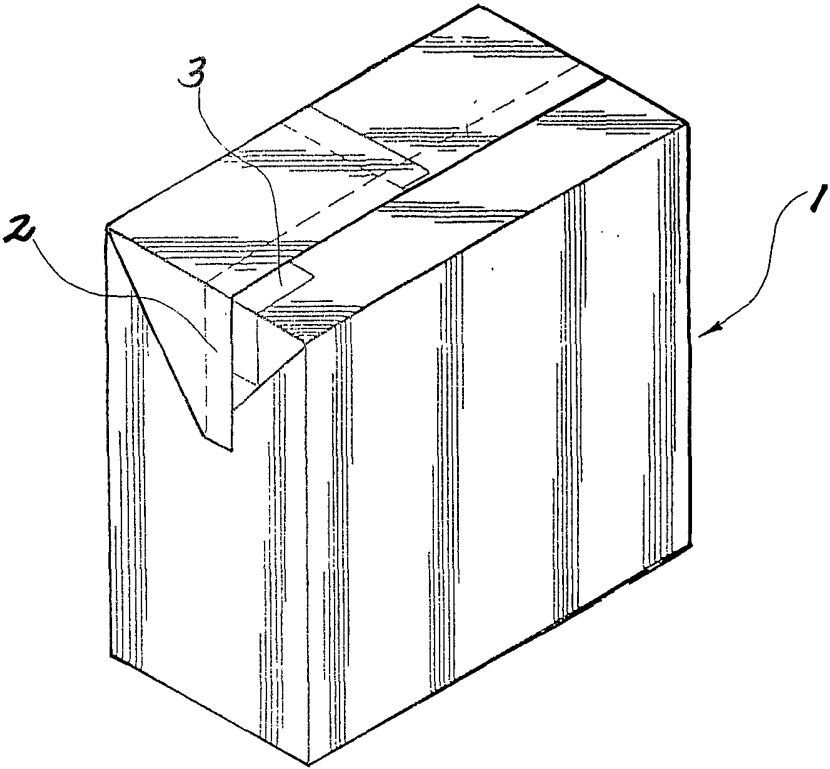


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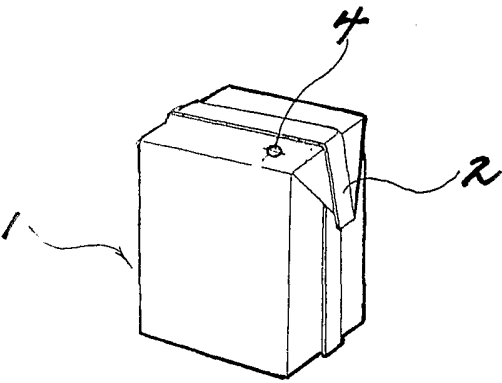
【FIG 2】



【FIG 3】

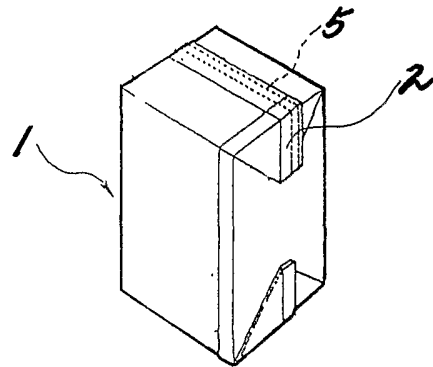


【FIG 4】

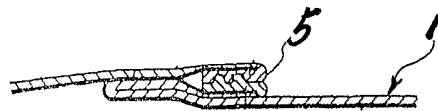


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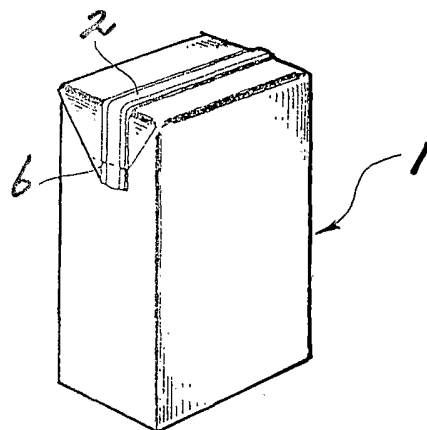
【FIG 5 a】



