Jan. 6, 1970 M. A. SPANGLER 3,487,985

VOLUMETRIC DISPENSING CONTAINER

Filed Dec. 20, 1967 2 Sheets-Sheet 1

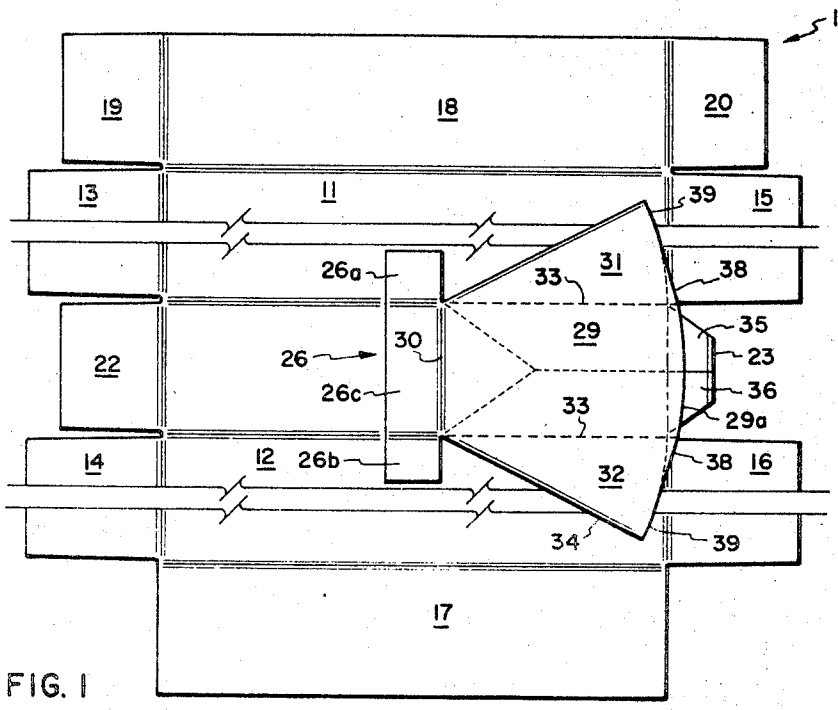



FIG. 1

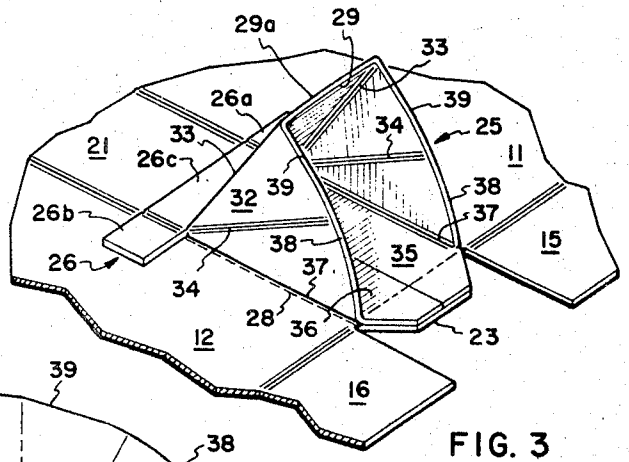



FIG. 3

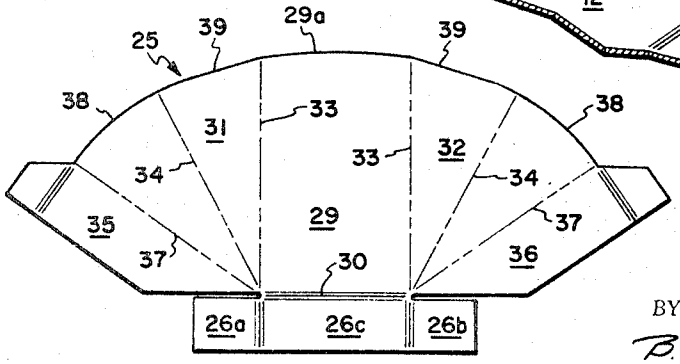



FIG. 2

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VOLUMETRIC DISPENSING CONTAINER

