

CLOSURE WITH PUSH TYPE OPENER

TECHNICAL FIELD

The present invention relates to a closure with a push type opener
5 and, more particularly, to one piece or two or more pieces of closures
capable of opening a sealing member which blocks an inlet of a container
or an inner side of a closure by pressing it, and capable of automatically
inserting a slit sealing member inside the closure for storage.

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BACKGROUND ART

Figure 1 is a sectional view showing a closure of a container of a
beverage container (bottle) having an opening structure in accordance with
a conventional art.

The closure of a beverage container includes a closure body 5
15 detachably coupled at an inlet of a container 1 sealed by a sealing member
2; an ascending/descending member 6 installed to be moved linearly up
and down at an upper outer side of the closure body 5; and an auxiliary
closure 7 capped at an upper portion of the closure body 5.

When a user wants to drink a beverage in a closure-capped
20 container, the user may separate the closure body 5 from the beverage
container 1 and remove the sealing member 2 blocking the inlet of the
container 1. And then, the user may couple the closure body 5 to the inlet
of the beverage container 1, open the auxiliary closure 7 and grasp the
ascending/descending member 5 by hand and pull it upwardly. Then, an

upper side surface 6' of the ascending/descending member 6 is isolated from a head part 5' of the closure body to open the closure of the beverage container 1, so that the user can drink the beverage by inclining the beverage container 1.

5 If the user does not want to drink the beverage any further, he/she can press the ascending/descending member 6 by hand to return it to its original position, thereby closing the inlet of the beverage container 1.

However, the conventional closure of the beverage container having such an opening structure has the following problems.

10 That is, in order to open the container, the closure body 5 is separated from the container 1, the sealing member 2 is removed, and then, the closure body 5 is coupled again to the beverage container 1, causing inconvenience to open the closure.

Especially, since the sealing member 2 is firmly attached for sealing
15 at the inlet of the container 1, it is not easy for the user to open it, and thus, in most cases, the user must open it by hand, causing a problem that the inlet of the container 1 is contaminated in the process of removing the sealing member 2, which is not hygienic.

In addition, the conventional closure makes it difficult to keep a
20 different content from a current content put in the container 1, so a container is additionally required or the structure of the closure is to be formed more complicate.

Moreover, when the user wants to drink a beverage contained in the beverage container, he/she must open the closure by putting up the

ascending/descending member 6 by hand, and after finishing drinking the beverage, he/she must push the ascending/descending member to its original position by hand, contaminating the portion where the beverage is discharged, which is thus insanitary.

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TECHNICAL GIST OF THE PRESENT INVENTION

Therefore, it is one object of the present invention to provide a closure with a push type opener capable of opening a container hygienically, removing a sealing member simply and keeping a slit sealing member inside a closure for storage by constructing such that the sealing member for sealing an inlet of the container is opened by pressing without separating the closure from a container, and mounting a spoon for a user to have a content in the closure to thereby avoid users' inconvenience of preparing a spoon personally.

Another object of the present invention is to provide a closure with a push type opener capable of improving users' convenience with a construction that a mixed beverage or a food stuff can be kept in one container and closure without a necessity of keeping them in individual containers, and contents contained in each container and closure can be mixed by opening a sealing member by pressing, to thereby simplify keeping and mixing individual contents.

Referring back to a problem of the conventional art, when the sealing member mounted at the inlet of the container is to be removed, the closure is first released from the container, the sealing member is torn off

directly by hand or by using a tool (knife or a gimlet), and then, the content in the container can be used. In such a case, it is quite inconvenient for a user to use the closure, the sealing member is quite roughly torn off, and it is not easy to handle and keep the removed sealing member in storage.

5 In order to accomplish the above objects, there is provided a closure having an inlet in the container processed by a sealing member or having a sealing member mounted in the closure, including a device for cutting the sealing member and keeping slit sealing member in the closure for storage, whereby in a state that the closure is coupled at the inlet of the container, a
10 spoon 13 mounted at an upper portion of the closure is released without isolating the closure and the container, and a pressing plate 32 of an upper end portion of a hemispherical (dome) region 30 of an upper portion of the closure by the thumb is vertically pressed to make the sealing member sealed at the inlet of the container be penetrated by several cutting blades
15 42 installed at a lower portion of a cutting region 40 of the closure (Refer to a principle presented in a 'Waveform Annular Body and other Cap(B)' described with reference to Figure 1 of Japanese Application No. Sho 57-126367 entitled 'Cap' filed on February 3, 1981 by the applicant of DAINIPPON INK AND CHEMICALS, INC., a former patent application),
20 and then, when the closure is rotated in an opening direction, the sealing member is completely cut by cutting blades 44 of a cutting support 41 and smoothly inserted into a sealing member keeping recess 43 in the closure.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a sectional view showing a closure of a beverage container having an opening structure in accordance with a conventional art;