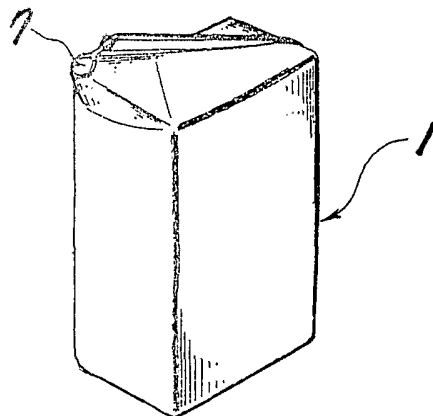
【FIG 5 b】



【FIG 6 a】

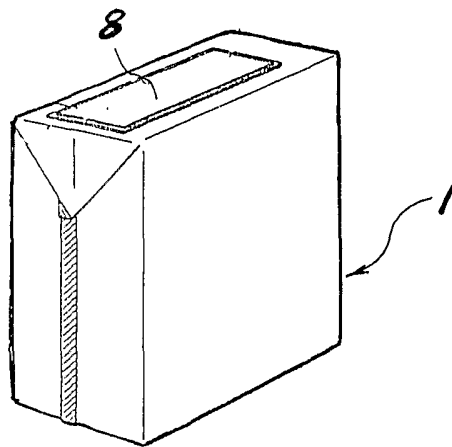


【FIG 6 b】

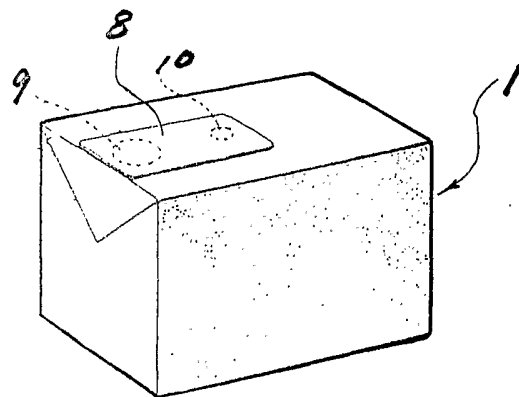


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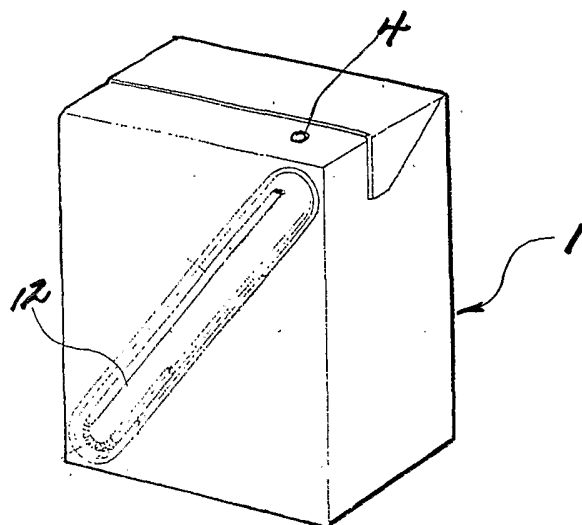
【FIG 7】