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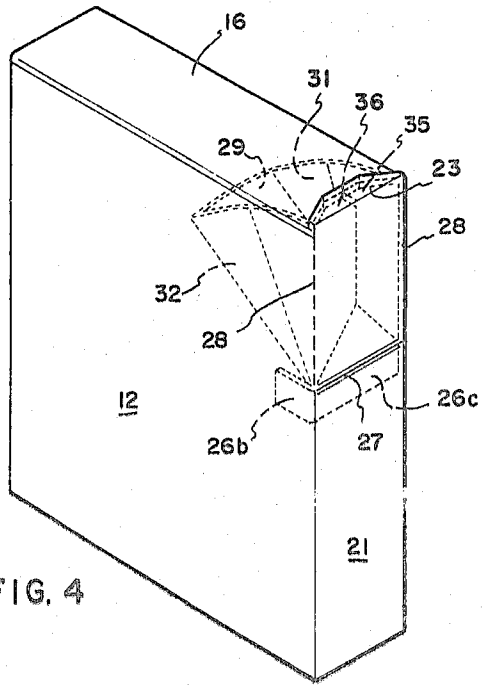



FIG. 4

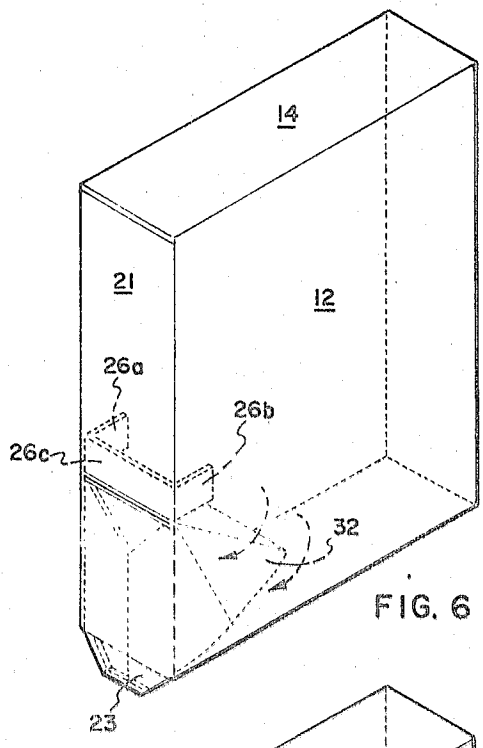



FIG. 6

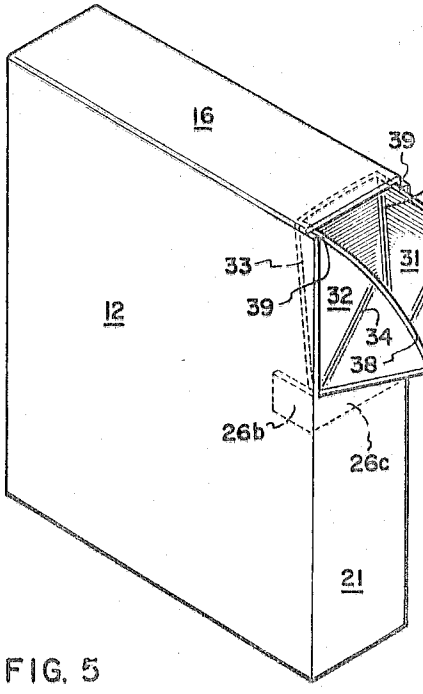



FIG. 5

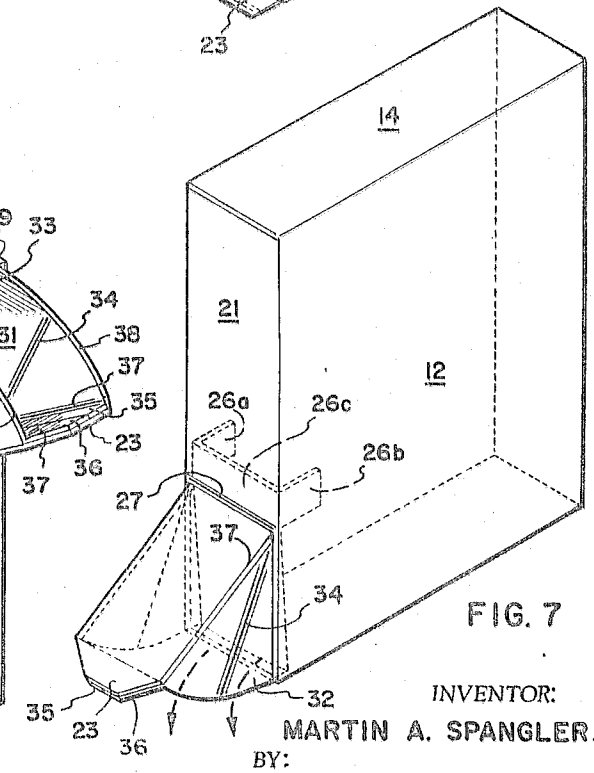



FIG. 7

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United States Patent Office 3,487,985
Patented Jan. 6, 1970



3,487,985

# VOLUMETRIC DISPENSING CONTAINER

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Filed Dec. 20, 1967, Ser. No. 692,086
Int. Cl. B65d 5/74
U.S. Cl. 222—364 4 Claims

## ABSTRACT OF THE DISCLOSURE

A carton blank has a volumetric, dispenser blank fixed thereto such that the combined carton-dispenser unit can be stacked flat for shipping and storage, but such that the dispenser will automatically assume its functional shape when the carton is assembled as a container. The dispenser can be positioned to allow continuous discharge from the container or can be used to dispense the container contents in known volumetric amounts.

