June 26, 1962 M. W. KUCHENBECKER 3,040,950

DISPENSING GUIDE

Filed May 9, 1960 2 Sheets-Sheet 1

Fig. 1

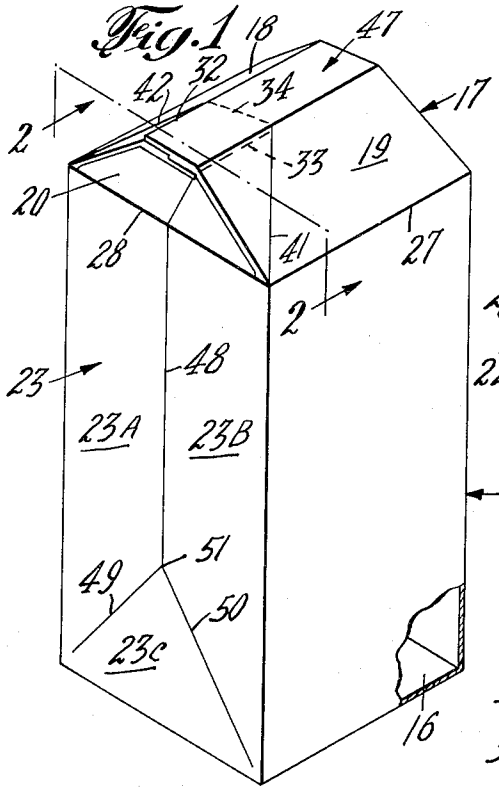


Fig. 2

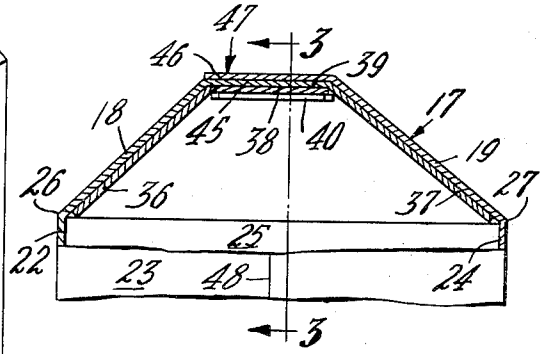


Fig. 4

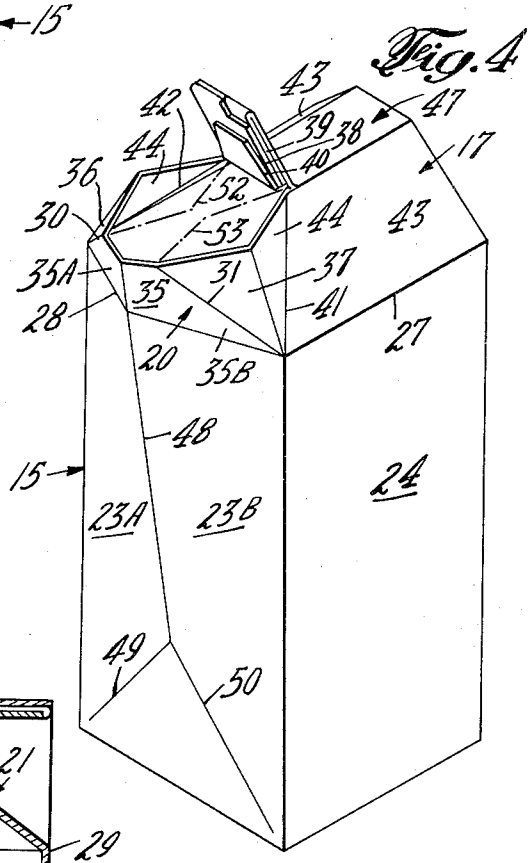
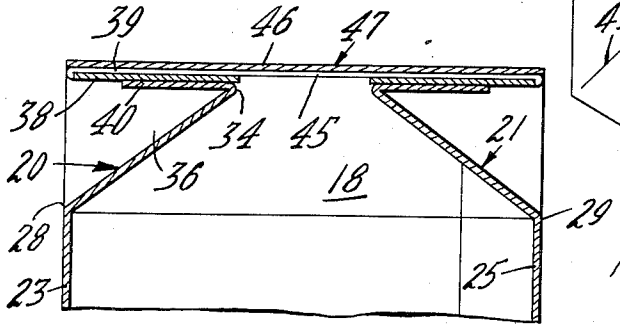