【FIG 8】

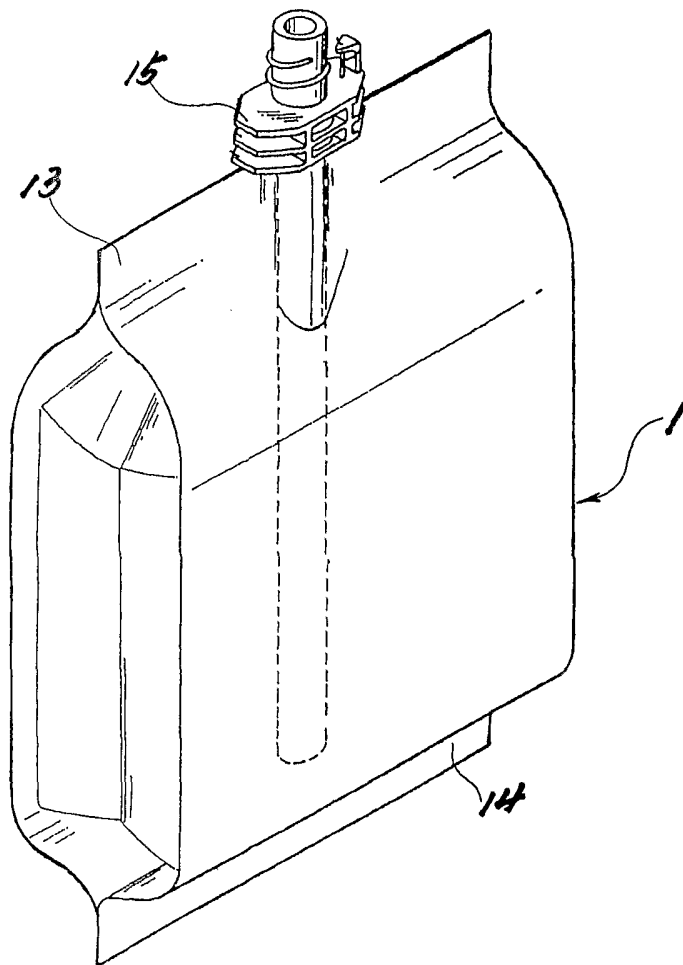


【FIG 9】

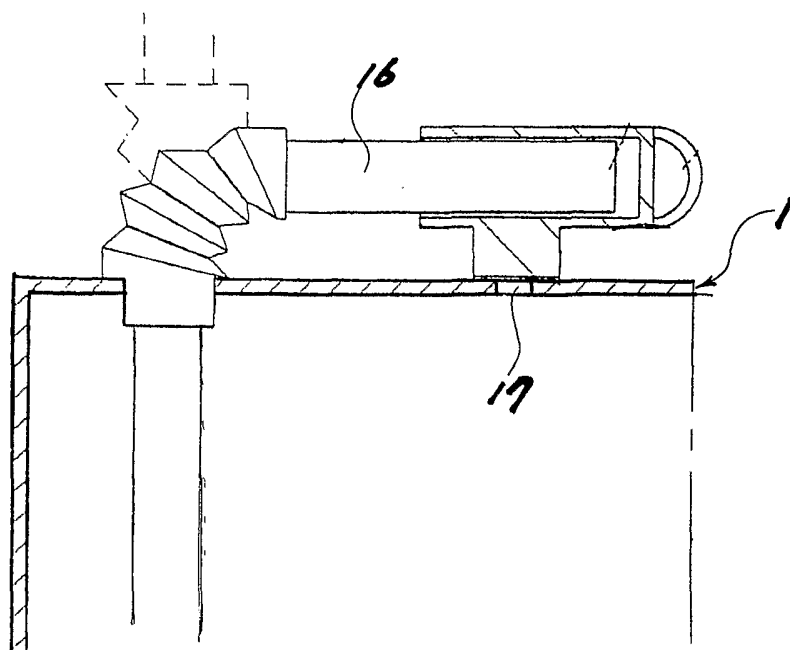


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【FIG 10】

