Jan. 4, 1966 R. E. CRAIN 3,227,322

MATERIAL DISPENSING CONTAINER

Filed April 6, 1964 2 Sheets-Sheet 1

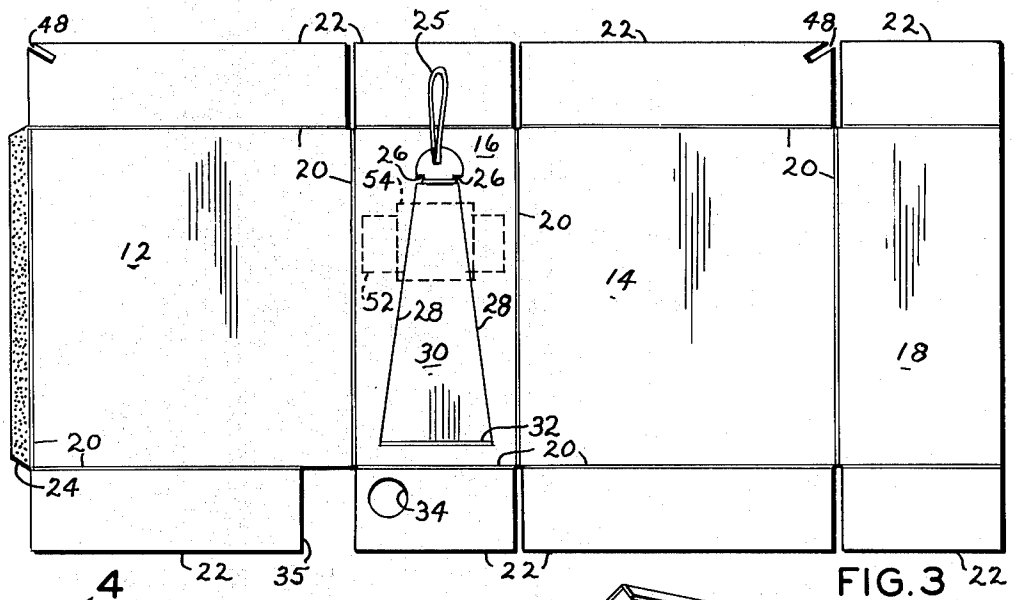


FIG. 3

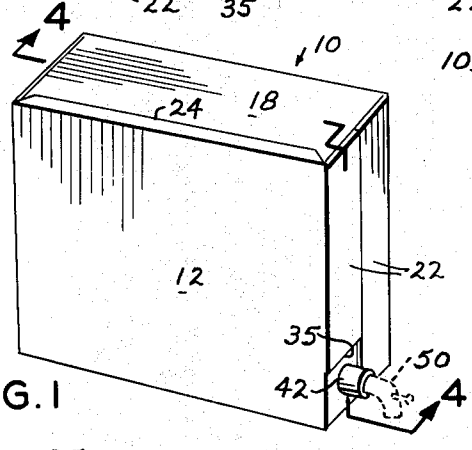


FIG. 1

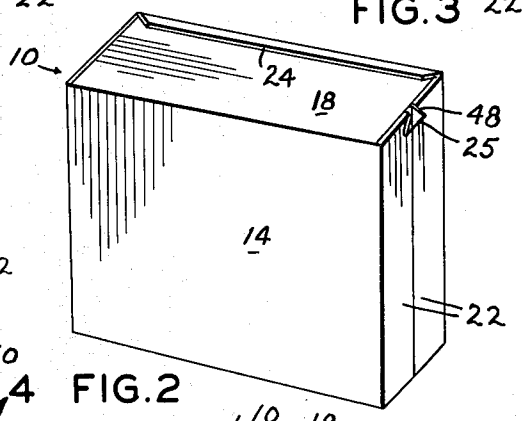


FIG. 2

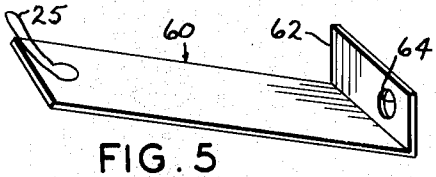


FIG. 5

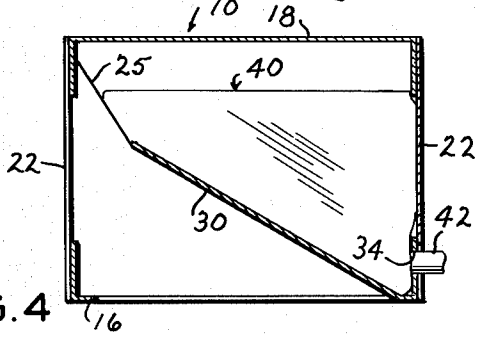


FIG. 4

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MATERIAL DISPENSING CONTAINER

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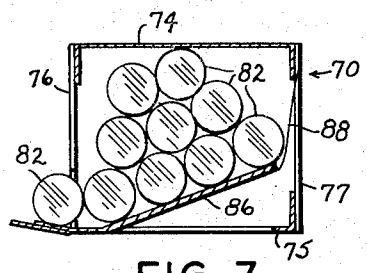


FIG. 7

FIG. 6

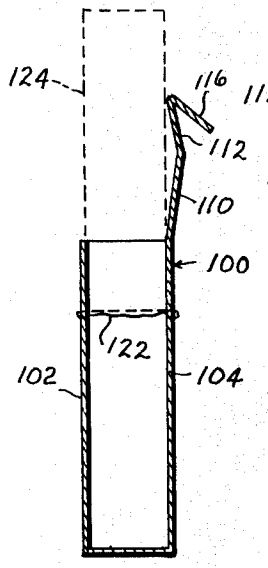


FIG. 10

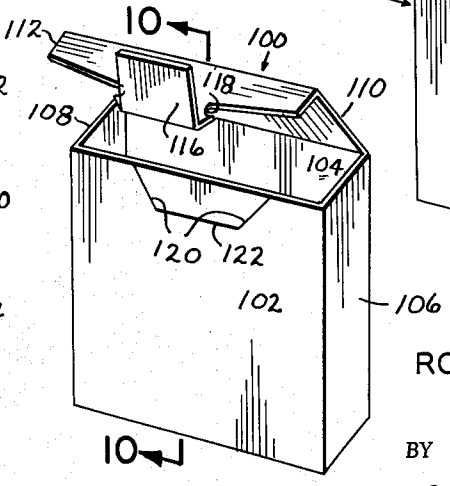


FIG. 9

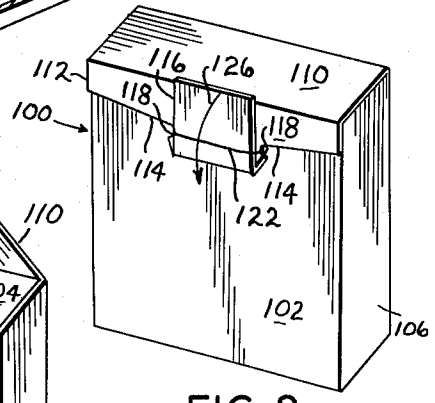


FIG. 8

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3,227,322

MATERIAL DISPENSING CONTAINER

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Filed Apr. 6, 1964, Ser. No. 357,465

6 Claims. (Cl. 222—183)

The present invention relates to dispensing containers and more particularly to an automation device.

The prior art reveals a number of dispensing containers designed for positioning material toward an outlet opening, some of which feature an inclined support to position the material toward the outlet. The devices disclosed by the prior art require that the inclined support be formed as a false bottom or a movable section inserted into the container behind or below the contained material. Therefore the construction of these prior art devices adds to the initial cost of the container.

It is, therefore, the principal object of the instant invention to form a container having a material engaging member, formed as a part of the container wall, which is urged toward a material dispensing position by a connected resilient member.

Another important object is to provide a means for dispensing or positioning all of the material within a container toward an outlet opening.

