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Description

Technical Field:

[0001] This invention relates to a container having a mouth portion forming, on the outer surface thereof, a screw thread for fastening a cap, and, specifically, to a container for containing liquids such as beverages and liquid seasonings.

Background Art:

[0002] The containers can be classified into plastic containers, glass containers, metal containers and the like containers depending on their materials. The containers formed by using any material that have now been widely used are having a mouth portion with which a cap engages by screw. Owing to their excellent sealing capability, these containers have been widely used for containing various kinds of liquids such as beverages and liquid seasonings.

[0003] However, the containers containing liquids are, without exception, accompanied by a problem of liquid dripping. Therefore, a contrivance becomes necessary so that, when the liquid contained in the container is poured out through the mouth portion, the liquid that is poured out will not drip onto the exterior along the outer wall surface of the mouth portion of the container.

[0004] A variety of proposals have been made concerning the containers for effectively preventing the liquid from dripping. However, many of them are to form a water-repellent coating on the inner and outer surfaces of the mouth portion of the containers. For instance, a patent document 1 proposes forming a coating of tin oxide or titanium oxide on the mouth portion of the containers. A patent document 2 proposes forming a coating on the mouth portion of the containers by firing a silicone oil.

[0005] Further, patent document 3 discloses a mouth of a container according to the preamble of appended claim 1 for flowing materials, in particular a glass bottle, having a peripheral groove provided in the outer limiting surface.

Prior Art Documents:

Patent Documents:

[0006]

Patent document 1: JP-A-2001-97384
Patent document 2: JP-A-9-193937
Patent document 3: WO 98/07553 A1

Outline of the Invention:

Problems that the Invention is to Solve:

[0007] Forming a water-repellent coating on the mouth portion of the containers is effective in preventing the dripping of liquid as is done by the above prior arts. The coating, however, must be formed by using a special material so as to cover the mouth portion of the containers involving problems such as an increase in the cost and clumsy operation for forming the coating. Specifically, when the screw thread for fastening the cap is formed on the outer circumferential surface of the mouth portion of the container, the screw thread extends to nearly the upper end of the mouth portion of the container. Therefore, the upper end and its vicinity of the mouth portion of the container become uneven making it further difficult to form the coating and causing the thickness of the coating to vary. In this case, if the upper end of the screw thread is formed at a low position, then it is allowed to increase the area of the flat side wall surface continuous to the upper end of the mouth portion of the container and to easily form the coating causing, however, the mouth portion of the container and the height of the cap to become unnecessary large, which, therefore, is not desirable.

[0008] It is, therefore, an object of the present invention to provide a container having a mouth portion forming, on the outer circumferential surface thereof, a screw thread for fastening a cap without forming a coating that covers the mouth portion, and effectively preventing the liquid contained therein from dripping along the outer circumferential surface of the mouth portion when the liquid contained therein is poured out from the mouth portion.

Means for Solving the Problems:

[0009] These problems are solved with the container of claim 1.

[0010] In the container of the present invention, it is desired that:

(1) The horizontally recessed portion is annular in shape;
(2) The distance from the upper wall surface of the horizontally recessed portion to the upper end of the mouth portion is in a range of 1 to 2 mm; and
(3) The depth of the horizontally recessed portion is in a range of 0.2 to 1.5 mm.

Specifically, from the standpoint of very easily forming the horizontally recessed portion satisfying a predetermined angle θ of intersection, it is desired that:

(4) The container is made of a plastic material.

It is, further, desired that the container of the present invention:

(5) Is used for containing non-carbonated beverages; and
(6) Has the mouth portion formed in white color, the container being used for containing colored liquids.

Effects of the Invention:

[0011] The container of the present invention has an annular or arcuate horizontally recessed portion formed in the outer circumferential surface of the mouth portion between the upper end of the screw thread and the upper end of the mouth portion. Here, an important feature resides in that the angle θ (hereinafter often angle θ of intersection) of the upper wall surface of the horizontally recessed portion relative to the vertical direction is set to be 90 degrees to 150 degrees, i.e., set to an angle close to right angle. This makes it possible to effectively prevent the liquid content from dripping along the outer circumferential surface of the mouth portion when the liquid content is being poured out through the mouth portion of the container. That is, even if the liquid that is poured out drips along the outer circumferential surface (side wall surface), the liquid is cut at the portion where the side wall surface intersects the upper wall surface of the horizontally recessed portion. As a result, the container is effectively prevented from being fouled with the liquid that drips.

[0012] Besides, the horizontally recessed portion having the angle θ of intersection that is set as described above can be easily formed by suitably selecting a mechanical means such as forming by using a metal mold or a cutting work depending on the kinds of the container materials. Therefore, the working operation is very easy as compared to forming the coating by using a special material effectively avoiding an increase in the cost, too.

