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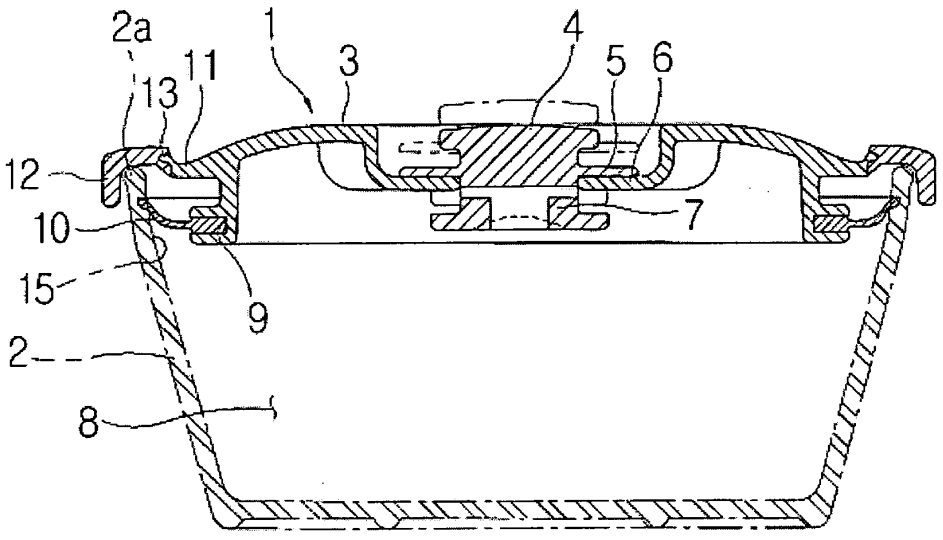
(54) **Container lid of vacuum valve operation type**

(57) A sealed container lid of a vacuum valve operation type is provided, in which an engagement structure of a silicon packing is simple, and a relatively strong sealing force is obtained. A process for engaging or disengaging a lid to a container body may be performed based one-touch method. The sealed contained lid of a vacuum valve operation type comprises a body which is injection-molded and has a circular groove formed in a horizontally and outwardly opened shape for an engagement of the silicon packing, and a downwardly bent peripheral part which is formed at an outer peripheral part of the body based on a double injection method while surrounding the same.

Figure 1



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Description

TECHNICAL FIELD

[0001] The present invention relates to a sealed container lid having a vacuum valve.

BACKGROUND ART

[0002] Generally, according to a sealed container for sealingly storing a certain stuff by covering a container body using a lid, a packing is engaged at a container lid, and the packing keeps a close contact with a rim of the container body. A sealed container may be provided with a locking wing so as to obtain a sealed engagement force of a lid.

[0003] However, in the case of an engagement method of a simple structure lid, a sealing force is disadvantageously weak. In the case of a locking wing method, a sealing force of the lid is good, but opening and closing the locking wing causes many inconveniences when in use.

[0004] As shown in Figure 3, a vacuum valve 22 is engaged at a center of the container lid 21. A silicon packing 23 is engaged near an outer side of the container body. When the container lid 21 is engaged with the container body 24, the silicon packing 23 is closely contacted with an inner wall surface 25 of the container body 24. In this state, the air of the container body 24 is discharged to the outside through the vacuum valve 22 by pressing the container lid 21. In the above state, a valve seat 26 is closed by softly pressing the vacuum valve 22. A negative force is formed in the container body 24 for thereby preventing the container lid 21 from being opened and obtaining a strong sealing force, so that the foods stored in the interior of the container is safely stored. In the above sealed container of a vacuum valve operation type, when it is needed to open the container lid 21, the vacuum valve 22 is softly lifted, and the valve seat 26 is opened, so that the inner space of the container body 24 communicates with the outside, and a vacuum state does not occur for thereby easily separating the container lid 21 from the container body 24. In the above conventional art, the opening and closing operations of the lid are easy, and a relatively strong sealing force is obtained.