Some fluids, such as milk, are presently packaged in a plastic bag-like container within a cardboard carton wherein the milk is dispensed from a spout projecting outwardly from the carton. Since the spout is normally positioned slightly above the supporting side or surface of the carton the fluid, positioned below the plane of the lowermost edge of the spout, is not easily removed from its containing bag.

It is, therefore, another object of the invention to provide a container having a hinged flap forming a part of the container which is automatically elevated to incline a fluid containing bag so that the fluid therein is positioned toward an outlet spout in response to a decrease in the volume of fluid within the bag.

A similarly important object is to provide a fluid containing and dispensing disposable container capable of storage, transportation and dispensing of fluid in relatively small quantities, for example 2-gallon to 5-gallon containers.

A further object is to provide a lightweight container which is easily assembled and activated for automatically dispensing its contents as the latter is progressively withdrawn from a dispensing position.

The present invention accomplishes these and other objects by providing a generally rectangular container having a flap means for releasing or dispensing contained material through an opening in the container as the material is progressively removed manually.

Other objects will be apparent from the following description when taken in conjunction with the accompanying two sheets of drawings, wherein:

FIGURE 1 is a perspective view of the container in material dispensing position;

FIGURE 2 is a perspective view of the opposite side and end of the container of FIG. 1;

FIG. 3 is a face view of a blank forming the container;

FIGURE 4 is a vertical cross-sectional view taken substantially along the line 4—4 of FIG. 1;

FIGURE 5 is a perspective view of an alternate article lifting insert for the container shown in FIG. 1;

FIGURE 6 is a perspective view of an alternate embodiment of the container with a portion thereof broken away for clarity;

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FIGURE 7 is a vertical cross-sectional view taken substantially along the line 7—7 of FIG. 6 and reduced;

FIGURE 8 is a perspective view of an alternate dispensing container;

FIGURE 9 is a perspective view of the container shown in FIG. 8 with the closure flap in partially open position; and

FIGURE 10 is a vertical cross-sectional view taken substantially along the line 10—10 of FIG. 9 illustrating the container in fully opened article dispensing position.

Like characters of reference designate like parts in those figures of the drawings in which they occur.

In the drawings:

The reference numeral **10** indicates the device, as a whole, which is rectangular in general configuration. The container **10** is formed from a single blank of cardboard or other material, as shown in FIG. 3, comprising four wall panels **12**, **14**, **16** and **18**, having closure flaps **22** at the ends thereof (eight in all). The side walls **12** and **14** are joined by the bottom wall **16**. The top wall **18** is joined to one side of the side wall **14**. The respective limits of the side, bottom and top walls are indicated by the score lines **20** along which the respective walls and flaps are folded. The closure flaps **22** are folded over in a conventional manner to close the ends of the container when the walls are folded to a closed position while a gummed edge portion **24**, attached to the wall **12**, seals with the outer surface of the top **18**. The central portion of the bottom wall **16** is cut along the solid lines **28** to define a substantially triangular-shaped flap section **30** within the limits of the bottom **16** which is joined to the latter and bendable along the bend lines **32** for the purposes which will presently be described.

A resilient member, such as a rubber band **25**, has one looped end portion positioned around the apex portion of the triangle shaped flap **30** within opposing band receiving grooves **26**.