Brief Description of the Drawings:

[0013]

[Fig. 1] is a view showing the whole plastic bottle which is a representative example of the container of the invention.
[Fig. 2] is a view illustrating, on an enlarged scale and in cross section, the portion A of the bottle of Fig. 1.
[Fig. 3] is a view showing a state where the liquid content is being poured out by tilting the bottle of Fig. 1.
[Fig. 4] is a view showing a state where the liquid content is being poured out by tilting the bottle of Comparative Example without forming the horizontally recessed portion.
[Fig. 5] is a schematic view illustrating the position of the arcuate recessed portion of when the container of the invention is a bottle of a square shape.
[Fig. 6] is another view illustrating, on an enlarged scale and in cross section, the portion A of bottle which is not part of the present invention.

[0014] Modes for Carrying Out the Invention:

[0015] Referring to Fig. 1 showing a plastic bottle which is a representative example of the container of the present invention, the bottle has a mouth portion generally designated at 1 at its upper portion. The lower part of the mouth portion 1 stretches to a shoulder portion 3 that curves outward. The shoulder portion 3 stretches to a body portion 5, the lower end of the body portion 5 being closed with a bottom portion 7.

[0016] As will be learned from Fig. 1, a screw thread 10 is formed on the outer circumferential surface of the mouth portion 1 and with which a cap engages by screw. A circumferential protuberance 11 is formed under the screw thread 10. Though not shown, a TE band may be provided at the lower end of the cap that is fitted by screw. Engagement of the TE band with the circumferential protuberance 11 creates evidence of not still tampered. Namely, if the cap is opened, the TE band remains on the container side being separated away from the cap letting general consumers to know that the cap was once opened.

[0017] A support ring 13 of a large diameter is formed at the lowermost par of the mouth portion 1 of the container. The container can be held and carried by utilizing the support ring 13.

[0018] Referring to an enlarged view of Fig. 2 together with Fig. 1, an annular or arcuate horizontally recessed portion 17 is formed between the upper end 10a of the screw thread 10 and the upper end 15 of the container (bottle). That is,

a side wall surface 19 stretches down in the vertical direction from the outer circumferential edge of the upper end 15 of the mouth portion, and is continuous, at a point X of intersection, to an upper wall surface 17a of the horizontally recessed portion 17.

[0019] In the present invention, it is very important from the standpoint of preventing the dripping of liquid that the upper wall surface 17a of the horizontally recessed portion 17 has an angle θ of 90 to 150 degrees and, particularly preferably, 90 to 120 degrees relative to the vertical direction. With the angle θ lying within the above range, when the container is tilted to pour out the liquid contained therein, the liquid may flow down to the side wall surface 19 from the outer circumferential edge of the upper end 15 of the mouth portion as shown in Fig. 3. In this case, however, the liquid is cut at the portion (point of intersection) X where the side wall surface 19 and the upper wall surface 17a of the horizontally recessed portion 17 are joined together and at where the force that pushes the liquid against the wall becomes zero. Namely, the liquid separates away from the container wall and falls down separating away from the mouth portion 1 of the container. The liquid drips most at the start of pouring out the liquid in a state where the container is nearly standing upright or, concretely, at the start or at the end of pouring out the liquid contained therein. By forming the horizontally recessed portion 17 having the above-mentioned angle θ according to the present invention, it is allowed to effectively prevent the liquid from dripping also at the start or at the end of pouring out the liquid content.

[0020] Here, the recessed portion 17 is horizontal and does not work as a screw thread.

[0021] If the angle θ of intersection is smaller than the above range, it becomes difficult to remove the metal mold at the time of forming. Concretely, if the angle θ of intersection is smaller than 80 degrees, it becomes difficult to remove the metal mold even by such means as forced removal or after-treatment. Further, if the angle θ is larger than the above range, the side wall surface 19 becomes continuous to the horizontally recessed portion 17 (ceiling wall 17a) so mildly that the liquid is not cut at the point X of intersection. The same also holds true when there is formed no horizontally recessed portion 17; i.e., there is no point X of intersection for cutting the liquid (i. e. , the liquid is not cut). Therefore, either if the angle θ is larger than the above range or if there has been formed no horizontally recessed portion 17, the liquid drips down from the side wall surface 19 along the screw thread 10 like the bottle shown in Fig. 4. Depending on the cases, the liquid that has dripped down, further, creeps down along the outer surface of the bottle body portion 5 to foul the entire bottle.