Figure 2 is a bird's-eye-view projected over an external structure of the closure;

Figure 3 is a sectional view showing 'before operation' with respect to an internal structure of the closure;

Figure 4 is a sectional view showing 'after operation' with respect to an internal structure of the closure;

Figure 5 is a drawing illustrating a cutting blade installed at a lower portion of a cutting support, of which

Figure 5A is an unfolded sectional view; and

Figure 5B is a bottom view;

Figure 6 is an enlarged sectional view of a sealing member keeping recess 43 installed at a middle portion of the cutting support;

Figure 7 is a drawing illustrating a cutting support blade installed at the side of the sealing member keeping recess of the cutting support, of which

Figure 7A is a sectional view; and

Figure 7B is a bottom view;

Figure 8 is a sectional view showing a spoon installed at a spoon mounting jaw installed at an upper portion of an outer wall (protecting wall) of the closure and a wrapper installed at a wrapper installation jaw;

Figure 9 is a projected plan view showing the spoon installed at the

spoon mounting jaw installed at the upper portion of the outer wall (protecting wall) of the closure and the wrapper installed at the wrapper installation jaw;

Figure 9 is a drawing illustrating a penetrating bar, of which

5 Figure 9A is a sectional view; and

Figure 9B is a bottom view;

Figure 10 is a drawing illustrating 'before operation' of the closure having only a cutting region without a hemispherical region;

Figure 11 is a drawing illustrating 'before operation' of the closure
10 having only the cutting region without the hemispherical region;

Figure 12 is a drawing illustrating 'before operation' of the closure having only the cutting region without the hemispherical region;

Figure 13 is a sectional view showing addition of the penetrating bar or an open bar in Figure 3; and

15 Figure 14 is a sectional view showing addition of the penetrating bar or an open bar in Figure 4.

MODE FOR CARRYING OUT THE PREFERRED EMBODIMENTS

Preferred embodiments of the present invention will now be
20 described with reference to the accompanying drawings.

The structure of a closure in accordance with the present invention will be described as follows.

The closure is divided into an outer wall region 10, a hemispherical (dome) region 30 and a cutting region 40.

The outer wall region 10 is coupled at its lower portion to an inlet of a container 1, and its upper portion is more protruded than the inlet of the container. A spoon mounting jaw 14 and a wrapper installation jaw 16 are installed at an outer wall 11 of the outer wall region 10. A knurl 12 is
5 installed at an outer surface of the outer wall region. At a lower side of the outer wall region 10 coupled to the inlet of the container 1, there are formed a sealing portion 17, a connected portion 18, a perforated portion 19 or an under cut 20, and the knurl 12A.

The dome region 30 is surrounded by an upper portion-opened
10 cylindrical outer wall 11, and includes a pressing plate 32 installed at an upper end of a hemisphere (dome) 31, a thin connection film 33 connecting the outer wall region and the hemispherical (dome) region. The thin connection film has at least one crease 34.

The cutting region 40 is installed at a lower inner portion of the
15 dome region. The cutting region 40 has a cylindrical shape with a lower portion opened, and is installed in a vertical direction. The cutting region 40 includes a cutting support 41 required for penetrating and cutting a sealing member, a cutting blade 42, a cutting support blade 44 for slitting the sealing member, and a sealing member keeping recess 43 for keeping the
20 slit sealing member.

A first embodiment of the present invention will now be described with reference to Figures 3 and 4.

A closure includes a wrapper installation jaw 16 installed at the inner surface or the outer surface of the outer wall (protecting wall) 11, a

wrapper 15 mounted at the wrapper installation jaw 16, the spoon mounting jaw 14 installed at the inner surface of the outer wall 11, a spoon for scooping a content, a pressing plate 32 formed thicker than the connection film 33 of the dome region 30, a crease 34 allowing the
5 connection film to be easily folded, a cutting blade 42 of the cutting region 40 penetrating the sealing member, a sealing member keeping recess 43 keeping the slit sealing member, and a cutting support blade 44 of the cutting support 41 for completely slitting the penetrated sealing member.