Fig. 3



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Fig. 5

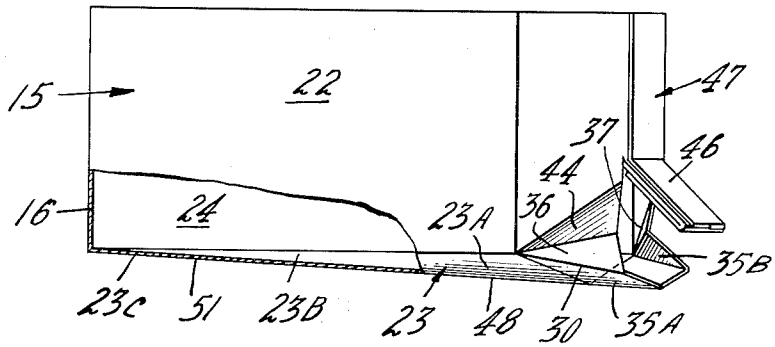


Fig. 7

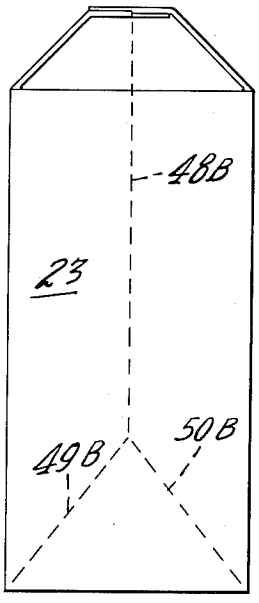
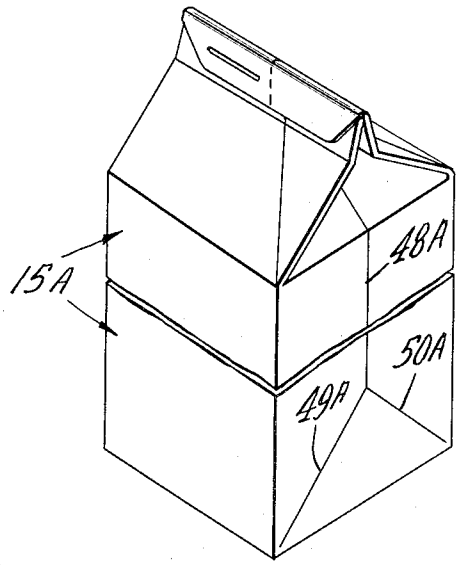


Fig. 6



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DISPENSING GUIDE

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2 Claims. (Cl. 229—17)

This invention relates to a container having a pouring or dispensing guide formed from one of the side walls of the container upon opening of the container and particularly to a container in which the side wall is arrangeable to direct any contents in the container into a stream during dispensing of the contents from the container.

It was well recognized that many various designs of containers had been construed in the past wherein a pouring spout was formed from a portion of the top end or closure of the container with the pouring spout extending from the top of one of the side panels of the container. These side panels were usually flat and rectangular in shape and extended from the bottom of the container. One of the main problems encountered and objections with the prior containers was the manner in which the contents, for example, fluids, milk, granulated powders and the like initially gushed out of the container during pouring. This was particularly noticeable when the container had been previously emptied to the point where it still contained only a small amount of fluid or contents. Usually the container walls were opaque and the exact amount of fluid in the container was not exactly and quickly determinable by looking through the container wall.

In the prior containers the wall of the container from which a short spout extended, and which was beneath the other walls during pouring was flat throughout at least a substantial or major portion of its length. The short spout was secured to the end of this wall at a substantial distance from the bottom of the container. Usually most of the length of the wall was free of fold lines or restrictive means except those defined by portions which formed a restriction at the opening or top end of the container. As soon as an attempt was made to pour fluid from the container all of the fluid suddenly gushed from the bottom of the container to the short spout. This was because the side flat wall of the container was free, along the entire length, or at least along a substantial portion of the length of this wall of any means for guiding or directing the fluid into a stream. Thus the fluid or contents flowed freely until it hit the portions of the short spout forming the dam or restriction. The dam or folded portions formed some guiding restriction for directing the fluid but could not provide control over the flow of the fluid throughout the length of the wall of the container and from the container bottom to the spout mouth. As a result, and unless the person using the container was very careful, an attempt to pour a small quantity of fluid from a nearly empty container would result in all of the fluid gushing through, over, or past the spout, and onto the floor.

One of the main objects of the present invention is to overcome the aforementioned problems and deficiencies in the prior container.

A further object of the invention is to provide a pouring or dispensing guide for a container wherein the pouring guide is automatically formed upon opening of the container and extends at least a major portion of the distance from the bottom to the open top end of the container.

Another object of the present invention is to provide the wall and long spout, which will be beneath the other walls of the container during pouring, with a fold line extending from the end of the spout lengthwise through the center of the wall and proximately to the bottom end of

the container so that the wall and spout may be transformed into a somewhat trough-shaped guide during pouring to guide any contents into a stream as the contents proceed from the bottom of the container to the spout.

A further object of the invention is to provide a pouring guide for a container and means for maintaining the pouring guide in guiding position after it has been moved to that position upon opening of the container.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

FIGURE 1 is a perspective view of a sealed container embodying the instant invention;

FIG. 2 is an enlarged sectional view of the top end of the container as taken substantially along a plane indicated by the lines 2—2 in FIG. 1;

FIG. 3 is a sectional view taken substantially along the line 3—3 of FIG. 2;

FIG. 4 is a view showing the container opened with the dispensing means in position for dispensing the contents;

FIG. 5 is a view similar to FIG. 4 and further showing the infolding of portions of the dispensing means which maintain the dispensing means in pouring position;

FIG. 6 is a perspective view illustrating the invention in combination with the pouring spout of another container and FIG. 7 shows a modification of the fold line.

