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CONTAINER CLOSURE

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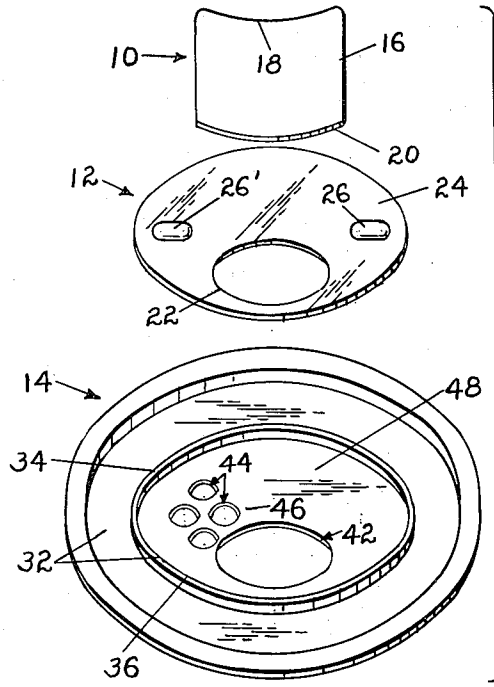



Fig. 1

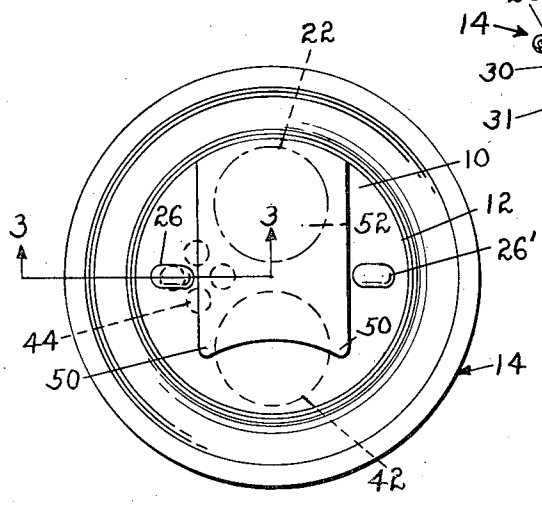



Fig. 2

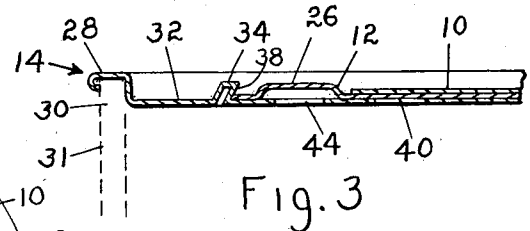



Fig. 3

INVENTOR.
EDWARD V. RUCKI, JR.
BY
Robert DeBrien
ATTORNEY

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# CONTAINER CLOSURE

Edward V. Rucki, Jr., Denville, N.J., assignor to King Container Corporation, Rockaway, N.J., a corporation of New Jersey

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8 Claims. (Cl. 222—153)

This invention broadly relates to an improved closure unit for containers and more particularly to an improved top closure member to selectively dispense the contents of a container.

It has been known to use matching openings on two adjacent metal parts, which openings, when at least one of the metal parts is rotated, are placed in alignment to define a dispensing opening affording direct communication with the interior of the container. However, by reason of their construction, many of these prior art closure units required the use of a screw driver, or heavy knife, in order to bring the openings into alignment. This forced opening or prying action is naturally undesirable and has led in many cases to either direct damage to the closure member, being forced into position, or injury to the person applying the force. In addition, after the forced opening had been accomplished, there arose another problem, that of effectively re-sealing the container to prevent leaking out of the contents of the container particularly when the contents being dispensed were in fine granular form. Once these closure units of the prior art had been forced open, a natural disfiguration of the individual component parts had occurred and they did not lend themselves easily to re-sealing.

