

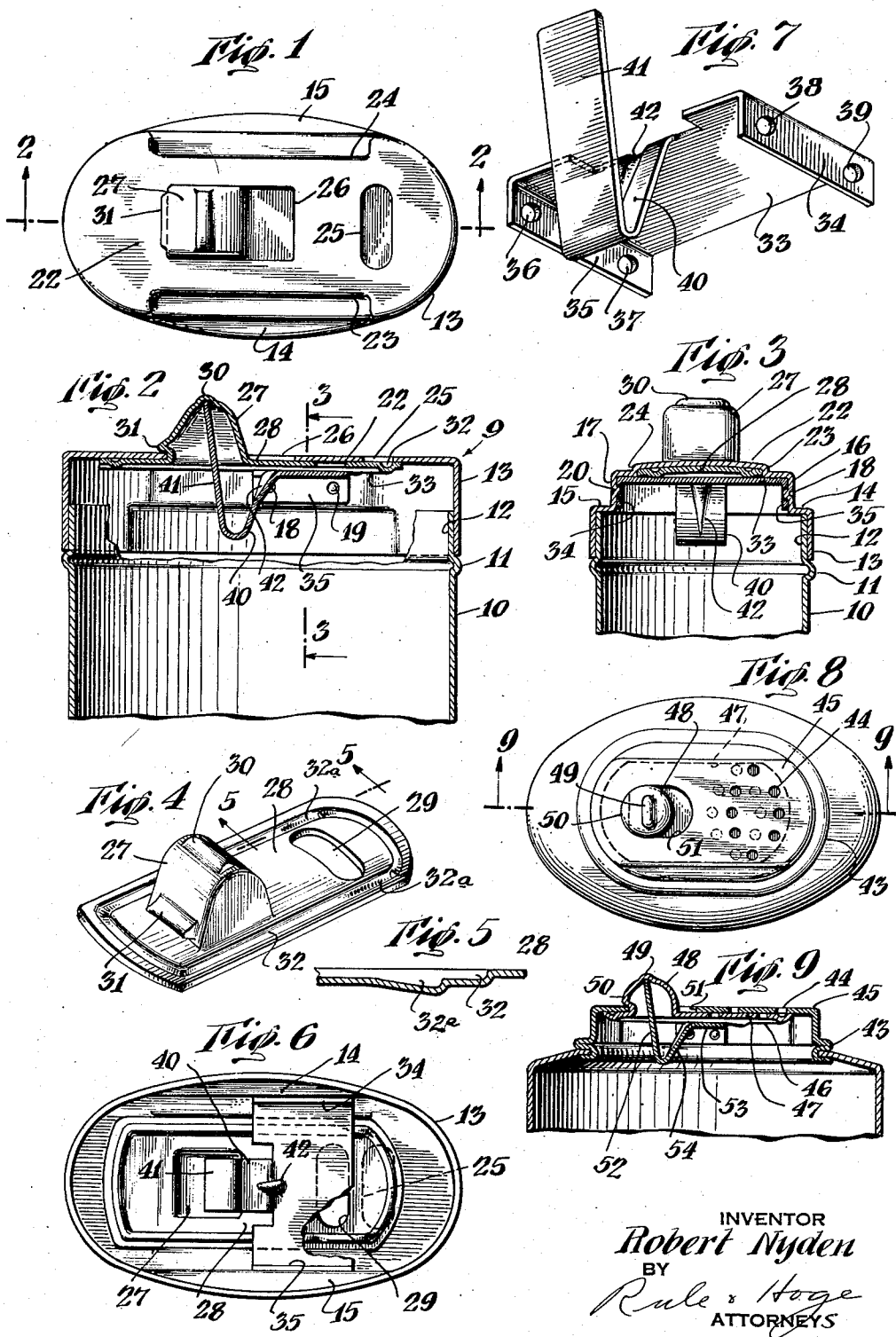
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DISPENSING CLOSURE

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DISPENSING CLOSURE

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This invention relates to an improvement in closures, and especially the type utilized in connection with dispensing packages. In such packages it is extremely desirable that the contents be rendered readily accessible to the user and at the same time be sealed against leakage and the ingress of moisture and the like when not in use.

It is an object of this invention to provide such a closure for use in connection with packaging powdered or pulverized material, and in which the closure lends itself to being opened through manual manipulation, but which automatically returns to its closed or sealed position when not being used.

Another object is that of providing a self-closing closure of this type that may be easily fabricated from sheet metal, plastics, and combinations of plastics and metal, or any other suitable material, and which can be readily assembled by relatively unskilled labor at a substantial saving in manufacturing costs.

A still further object is that of providing a closure of this type that can be interchangeably adapted for use in connection with standard containers now available and in use.