[0005] However, in the above-described conventional sealed container of a vacuum valve operation type, the container lid 21 is made of a plastic material based on an injection method, whereas the packing is made of a silicon rubber material. Namely, the materials are different from each other. When the packing 23 is engaged at the container lid 21, a vertically opened circular groove 27 is formed at the container lid 21. A ring-shaped fixing member 29 having a plurality of insertion protrusions 28 formed at regular intervals is provided so as to obtain a certain fixing force. The insertion protrusions 28 pass through the packing 23. The fixing member 29 is inserted into the circular groove 27 for thereby finishing an engagement of the packing 23. In this case, a certain member (fixing member) is additionally needed so as to engage the packing 23. Since an assembling process is further needed, the mold and manufacture costs increase, and the productivity decreases.

[0006] As shown in Figure 4, a circular groove 30 provided for fixing the packing 23 may be formed and opened in a horizontal direction. When a silicon packing 23 having a relatively large elastic force is extended so that the diameter increases, and is inserted into the circular groove 30, the packing 23 is not easily escaped from the circular groove 30 by a force as allowing the diameter to decrease for thereby obtaining a relatively strong engaging force. However, in the above conventional art, it is impossible to form the circular groove as being opened in the horizontal direction due to the following reasons. Namely, since a downwardly bent peripheral part 31 is formed at an outer peripheral part of the container lid 21 while surrounding the outer peripheral part 24a of the container body 24, it is impossible to perform an injection method so as to concurrently satisfy the design conditions of the downwardly bent peripheral part 31 and the circular groove 30. Namely, in the above structure, molds cannot be separated during the manufacture. So, the conventional art of Figure 4 may not be actually adapted to the industry.

DISCLOSURE OF THE INVENTION

[0007] Accordingly, it is an object of the present invention to provide a sealed container lid of a vacuum valve operation type which overcomes the problems encountered in the conventional art.

[0008] It is another object of the present invention to provide a sealed container lid of a vacuum valve operation type in which an engagement structure of a silicon packing is simple, and a relatively strong sealing force is obtained. A process for engaging or disengaging a lid to a container body may be performed based one-touch method.

[0009] To achieve the above objects, in a sealed container lid of a vacuum valve operation type which includes a vacuum valve as operating with a certain pressure by communicating an interior of a container body and the outside or disconnecting the same, and a silicon packing for sealing the interior of the container body in close contact with an inner wall surface of the container body, there is provided a sealed contained lid of a vacuum valve operation type which comprises a body which is injection-molded and has a circular groove formed in a horizontally and outwardly opened shape for an engagement of the silicon packing; and a downwardly bent peripheral part which is formed at an outer peripheral part of the body based on a double injection method while surrounding the same.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The present invention will become better understood with reference to the accompanying drawings which are given only by way of illustration and thus are not limitative of the present invention, wherein;

Figure 1 is a view illustrating a sealed container lid of a vacuum valve operation type according to the present invention;

Figure 2 is a view illustrating a dual injection structure of a sealed container lid of a vacuum valve operation type according to an embodiment of the present invention;

Figure 3 is a view of a conventional art; and

Figure 4 is a view illustrating a container lid which may be manufactured based on an injection method.

MODES FOR CARRYING OUT THE INVENTION

[0011] Figure 1 is a view illustrating a sealed container lid of a vacuum valve operation type according to the present invention, and Figure 2 is a view illustrating a dual injection structure of a sealed container lid of a vacuum valve operation type according to an embodiment of the present invention.

[0012] In the drawings, reference numeral 1 represents a container lid, and 2 represents a container body in which the container lid 1 is opened and closed.

[0013] A vacuum valve 4 for an opening and closing operation of a lid is engaged at a body 3 of the container lid 2. When a valve seat 5 of the vacuum valve 4 is lifted off the valve seat 6, the interior 8 of the container body 2 is opened through a valve hole 7 with respect to the outside. When it is pressed and is closely contacted with the valve seat 6, the valve hole 7 is closed, and the interior 8 of the container body 2 is disconnected with the outside.