Another type of closure unit of known use is the metal unit having two metal components in which there is a semi-perforated opening in one of the units that has to be punched out in order to gain access to the interior of the container to dispense the contents. However, as was true with the embodiment of the prior art above discussed, it was not unusual during punching out the perforated opening, for the person performing this task to cut, bruise or scrape their knuckles or fingers on the raw metal. Such a result was of course highly objectionable and constituted a critical deficiency for this type of prior art closure unit. In addition such a closure once opened was difficult to re-seal since the rotation of one of the metal components had to be accomplished and here again this frequently requires the use of a tool to force the rotation.

Accordingly, it is a primary object of the present invention to provide an end closure unit that will eliminate the above discussed deficiencies of the prior art closure units and most particularly an end closure unit that will provide a sift-proof and damage-proof closure unit with a novel selectively operable locking feature for the rotatable component.

Referring to the drawings, wherein like numerals are used to designate like parts throughout:

Fig. 1 is an exploded plan view showing the three components of the closure unit of the present invention;

Fig. 2 is a plane view of the closure unit of the present invention in its assembled state; and

Fig. 3 is a fragmentary sectional view along the lines 3—3 of Fig. 2.

This invention relates to an improved closure unit for a container holding products that are normally dispensed either by pouring, sifting or both. Examples of such



products are bread crumbs, dry powdered milk, or milk products, dehydrated coffee or tea and similar dry powdered beverage bases and products in granular, pellet, powdered, or dehydrated form and also those cut to short lengths. While the closure unit of the present invention is primarily intended for food products, it can also be used for industrial or chemical products which are dispensed by pouring, sifting or a combination of either.

The improved closure unit of the present invention, generally indicated disassembled in Fig. 1, includes three basic individual components, namely a locking member 10, a rotating swivel member 12 and an end or base member 14.

The locking member or unit sealing member 10, in the particular embodiment shown, is a pressure sensitive tape, having an adhesive coating on at least one side 16 and also having one concave edge 18 and one convex edge 20 for a purpose to be later discussed.

In order to allow for the dispensing of the contents of the container after the closure unit has been placed thereon, the swivel member 12 is provided with dispensing means which as seen in Fig. 1, includes a dispensing opening 22. In order to rotate the swivel member 12, there are located on the outer or upper surface 24 of member 12, two opposed knobs 26 and 26′ that are upwardly raised with respect to the surface 24 of swivel member 12.

Base member 14 has a curled edge or lip 28 (Fig. 3) around its circular periphery adapted to be crimped, seamed or otherwise secured to the wall 30 of the container 31 (shown in dotted outline in Fig. 3). This edge 28 is also slightly raised with respect to the surface 32 of base member 14 so that the surface 32 is actually depressed. The members 12 and 14 are normally made of tin plate or some other metal, however, if desired member 12 may be made of any suitable plastic material. Also upwardly raised with respect to the base surface 32, is a ridge 34 formed as a continuous ring or rib to define, centrally of base surface 32, a circular well or seating recess 36. This recess 36 is identified by that portion of the base surface 32 that is within the confines of the ridge or rib 34, and has a diameter that is substantially the same as the diameter of the swivel member 12. After the swivel member is placed within the recess 36, the ridge 34 is flattened or bumped, as seen in Fig. 3, to form a shoulder or flange 38 that grips the swivel member 12 and although allowing the swivel 12 to freely rotate, prevents the swivel 12 from being disassociated from its recess 36 in the base member 14. The member or swivel 12 has its bottom surface 40 in abutting relationship with the opposed surface 32 of member 14 within recess 36 so that a certain amount of frictional pressure is developed, which frictional pressure, as will later be discussed, also cooperates in maintaining the leakproof or sift-proof relationship between the swivel 12 and the base member 14.