With these and other objects in mind, reference is had to the attached sheet of drawing, in which:

Fig. 1 is a plan view of a closure embodying one form of my invention, and in place on a container;

Fig. 2 is a cross-section taken through Fig. 1 along the line 2-2 in the direction of the arrows;

Fig. 3 is a cross-section taken through Fig. 2 along the line 3-3 and in the direction of the arrows;

Fig. 4 is a perspective view of the movable element of the closure shown in the preceding views;

Fig. 5 is a fragmentary cross-section of Fig. 4 taken along the line 5-5 in the direction of the arrows, and emphasizing a detail of the structure;

Fig. 6 is a plan view of the closure shown in the preceding views, looking upwardly from the interior of the closure;

Fig. 7 is a perspective view of the spring member utilized in the closure illustrated in the previous view;

Fig. 8 is a plan view of a slightly modified type of closure embodying my invention, in place on a container; and

Fig. 9 is a cross-section taken through Fig. 8 along the line 9-9 in the direction of the arrows.

Now turning first to Figs. 1 through 7, we note

a container body 10, which may be utilized for packaging any powdered or pulverized material such as talc, tooth-powder, or the like. Such container, in conformity with common practice, may be provided with a bead 11 adjacent its upper or open end, leaving an upwardly extending flange portion 12 extending above such bead. In sealing contact with such flange comprises a body portion 9 the container closure which is formed with a skirt 13 and laterally extending shoulders 14 and 15, which, in the case of the container illustrated, extend along the side edges of the closure. Projecting upwardly from said shoulder portions are the side walls 16 and 17 of the closure neck, which also extend along the sides of the closure. Each of said side walls is provided with, for example, two struck in projections, shown at 18, 19, 20 and 21, and for a purpose which will be hereinafter disclosed.

Bridging the top of said closure is the top 22, which is preferably formed with a slightly convex upper surface, as shown in Fig. 3. Likewise, as shown in Fig. 1 and in Fig. 3, the top 22 has shoulder portions 23 and 24 extending along its side edges parallel to but spaced inwardly from side walls 16 and 17.

In addition, a dispensing aperture 25 is provided in the top, and a further aperture 26 is positioned adjacent the dispensing aperture but spaced therefrom to accommodate the manipulating member 27, as hereinafter described. Riding beneath said top and movable laterally with respect thereto is the cut-off member 28, which is likewise slightly bowed from side to side to conform with the doming of the top. This cut-off is preferably made of metal, but can likewise be made of a plastic or other suitable material. A dispensing aperture 29 is formed in the cut-off member for registry with the aperture 25 of the top. Likewise, as has already been stated, the manipulating member 27 extends upwardly from said cut-off member adjacent the end opposite to said dispensing aperture. This manipulating member is provided with a ridge 30 along its upper edge, and a second ridge 31 on the side away from said dispensing aperture 29 and adjacent the surface of the cut-off member.

A reinforcing rib 32 is preferably formed in said cut-off member adjacent its upper edges, and, as shown in Fig. 5, this rib is inclined at either side of the dispensing aperture 29, as shown at 32a, for the purpose hereinafter described. Positioned beneath said cut-off member and normally spaced therefrom is a bridge member 33, formed with downwardly depending

side flanges 34 and 35, each bearing openings 36, 37, 38 and 39 for registration with the struck in projections 18, 19, 30 and 21, respectively. In addition, said bridge member, at one end thereof, has a downwardly depending tongue 40, which is bent upon itself and carries a free end 41 which extends upwardly at an acute angle to the part 40. In addition, as will be noted, the tongue is preferably provided with a reinforcing rib 42 in the short arm thereof, to rigidify the part 40 at its place of connection to the bridge member, and thus assist in preventing a ready flexing at this point.

It will be appreciated that the bridge member and the integral portions 40 and 41 comprising the tongue, can be stamped from a single sheet of metal or other material which imparts sufficient resilience to the tongue. In assembled condition, the cut-off member 28 is inserted beneath the top 22, so that the manipulating member 27 projects through the opening 26 in said top. It will be observed that in this position the width of the cut-off member 28 is such that its side edges abut the shoulders 23 and 24 in said top, which serve as guides for the same.

Likewise, it will be observed that when the parts are in the position shown in Fig. 2, the rib 31 of the manipulating member 27 engages the rear edge of the aperture 26, and serves to hold the manipulating member and cut-off member in position with respect to the top 22. With the parts in this position, the bridge member 33 is next placed beneath the cut-off member 28 so that the apertures 36, 37, 38 and 39 register and engage with the struck in projections 18, 19, 20 and 21 formed on the side walls 16 and 17 of the closure. At the same time, the free end 41 of the tongue is positioned so that it engages the rib 30 of the manipulating member 27, it being observed that the over-all length of the tongue 41 is such that, with the parts in assembled position as in Fig. 2, said tongue maintains a constant upward pressure against the under face of the manipulating member 27, and thus serves to hold said manipulating member, and the cut-off member 28 carried thereby, in intimate contact with the under face of the top 22.

