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(71) Applicant: **Yonwoo Co., Ltd.**
Incheon 22824 (KR)

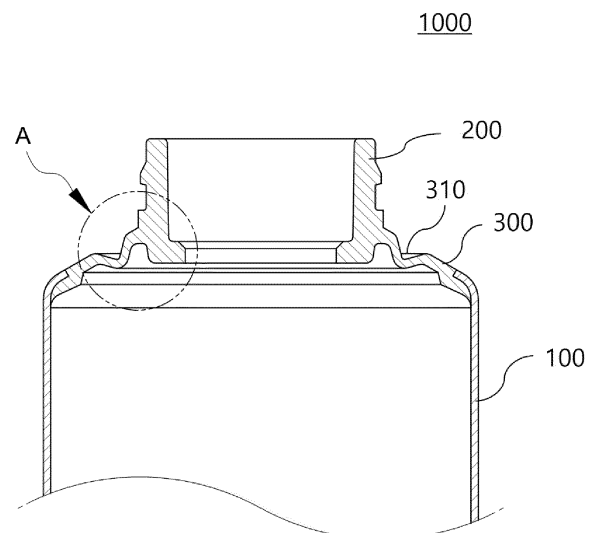
(72) Inventors:
• **CHOE, Seong Ung**
Incheon 22824 (KR)
• **HAM, Ki Young**
Incheon 22824 (KR)

(74) Representative: **Nederlandsch Octrooibureau**
P.O. Box 29720
2502 LS The Hague (NL)

(54) **CONTENT CONTAINER**

(57) Provided is a content container according to an embodiment of the present invention. The content container comprises: a container body which has an accommodation space for storing contents formed therein and which is pressed by an external force; a discharge portion of which the upper end is open so as to discharge the contents according to pressure applied to the container body; and a shoulder portion which extends from the circumference of the lower end of the discharge portion and connects the discharge portion and the container body, wherein a deformation suppression groove which suppresses deformation of the discharge portion when the container body is pressed may be recessed in at least one area of the shoulder portion.

[Fig.3]



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Description

Technical Field

5 [0001] The present invention relates to a container, more specifically to a container that is capable of effectively suppressing a discharge part from being deformed in shape.

Background Art

10 [0002] As shown in FIG. 1, a conventional tube consists of a soft tube body 11 for storing a content therein, a discharge part 12 open on top thereof to discharge the content stored in the tube body 11 therethrough, and a shoulder part 13 extending from the lower end periphery of the discharge part 12 to connect the tube body 11 and the discharge part 12. Even if not shown in FIG. 1, a cap or nozzle having a discharge hole is coupled to the discharge part 12.

15 [0003] If the outer periphery of the tube body 11 of the tube is pressed by a user, an internal pressure of the tube body 11 increases to allow the content stored in the tube body 11 to be discharged through the discharge part 12 or the cap connected to the discharge part 12 to the outside.

20 [0004] However, as shown in FIG. 2, as the tube body 11 of the tube is pressed, the force generated from the pressing is transferred to the discharge part 12 through the shoulder part 13 so that the discharge part 12 becomes deformed to an oval shape from a circular shape, thereby causing the content to leak between the discharge part 12 and the cap coupled to the discharge part 12.

[0005] Therefore, there is a need to develop a new container capable of effectively suppressing a discharge part from being deformed in shape.

Disclosure

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Technical Problem

30 [0006] Accordingly, the present invention has been made in view of the above-mentioned problems occurring in the related art, and it is an object of the present invention to provide a container that is capable of effectively suppressing a discharge part from being deformed in shape.

[0007] The technical problems to be achieved through the present invention are not limited as mentioned above, and other technical problems not mentioned herein will be obviously understood by one of ordinary skill in the art through the following description.

Technical Solution

35 [0008] A container is provided according to an embodiment of the present invention. The container may include: a container body pressed by an external force and having an accommodation space formed therein to store a given content therein; a discharge part open on top thereof to discharge the given content therethrough if the container body is pressed; 40 and a shoulder part extending from the outer periphery of a lower end portion of the discharge part in such a way as to connect the discharge part and the container body, wherein the shoulder part has a deformation suppression groove formed concavely on at least one area thereof in such a way as to suppress the discharge part from being deformed in shape if the container body is pressed.

Advantageous Effects of Invention

45 [0009] According to the present invention, the container can allow the deformation suppression groove of the shoulder part to prevent the deformation force generated when the container body is pressed from being transferred to the discharge part, thereby effectively suppressing the discharge part from being deformed in shape.

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Brief Description of Drawings

[0010] To allow the drawings as will be mentioned in the description of the present invention to be more sufficiently understood, the brief description of the drawings may be provided.

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FIG. 1 is a sectional view showing a conventional tube, and FIG. 2 shows photographs of the deformation of a discharge part when a tube body of the conventional tube is pressed.

FIG. 3 is a sectional view showing a container according to an embodiment of the present invention.

FIG. 4 is an enlarged view showing a portion 'A' of FIG. 3.

FIG. 5 is a perspective view showing the container according to the embodiment of the present invention.

FIG. 6 shows photographs of a shoulder part with a deformation suppression groove according to the embodiment of the present invention and a shoulder part with reinforcing ribs formed on the inside thereof.

FIGs. 7 and 8 are photographs showing comparison experimental results, when container bodies are pressed, between the container (in a first embodiment) according to the embodiment of the present invention and the container (in a first comparison example) having the shoulder part with the reinforcing ribs formed on the inside thereof.