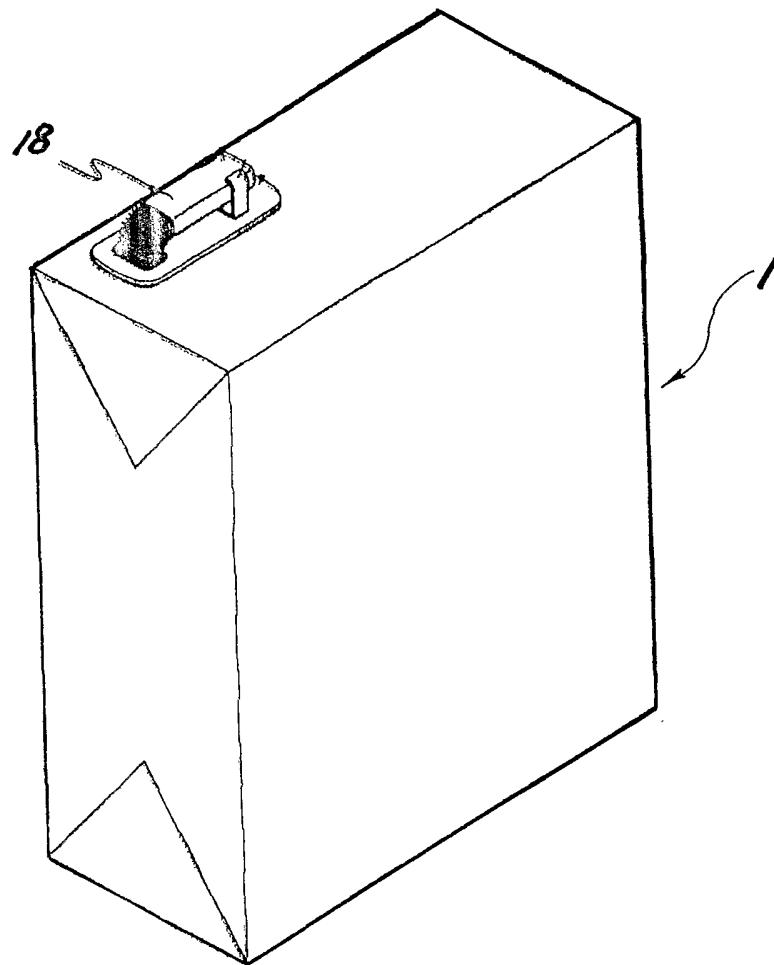


【FIG 11】



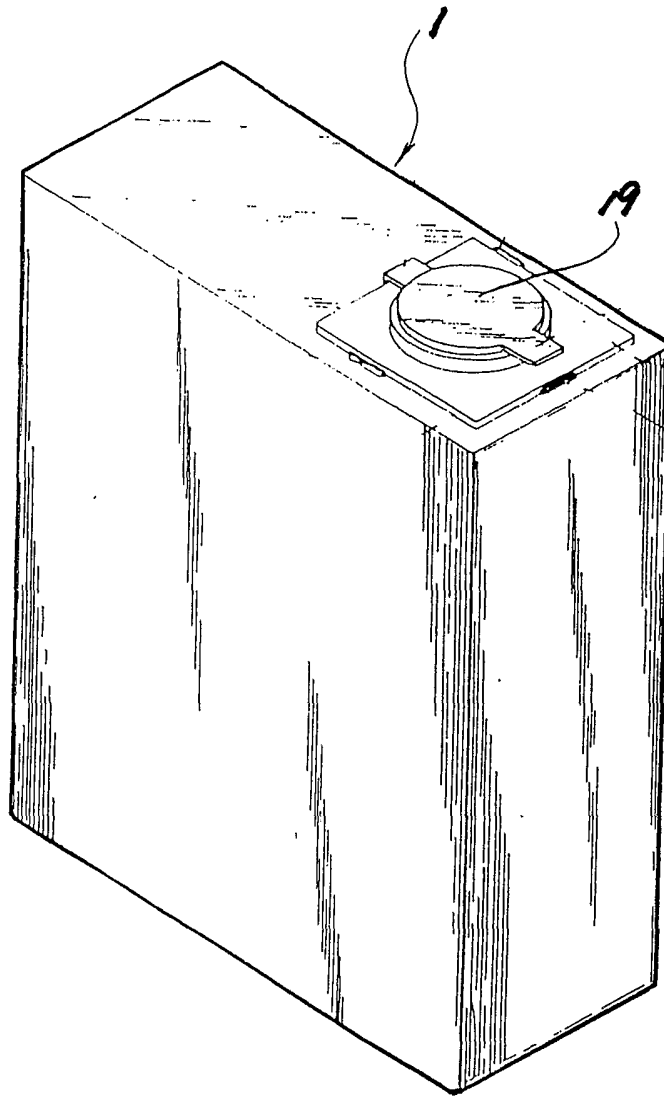
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【FIG 12】



