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(54) **AN IMPROVED CONTAINER**

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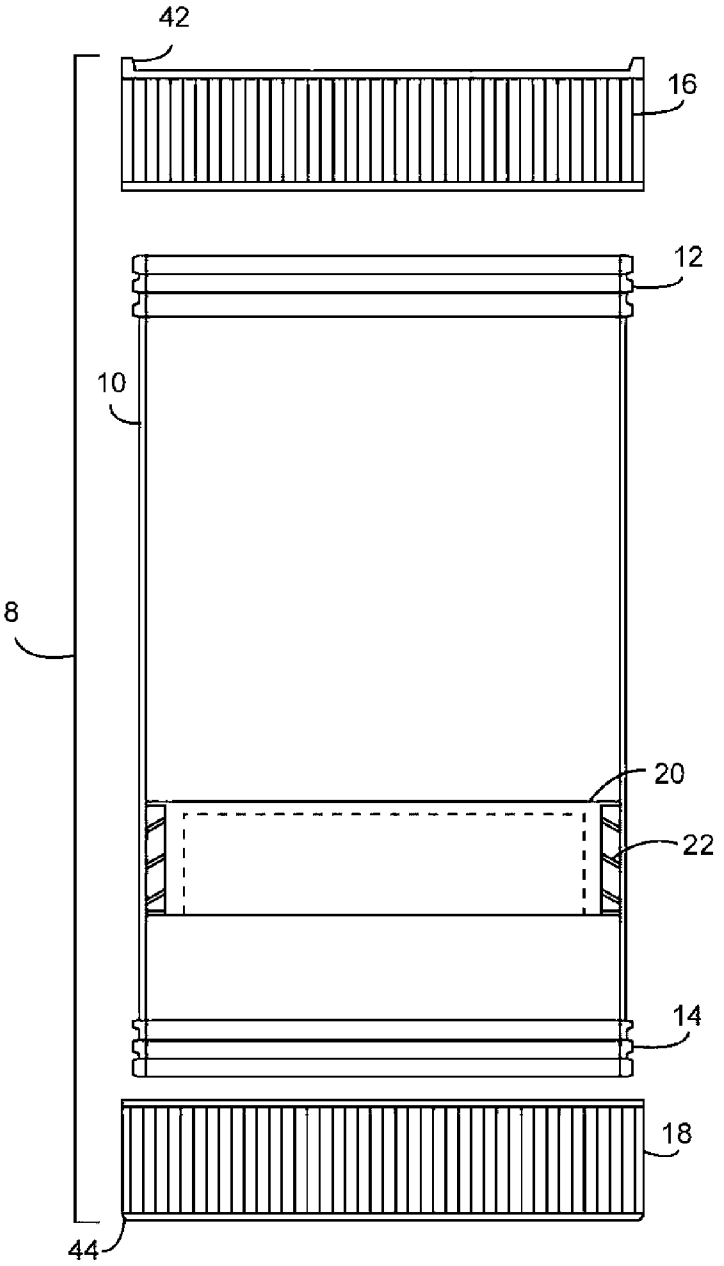
(57) **ABSTRACT**

The present invention is directed to a cylindrical container, preferably glass or plastic, comprising a top threaded end and a bottom threaded end and two threaded lids adapted to screw onto the top and bottom threaded ends, respectively. The container further comprises a moveable piston means therein and a sealing means for sealing between the piston means and the container