The closure according to the first embodiment of the present
10 invention is applied to a container in which content 3 is put in a paste state, or content such as a thick solution or a powder product, which a user can have with a spoon.

A second embodiment of the present invention will now be described, in which the closure does not have such a spoon mounting jaw
15 and a spoon as in the first embodiment of Figures 3 and 4.

Its operational order is as follows.

1) The wrapper 15 mounted at the wrapper installation jaw 16 installed at an inner or outer surface of the outer wall (protection wall) 11, namely, a portion of the outer wall region 10 of the closure is removed by
20 using fingers or other tools.

2) The pressing plate 32 of the dome region is softly pressed by the thumb in a vertical direction downwardly.

3) The thin connection film 33 is folded by virtue of the pressing force and the cutting region 40 also descends.

4) The cutting blade 42 of the cutting region 40 installed at the lower side of the dome region 30 mounted at the inlet of the container descends to penetrate the sealing member 2, and at this time, the folded thin connection film 33 remains folded, not being recovered to its original state.

5 5) The sealing member which has been penetrated by the cutting blade 42 is inserted in the sealing member keeping recess 43 (Refer to Figure 4).

6) In order to release the closure from the container, the closure is rotated in an opening direction.

10 7) A portion of the sealing member 2 inserted in the sealing member keeping recess 43, which has survived the cutting and thus remained intact, if any, is cut by the sharp cutting support blade 44 installed perpendicular in the opening direction to the side of the cutting support 41 and inserted into the sealing member keeping recess 43 completely, and the slit sealing
15 member 2A is kept in the sealing member keeping recess 43 of the closure.

The closure in accordance with the second embodiment of the present invention is applied to a container which holds a watery solution that users may have by applying their mouths to the container, or to a
20 container having a content can be poured into a different container for a user to have, e.g., milk, watery yogurt, café latte, or the like.

A third embodiment of the present invention will now be described.

In such a structure of the closure as in first embodiment, an open bar 46 for penetrating the sealing member to open it is installed at a lower

portion of the pressing plate of the hemispherical region, and an upper space for storing content inside the hemispherical region is formed.

A fourth embodiment of the present invention will now be described.

Figures 11 and 12 illustrate installation of the cutting region 40 at an
5 inner wall surface of the outer wall region, without having the hemispherical region 30. A closure in accordance with the fourth embodiment of the present invention operates as follows.

1) A closure 4 coupled spaced with a certain interval 50 from the inlet of the container 1 with the sealing member 2 mounted therein is
10 rotated (in case of a screw) in a closing direction and descends vertically by a pressing force (in case of an undercut) to be closed completely.

2) The perforated portion 19 of the sealing portion 17 is torn off by virtue of the rotational force or the vertical descending force and the closure is tightly attached to the inlet of the container.

15 3) The sealing member 2 is penetrated by the cutting blade 42 installed at the inner surface of the closure 4, cut by the cutting support blade 44 and completely separated from the inlet of the container 1.

4) The completely slit sealing member 2A is released from the inlet of the container and inserted into the sealing member keeping recess 43.

20 5) When the closure 4 is rotated in an opening direction, the connected portion 18 is torn and the perforated portion 17 is caught by a protrusion of the lower portion of a screw installed at an outer surface of the inlet of the container to remain there while the sealing member 2A is kept in the sealing member keeping recess 43. In this state, the closure 4

is released from the inlet of the container.

The closure is applied to a container which holds a content 3 in a paste state, or content such as a thick solution or a powder product which a user can have with a spoon.

5 As stated above, when the closure coupled at the inlet of the container 1 with the sealing member 2 mounted therein is opened, the sealing member 2 is automatically penetrated, slit and inserted for storage in the sealing member keeping recess 43 inside the closure.

10 In addition, the closure mounted at the inlet of the sealing-processed container which automatically keeps the sealing member 2A when it is opened can be applicable to any containers so long as they are sealing-processed regardless of a content, rather than being limited to the beverage container, and a design (or pattern) of the closure is to be interpreted to come within the coverage of the present invention.

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INDUSTRIAL APPLICABILITY

As so far described, the closure with the push type opener in accordance with the present invention has the following advantages.