## BRIEF DESCRIPTION

This invention relates to carton-type containers for dry, granulated or particulate materials that are at least sometimes desirably dispensed in known quantities. Housewives, for example, frequently desire to place a known volume of granulated soap or water softener into a washing machine. In the past, this has required the use of a separate measuring cup into which the granulated material was dumped prior to its being placed in the washing machine. Even though a precise measurement is not necessarily required, it is important that some reasonably close indication of the amount used, be made. If a separate measuring cup is not readily available, the housewives generally dump the soap and softener into the machine, while guessing at the amount used. This frequently results in the use of too little soap or softener to do an effective cleaning job, or so much that it is wasteful and possibly damaging to the machine.

Other materials also must be, or may desirably be, distributed from a carton-type container in measured amounts. Dry pet foods, and powdered milk solids and dehydrated potatoes that are to be reconstituted, are diversified examples of these. Many others will be apparent.

Since separate measuring devices are not always conveniently available for dispensing materials from a container in measured amounts, it is desirable to have such a device formed as part of the container.

In the past, a number of carton-type containers having integral dispensers have been developed and some of these can be used to dispense predetermined volumes of material. However, the dispensers have included non-collapsible components such as rigid walls, interconnected by metal rivets or corner fasteners and the dispenser-equipped cartons have been incapable of being stacked flat for shipping and storage, prior to their assembly and the filling of the container. Because of the rigid, non-collapsible components, the costs of construction and handling of these prior known units have been prohibitive for most uses.

Also, the dispensers with which I am familiar do not allow for continuous pouring of the contents from the container or alternatively for the dispensing of the contents in predetermined volumes.

Principal objects of the present invention are to provide a carton-type container that has a dispenser integral therewith; the dispenser being so constructed that it can be positioned to allow uninterrupted flow from the carton or such that only a known pre-determined volume of the material contained in the carton will be dispensed, and



the unit being so constructed that when unassembled, it is flat, whereby a maximum number of them can be stacked within a minimum space.

If a volumetric dispensing container is to be successful commercially, it must be simple to construct and low in cost. Thus, it is still another object of the present invention, to provide a volumetric dispenser equipped container that can be constructed with available carton forming equipment and with low cost, conventionally used materials.

Principal features of the invention include the carton blank that is cut and scored in conventional fashion from a sheet of cardboard or other suitable sheeting material; and a volumetric dispenser blank, similarly cut and scored from suitable sheeting material and adhesively secured to the carton blank such that the carton-dispenser unit can still be laid substantially flat, for storage and transportation.

It is another feature of the invention that the dispenser and carton are scored such that when the carton is assembled the dispenser automatically assumes its functional configuration.

Additional objects and features will become apparent from the following detailed description and drawings, disclosing what is presently contemplated as being the best mode of the invention.

## THE DRAWINGS

FIG. 1 is a layout, plan view of the carton blank, and with the dispenser blank affixed thereto;

FIG. 2, a layout plan view of the dispenser;

FIG. 3, a perspective view showing the dispenser in its functional configuration and the carton blank, shown fragmentarily, laid out flat;

FIG. 4, a perspective view of the carton, assembled as a container and sealed, and with the dispenser shown in dotted lines;

FIG. 5, a similar view, but with the container unsealed and the dispenser pivoted therefrom;

FIG. 6, another perspective view, like FIG. 4, but showing the container turned upside down and showing how the dispenser is filled; and

FIG. 7, a view like FIG. 6, but showing how the dispenser is emptied.

## DETAILED DESCRIPTION

Referring now to the drawings:

In the illustrated preferred form of the invention, the container is made of a single carton blank **10** of sheet material such as cardboard. Blank **10** includes side panels **11** and **12**; bottom flaps **13** and **14**, connected to side panels **11** and **12**, respectively; top flaps **15** and **16**, respectively connected to side panels **11** and **12**; an inner, rear end panel **17**, connected to side panel **12**; an outer, rear end panel **18**, connected to side panel **11**; a pair of bottom and top flaps **19** and **20**, respectively connected to opposite ends of outer rear end panel **18**; a front end panel **21**; a bottom, flap **22**, connected to one end of the front end panel; and a top flap **23** connected to the other end of the front panel.