In addition, and again referring to the assembled container referred to in Fig. 2, it will be noted that the tongue 41 at the same time exerts a lateral pressure which tends to urge the cut-off member 28 to its operative cut-off position wherein the rib 31 moves into overlapping contact with the corresponding edge of the aperture 26 in the top 22. It will also be noted that in the assembled position shown in Fig. 2, the downwardly inclined portions 32^a of the rib 32, carried by the cut-off member 28, engage the upper surface of the bridge member 33 in a cam like action, which further results in an upward urging of the cut-off member 28 into sealing contact with the under surface of the top 22.

To operate the closure, it is merely necessary to push the manipulating member to the right, as is represented in Fig. 2, which will bring the apertures 25 and 29 into registry and allow a dispensing of the contents. Upon the release of external pressure upon the manipulating member 27, the action of the tongues 40 and 41 will return the manipulating member and cut-off member 28 to closed position, again sealing the dispensing aperture 25 against external displacement of the contents of the container.

In the modification shown in Figs. 8 and 9, there is shown a closure which might be adapted for any type container regardless of the size or shape, and in which the closure proper is seamed into the top of the container or into an opening provided in the container cover, as at 43. As is shown in the figures, a sifter type dispensing aperture 44 can be provided in the top 45, with corresponding openings 46 provided in the cut-off member 47 for registry therewith. Again, a manipulating member 48 is made integral with said strip and is provided with ribs 49 and 50, the latter for engaging the top 45 adjacent the rear of the aperture 51 and the former, for receiving the free end of the tongue 52, which, in turn, is associated with the bridge member 53 by means of the turned back portion 54.

As in the prior description, operation is effected by moving the manipulating member to the right, as shown in Fig. 9, or in the direction of the dispensing aperture. This action presses the tongue 52, and moves the cut-off member 47, having complementary dispensing apertures 46 therein, in registry with the dispensing apertures 44 in the top 45. Release of external pressure on the manipulating member will return the parts to their position of rest, as shown in Fig. 9.

It will be appreciated that the foregoing description of the closures illustrated in the accompanying drawing simply represent preferred embodiments of my invention, and that many changes in details of construction and re-arrangement of the parts might be resorted to, without in the least departing from the spirit of the invention.

Having thus fully described the invention, what is claimed is:

1. A dispensing closure for containers comprising a body portion provided with a top having a dispensing aperture therein and a continuous depending flange, a bridge member extending across the top in the medial regions thereof and having downwardly extending end flanges, there being an aperture in each end flange, inwardly extending projections formed on the depending top flange, said projections entering the apertures in the end flanges and forming a support for the bridge member, a cut-off member slidably disposed on the bridge member and having a dispensing aperture therein designed for registry with said first mentioned aperture in one extreme position of the cut-off member, and means extending through the top of the closure for manipulating the cut-off member.

2. A dispensing closure for containers comprising a body portion provided with a top having a dispensing aperture therein and a continuous depending flange, a bridge member having its ends secured to the flange at opposed points, a cut-off member slidably supported on the bridge member beneath the top and wholly confined within said flange, there being an aperture in the cut-off member designed for registry with the dispensing aperture when the cut-off member is in one extreme position, there being a slot in said top, a manipulating member on the cut-off member projecting through the slot, and a rib on the manipulating member adapted to overlie an edge of the slot when the manipulating member is in the other extreme position.

3. A dispensing closure for containers comprising a body portion provided with a top having a dispensing aperture and a slot therein, a slidable cut-off member for the aperture movable from an operative to an inoperative position and vice

versa, means for supporting said member beneath the top, a manipulating member on the cut-off member projecting through the slot, and a rib on the manipulating member adapted to overlie one edge of the slot when the cut-off member is operative.

4. A dispensing closure for containers comprising a body portion provided with a top having a dispensing aperture therein and a continuous depending flange, a bridge member having its ends secured to the flange at opposed points, a cut-off member slidably supported on the bridge member below the top, there being an aperture in the cut-off member designed for registry with the dispensing aperture when the cut-off member is in one extreme position, means extending through the body portion of the closure for manipulating the cut-off member, and a depending rib on the cut-off member designed for engagement with the bridge member when the cut-off member is in its other extreme position to urge the cut-off member upwardly into sealing engagement with the top.