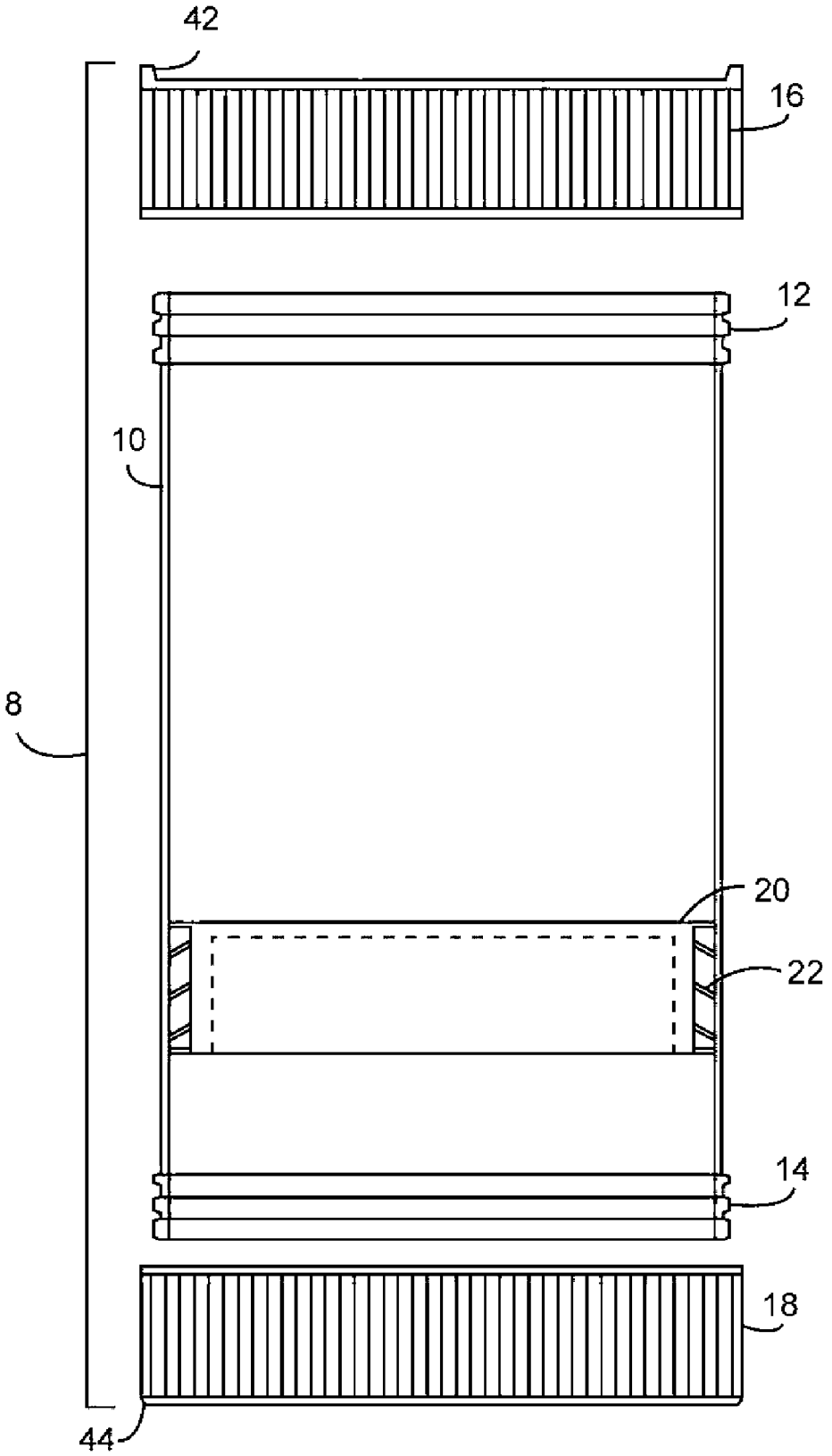


Fig. 1

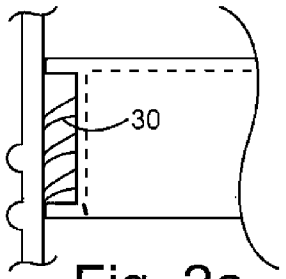


Fig. 2a

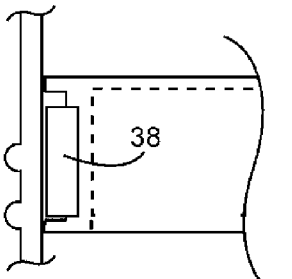


Fig. 2e

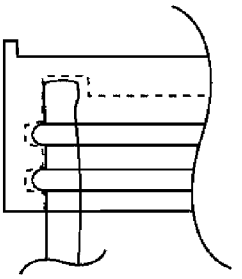


Fig. 3

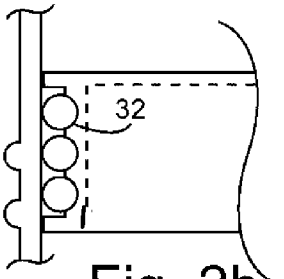


Fig. 2b

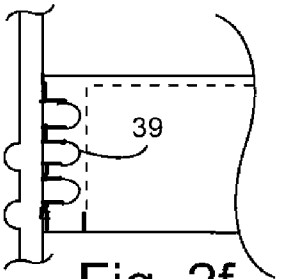


Fig. 2f

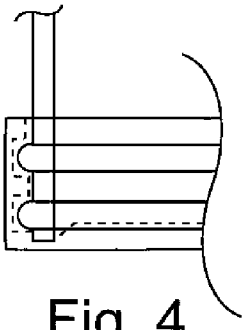


Fig. 4

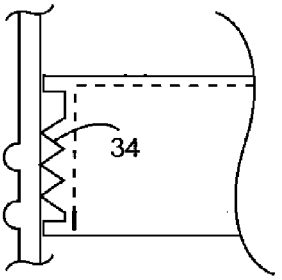


Fig. 2c

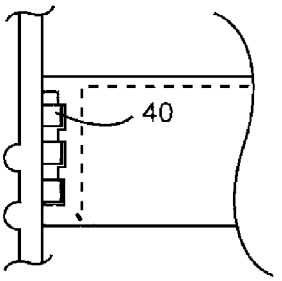


Fig. 2g

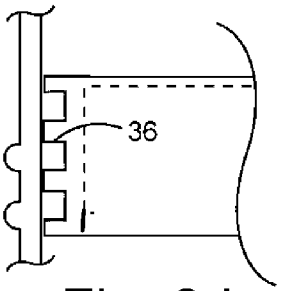


Fig. 2d

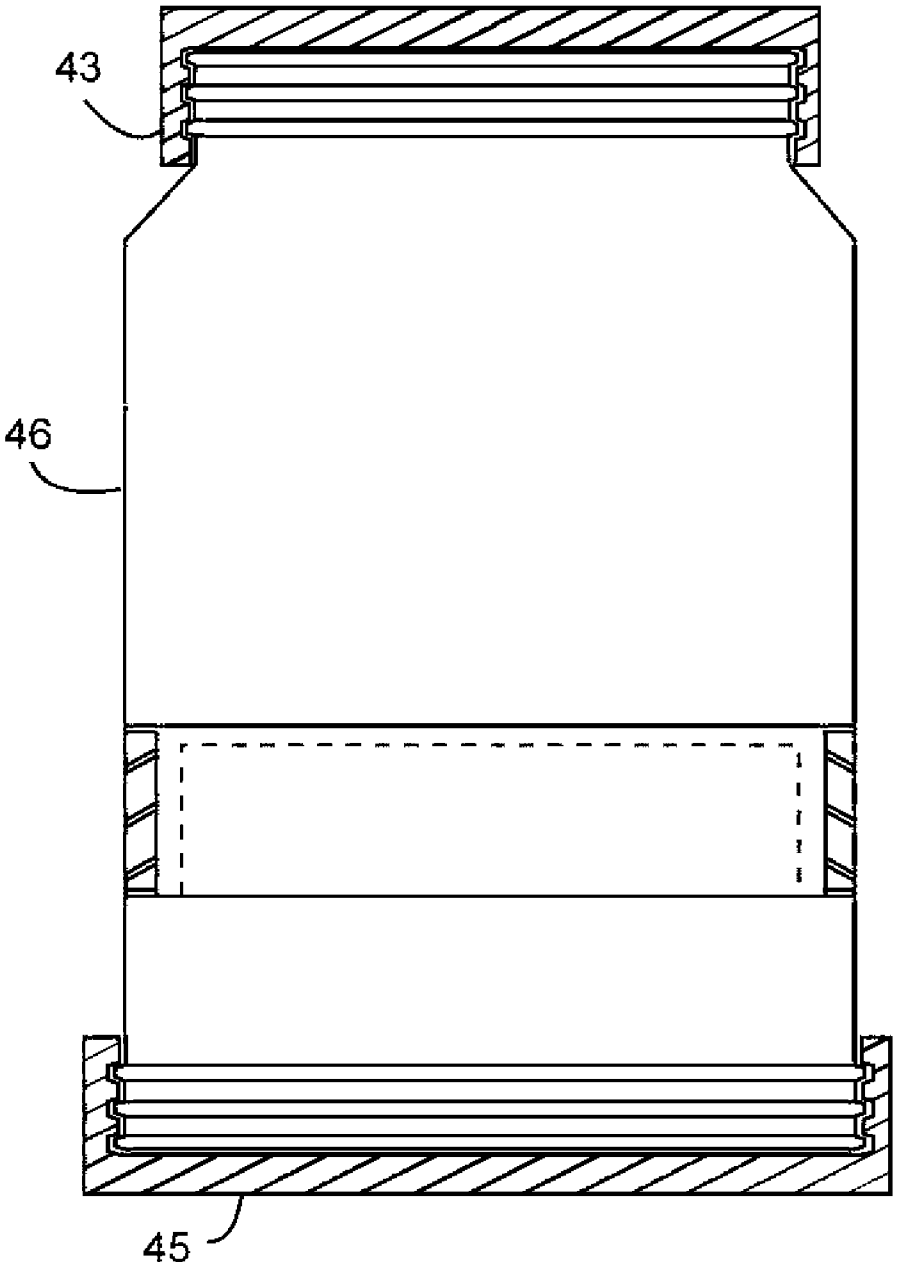


Fig. 5

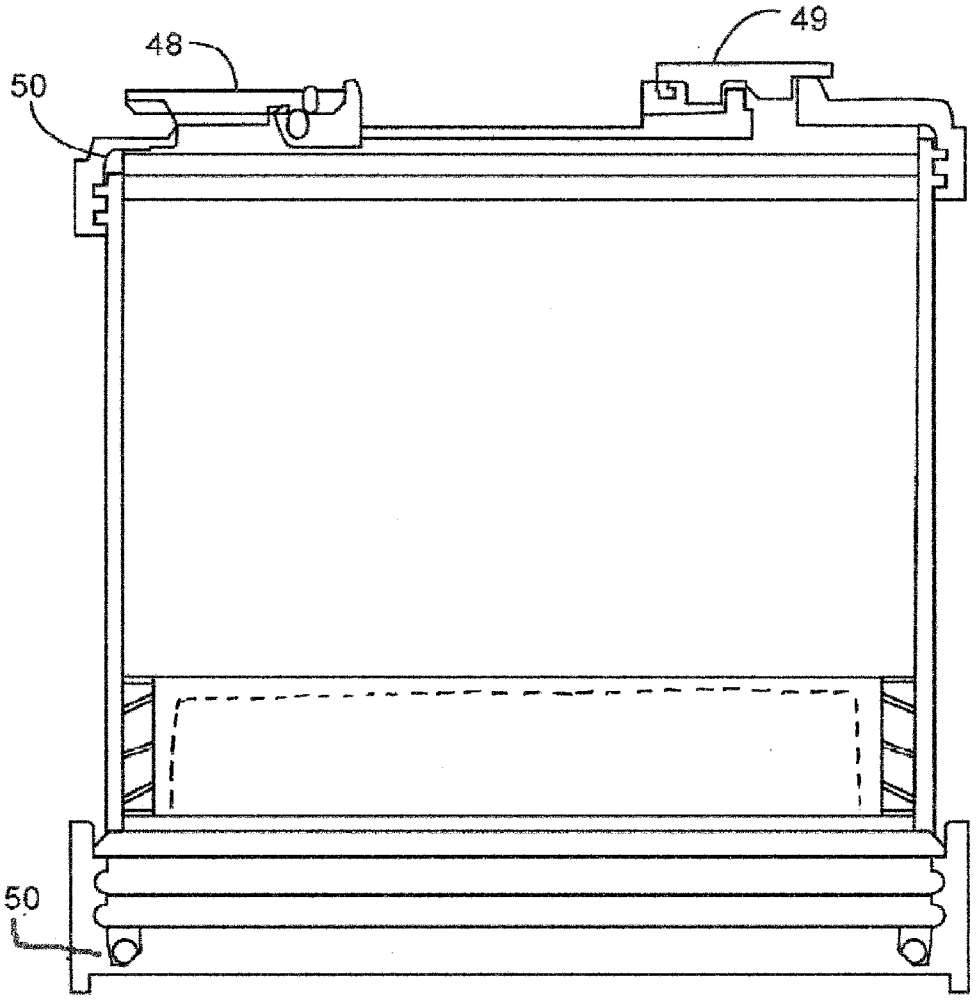


Fig. 6

AN IMPROVED CONTAINER

BACKGROUND

[0001] 1. Field of the Invention

[0002] The present invention relates to containers, and particularly a container assembly with a piston means for convenient removal of the contents of the container as the contents is progressively consumed.