Best Mode for Invention

[0011] A container is provided according to an embodiment of the present invention. The container may include: a container body pressed by an external force and having an accommodation space formed therein to store a given content therein; a discharge part open on top thereof to discharge the given content therethrough if the container body is pressed; and a shoulder part extending from the outer periphery of a lower end portion of the discharge part in such a way as to connect the discharge part and the container body, wherein the shoulder part has a deformation suppression groove formed concavely on at least one area thereof in such a way as to suppress the discharge part from being deformed in shape if the container body is pressed.

[0012] Further, the deformation suppression groove is varied in a width of at least a given area thereof, if the container body is pressed, thereby suppressing the discharge part from being deformed in shape.

[0013] Furthermore, the deformation suppression groove is spaced apart from the lower end portion of the discharge part in such a way as to surround the outer periphery of the lower end portion of the discharge part.

[0014] Besides, the shoulder part comprises a first bent portion, a second bent portion, and a third bent portion formed sequentially from the outer periphery of the lower end portion of the discharge part in an outward direction so that the shoulder part is bent around the first to third bent portions, and the deformation suppression groove is formed by locating the second bent portion between the first bent portion and the third bent portion so that the second bent portion forms a valley.

[0015] Further, the deformation suppression groove comprises a first slant surface and a second slant surface located on both sides of the second bent portion, and the first slant surface extends from the second bent portion toward the first bent portion, while the second slant surface extends from the second bent portion toward the third bent portion.

[0016] Furthermore, in a state where the container body is not pressed, an angle between the first slant surface and the second slant surface is in the range between 60 and 120°.

[0017] Besides, the given area of the shoulder part, on which the deformation suppression groove is formed, has a thickness in the range between 0.5 and 1.0 mm.

[0018] Moreover, the deformation suppression groove has a maximum depth in the range between 0.8 and 2 mm.

[0019] Further, the deformation suppression groove is formed at a position distant inward by 3 to 10 mm from a connection portion between the shoulder part and the container body.

Mode for Invention

[0020] Hereinafter, example embodiments will be described with reference to the accompanying drawings. In addition, a device of the present invention and a method for using the device will be explained in detail with reference to the attached drawings. In the drawings, the same reference numerals or symbols are parts or components performing the same functions. Further, top, bottom, left and right directions as will be described below are determined with reference to the drawings, and accordingly, the scope of the present invention is not necessarily restricted to the corresponding directions.

[0021] Terms, such as the first, the second, and the like, may be used to describe various elements, but the elements should not be restricted by the terms. The terms are used to only distinguish one element from the other element. For example, a first element may be named a second element without departing from the scope of the present invention. Likewise, a second element may be named a first element. A term 'and/or' includes a combination of a plurality of relevant and described items or any one of a plurality of related and described items.

[0022] Terms used in this application are used to only describe specific exemplary embodiments and are not intended to restrict the present invention. An expression referencing a singular value additionally refers to a corresponding expression of the plural number, unless explicitly limited otherwise by the context. In this application, terms, such as "comprise", "include", or "have", are intended to designate those characteristics, numbers, steps, operations, elements, or parts which are described in the specification, or any combination of them that exist, and it should be understood that they do not preclude the possibility of the existence or possible addition of one or more additional characteristics, numbers, steps, operations, elements, or parts, or combinations thereof.

[0023] In the description, when it is said that one element is described as being "connected" to the other element, one element may be directly connected or coupled to the other element, but it should be understood that another element may

be present between the two elements. When it is said that one portion is described as "includes" any component, further, one element may further include other components unless no specific description is suggested.

[0024] FIG. 3 is a sectional view showing a container according to an embodiment of the present invention, FIG. 4 is an enlarged view showing a portion 'A' of FIG. 3, and FIG. 5 is a perspective view showing the container according to the embodiment of the present invention.

[0025] Referring to FIGs. 3 to 5, a container 1000 according to an embodiment of the present invention largely includes a container body 100, a discharge part 200, and a shoulder part 300.

[0026] The container body 100 has an accommodation space formed at the inside thereof to store a given content. The container body 100 has the shape of a tube open on top thereof and sealed on bottom thereof, but without being limited thereto, the container body 100 may have various shapes reduced in volume when pressed, such as soft bottles, tottles, and the like.

[0027] According to the embodiment of the present invention, the container body 100 has at least a portion made of a soft material. If the outer periphery of the container body 100 is pressed by an external force applied by a user, the container body 100 is deformed (that is, compressed) in shape to allow the content stored therein to be discharged to the outside through the discharge part 200.

[0028] In this case, the content is, for example, a liquid or gel cosmetic content, a drug, a quasi-drug, etc. For example, the content may be lotion, milk lotion, moisture lotion, nutrition lotion, skin lotion, skin softer, skin toner, astringent, massage cream, nutrition cream, whitening essence, tone-up cream, sunblock, sun cream, sun milk, BB cream, base, foundation, CC cream, concealer, blusher, shade, eyeshadow, eyebrow, eye cream, primer, etc. However, the content may not be limited thereto, and therefore, the content may include various types of materials that are stored in the container body 100 and thus discharged to the outside when the container body 100 is pressed.

[0029] The discharge part 200 is disposed on top of the container body 100 in such a way as to communicate with the container body 100 and serves to discharge the content to the outside through an open top thereof.