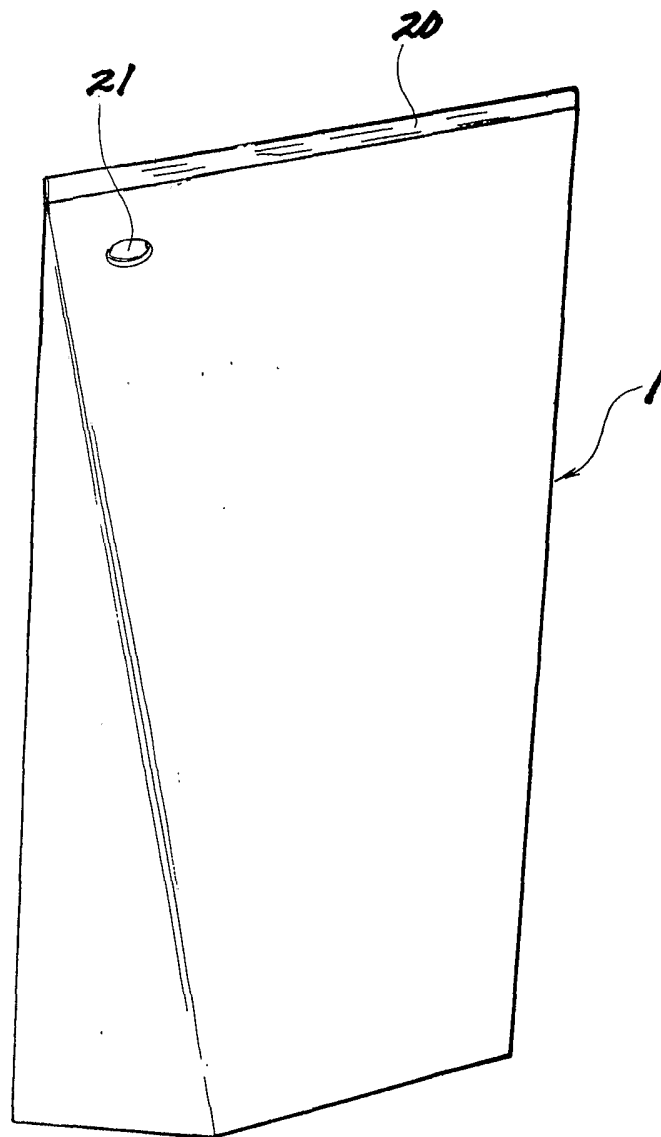
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【FIG 13】



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【FIG 14】



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR02/01471

**A. CLASSIFICATION OF SUBJECT MATTER****IPC7 B65D 33/36**

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

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC7 B65D 33/36, B65D 5/06, B65D 85/80

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

KR, JP : classes as above

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|------------------------------------------------------------------------------------|-----------------------|
| X         | JP 63 - 34070 U(HOSOKAWA Co.) March 4, 1988<br>See Figure 1.                       | 1, 2                  |
| Y         | See Figure 1.                                                                      | 3                     |
| Y         | JP 7 - 61453 A(WATANABE HARUHIKO) March 7, 1995<br>See Figure 6, 7.                | 3                     |
| A         | JP 8 - 282657 A(YATHY NOBUSIKE) October 29, 1996<br>See whole document             | 1                     |

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

\* Special categories of cited documents:

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

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"&amp;" document member of the same patent family

Date of the actual completion of the international search

31 OCTOBER 2002 (31.10.2002)

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR02/01471

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|-------------------------------------------|---------------------|----------------------------|---------------------|
| JP 63 - 34070 U                           | 04 - 03 - 1988      | None                       |                     |
| -----                                     |                     |                            |                     |
| JP 7 - 61453 A                            | 07 - 03 - 1995      | None                       |                     |
| -----                                     |                     |                            |                     |
| JP 8 - 282657 A                           | 29 - 10 - 1996      | None                       |                     |