[0014] A circular groove 9 is formed at the body 3 in a horizontal direction and is open in the outward direction. A silicon packing 10 having a smaller diameter and a high elastic force is formed at the circular groove 9. When it is engaged, it is needed to enlarge the diameter by pulling the same. A downwardly bent peripheral part 12 is engaged at an outer peripheral part 11 of the body 3 while surrounding a peripheral part 2a of the body 2.

[0015] In the present invention, the body 3 is first manufactured based on the injection method and is provided with an opened circular groove 9 as being horizontally formed in an outward direction. The downwardly bent peripheral part 12 is formed at the body 3 based on a double injection method. The silicon packing 10 is inserted into the circular groove 9 for thereby finishing the manufacture of the lid 1.

[0016] When the downwardly bent peripheral part 12 is formed at the body 3 based on the double injection method, it is preferred to provide protrusions 13 and 14 so as to obtain a certain durability.

[0017] According to another embodiment of the present invention, the downwardly bent peripheral part 12 may be separately manufactured and assembled at the body 3 as compared to the earlier described method in which the downwardly bent peripheral part 12 is formed on the body 3 based on the double injection method.

[0018] In the present invention, when the lid 1 is engaged at the container body, the silicon packing 10 is closely contacted with the inner wall surface 15 of the container body 2. When the body 3 of the container lid 1 is softly pressed, the air of the interior of the container body 2 is discharged to the outside through the valve hole 7. At this time, when the valve seat 5 is closely contacted with the valve seat 6 by softly pressing the vacuum valve 4, the interior 8 of the container body 2 is disconnected from the outside. When the pressed body 3 returns to its original position by the elastic force, since a certain vacuum pressure is formed in the interior, it is possible to prevent the lid 1 from being opened based on a generation of negative pressure in the container. So, it is possible to obtain a strong sealing force.

[0019] When it is needed to separate the container lid 1 from the container body 2, the vacuum valve 4 is lifted upward, so that a valve assembly 5 is separated from the valve seat 6. The vacuum of the interior 8 of the container body 2 disappears, so that the inner and outer spaces communicate. As air is freely inputted from the outside into the interior based on the above communication, the container lid 1 can be easily opened.

[0020] Here, the silicon packing 10 is not easily escaped even if a certain fixing member is not used in the present invention. Namely, the silicon packing 10 is elastically extended and inserted into the circular groove 9, so that it is not easily escaped due to a strong inward contraction force.

[0021] As described above, a downwardly bent peripheral part as surrounding an outer peripheral part of the container body may be formed on a lid body based on a double injection method or may be separately manufactured and assembled. A circular groove for an engagement of a silicon packing is formed at the lid body in a horizontally and outwardly opened shape, not in a vertical direction. So, it is possible to obtain a stable engagement without using an additional fixing member of the silicon packing. The assembling process decreases, and the productivity is enhanced. The manufacture cost advantageously decreases.

[0022] As the present invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, it should also be understood that the above-described examples are not limited by any of the details of the foregoing description, unless otherwise specified, but rather should be construed broadly within its spirit and scope as defined in the appended claims, and therefore all changes and modifications that fall within the meets and bounds of the claims, or equivalences of such meets and bounds are therefore intended to be embraced by the appended claims.

Claims

1. In a sealed container lid of a vacuum valve operation type which includes a vacuum valve as operating with a certain pressure by communicating an interior of a container body and the outside or disconnecting the same, and a silicon packing for sealing the interior of the container body in close contact with an inner wall surface of the container body, a sealed contained lid of a vacuum valve operation type, comprising:

   a body which is injection-molded and has a circular groove formed in a horizontally and outwardly opened shape for an engagement of the silicon packing; and
   a downwardly bent peripheral part which is formed at an outer peripheral part of the body based on a double injection method while surrounding the same.