[0030] According to the embodiment of the present invention, the discharge part 200 is coupled to a cap or nozzle having a discharge hole, a pump, or the like. To do this, the discharge part 200 has at least one coupling portion formed on the outer peripheral surface thereof. For example, the coupling portion is a screw thread, a coupling protrusion, a coupling groove, or the like, but without being limited thereto, a variety of coupling portions may be formed on the discharge part 200.

[0031] The shoulder part 300 extends downward from the outer periphery of the lower end portion of the discharge part 200 at a given inclination in an outward direction in such a way as to connect the container body 100 and the discharge part 200. At least a portion of the upper end portion of the container body 100 is sealed with the should part 300.

[0032] The shoulder part 300 has a given thickness and is made of a synthetic resin harder than the container body 100.

[0033] According to the embodiment of the present invention, the lower end portion of the shoulder part 300 is coupled to the upper end portion of the container body 100 by means of various methods such as thermal adhesion, ultrasonic adhesion, adhesion using an adhesive, double injection molding, and the like.

[0034] According to the embodiment of the present invention, some of the container body 100, the discharge part 200, and the shoulder part 300 may be formed unitarily with each other by means of injection molding. For example, the discharge part 200 and the shoulder part 300 may be formed unitarily with each other by means of injection molding, and next, they are coupled to the upper end portion of the container body 100 by means of adhesion.

[0035] The shoulder part 300 has a deformation suppression groove 310 as an inward concave formed on at least a given area thereof. The deformation suppression groove 310 serves to suppress the discharge part 200 from being deformed in shape when the container body 100 is pressed to discharge the content therefrom. When the container body 100 is pressed, in detail, at least a given area of the deformation suppression groove 310 is contracted or expanded to allow the width of the deformation suppression groove 310 to be changed in size, so that the deformation force caused by the pressing of the container body 100 is prevented from being transferred to the discharge part 200 through the shoulder part 300, thereby suppressing the discharge part 200 from being deformed in shape. According to the embodiment of the present invention, a maximum depth of the deformation suppression groove 310 is in the range between 0.8 and 2 mm, and a portion of the shoulder part 300, on which the deformation suppression groove 310 is formed, has a thickness in the range between 0.5 and 1.0 mm.

[0036] The deformation suppression groove 310 is formed spaced apart from a connection portion between the discharge part 200 and/or the shoulder part 300 and the container body 100 by a given distance. For example, the deformation suppression groove 310 has the shape of a circle and is spaced apart from the lower end portion of the discharge part 200 in such a way as to surround the outer periphery of the lower end portion of the discharge part 200. According to the embodiment of the present invention, the deformation suppression groove 310 is formed at a position distant inward by 3 to 10 mm from the connection portion between the shoulder part 300 and the container body 100.

[0037] To form the deformation suppression groove 310, the shoulder part 300 includes a first bent portion 320, a second bent portion 330, and a third bent portion 330. The first bent portion 320, the second bent portion 330, and the third bent portion 330 of the shoulder part 300 are formed sequentially from the outer periphery of the lower end portion of the discharge part 200, and as the shoulder part 300 is bent around the first to third bent portions 320 to 340 at given

curvatures, the deformation suppression groove 310 is formed. For example, the deformation suppression groove 310 is formed by locating the second bent portion 330 between the first bent portion 320 and the third bent portion 340 so that the second bent portion 330 forms a valley (that is, a point with a maximum depth).

[0038] According to the embodiment of the present invention, a first slant surface 311 and a second slant surface 312 are formed on the inside of the deformation suppression groove 310. For example, the first slant surface 311 and the second slant surface 312 are located on both sides of the second bent portion 330 in such a way as to extend to the first bent portion 320 and the third bent portion 340. As a result, the deformation suppression groove 310 has the sectional shape of "V". In a state where the container body 100 is not pressed, an angle between the first slant surface 311 and the second slant surface 312 is in the range between 60 and 120°.

[0039] The container 1000 as shown in FIGs. 3 to 5 is just exemplary in shape, and therefore, the container 1000 may have various shapes according to embodiments of the present invention. According to the embodiments of the present invention, further, the container 100 may have additional parts such as a cap, a nozzle, and the like as well as the container body 100, the discharge part 200, and the shoulder part 300 as mentioned above.

Experimental example - Deformation experiments through pressing of the container body

[0040] As shown in FIG. 6, the shoulder part having the deformation suppression groove and the discharge part according to the present invention were made (See FIG. 6a), and a shoulder part having a plurality of reinforcing ribs and a discharge part were made (See FIG. 6b). In this case, the reinforcing ribs served to support the outer periphery of the discharge part and suppress the discharge part from being deformed in shape.

[0041] Next, the container with the shoulder part and the discharge part according to the present invention was made (in a first embodiment of the present invention), and a container with the shoulder part having the plurality of reinforcing ribs and the discharge part was made (in a first comparison example). After that, deformation experiments for both containers were carried out.

[0042] Referring first to FIG. 7, caps were coupled to the discharge parts of the containers in the first embodiment of the present invention and the first comparison example, and if the container bodies of the containers were pressed, the width of the deformation suppression groove corresponding to the pressed position of the container body of the container in the first embodiment of the present invention was varied to allow the shoulder part to be substantially spaced apart from the cap (See FIG. 7a). However, a gap between the shoulder part and the cap of the container in the first comparison example was small (See FIG. 7b).