[0022] The horizontally recessed portion 17 is of an annular or arcuate shape. That is, the horizontally recessed portion 17 is formed over the whole circumference along the outer circumferential surface of the mouth portion 1 (annular recessed portion) or is formed intermittently along the outer circumferential surface of the mouth portion 1 (arcuate recessed portion). The horizontally recessed portion 17 of which shape be selected is suitably determined depending on the shape and use of the container. If the container of the invention is a round-shaped bottle, for example, there is no restriction on the direction in which the liquid content is to be poured out. In this case, therefore, the annular horizontally recessed portion 17 must be formed over the whole circumference along the outer circumferential surface of the mouth portion 1. On the other hand, if the container of the invention is a square-shaped container as shown in Fig. 5 and, specifically, if the container is the square-shaped container having groove portions for gripping formed in the opposing two surfaces of the container body portion, the directions for pouring out the liquid have been specified. Therefore, the horizontally recessed portion 17 formed in the mouth portion 1 does not have to be of an annular shape; i.e., there may be formed one or a plurality of arcuate horizontally recessed portions 17 intermittently so as to be in parallel relative to the side surface of the container body portion 5.

[0023] The container of the present invention should have a shape which is as sharp as possible at the point X of intersection. For instance, it is desired that the radius of curvature thereof is not more than 0.5 mm. When chamfered at the point X of intersection, it is desired that the chamfering C is as small as possible. If the point X of intersection is rounded in a large size, the liquid remaining on the sidewall surface 19 is not cut at the point X of intersection at the end of pouring the liquid but flows around to the inside of the horizontally recessed portion 17. It is, therefore, probable that the liquid may flow down to the portion where the screw thread 10 is formed passing through the horizontally recessed portion 17.

[0024] It is, further, desired that the horizontally recessed portion 17 is formed at a position as close to the upper end 15 of the mouth portion as possible so far as the sealing is not lost when the cap is fitted. Concretely, it is desired that a distance L from the point X of intersection to the upper end 15 of the mouth portion is in a range of 1.0 to 2.0 mm. If the horizontally recessed portion 17 is formed at a too low position, the liquid remains in an increased amount on the side wall surface 19 when pouring the liquid is discontinued and flows around into the horizontally recessed portion 17. As a result, the liquid easily flows through the horizontally recessed portion 17 down to the portion where the screw thread 10 is formed. Further, if the horizontally recessed portion 17 is formed too close to the upper end 15 of the mouth portion, the area decreases in the portion where the cap that is fitted comes into close contact thereto, and it becomes difficult to stably maintain the sealing.

[0025] On the other hand, when the distance from the point X of intersection to the lower surface of the horizontally recessed portion 17 is regarded to be the height h of the horizontally recessed portion, there is no specific limitation on

the height of the horizontally recessed portion but it is desired that the distance L is within the above-mentioned range and the screw thread is formed at a position which is not too low. Since the lower surface of the horizontally recessed portion 17 and the upper end 10a of the screw thread are formed integrally together as shown in Fig. 2, the height h of the horizontally recessed portion becomes the distance of from the point X of intersection to the upper end 10a of the screw thread.

[0026] In the invention, further, it is desired that the depth d of the horizontally recessed portion 17 is large to some extent so far as the mouth portion 1 of the container does not lose the strength. For instance, it is desired that the depth d is in a range of from 0.2 to 1.5 mm. If the horizontally recessed portion 17 is not sufficiently deep, there occurs the same phenomenon as that of when the horizontally recessed portion 17 is not formed. That is, if the liquid that has flown down along the side wall surface 19 flows around even by a small amount into the recessed portion 17, then the recessed portion 17 is readily filled up with the liquid that has flown therein. As a result, the liquid becomes the priming, and the liquid that has flown down along the side wall surface 19 does not cut at the point X of intersection but flows down to the portion where the screw thread 10 is formed. If the depth d is too large, on the other hand, the strength of the mouth portion 1 decreases at the portion where the horizontally recessed portion 17 is formed, and the mouth portion 1 tends to be easily broken.

[0027] From the standpoint of preventing the liquid from dripping, further, it is desired that the outer circumferential edge (portion that connects to the side wall surface 19) Y of the upper end 15 of the mouth portion has an angular shape close to the right angle like the above-mentioned point X of intersection. However, this portion comes into close contact with the inner surface of the cap that is fitted to the mouth portion, affects the sealing and may, further, come in contact with the mouth of a person who attempts to drink. Therefore, this portion Y may have a curved surface that is rounded to a suitable degree like the known containers. This is because, according to the present invention, the liquid is effectively prevented from dripping due to the formation of the above-mentioned horizontally recessed portion 17.

[0028] The above description and Figs. 1 to 5 are concerned to the example of when the horizontally recessed portion is formed between the upper end of the screw thread and the upper end of the mouth portion. As shown in Fig. 6, however, the effect of preventing the dripping of liquid may be also exhibited even by forming the horizontally recessed portion in the screw thread. In this case, however, the angle θ of intersection of the upper wall surface of the horizontally recessed portion relative to the vertical direction is 90 to 150 degrees and, particularly preferably, 90 to 120 degrees.