[0003] 2. Description of the Related Art

[0004] Foodstuffs are often dispensed in jars which can be conveniently stacked for storage in a consumer's pantry. Many foodstuffs have a thick consistency as do other non-foodstuffs. It would be desirable to have a container which would facilitate removal of the thick consistency contents, progressively as the contents are consumed. It would be desirable to remove only a portion of the contents at any one time, without the need to use utensils or tools, and likewise to resealing the container to protect the remaining contents.

[0005] U.S. Pat. No. 1,468,152 relates to a container equipped with a follower disc with flexible means for pulling the follower disc up through a cylindrical container as the contents are consumed. The contents are preferably solid tablets and the follower is held in place by tying flexible means outside of the bottle.

[0006] U.S. Pat. No. 5,626,266 relates to a container with a connecting member which is used to pull up a follower which supports the container contents after the container is open. The follower plate contains holes to drain any liquid as the contents are consumed.

[0007] U.S. Pat. No. 3,231,139 relates to containers with a dispensing opening and a closed end, and a moveable member which is pulled up to dispense the contents through the opening.

[0008] U.S. Pat. No. 3,920,156 relates to an incremental butter dispenser. In the butter dispenser, a stick of butter is pushed out of a tubular holder through an opening in the top thereof.

[0009] U.S. Pat. No. 6,257,459 relates to an improved lifting assembly for removing the contents of a container. The container has one removable and one fixed end. A support plate is moved by a connecting rod.

SUMMARY OF THE INVENTION

[0010] The present invention is directed to a cylindrical container, preferably glass or plastic, comprising a top threaded end and a bottom threaded end and two threaded lids adapted to screw onto the top and bottom threaded ends, respectively. The container further comprises a moveable piston means therein and a sealing means for sealing between the piston means and the container.

OBJECTS OF THE INVENTION

[0011] It is an object of the present invention to provide an improved container construction that is easy to use.

[0012] It is a further object of the invention to provide an improved container that is inexpensive to manufacture.

[0013] It is a still further object of the invention to provide a container with a reliable contents removal system.

[0014] It is a still further object of the invention to provide a container that is compatible with existing machinery and procedures.