[0043] Referring next to FIG. 8 and Table 1, if the container bodies of the containers in the first embodiment of the present invention and the first comparison example were pressed, the discharge part of the container in the first embodiment of the present invention was kept in the shape of a circle (See FIG. 8a), but the discharge part of the container in the first comparison example was deformed to the shape of an oval (See FIG. 8b).

Table 1

	Maximum width of discharge part prior to pressing the container body	Maximum width of discharge part after the container body is pressed	Degree of deformation
First embodiment of the present invention	15.78 mm	15.99 mm	0.21 mm
First comparison example	15.75 mm	16.40 mm	0.65 mm

[0044] It can be appreciated from Table 1 that in the case of the embodiment where the deformation suppression groove is formed on the shoulder part, the force (deformation force) generated when the container body is pressed changes the width of the deformation suppression groove, without being transferred to the discharge part, so that the discharge part is effectively prevented from being deformed in shape.

[0045] As mentioned above, the preferred embodiment of the present invention has been disclosed in the specification and drawings. Therefore, persons skilled in the relevant art can appreciate that many modifications and variations are possible in light of the above teachings. It is therefore intended that the scope of the invention be limited not by this detailed description, but rather by the claims appended hereto.

100:	Container body	200:	Discharge part
300:	Shoulder part	310:	Deformation suppression groove
311:	First slant surface	312:	Second slant surface

(continued)

320:	First bent portion	330:	Second bent portion
340:	Third bent portion	1000:	Container

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Claims

1. A container comprising:

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a container body pressed by an external force and having an accommodation space formed therein to store a given content therein;

a discharge part open on top thereof to discharge the given content therethrough if the container body is pressed; and

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a shoulder part extending from the outer periphery of a lower end portion of the discharge part in such a way as to connect the discharge part and the container body,

wherein the shoulder part has a deformation suppression groove formed concavely on at least one area thereof in such a way as to suppress the discharge part from being deformed in shape if the container body is pressed.

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2. The container according to claim 1, wherein the deformation suppression groove is varied in a width of at least a given area thereof, if the container body is pressed, to thus suppress the discharge part from being deformed in shape.

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3. The container according to claim 2, wherein the deformation suppression groove is spaced apart from the lower end portion of the discharge part in such a way as to surround the outer periphery of the lower end portion of the discharge part.

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4. The container according to claim 3, wherein the shoulder part comprises a first bent portion, a second bent portion, and a third bent portion formed sequentially from the outer periphery of the lower end portion of the discharge part in an outward direction so that the shoulder part is bent around the first to third bent portions, and the deformation suppression groove is formed by locating the second bent portion between the first bent portion and the third bent portion so that the second bent portion forms a valley.

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5. The container according to claim 4, wherein the deformation suppression groove comprises a first slant surface and a second slant surface on both sides of the second bent portion, and the first slant surface extends from the second bent portion toward the first bent portion, while the second slant surface extends from the second bent portion toward the third bent portion.

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6. The container according to claim 5, wherein in a state where the container body is not pressed, an angle between the first slant surface and the second slant surface is in the range between 60 and 120°.

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7. The container according to claim 2, wherein the given area of the shoulder part, on which the deformation suppression groove is formed, has a thickness in the range between 0.5 and 1.0 mm.

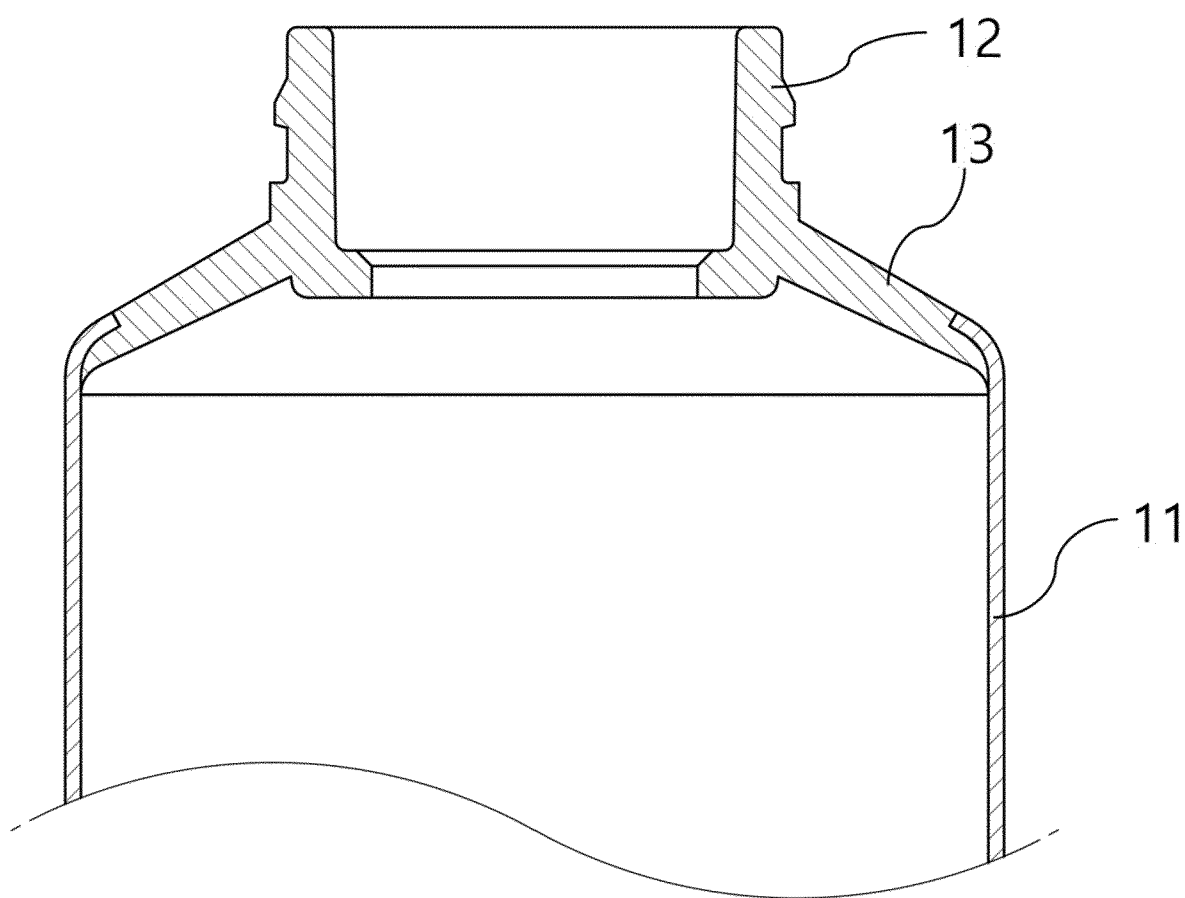
8. The container according to claim 2, wherein the deformation suppression groove has a maximum depth in the range between 0.8 and 2 mm.