[0029] In this case, further, though there is no specific limitation on the height h of the horizontally recessed portion 17, it is desired that the screw thread is not formed at a too upper position and a suitable distance is maintained by the screw thread.

[0030] The Figs. 1 to 6 are illustrating examples of a plastic bottle. So far as the mouth portion provided with the screw thread is formed, however, the mode of the container of the invention is not limited to the bottles only but can also be applied to the bottle-shaped containers having wide mouths and to the bag-shaped contains. There is no specific limitation on the shapes of the containers of the invention, either.

[0031] The material of the container of the invention is not limited to the plastic material but may be a glass or a metal. However, the plastic material is desired from such a standpoint that the horizontally recessed portion 17 can be easily formed satisfying the above-mentioned conditions.

[0032] The present invention improves the anti-dripping of liquid relying on the shape of the mouth portion of the container and, therefore, is not to specify or limit the contact angle between the mouth portion of the container and the liquid contained therein. Besides, the anti-dripping is not limited by the viscosity or surface tension of the liquid that is contained.

[0033] As the plastic material, there can be used those materials that have heretofore been used for producing containers for containing, specifically, liquids, such as polyesters as represented by polyethylene terephthalate (PET), and polyolefins like polyethylene and polypropylene. It is also possible to employ multilayer structures by using a gas-barrier resin such as ethylene vinyl alcohol resin or an oxygen absorber (oxidizing resin or transition metal catalyst) in combination with the above resin.

[0034] In order to effectively prevent the liquid from dripping at the time of pouring out the liquid that is contained according to the invention, it is desired to so select the shape of the container and the liquid contained therein that the liquid can be prevented from dripping most advantageously.

[0035] As the liquid to be contained, there can be selected any of those having low viscosities through up to those having high viscosities without special limitation. That is, the carbonated beverages have carbonic acid dissolved therein and are filled maintaining head space of some volume whereas the non-carbonated beverages are nearly fully filled without leaving head space. When it is attempted to pour the liquid out, first, therefore, the container is slightly tilted (the container is nearly upright) to pour out the liquid; i.e., the liquid is very likely to drip down. The present invention makes it possible to effectively prevent the liquid from dripping even at the start of pouring out the non- carbonated beverage.

[0036] In the plastic containers, in general, the mouth portions of the containers are formed white due to the heat crystallization for imparting heat resistance. When the liquids that are contained are colored liquids such as coffee, soy sauce, or various kinds of juices, fouling of the mouth portion of the container appears very conspicuous due to the liquid

that has dripped. In such cases, the present invention is very useful in effectively preventing the liquid from dripping.

[0037] When the liquids to be contained are beverages, it is desired that the present invention is applied to the bottles having volumes of not less than 500 ml. Namely, in the case of beverage bottles of small volumes of about 180 ml, the consumers, in many cases, drink the contents directly from the mouth portion of the containers. As the volumes of the containers increase, however, the consumes drink the liquid contents by once transferring them into a cup inviting, therefore, the occurrence of liquid dripping. It is, therefore, also effective to apply the present invention to the beverage bottles of large volumes.

EXAMPLES

[0038] Excellent effects of the invention will now be described by way of the following experiments.

[0039] In the experiments, preventing the liquid from dripping was tested as described below.

(Testing the liquid drip prevention)

[0040] PET bottles of a volume of 500 ml were used as sample bottles by changing only the mouth portion that formed the screw thread. The bottles were each filled with 498 ml of coffee {viscosity at 25°C: 10 mPaS (B-type viscometer)} as the liquid content.

[0041] The positions of the center of gravity and the tilted angles were recorded as data every time based on the human operation for pouring out the liquid by hand. By using a jig (6-axis-controlled robot manufactured by Yasukawa Denki Co.), each of the samples was moved and turned to observe the state of liquid dripping with the eye. The samples that permitted the liquid to fall down to the portion where the screw thread was formed were evaluated to be × (poor) and the samples that have cut the liquid at the point X of intersection were evaluated to be ○ (good).

<Example 1>

[0042] The specifications of the mouth portion were set as described below.