The panels and flaps are all connected by scored fold lines, such that when the carton is assembled as a container, the faces of side panels **11** and **12** are parallel, the faces of end panels **18** and **21** are parallel, bottom flaps **19** and **22** are turned in and over overlapped by bottom flap **13**, bottom flap **14** overlaps flap **13** and is adhesively secured thereto, top flap **20** is turned in, flap **15** overlies flap **20** and flap **16** overlies flap **15** and is adhesively secured thereto, and flap **23** is turned in and is secured to flap **16**, as will be more fully described hereinafter.

A dispenser, made from a single blank **25**, of cardboard, or other suitable sheet material, has a generally spread-fan configuration. A securement tab **26** has a center section **26***c* forming the base of the spread-fan and extensions **26***a* and **26***b* extending outwardly therefrom.

The center section **26***c* is adapted to be adhesively secured to the face of front end panel **21** that is to be inside the carton, with the upper edge of the center section positioned along a fold line **27** (FIGS. 4, 6 and 7) that is formed across the front end panel. The extensions **26***a* and **26***b*, are respectively secured to the side panels **11** and **12** and fold lines formed between the end sections and the center section correspond to the fold lines interconnecting the front end panel **21** and the side panels **11** and **12**.

The fold lines interconnecting front end panel **21** and the side panels **11** and **12**, from the fold line **27** to the flap **23**, are partially perforated at **28** so that the carton can be easily torn therealong, as will be further explained.

Dispenser blank **25**, further includes a rear wall **29**, extending outwardly from center section **26***c* of securement tab **26** and hingedly connected thereto by a fold line **30** that will overlie the fold line **27** of front end wall **21**. Side walls **31** and **32** are connected to opposite sides of rear wall **29** by fold lines **33** and each side wall has another bisecting fold line **34** radiating out from the intersection of its fold line **33** and the securement tab **26**.

The edge **29***a* of rear wall **29**, remote from securement tab **26**, is shaped to conform to the inside top of the assembled carton, and as illustrated is very slightly curved. If the carton top was to at all times remain straight, the edge **29***a* would accordingly be straight, but inasmuch as the top of cartons made of lightweight sheet materials tend to bow outwardly, with handling, the edge **29***a* is slightly curved to compensate for such bowing.

A pair of wing tabs **35** and **36** are respectively connected to the side walls by radiating fold lines **37** and while these can be of other configurations, they are preferably shaped such that when they are folded into abutting relationship, they substantially cover and reinforce flap **23** and overlie a portion of front end panel **21**.

The outer edges of side walls **31** and **32**, i.e. the edges remote from securement tab **26**, are each arcuately curved at **38**, starting from fold lines **37**, for most of their lengths. The radii of the curved edges **38** are equal to the distance between the fold line **27** and the trap forming the inside top of the container, and their centers of curvature are at the intersections of fold lines **33** and **30**, so that when the dispenser is ready for use, it will easily pivot, in the manner hereinafter to be described.

The remaining lengths of the outer edges of side walls **31** and **32** are shaped to conform to the inside top of the container and, as illustrated at **39**, are formed as substantially straight lines, tangential to the arcs **38** and intersecting fold lines **33**, so that these fold lines are slightly longer than are the radii of the curved edges **38**. Thus, the dispenser will not be pulled completely out of the assembled carton.

In constructing the volumetric dispenser container of the invention, the securement tab **26** is attached to blank **10** in the manner previously described. The wing tabs are folded beneath the rear wall **29** and are adhesively secured to flap **23** and front end panel **21**, such that fold lines **33** overlie the perforated portions **28** of the fold lines between panel **21** and panels **11** and **12**. At this time, the dispenser is folded along fold lines **34** and is substantially flat, as shown in FIG. 1.

In its use position, the dispenser is folded on lines **33** and **37**, as shown in FIG. 3, and the dispenser automatically assumes this position when the side panels **11** and **12** of the carton blank are folded with respect to front end panel **21**, to thereby form the container, as previously described.