20 That is, for example, first, since the sealing member capping the container can be opened by the pressing method, a user cannot be bothered to separate the closure in order to remove the sealing member to take the content of the container.

Second, because the user can easily open the inlet of the container without applying hands to the inlet of the container in order to remove the

sealing member to have a beverage or a content of the container, he/she can take the content hygienically.

Third, with a content stored inside the closure, the sealing member can be opened by the pressing method, and the content stored inside the
5 closure and a content stored in the container can be mixed. Accordingly, the user can simply mix the different contents to have it.

Fourth, since the sealing member mounted at the inlet of the container is removed and automatically stored inside the closure, the slit sealing member does not remain as waste.

10 Finally, since a spoon or a straw can be kept in a space of an upper portion of the closure, a user can easily use them for having a content of the container, and in addition, by providing a closure cover, it accomplishes effectiveness of advertising as well as preventing introduction of foreign materials to thereby improve hygiene of the spoon or the straw.

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CLAIMS

1. One piece or two or more pieces of closures of a container comprising:

5 a closure body detachably coupled at an inlet of a container; and
a sealing member provided at the closure body and sealing the inlet of the container or the closure body as a hemispherical region descends by a pressing method,

wherein a cutting support 41 is installed inside a thin connection film
10 33 of the closure (Refer to a principle presented in a 'Waveform annular body and Cap(B) described with reference to Figure 1 of Japanese Application No. Sho 57-126367 entitled 'Cap' filed on February 3, 1981 by the applicant of DAINIPPON INK AND CHEMICALS, INC., a former patent application), a structure having a new function such as a sealing member
15 keeping recess 43 and a cutting blade 44 are installed at the cutting support 41, and such a principle that a sealing member 2 sealed at the inlet of the container is penetrated by a cutting blade 42 of the closure, slit by the cutting support blade 44 and then inserted in the sealing member keeping recess 43 for storage is applied.

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2. The closure of claim 1, wherein a wrapper installation jaw 16 for mounting a wrapper 15 is installed at an inner or outer surface of an outer wall (protecting wall) 11 of an upper portion of the closure, and a spoon mounting jaw 14 for mounting a spoon 13 is installed at an inner

surface of the outer wall 11.

3. One piece or two or more pieces of closures, wherein a cutting support 41, a cutting blade 42, a cutting support blade 44 and a sealing member keeping recess 43 are installed at an inner surface of the side of a body of the closure.

4. The closure of claim 1 or 2, wherein a thin connection film has at least one crease so that a hemispherical (dome) region can be easily folded.

5. The closure of claim 1, 2 or 3, wherein a sealing member keeping recess of the closure for keeping sealing member is provided to keep a sealing member which has been penetrated, slit and separated.

6. The closure of claim 1, 2 or 3, wherein a sealing portion, a connected portion, a perforated portion or one or more undercuts are installed at a lower portion of an outer wall region of the closure coupled to a container.

7. The closure of claim 1 or 2, wherein a pressing plate 32 in various forms at the center of an upper end of a dome region is provided so as to easily press the dome region.

8. The closure of claim 1, 2 or 3, wherein the cutting support blade 44 is installed at the cutting support which has the sealing member keeping recess for keeping the sealing member slit after being penetrated by the cutting blade and a penetrating bar 45.

5 9. The closure of claim 1 or 2, wherein a penetrating bar 45 is installed vertically and downwardly at the center of the pressing plate 32 of the hemispherical region 30 of the closure, and has a cylindrical shape, a jaw at its lower portion, and a sharp end portion to facilitate penetrating the sealing member.

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10. The closure of claim 1, 2 or 3, wherein an open bar 45 in various forms is installed vertically and downwardly at the center of an inner surface of the pressing plate 32 of the hemispherical region 30 of the closure.

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11. The closure of claim 1 or 2, wherein a suitable open bar 46 (e.g., a cross type or a 'T'-shape one, etc.) is installed at the position of the penetrating bar 45 to substitute the penetrating bar 45 in order to easily open the sealing member 2, and an upper space 35 is formed at a certain
20 portion inside the hemispherical region 30 to keep a content 3 such as a solution or powder.

12. The closure of claim 3, wherein a wrapper installation jaw 16 for mounting a wrapper 15 is formed at an inner or outer surface of an

outer wall (protecting wall) 11 of an upper portion of the closure, and a spoon mounting jaw 14 for mounting a spoon 13 is formed at an inner surface of the outer wall 11.