[0043] Specifications of the mouth portion (whitened due to the heat crystallization):

Distance between the point X of intersection and the upper end 10a of the screw thread (height h of the horizontally recessed portion 17):	1.35 mm
Angle θ intersected by the horizontally recessed portion 17 and the side wall surface 19: 120 degrees	0.1
Radius R of curvature at the point X of intersection:	
Distance L between the point X of intersection and the mouth portion 15:	1.25 mm
Depth d of the horizontally recessed portion 17:	1.0 mm

<Example 2>

[0044] Example 1 was followed but changing the specifications of the mouth portion as follows:

Angle θ intersected by the horizontally recessed portion 17 and the side wall surface 19: 150 degrees

<Example 3>

[0045] Example 1 was followed but changing the specifications of the mouth portion as follows:

Distance L between the point X of intersection and the mouth portion 15: 2.00 mm

<Example 4>

[0046] Example 1 was followed but changing the specifications of the mouth portion as follows:

Distance L between the point X of intersection and the mouth portion 15: 1.00 mm

<Example 5>

[0047] Example 1 was followed but changing the specifications of the mouth portion as follows:

Radius R of curvature at the point X of intersection: 0.5

<Example 6>

[0048] Example 1 was followed but changing the specifications of the mouth portion as follows:

Chamfer C at the point X of intersection: 0.3

<Example 7>

[0049] Example 1 was followed but changing the specifications of the mouth portion as follows:

Depth d of the horizontally recessed portion 17: 0.2 mm

<Example 8>

[0050] Example 1 was followed but changing the specifications of the mouth portion as follows:

Depth d of the horizontally recessed portion 17: 1.5 mm

<Example 9>

[0051] Example 1 was followed but changing the specifications of the mouth portion as follows:

Angle θ intersected by the horizontally recessed portion 17 and the side wall surface 19: 86 degrees

<Comparative Example 1>

[0052] A conventional bottle without the step (horizontally recessed portion) was used to evaluate.

<Comparative Example 2>

[0053] Example 1 was followed but changing the specifications of the mouth portion as follows:

Angle θ intersected by the horizontally recessed portion 17 and the side wall surface 19: 160 degrees

[0054] Table 1 shows the results of testing the liquid drip prevention by using the sample bottles having the above-mentioned mouth portions.

Table 1

	Example									Comp. Example	
Item	1	2	3	4	5	6	7	8	9	1	2
Intersec ting angle θ Radius of curvature or chamfer at point X	120 R0.1	150 R0.1	120 R0.1	120 R0.1	120 R0.5	120 C0.3	120 R0.1	120 R0.1	86 R0.1	- -	160 R0.1
Distance L (mm)	1.25	1.25	2.0	1.0	1.25	1.25	1.25	1.25	1.25	-	1.25

(continued)

Item	Example 1	2	3	4	5	6	7	8	9	Comp. Example 1	2
Depth d (mm)	1.0	1.0	1.0	1.0	1.0	1.0	0.2	1.5	1.0	-	1.0
No dripping	○	○	○	○	○	○	○	○	○	×	×

Description of Reference Numerals:

[0055]

1: mouth portion of the container
10: screw thread
10a: upper end of the screw thread
15: upper end of the mouth portion
17: horizontally recessed portion
17a: upper wall surface of the horizontally recessed portion
19: side wall surface
θ: Angle intersected by the upper wall surface 17a and the side wall surface 19

Claims

1. A container having a mouth portion (1) forming, on the outer circumferential surface thereof, a screw thread (10) for fastening a cap,
wherein a horizontally recessed portion (17), which is arcuate or annular, is formed between an upper end (10a) of said screw thread (10) and an upper end (15) of said mouth portion (1),
wherein said horizontally recessed portion has an upper wall surface (17a) which intersects the outer wall of the mouth portion at a point X and a lower wall surface,
wherein an angle θ of the upper wall surface (17a) of said horizontally recessed portion (17) is set to be 90 degrees to 150 degrees relative to the vertical direction, **characterised in that** the lower wall surface of the horizontally recessed portion (17) and the upper end (10a) of the screw thread (10) are formed integrally, i.e. the distance from the point X to the lower wall surface of the horizontally recessed portion (17) is equal to the distance from the point X to the upper end (10a) of the screw thread.

2. The container according to claim 1, wherein said horizontally recessed portion (17) is annular in shape.

3. The container according to claim 1, wherein the distance L from the upper wall surface (17a) of said horizontally recessed portion (17) to the upper end (15) of said mouth portion (1) is in a range of 1 to 2 mm.

4. The container according to claim 1, wherein the depth d of said horizontally recessed portion (17) is in a range of 0.2 to 1.5 mm.

5. The container according to claim 1, wherein said container is made of a plastic material.

6. The container according to claim 5, wherein said container is used for containing non-carbonated beverages.

7. The container according to claim 5, wherein said container has the mouth portion (1) formed in white color, and is used for containing colored liquids.