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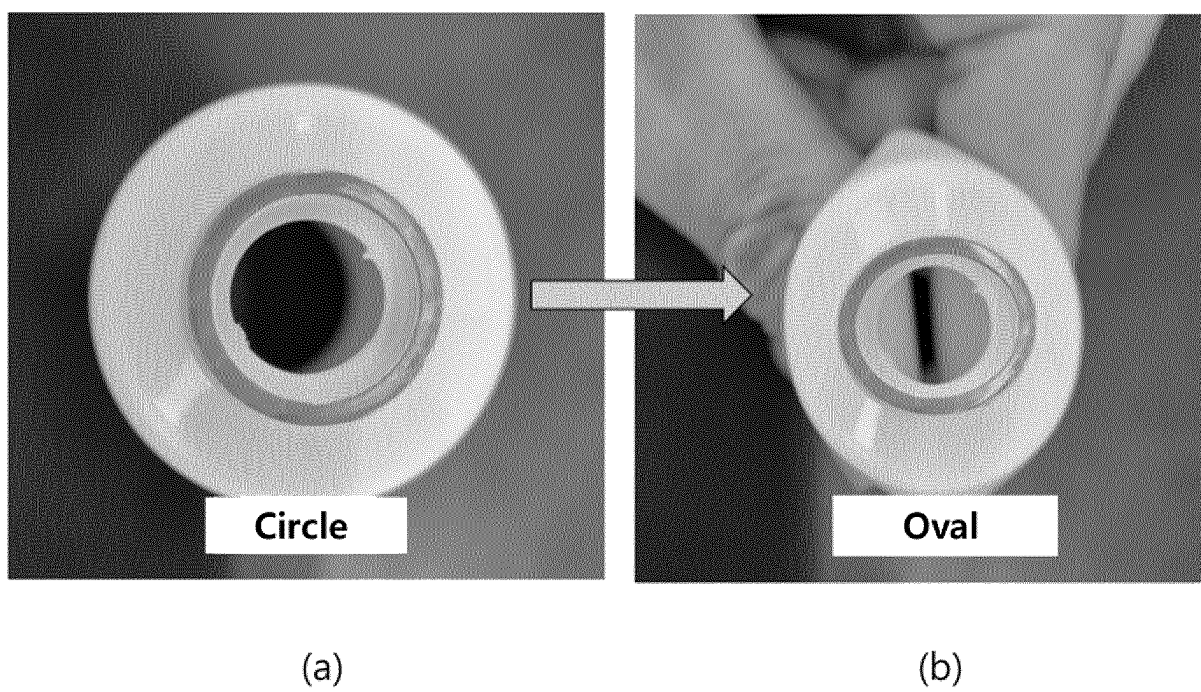
9. The container according to claim 2, wherein the deformation suppression groove is formed at a position distant inward by 3 to 10 mm from a connection portion between the shoulder part and the container body.