When the container has been assembled, filled and sealed, as shown in FIG. 4, the user need only slide a thumnail beneath flap **23** and the portions of wing tabs **35** and **36** fixed thereto, lift up on the flap and pivot it



about fold line **27**. The partially perforated portions **28** of the fold lines between front end panel **21** and the side panels **11** and **12** easily tear and the dispenser is pivoted forward to the position of FIG. 6. Thereafter, the dispenser is filled by pivoting it back into the container, and turning the container upside down, as shown in FIG. 6, to allow its contents to run into the dispenser. The container can then be returned to its upright position by turning it counter-clockwise, as viewed in FIG. 6, to maintain the dispenser full, the dispenser can be pivoted open, and its contents can be poured out:

Alternatively, the dispenser can be pivoted even while the container is upside down, as shown in FIG. 7. In either case, the back wall and the straight edges **39** of the end walls **31** and **32** of the dispenser contact the inside top of the carton to effectively seal the interior of the dispenser from the interior of the carton.

If it is desired to continuously pour out the contents of the container, the dispenser is pivoted to a partial open position wherein the back wall **29** and the straight edges **39** are not in contact with the inside top of the carton. The material in the carton can then continuously flow past the back wall and straight edges, into and out of the dispenser.

The side walls **31** and **32** of the dispenser fit snugly against the side panels **11** and **12** of the carton so that very little, if any, of the contents are lost between them.

The folds along lines **34** tend to expand the side walls even more tightly into engagement with the side panels **11** and **12**.

The carton and dispenser are both made easily and of inexpensive materials. They are easily, quickly and economically assembled to make a volumetric dispenser container and the completed unit, in unassembled condition, is flat for stacking, and does not require expensive tools or equipment for assembly.

The volumetric dispenser container of the invention selectively allows predetermined volumes of material to be discharged or continuous discharge of the container contents.

Obviously, the carton can also be formed differently than is illustrated. The flaps can be overlapped differently, for example, and other flap arrangements can be used. It is only necessary that the dispenser fit tightly between oppositely facing side panels and be pivoted from an end panel. It is the interaction between the folded side walls of the dispenser and the side panels of the carton that provides the necessary sealing of the container and rigidity to the dispenser, while still allowing the entire unit to be folded flat prior to assembly.

Also, the securement tab **26** of the dispenser need not always include extensions such as are shown at **26***a* and **26***b*, but they provide additional reinforcement for the carton, so are preferably used.

I claim:

**1.** A volumetric dispensing container comprising

a carton blank of foldable sheet material having pivotally inter-connected side panels, front and rear end panels, and flaps for forming a top and a bottom;

a dispenser blank of foldable sheet material having a securement tab, a rear wall extending from the securement tab and pivotally connected thereto, side walls fanning out from each side of the rear wall and the engagement of the sides of the rear wall with the securement tab and pivotally connected to the rear wall, scored fold lines on the side walls and wing tabs pivotally connected to and flanking the end walls;

means for securing the securement tab to the front end panel;

means for securing the wing tabs to overlie the front end panel above the securement tab, such that when the carton blank is spread flat, the rear wall overlies the said wing tabs and the side walls protrude over the side panels and are folded on the scored fold

lines to have a portion turned back beneath the remainder thereof; and

means for locking the carton blank together as a container, with the dispenser blank fixed thereinside and with the side walls fitted tightly against the side panels.

2. A volumetric dispensing container according to claim 1, wherein

the front and rear panels are connected to the side panels by fold lines and wherein the fold lines interconnecting the front and side panels are partially perforated from the top of the container down to the securement tab.

3. A volumetric dispensing container according to claim 2, wherein

the outer edge of the rear wall of the dispenser blank, remote from the securement tab, is shaped to conform to the inside top of the carton during use and wherein

the edges of the side walls remote from the securement tab are arcuately curved for a portion of their length, with the said curved portions each having a center of radius at the intersection of the securement tab and the respective side wall, and a portion connecting the curved portion and the outer edge of the rear wall that is shaped to conform to the inside top of the carton during use.

4. A volumetric dispensing container comprising

a carton having oppositely facing side panels, oppositely facing front and rear end panels, a top and a bottom; and



a dispenser having a securement tab extending across and fixed to the inside of said front end panel and the side panels, below the top of the carton, wing tabs fixed to the front end panel, above the securement tab, a rear wall pivotally connected to the securement tab and extending therefrom a length slightly greater than the distance along the front end panel from the securement tab to the top and terminating in an outermost edge shaped to conform to the inside top of the carton, and side walls interconnecting the rear wall and the wing tabs, said side walls each having an outer edge arcuately curved from the wing tabs for a portion of its length, the radius of curvature being equal to the distance from the securement tab to the inside top of the carton, along the front end panel and the center of curvature being at the intersection of the side wall and the securement tab, and the remaining portion of its length being formed by a line substantially tangential to the arcuately curved portion and intersecting the outermost edge of the rear wall.

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S. H. TOLLBERG, Primary Examiner

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