Formed in surface 32 of the base member 14 within recess 36 are the base member dispensing means. One such base member dispensing means, as seen in Fig. 1, is a pouring opening, 42 the diameter of which is about the same but at least not greater than the diameter of the swivel member dispensing opening 22 above discussed. A second base member dispensing means is also provided and is composed of a plurality of openings 44 grouped to form a sifting opening 46, there being one sifting opening 46 in the specific embodiment shown located in adjacent quadrant relationship to the single pouring opening 42. Also in this specific embodiment there are actually four of the small openings 44 constituting the one sifting opening 46 and these four openings 44 each normally being of a smaller area individually than pouring opening 42, are also in quadrant relationship to each

other. It should be noted that the total area of the sifting opening 46 is about the same as or at least not greater than the area of the swivel opening 22 so that all of these smaller openings 44 will fall within or under the outline of the swivel dispensing opening 22 when the openings 22 and 46 are aligned.

Since the pouring and sifting openings 42 and 46 are located in adjacent quadrants, a substantial part 48 of the surface 32, within the ring 34 and under the swivel member 12, is solid and has no opening therethrough. Thus as seen in Fig. 2, when the members 12 and 14 are assembled, opening 22 in swivel 12 (shown in dot-dash lines) rests over this solid portion 48 (Fig. 1) of base member 14 so that no contents can be dispensed from the interior of container 31 even if the container is tipped. When the parts are in this position, the tape 10 is placed over the opening 22 in the swivel 12 and onto the solid portion 48 of surface 32 of the member 14 exposed by opening 22 of swivel 12 so that the convex edge 20 abuts against the ridge shoulder or flange 38 and the concave edge 18 is positioned near the center of the swivel 12. The tips 50 of the concave edge 18 are shaped so that they afford the lifting or grasping portion or tabs of the tape 10 which allows the tape 10 to be raised when access to the interior of the container 31 is desired.

It should here be noted that the tape 10 acts as a locking member since the portion 52 of the tape 10, intermediate its length, will extend through the opening 22 in the swivel member 12 and will thus engage the portion 48 of the surface 32 of base member 14 therebelow. In this condition, pressure on the knobs 26, 26' will not rotate the swivel member 12 since it is locked into position, the tape 10 engaging both the base member 14 (fixedly positioned on the container 31) and the swivel member 12. The container can then be transported without fear of any leakage there being a positive locking of the rotating member 12. The tight seal is actually achieved by a combination of a close fit between the undersurface 40 of rotatable disk 12 and the depressed surface 32 of the base member 14 within the ridge 34, a close fit of the ridge to the swivel member 12 itself through the shoulder or flange 38 and by the aforementioned sealing strip of tape 10.

As above discussed the rotatable swivel 12 cannot be rotated while the tape 10 is thus positioned. To open the closure unit and to gain access to the interior of the container 31, the tape 10 is first removed by raising on the tabs 50. Then the knobs 26, 26' on the swivel 12 are grasped and the swivel rotated in either a clockwise or a counter clockwise direction until the swivel dispensing opening 22 is in alignment either with the base member pouring opening 42 or the base member sifting opening 46 as desired.

After the contents, or the desired amount of the contents, have been dispensed the swivel 12 is again rotated until the swivel dispensing opening 22 is again over the solid portion 48 of the base member 14 and free access to the interior of the container 31 thus broken. At this time the close fit of the two major components, i.e. swivel 12 and base member 14, affords a reasonably snug and sift-proof seal and prevents accidental spilling of the contents when the container 31 is tipped. This sift-proof seal or self-locking feature is particularly desirable since young children often get control of the container and if it leaked they could easily spill the contents all over the floor. However, if desired the tape 10 can be replaced or if the tape is no longer available or this is for some reason not possible, then if a positive re-seal is desired some suitable plastic tape can be used to effect an almost air tight seal. The re-sealing generally speaking, prevents accidental dislodging of the contents and also protects the contents from contamination and deterioration. If desired the dispensing openings in the base 14 and swivel 12 could remain in alignment and re-sealing effected only by use of tape 10. Since the tape has a convex edge 20 it can be snugly fitted against the contour of ridge 34, i.e. shoulder 38, and used to seal at least opening 22. In this position with opening 22 sealed, free access to the interior of the container is broken and the container itself sealed.