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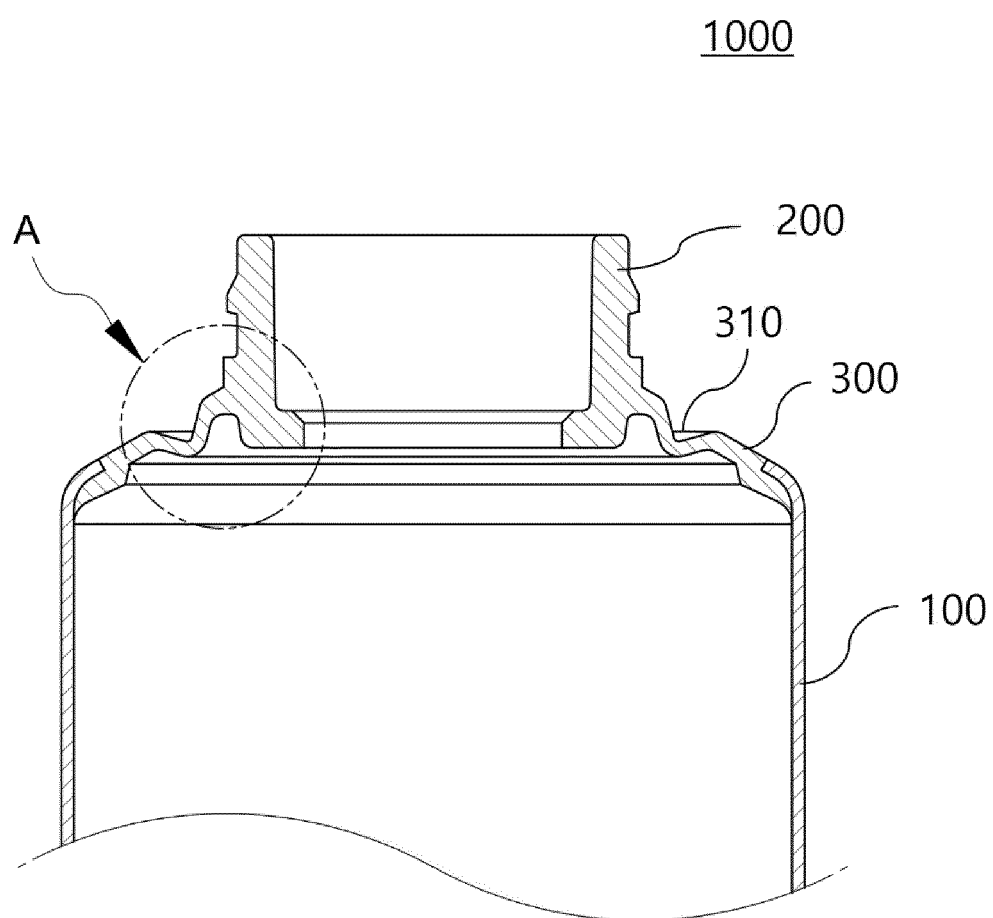
[Fig.1]



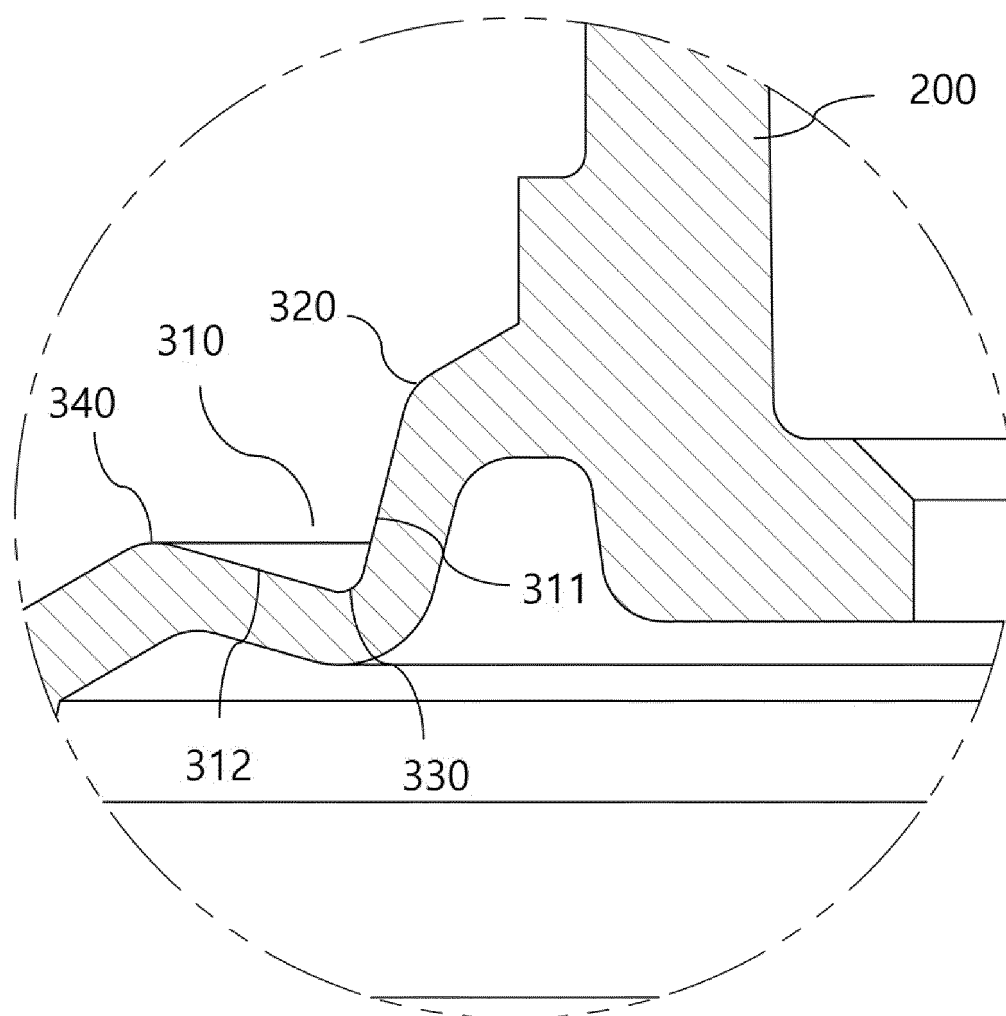
[Fig.2]