Patentansprüche

1. Ein Behälter, dessen Mündungsabschnitt (1) an der äußeren Umfangsfläche davon ein Schraubgewinde (10) zur Befestigung einer Kappe bildet,
wobei ein horizontal vertiefter Abschnitt (17), der bogen- oder winkelförmig ist, zwischen einem oberen Ende (10a)

des genannten Schraubgewindes (10) und einem oberen Ende (15) des genannten Mündungsabschnitts (1) gebildet wird,
wobei der genannte horizontal vertiefte Abschnitt eine obere Wandfläche (17a) aufweist, die die Außenwand des Mündungsabschnitts an einem Punkt X und einer unteren Wandfläche schneidet,
wobei ein Winkel θ der oberen Wandfläche (17a) des genannten horizontal vertieften Abschnitts (17) auf 90° bis 150° in Bezug auf die vertikale Richtung eingestellt ist, **dadurch gekennzeichnet, dass**
die untere Wandfläche des horizontal vertieften Abschnitts (17) und das obere Ende (10a) des Schraubgewindes (10) einstückig ausgebildet sind, d. h. dass der Abstand ausgehend vom Punkt X bis zur unteren Wandfläche des horizontal vertieften Abschnitts (17) dem Abstand ausgehend vom Punkt X bis zum oberen Ende (10a) des Schraubgewindes gleicht.

2. Der Behälter nach Anspruch 1, wobei der genannte horizontal vertiefte Abschnitt (17) eine ringförmige Gestalt aufweist.

3. Der Behälter nach Anspruch 1, wobei der Abstand L ausgehend von der oberen Wandfläche (17a) des genannten horizontal vertieften Abschnitts (17) bis zum oberen Ende (15) des genannten Mündungsabschnitts (1) in einem Bereich zwischen 1 und 2 mm liegt.

4. Der Behälter nach Anspruch 1, wobei die Tiefe d des genannten horizontal vertieften Abschnitts (17) in einem Bereich zwischen 0,2 und 1,5 mm liegt.

5. Der Behälter nach Anspruch 1, wobei der genannte Behälter aus einem Kunststoffmaterial hergestellt wird.

6. Der Behälter nach Anspruch 5, wobei der genannte Behälter zur Aufnahme von kohlensäurefreien Getränken verwendet wird.

7. Der Behälter nach Anspruch 5, wobei der genannte Behälter einen Mündungsabschnitt (1) aufweist, der in weißer Farbe gebildet wird, und zur Aufnahme von farbigen Flüssigkeiten verwendet wird.

Revendications

1. Un récipient présentant une portion d'embouchure (1) qui forme à sa surface de circonférence extérieure un filetage (10) pour fermer un capuchon,
sachant qu'une portion en retrait horizontalement (17) en forme d'arc ou annulaire est formée entre une extrémité supérieure (10a) dudit filetage (10) et une extrémité supérieure (15) de ladite portion d'embouchure (1),
sachant que ladite portion en retrait horizontalement présente une surface de paroi supérieure (17a) qui coupe la paroi extérieure de la portion d'embouchure en un point X et une surface de paroi inférieure,
sachant qu'un angle θ de la surface de paroi supérieure (17a) de ladite portion en retrait horizontalement (17) est fixé pour comporter entre 90 degrés et 150 degrés par rapport à la direction verticale, **caractérisé en ce que**
la surface de paroi inférieure de la portion en retrait horizontalement (17) et l'extrémité supérieure (10a) du filetage (10) sont formées intégralement, c'est-à-dire que la distance à partir du point X jusqu'à la surface de paroi inférieure de la portion en retrait horizontalement (17) est égale à la distance à partir du point X jusqu'à l'extrémité supérieure (10a) du filetage.

2. Le récipient d'après la revendication 1, sachant que ladite portion en retrait horizontalement (17) présente une forme annulaire.

3. Le récipient d'après la revendication 1, sachant que la distance L à partir de la surface de paroi supérieure (17a) de ladite portion en retrait horizontalement (17) jusqu'à l'extrémité supérieure (15) de ladite portion d'embouchure (1) se situe dans une plage de 1 à 2 mm.

4. Le récipient d'après la revendication 1, sachant que la profondeur d de ladite portion en retrait horizontalement (17) se situe dans une plage de 0,2 à 1,5 mm.

5. Le récipient d'après la revendication 1, sachant que le récipient est constitué d'une matière plastique.

6. Le récipient d'après la revendication 5, sachant que le récipient est utilisé pour contenir des boissons non gazéifiées.

7. Le récipient d'après la revendication 5, sachant que ledit récipient présente la portion d'embouchure (1) formée de couleur blanche, et qu'il est utilisé pour contenir des liquides colorés.