[0015] It is a still further object of the invention to provide a container that can be resealed for storage of the unused contents.

[0016] These and other objects of the invention will be apparent from a detailed description and accompanying drawings which are provided by way of example and not limitation.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] FIG. **1** is a front view of one preferred embodiment of the invention.

[0018] FIG. **2***a* is a partial front view illustrating a wiper type sealing means.

[0019] FIG. **2***b* is a partial front view illustrating o-ring type sealing means.

[0020] FIG. **2***c* is a partial front view illustrating a 'w' type sealing means.

[0021] FIG. **2***d* is a partial front view illustrating a plurality of square type sealing means.

[0022] FIG. **2***e* is a partial front view illustrating a single rubber band type sealing means.

[0023] FIG. **2***f* is a partial front view illustrating a "U" type sealing means.

[0024] FIG. **2***g* is a partial front view illustrating multiple square rubber bands as a sealing means.

[0025] FIG. **3** is a partial detail of the top lid on a bottle.

[0026] FIG. **4** is a partial detail of the bottom lid on a bottle.

[0027] FIG. **5** is a sectional view of a container with a square cross section and a top lid which is smaller in diameter than the container.

[0028] FIG. **6** is a side view of a jar having a top lid with a pour spout and a vent spout.

DETAILED DESCRIPTION OF THE DRAWINGS

[0029] The invention is now described more fully with reference to the accompanying drawings in which illustrate several preferred embodiments. The invention may be embodied in many different forms and should not be construed to preferred embodiments illustrated, but rather these embodiments are provided to fully convey the scope of the invention to those skilled in the art, and should be construed to be limited only by the scope of the appended claims.

[0030] FIG. **1** shows one preferred embodiment of the invention comprising a cylindrical jar **10** with a full opening threaded top **12** and a full opening threaded bottom **14**, a top lid adapted to sealing the threaded top **16**, a bottom lid **18** adapted to sealing the threaded bottoms a moveable piston **20** which can be moved up and down the cylindrical jar, and a sealing means **22** for preventing leakage between the piston and the jar. In this case the piston and sealing means are preferably made in one integral piece with the wipers extending out from the piston. The cylindrical jar approximates a right circular cylinder.

[0031] The sealing means may be integral with the piston, for instance the piston and sealing means are a single piece of plastic made by injection molding or extrusion. One such type of sealing means illustrated in FIG. **1**, with wiper means **22** and FIG. **2***a*, a wiper type means **30**. Another sealing means is illustrated in FIG. **2***b*, a sealing means comprising two or more o-rings **32** which are retained in notches on the piston. In this type of sealing means part of the means is integral with the piston (the notches) and part is separate (the

o-rings). Still another type of sealing means is illustrated in FIG. **2***c*, a "w" type sealing means **34** where the "w" structure is preferably an integral part of the piston. FIG. **2***d* illustrates a square cross section sealing means **36** made integral with the piston. FIG. **2***e* illustrates a sealing means comprising a single broad band **38** retained in an indented space on the piston. FIG. **2***f* illustrates a "u" type sealing means **39**, integral with the piston. FIG. **2***g* illustrates a sealing means with 3 square cross section bands **40** retained on notches in the piston. Those skilled in the art will identify equivalent sealing means.

[0032] FIG. **3** illustrates the detail of the threaded top lid applied to the threaded jar top.

[0033] FIG. **4** illustrates the detail of the threaded bottom lid applied to the threaded jar top.

[0034] Referring to FIG. **1**, a preferred embodiment is shone wherein the top lid has a an upper lip **42** onto which the rounded bottom **44** will fit, allowing the jars to be stacked in a consumer's pantry.