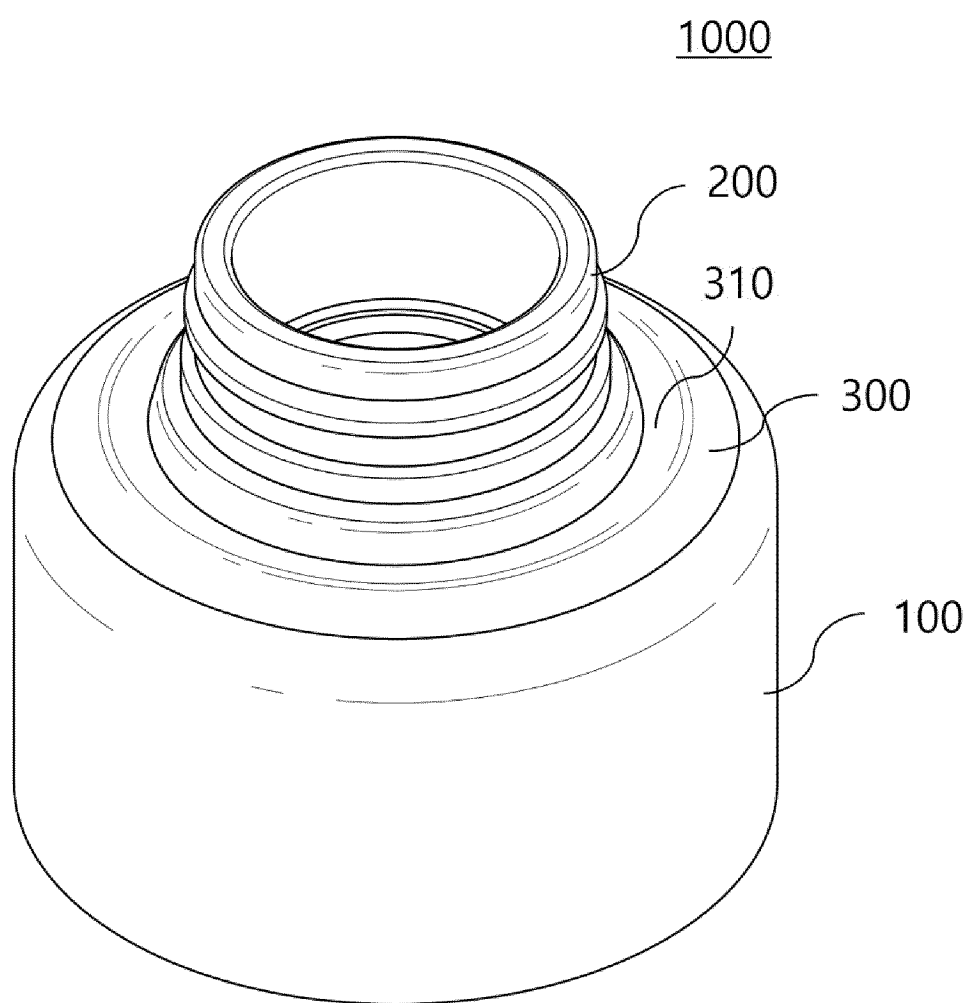
[Fig.3]



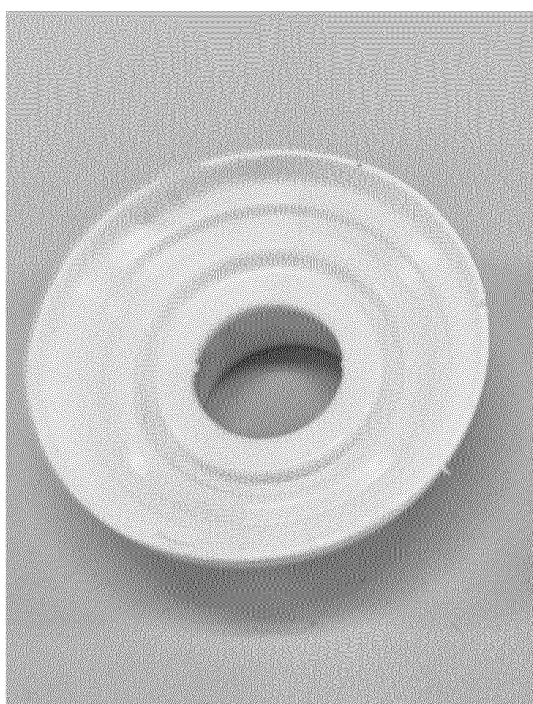
[Fig.4]



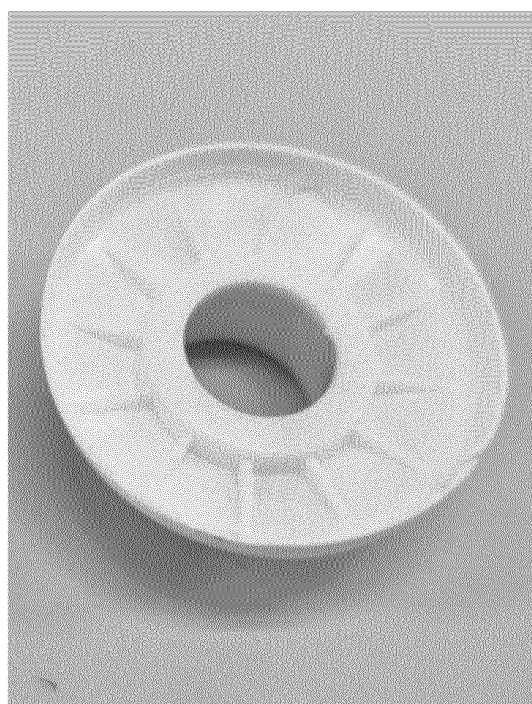
[Fig.5]