Fig. 1

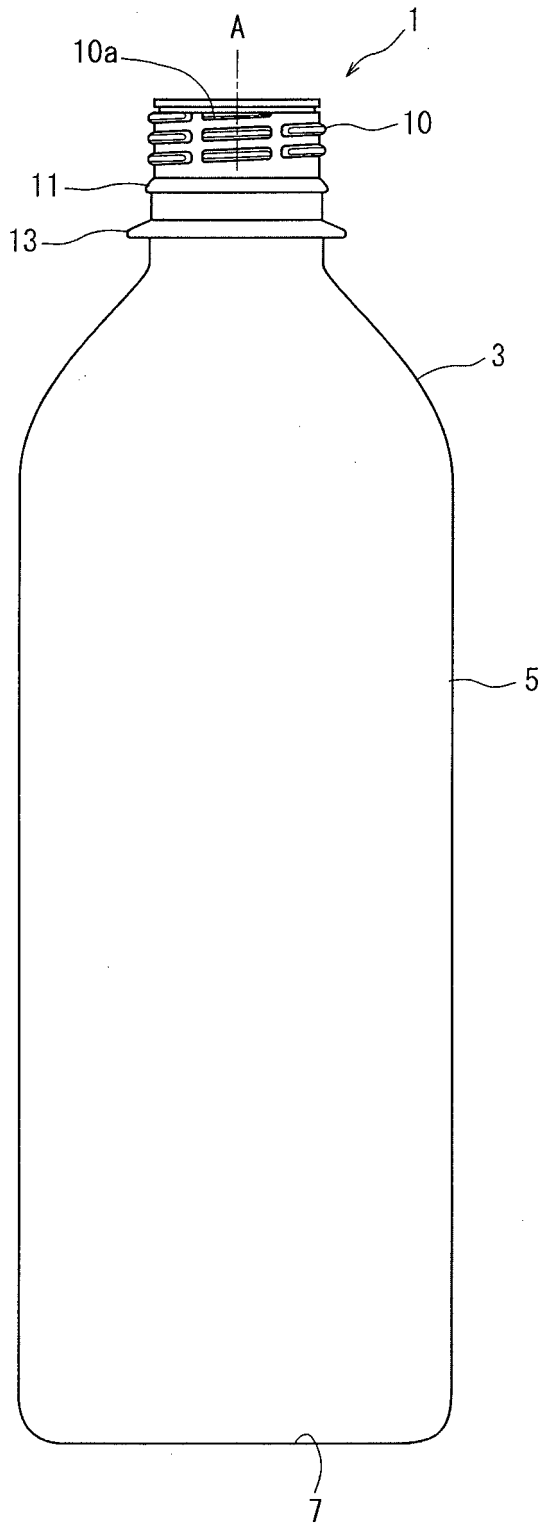


Fig. 2

ENLARGED SECTIONAL VIEW OF THE PORTION A

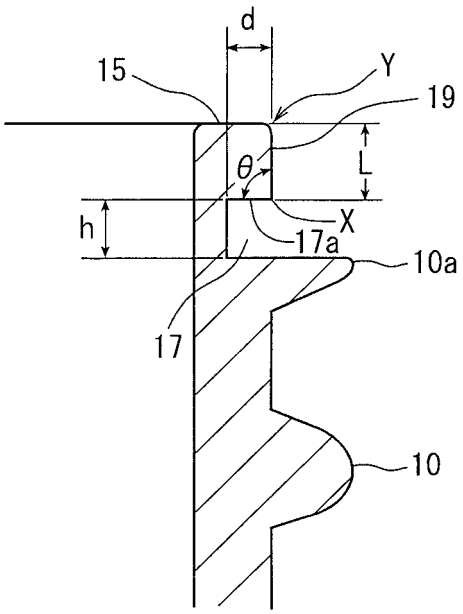


Fig. 3

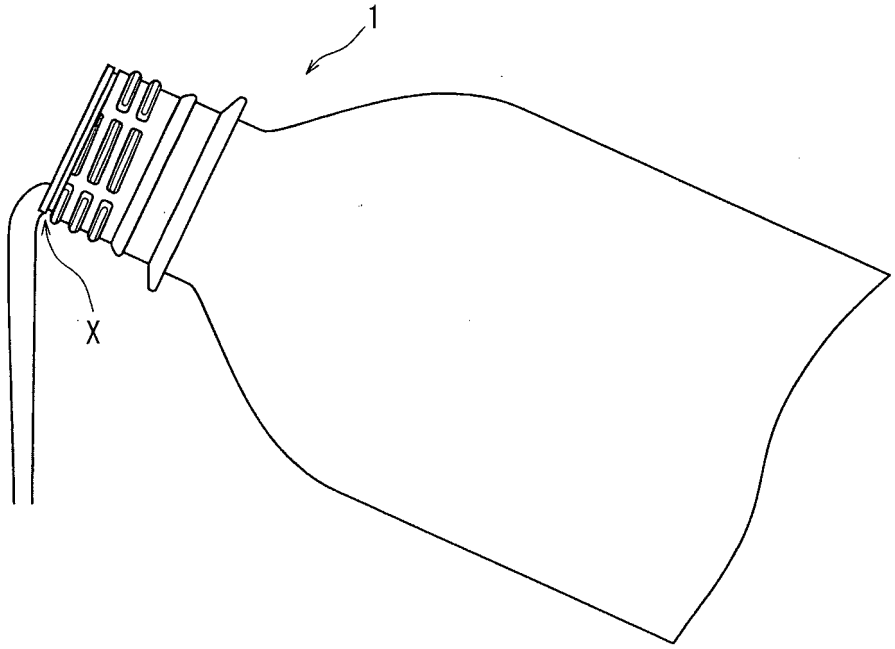


Fig. 4

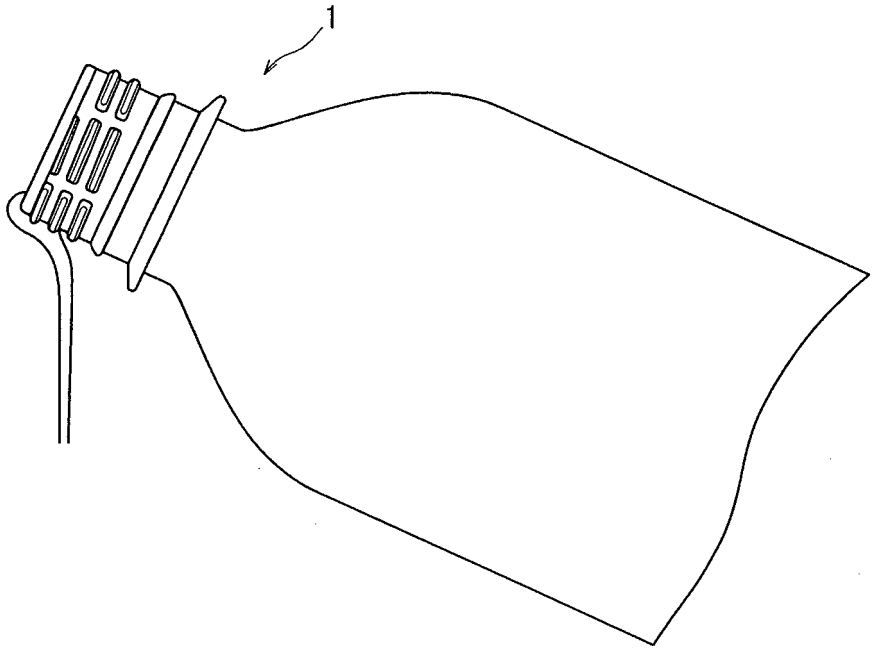