[0035] The preferred materials for the container include glass or plastic. The method of construction can include such conventional methods as molding, injection molding or extrusion. A preferred thickness for the jar is about 1/16 of an inch. The piston and sealing means are snug fit inside the jar, with a preferred clearance between the sealing means and the jar wall is 1/16 inch to 3/32 inch. A preferred minimum height of the piston is about 3/4 of an inch for a five inch diameter jar. This height of the piston will depend on the diameter of the jar and should be set so that the piston will move straight up and down without tilting or flipping. The wall of the jar should comprise a portion which is straight and perpendicular to the base. The piston is preferably plastic and made by molding. The sealing means may be the same material as the piston or have portion which is a rubber or rubber like material.

[0036] The container is used by filling the jar with a consumable product when the piston is at about the bottom of its travel. The product is consumed through the top and the piston is pushed up to bring the level of the product conveniently to the top. Product is stored with the two lids in place, so there is minimal air space so as to prevent oxidation. It is preferable that the jar not have internals other than the piston and sealing means, preferably no mechanism above or below the piston to push or pull it up or down. It is intended that the piston be pushed up by hand.

[0037] While the container has thus far been described as having a circular cross section, the invention may have any desired shape, such as but not limited to square, star, oval, triangle, octagon, and the like. In this case, the piston will have the same shape as the jar. The top or bottom lid may have a different shape than the straight side of the jar, such that the piston will not fit through the opening. For example a round lid **44** on a square jar **46** as shown in FIG. **5**. FIG. **5** also illustrates another optional feature, that the entire container need not be cylindrical. In FIG. **5** the top of the container is smaller than the cylindrical bottom section. In the piston will only move within the cylindrical section.

[0038] Another attractive optional feature is a top lid with a flip pour spout **48** and a flip air hole flap **49** for dispensing liquid contents such as paint as illustrated in FIG. **6**. This arrangement is handy for removing the air above remaining contents in the jar. A jar may be fitted with one or more o-rings **50** to prevent leakage as shown on FIG. **6**.

[0039] While the invention has now been described in terms of several preferred embodiments, it should be understood that other embodiments and equivalents will become apparent to those skilled in the art and the scope of the invention should only be limited by the appended claims.

I claim:

1. A container comprising a full opening threaded top, a full opening threaded bottoms a top lid, a bottom lid, a cylindrical side wall, a piston adapted to move up and down along the cylindrical side wall, and a sealing means for sealing between the piston and the side wall, wherein said container does not include mechanical assistance to push or pull the piston.

2. The container of claim **1**, wherein the top lid further comprises a lip around the perimeter thereof and the bottom lid is rounded and adapted to fit within the lip, whereby containers may be stacked one on top of the other.

3. The container of claim **1** wherein the container is made of glass.

4. The container of claim **1** wherein the container is made of a plastic.

5. The container of claim **4** wherein the plastic is transparent plastic.

6. The container if claim **4** wherein the plastic is translucent plastic.

7. The container of claim **1** wherein the piston moves up and down the container side wall without flipping inside the container.

8. The container of claim **1** wherein the sealing means comprises at least two blades which are an integral part of said piston.

9. The container of claim **1** wherein the sealing means comprises at least two o-rings.

10. The container of claim **1** wherein the sealing means comprises a series of "w" shaped structures.

11. The container of claim **1** wherein the sealing means comprises a series of square cross section structures.

12. The container of claim **1** wherein the sealing means comprises a single band.

13. The container of claim **1** wherein the sealing means comprises a series of "u" shaped structures.

14. The container of claim **1** wherein the sealing means comprises at least two square cross sectioned bands.

15. The container of claim **1** wherein the shape of the cylindrical jar is of noncircular cross-section.

16. The container of claim **15** wherein the noncircular cross section is chosen from the group consisting of ovals, rectangles, squares, triangles, hexagons, octagons, decagons, and dodecagons.

17. The container of claim **1** wherein the top lid further comprises a pour flap.

18. The container of claim **17** wherein the top lid further comprises an air flap.

19. The container of claim **1** further comprising a reduced diameter section above the cylindrical side wall.

* * * * *