[Fig.6]

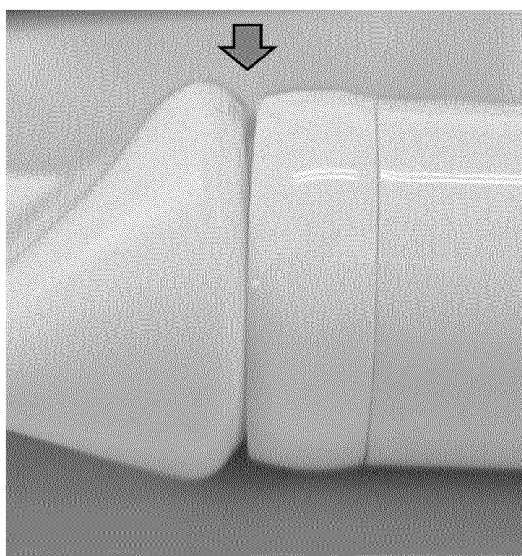


(a)

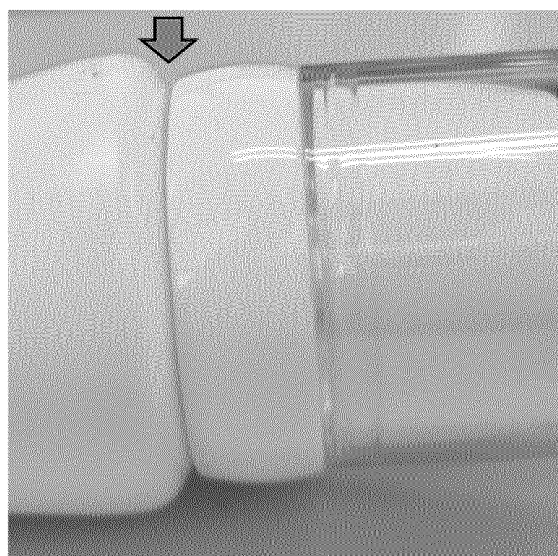


(b)

[Fig.7]

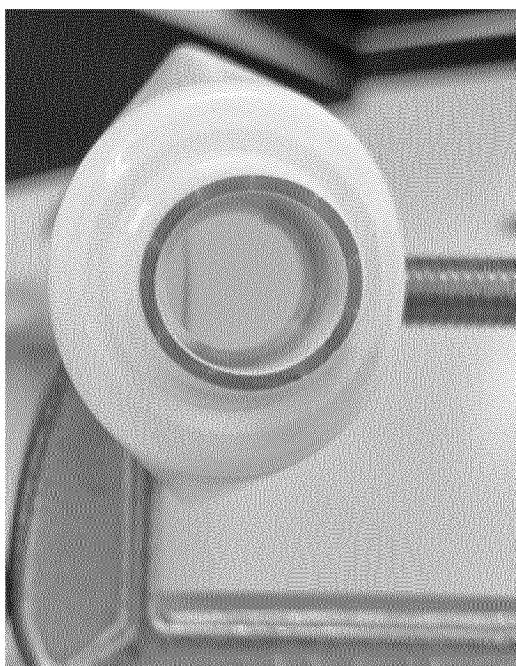


(a)



(b)

[Fig.8]



(a)



(b)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2023/007743

A. CLASSIFICATION OF SUBJECT MATTER

B65D 35/10(2006.01)i; B65D 35/38(2006.01)i; B65D 35/14(2006.01)i

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)

B65D 35/10(2006.01); B65D 35/14(2006.01)

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

Korean utility models and applications for utility models: IPC as above

Japanese utility models and applications for utility models: IPC as above

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

eKOMPASS (KIPO internal) & keywords: 튜브 용기(tube container), 오목(concave), 뚜껑(lid), 가압(press), 어깨부(shoulder)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	JP 2013-082484 A (TAKEUCHI PRESS IND. CO., LTD.) 09 May 2013 (2013-05-09) See paragraphs [0017]-[0019] and figures 4-6.	1-9
A	JP 2020-172300 A (TOPPAN PRINTING CO., LTD.) 22 October 2020 (2020-10-22) See figures 2-3.	1-9
A	JP 2022-111610 A (TOPPAN PRINTING CO., LTD.) 01 August 2022 (2022-08-01) See figures 1-3.	1-9
A	US 6846443 B1 (JACKSON et al.) 25 January 2005 (2005-01-25) See figures 1-4.	1-9

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

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"E" earlier application or patent but published on or after the international filing date	"&" document member of the same patent family
"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)	
"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	

Date of the actual completion of the international search 12 September 2023	Date of mailing of the international search report 12 September 2023
Name and mailing address of the ISA/KR Korean Intellectual Property Office Government Complex-Daejeon Building 4, 189 Cheongsaro, Seo-gu, Daejeon 35208	Authorized officer
Facsimile No. +82-42-481-8578	Telephone No.

Form PCT/ISA/210 (second sheet) (July 2022)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2023/007743

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