Fig. 5

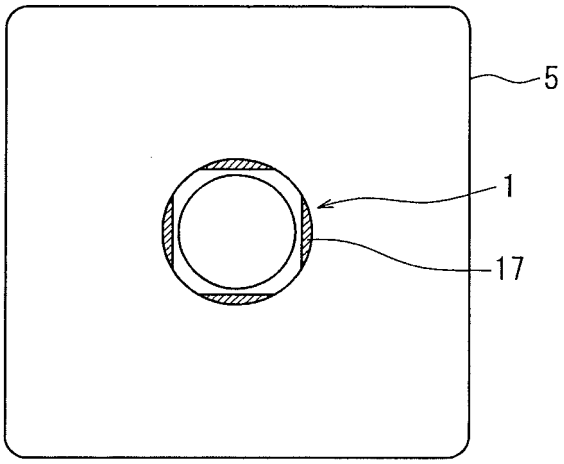
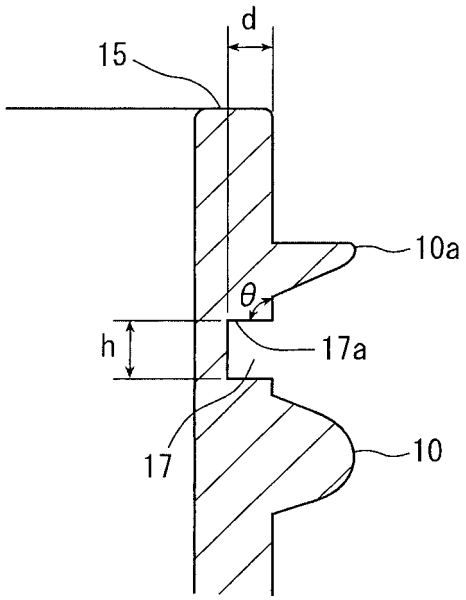


Fig. 6



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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