Thus there has been provided a new and novel closure member that affords to the user maximum simplicity and efficiency of operation and one that has eliminated the undesirable deficiencies that had plagued the closures of the prior art.

While changes could be made to the specific embodiments shown without departing from the spirit of the invention, such changes are intended to be within the spirit of the present invention and what I intend to cover by Letters Patent is set forth in the appended claims.

I claim:

1. A closure unit secured to a container for selectively dispensing the contents of the container, including a base member, having at least one dispensing opening affording access to the interior of the container, fixedly sealed to one end of the container, a swivel member, having at least one dispensing opening therethrough, mounted for rotation relative to said base member, means for aligning the dispensing opening of said swivel member so that the contents of the container may be freely dispensed through the aligned dispensing openings and selectively operable container sealing means to retain said swivel member immobile relative to said base member and to simultaneously seal at least the dispensing opening in said swivel member.

2. A closure unit fixedly secured to a container to selectively dispense the contents of the container, said unit including a base member fixedly positioned relative to the container and having a depressed central portion, an endless base member rib in the depressed central portion defining a seating recess, a dispensing opening in said base member within the seating recess, a rotatable swivel member seated in the seating recess, a dispensing opening in said swivel member, means integral said swivel member for rotating the swivel member relative to said base member and a sealing member adhered to the area of said swivel member other than the area occupied by said swivel rotating means and also adhered to the portion of said base member, in the seating recess, exposed by the dispensing opening in said swivel member to retain said swivel member immobile relative to said base member and to simultaneously seal at least the dispensing opening in said swivel member.

3. A closure unit as defined in claim 2, wherein said swivel rotating means includes a pair of raised knobs, one of said knobs being positioned on each side of said sealing member.

4. A closure unit as defined in claim 2, wherein said sealing member includes a pressure sensitive tape having one concave edge and one convex edge, said concave edge having two extending tabs adapted to form a lifting surface allowing removal of said tape from the closure unit upon the application of lifting force when the container contents are to be dispensed and wherein said swivel rotating means includes a pair of raised knobs, one of said knobs being positioned on each side of said sealing member.

5. A closure unit as defined in claim 2, wherein said sealing member includes a pressure sensitive tape having one concave edge and one convex edge, said concave edge having two extending tabs adapted to form a lifting surface allowing for removal of said tape from the closure unit upon the application of lifting force when the container contents are to be dispensed.

6. A spill-proof closure fixedly secured to a container to insure positive protection against accidental discharge of the container contents and including a base member fixedly mounted to the container and having a depressed circular centrally disposed portion, an endless circular upstanding rib in said depressed base portion defining a

seating recess, at least one dispensing opening extending through depressed base portion within the confines of said rib affording access to the interior of the container, a rotatable swivel member seated within the recess in said depressed base portion, at least one dispensing opening in said swivel member through which the container contents are dispensed when said swivel is rotated to register said swivel member dispensing opening with said base member dispensing opening, means integral said swivel member through which force is applied to rotate said swivel member within the seating recess and a selectively operable sealing member exclusively within the confines of said recess adhered to an area of the exposed upper surface of said swivel member, other than the area occupied by said swivel member rotating means, and also adhered to the portion of the upper surface of said base member in the seating recess exposed by the dispensing opening in said swivel member to retain said swivel member immobile relative to said base member and to simultaneously seal at least the dispensing opening in said swivel member, said sealing member being removed



from contact with said closure when access to the contents of the container is desired and replaceable on said closure when access to the contents of the container is not desired.

7. A closure unit as defined in claim 6, wherein said sealing member includes a pressure sensitive tape having one concave edge and one convex edge, said concave edge having two extending tabs adapted to form a lifting surface allowing for removal of said tape from the closure unit upon the application of lifting force when the container contents are to be dispensed and said rotating means includes a pair of raised knobs, one of said knobs being positioned on each side of said sealing member.

8. A closure unit as defined in claim 1, wherein said container sealing means includes a pressure sensitive tape.

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