The end closure flap **22**, connected with the end of the bottom **16** adjacent the bend lines **32**, is scored to be pulled out to form an outlet or opening **34**. As shown in FIGS. 1 and 3, one end portion of the end closure flap **22**, connected to the container wall **12** and normally overlapping the container bottom closure flap, having the aperture **34**, is cut away as at **35**. A liquid containing conventional heat sealed plastic bag **40** (FIG. 4), having a dispensing spout **42**, is positioned within the container **10** before closing the latter with the spout **42** positioned inwardly of the opening **34**. After placing the fluid filled bag **40** within the container and before sealing the latter the band **25** is extended at its other looped end portion to the upper rearward end portion of the container, as viewed in FIGS. 1, 2 and 4, and is disposed, in a looping over manner within downwardly diverging grooves or slots **48** formed in the upwardly disposed edge portions of the end closure side wall flaps **22** at that end of the container opposite the opening **34**. Fluid within the bag **40** is dispensed by manually pulling the neck **42** outwardly through the opening **34** to the position shown in FIGS. 1 and 4. A conventional dispensing spout, indicated by the dotted lines **50**, is inserted into the neck **42**. As the fluid is removed from the bag through the spout **50** the resilient member **25** lifts the triangular shaped flap **30** by bending along the scored lines **32** which positions the fluid within the bag toward the neck **42** as the material is progressively withdrawn.

During transit and storage the flap **30** is maintained within the plane of the bottom **16** by the pressure of the material therein and is prevented from extending outwardly of the plane of the bottom **16** by a strip of adhesive-backed tape **52** which is glued to the outer sur-

face of the bottom **16** transversely of the flap **30**. A section of paper or fabric **54** is interposed between the adhesive-backed tape **52** and the overlapped portion of the flap **30**. This permits the flap **30** to be lifted out of the plane of the bottom **16** by the member **25** as the fluid is withdrawn from the bag **40**.

FIGURE 5 illustrates an alternate material lifting insert or false bottom for the container **10** wherein a rectangular sheet of cardboard-like material, indicated by the numeral **60** and having overall dimensions substantially equal to the area defined by the container bottom **16**, is flatly positioned on the inner surface of the bottom **16**. One end of the insert is similarly connected to the band **25**. The other end of the insert **60** includes an integral upstanding end portion **62** provided with an opening **64** coaxial with respect to the end closure flap opening **34**, so that when the insert **60** is positioned on the inwardly disposed surface of the bottom **16**, the plastic bag neck **42** is surrounded by the opening **64** thus maintaining the end portion **62** of the insert **60** adjacent the bottom **16** of the container when the opposite end portion of the insert **60** is raised or lifted by the member **25**.

An alternate embodiment of the container is illustrated in FIGS. 6 and 7 and indicated by the numeral **70**. The device **70** is similarly composed of side walls **72** and **73** joined with top and bottom walls **74** and **75** which are held in assembled relation by end closure flaps **76** and **77**, respectively. Opposing ones of the end closing flaps **76** and **77** form vertically positioned slots **78** and **79**, as seen in FIG. **6**, for the purposes which will presently be explained.

At least one of the side walls **72** is provided with a plurality of spaced-apart openings or apertures **80** which are preferably positioned adjacent the respective end portions of cans **82**, or the like, within the container **70** for price marking the cans and visual inspection of the quantity of cans within the container. Adjacent their depending ends, as seen in FIG. 6, the end flaps **76** are transversely diecut, indicated by the dotted line **84**, so that this end portion of the container **70** may be manually pulled out to its dotted line position for dispensing the cans **82**. The container **70** is similarly provided with a lift flap **86** having a resilient band **88** connected thereto and extended upwardly through the slot **79** and connected to the container top **74** within a diecut section **90**. The cans **82** are held in spaced relation during shipment and storage by a pair of spaced-apart U-shaped dividers **92** and **94** which extend into the container **70** through suitable apertures formed in the end flaps **76**. A third E-shaped divider or partition member **96** is similarly inserted through the box top **74** between the U-shaped members **92** and **94** thus providing a plurality of vertical and horizontal partitions, as viewed in FIG. 6, for separating the packaged cans **82**. The members **92**, **94** and **96**, are manually pulled out of the box **70** before placing the container in dispening position.

As shown in FIG. 7, as the packaged articles or cans **82** are progressively removed from the box, the flap **86** is progressively raised by the band **88** to successively position the remaining cans **82** in dispensing position.