2. In a sealed container lid of a vacuum valve operation type which includes a vacuum valve as operating with a certain pressure by communicating an interior of a container body and the outside or disconnecting the same, and a silicon packing for sealing the interior of the container body in close contact with an inner wall surface of the container body, a sealed contained lid of a vacuum valve operation type, comprising:

   a body which is injection-molded and has a circular groove formed in a horizontally and outwardly opened shape for an engagement of the silicon packing; and
   a downwardly bent peripheral part which is formed at an outer peripheral part of the body based on a double injection method while surrounding the same, said downwardly bent peripheral part being separately formed and assembled at the body.

3. The lid of either claim 1 or claim 2, wherein said downwardly bent peripheral part includes protrusions for enhancing an engagement force with respect to the body.

Figure 1

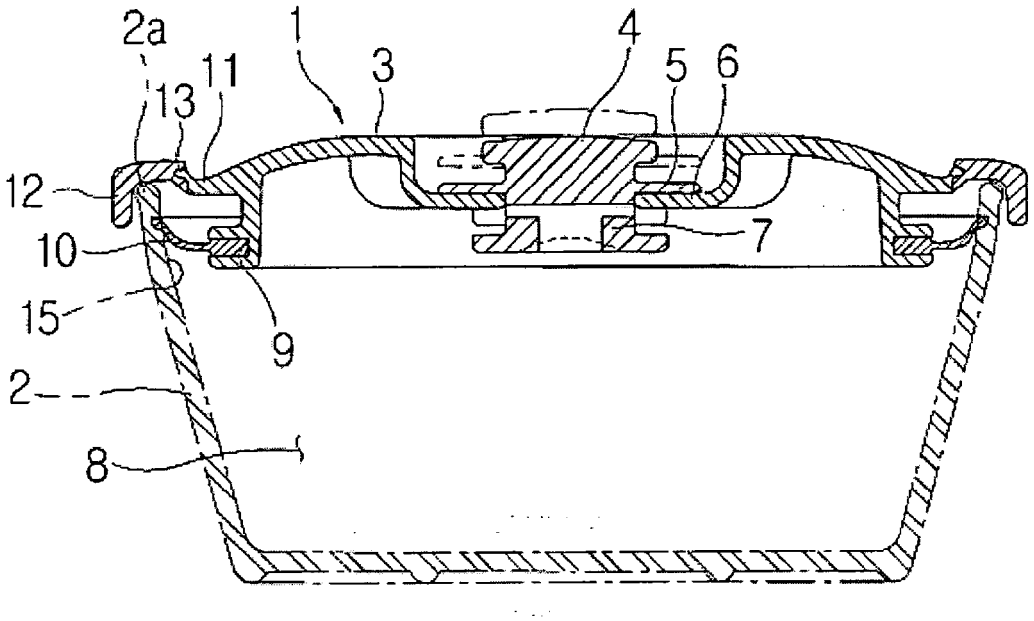

Figure 2

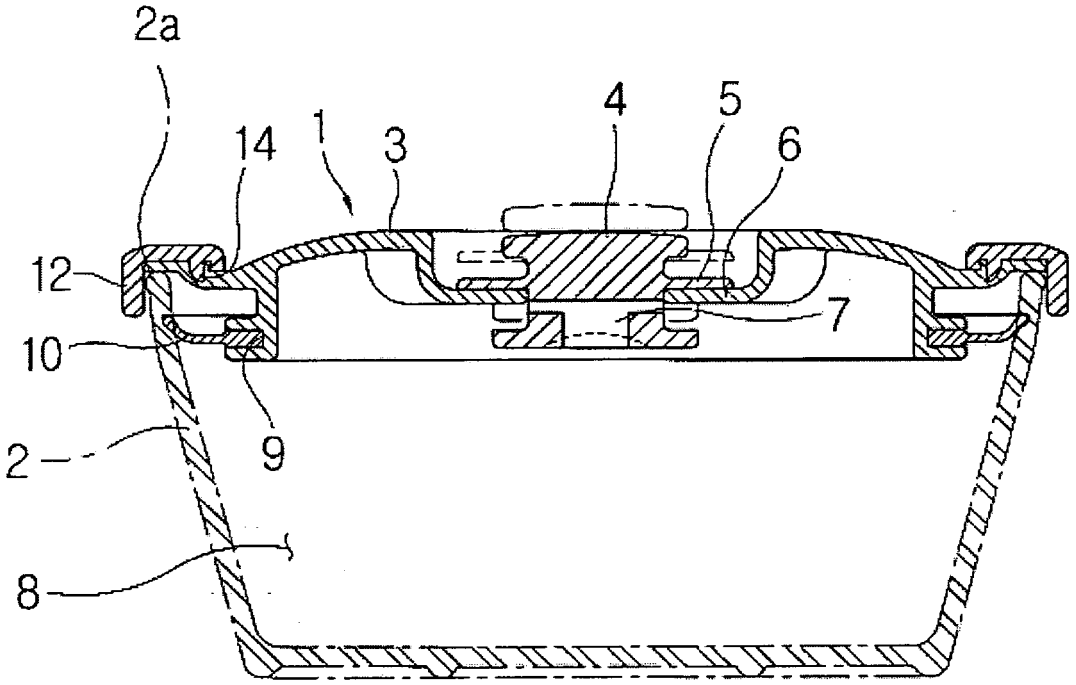

Figure 3 **PRIOR ART**

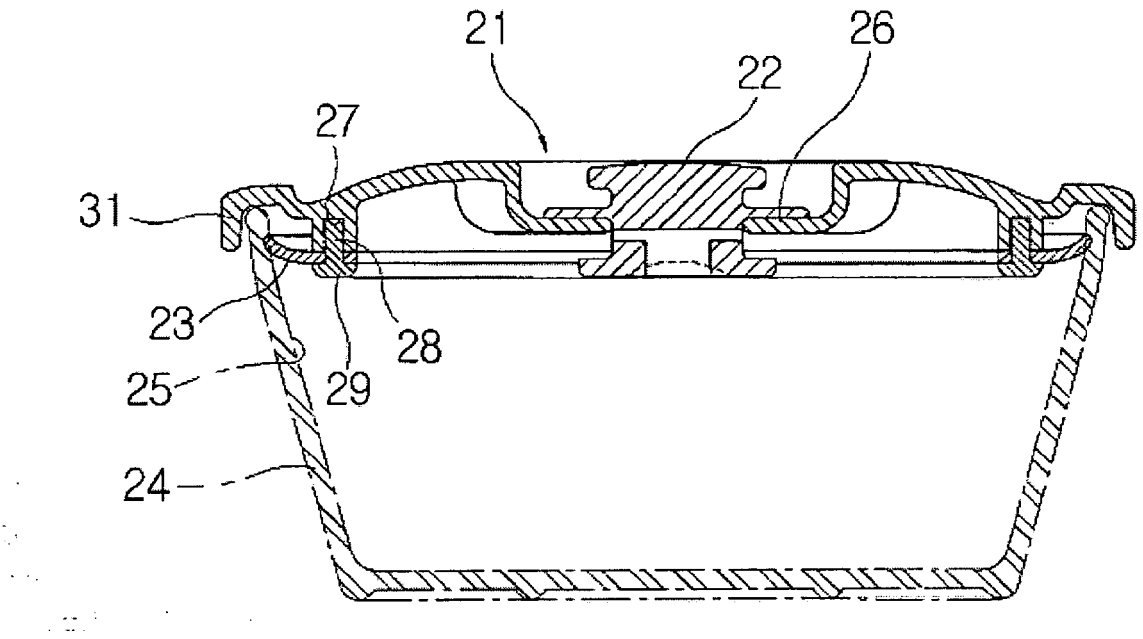

Figure 4