5. A dispensing closure for containers comprising a body portion provided with a top having a dispensing opening therein, a slidable cut-off member for the aperture movable from an operative to an inoperative position and vice versa, means for supporting said member beneath said top, means extending through the body portion for manipulating the cut-off member, and a depending rib on the cut-off member designed for engagement with the bridge member when the cut-off member is in its operative position to elevate the latter into sealing engagement with the top.

6. A dispensing closure for containers comprising a body portion provided with a top having a dispensing aperture therein and a continuous depending flange, a bridge member extending across the top in the medial regions thereof and having its ends secured to said flange, a cut-off member slidably disposed on the bridge member and having an aperture therein designed for registry with the dispensing aperture in one extreme position of the cut-off member, means extending through said top for manipulating the cut-off member, and a resilient tongue formed on the bridge member and engaging the manipulating means and normally urging the cut-off member to its other extreme position.

7. A dispensing closure for containers comprising a body portion provided with a top having a dispensing aperture therein and a continuous depending flange, a bridge member extending across the top in the medial regions thereof and having its ends secured to said flange, a cut-off member slidably disposed on the bridge member and movable from an inoperative position to an operative position and vice versa, means extending through said top for manipulating the cut-off member, and a resilient tongue formed on the bridge member and engaging the manipulating means and normally urging the cut-off member to its operative position.

8. A dispensing closure for containers comprising a body portion provided with a top having a dispensing aperture therein and a continuous depending flange, a bridge member extending across the top in the medial regions thereof and having its ends secured to said flange, a cut-off member slidably disposed on the bridge member and movable from an inoperative position to an operative position and vice versa, means extending through said top for manipulating the cut-off

member, and a resilient tongue formed on the bridge member and engaging the manipulating means and normally urging the cut-off member to its operative position, said bridge member forming the sole support for the cut-off member.

9. A dispensing closure for containers comprising a body portion provided with a top and a continuous depending flange, a bridge member having its ends secured to the flange at opposed points thereon, a cut-off member slidably supported on the bridge member beneath the top, said top and cut-off member having apertures therein designed for registry when the cut-off member is in one extreme position, there being a slot in the top, and a hollow manipulating member formed on the cut-off member extending upwardly therefrom and projecting through the slot, and a resilient tongue on the bridge member extending upwardly into the hollow manipulating member normally urging the cut-off member to its other extreme position.

10. A dispensing closure for containers comprising a body portion provided with a top and a continuous depending flange, a bridge member having its ends secured to the flange at opposed points thereon, a cut-off member slidably supported on the bridge member beneath the top, said top and cut-off member having apertures therein designed for registry when the cut-off member is in one extreme position, there being a slot in the top, a hollow manipulating member formed on the cut-off member extending upwardly therefrom and projecting through the slot, a rib in said hollow member, and a resilient tongue on the bridge member extending upwardly into the rib and normally urging the cut-off member to its other extreme position.

11. A dispensing closure for containers comprising a body portion provided with a top and a continuous depending flange, a bridge member having its ends secured to the flange at opposite points, a cut-off member slidably supported on the bridge member beneath the top, said top and cut-off member having apertures therein designed for registry when the cut-off member is in one extreme position, there being a slot in said top, a manipulating member on the cut-off member projecting upwardly through the slot, and means formed on the bridge member normally urging the cut-off member to its other extreme position.

12. A dispensing closure for containers comprising a body portion provided with a top and a continuous depending flange, a bridge member having its ends secured to the flange at opposite points, a cut-off member slidably supported on the bridge beneath the top, said top and cut-off member having apertures therein designed for registry when the cut-off member is in one extreme position, there being a slot in the top, a hollow manipulating member on the cut-off member projecting upwardly through the slot, and a resilient tongue formed on the bridge member extending downwardly to a point beneath the manipulating member and from thence upwardly and into the manipulating member and into contact therewith, said tongue normally urging the cut-off member to its other extreme position.

13. A dispensing closure for containers comprising a body portion provided with a top having a dispensing opening therein and a continuous depending flange, a bridge member having its ends secured to the flange at opposite points, a cut-off member for the aperture slidably sup-

ported on the bridge member and movable from an inoperative position to an operative position and vice versa, there being a slot in the top, a manipulating member on the cut-off member
5 projecting upwardly through the slot, and a spring on the bridge member engaging the manipulating member and urging the cut-off member to its operative position.

10 14. A dispensing closure for containers comprising a body portion including a top having a dispensing aperture therein and a continuous depending flange, a bridge member extending across the top in the medial regions thereof and

having downwardly extending end flanges, means for releasably securing each of the end flanges to the depending flange and for preventing downward shifting of the former on the latter, a cut-off member slidably disposed on the bridge member and having a dispensing aperture therein
5 designed for registry with said first mentioned aperture in one extreme position of the cut-off member, and means extending through the top of the closure for manipulating the cut-off
10 member.

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