Referring more particularly to FIGS. 8, 9 and 10, another embodiment of the device is indicated generally by the numeral **100** which comprises a substantially rectangular container having a front **102** and back **104** joined by side walls **106** and **108**. An end closing member or flap **110**, integrally connected with the back wall **104**, extends forwardly across the top of the container, as viewed in FIG. 8, and is turned downwardly, as at **112**, in overlapping relation forwardly of the front wall **102**. The overlapping section **112** is defined by converging edge surfaces **114** which form a pull-out flap **116**. The pull-out flap **116** is doubled back upon itself to overlie the outer surface of the section **112**. Opposing arcuate recesses **118** define the juncture of the pull-out flap **116** with the section **112** for the purposes presently explained.

Spaced-apart downwardly converging slits or cuts **120**, as viewed in FIG. 9, are formed in the upper edge portion of the front **102**. The spacing between the lowermost limit of the cuts **120** is substantially equal to the width of the pull-out **116** between the recesses **118**. A rubber band **122**, or the like, has one looped end portion received by the cuts **120** and extended transversely therebetween. The other looped end portion of the rubber band **122** is similarly connected with the back wall **104** through a suitable slot or opening formed therein, not shown. The material, indicated by the dotted lines **124**, is forced into the container **100** against the band **122** thus placing the latter under tension. The flap **110** is pivoted to closed position with the rubber band **122** positioned within the respective recess **118** and extending transversely across the pull-out flap **116**. The box **100** is opened by manually pulling the pull-out flap **116** forwardly, in the direction shown by the curved line **126**, so that the rubber band is released from contact with the surfaces forming the recesses **118**. This permits the rubber band **122** to raise the contents **124** to the dotted line position shown in FIG. 10.

Obviously the invention is susceptible to some change or alteration without defeating its practicability, and I therefore do not wish to be confined to the preferred embodiment shown in the drawings and described herein, further than I am limited by the scope of the appended claims.

I claim:

1. A material containing and dispensing container, comprising: a rectangular housing having side, top and bottom walls; closure flaps covering the ends of said housing; a pull-out flap on one said closure flap for releasing the latter toward housing end open position; and flexible means within said housing and normally urging the material therein toward the pull-out flap equipped closure end of said housing, said flexible means comprising a flap portion hingedly connected with and normally forming a part of a bottom wall of said housing, and a resilient member connected with said flap and a top wall of said carton tending to lift said flap.

2. Structure as specified in claim **1** in which said flap is substantially triangular shaped and having its base portion integrally connected with said bottom wall adjacent that end portion of said bottom wall adjacent the open position of said housing and forming a hinge for vertical movement of the apex end portion of said flap.

3. Structure as specified in claim **2** and a plurality of dividers removably received through at least two walls of said housing and forming, in combination with the housing, a plurality of material containing spaces.

4. A material containing and dispensing container, comprising: a rectangular housing having side, top and bottom walls; closure flaps closing the ends of said housing; means on one said closure flap forming a material outlet; a material lifting flap forming a part of said bottom wall; and flexible means connected with said material lifting flap and said housing and normally urging the material therein toward the material outlet end of said housing.

5. A container for liquids, comprising: a paper board carton having a fluid filled flexible plastic bag therein, said bag having an outlet spout; a removable section formed in the lower part of an end wall of the carton of a size permitting said spout to project outwardly therethrough; a triangular shaped flap cut out of a bottom wall of said carton with the base portion of said triangular shaped flap forming a hinged connection with said bottom wall, the apex portion of said triangular shaped flap positioned toward that end of said carton opposite the removable section in said end wall; and a resilient member extending between and connected with the apex portion of said triangular shaped flap and a top wall of said

carton and tending to lift the apex end portion of said flap in response to a decrease in the volume of fluid within said bag.

6. A material containing and dispensing container, comprising: a rectangular housing having side, top, bottom and end walls; a pull-out flap doubled back upon itself and positioned on an outer wall surface of said housing for releasing the latter to a material outlet position; and a resilient member connected with opposing walls of said housing, said resilient member normally overlying said pull-out flap and maintaining said housing in closed position.

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