As a preferred and exemplary embodiment of the instant invention, the drawings illustrate a substantially rectangular container comprising a body **15**, a bottom **16** and a top end closure **17**. The container shown in FIGURES 1 to 5 and 7 is provided with a modified or flattened top end closure **17** although the invention is equally well adapted to a full peak as illustrated in FIG. 6 or to a flat top end closure if desired.

Referring again to FIGURES 1 to 5, and as more fully described in copending application Serial No. 853,365, filed November 16, 1959, the top end closure **17** for the container comprises a pair of outer closure panels **18**, **19** and a pair of inner closure panels **20**, **21**. These panels are hingedly connected to the respective side walls **22**, **23**, **24**, **25** along hinge crease lines **26**, **27**, **28**, **29** respectively.

The inner closure panel **20** is divided by a pair of diagonal crease lines **30**, **31** and a plurality of coextensive weakened or tear lines, preferably perforated lines **32**, **33**, **34**, which extend fully across the inner closure panel **20** and continue into the two adjacent outer closure panels **18**, **19** as shown in FIG. 2. The line **34** preferably is a slit and the entire tear lines preferably are sealed against leakage by a moisture proof paper liner. These crease lines and tear lines divide the inner closure panel **20** into a trapezoidal section **35** hinged to the side wall **23** along crease line **28**, a pair of triangular wing portions **36**, **37** diagonally hinged to the trapezoidal section **35** and hinged to the adjacent outer closure panels **18**, **19** respectively, and long and short tab portions **38**, **39** and a central tab portion **40** respectively hinged to the wing portions **36**, **37** and the trapezoidal section **35** along the respective coextensive tear lines **32**, **33**, **34**. The short tab **39** is hinged to the outer closure panel **19** and the long tab **38** is hingedly connected to the outer closure panel **18**.

The outer closure panels **18**, **19**, are divided by diagonal crease lines **41** and substantially horizontal crease lines **42** into rhombo-rectangular, herein called rhomboidal sections **43** hinged to the respective side walls **22**, **24**, along the crease lines **26**, **27**, triangular wing portions **44** diagonally hinged to the rhomboidal sections **43** and to the triangular wing sections **36**, **37**, of the adjacent inner closure panel **20**, and the tab portions **45**, **46**,

of the respective outer closure panels 18, 19, hingedly connected to the rhomboidal sections 43 and triangular wing portions 44 along the crease lines extending with the tear lines 32, 33.

The conveniently available dispensing means hereinbefore mentioned is incorporated in the inner closure panel 20 and comprises the side or wall 23, the trapezoidal section 35, its two adjacent triangular wing portions 36, 37, the two adjacent triangular wing portions 44 in the outer closure panels 18, 19, and the coextensive tear lines 32, 33, 34, which are disposed at the base of the tabs 38, 39, 40, 45, 46, connected with these panel sections. In the sealed container the tear lines 32, 33, extend along and are parallel with opposite sides of the end seam 47 while the tear line 34 extends across the central tab 40.

The side wall 23 and the trapezoidal section 35 hingedly connected thereto are provided with crease lines 48, 49, 50, to permit flexing of this side wall and trapezoidal section as will be hereinafter explained.

The fold line 48 extends from the top end and thus from the tear line 34 downwardly along trapezoidal section 35 and side wall 23 to a location nearer the bottom 16 than the top or closure end 17 to a location 51. The fold lines 49 and 50 extend from this location 51 towards the bottom end 16 in a diverging manner and extend at least proximate to the bottom end 16. It has been found that a more moisture proof and mechanically stronger container is obtained if the lines 49 and 50 extend proximate to the bottom end 16 and do not intersect or meet the corners at the bottom end of the container. These fold lines divide the wall 23 into a pair of adjacent wall portions 23A and 23B extending from the top end to at least proximate to the bottom end and another wall portion 23C disposed between the bottom end 16 and the pair of adjacent portions 23A and 23B. As is best illustrated in FIG. 1 the wall portions 23A and 23B are trapezoidal in shape and the wall portion 23 is triangular in shape when the wall 23 is rectangular in shape. In addition, and as illustrated the fold line 48 is preferably disposed equidistant from the opposite side walls 22 and 24 so that location 51 is equidistant from the side walls 22 and 24 and much closer to the bottom 16 than to the upper closed end 17 or panel 35. The diverging lines 49 and 50 are also illustrated as extending from the location 51 in respective straight lines towards the respective corners formed by the junction of the bottom 16 with the respective side walls 22 and 24.

The infolded trapezoidal section 35, being disposed in a plane at an angle to side wall 23 helps maintain the wall portions 23A and 23B in a common plane prior to opening of the container. In order to open the container and make the dispensing device available for use, it is merely necessary to apply an upward pull to the end seam 47 at its end adjacent the inner panel 20. This action tears the end seam 47 endwise, i.e., longitudinally along the tear lines 32, 33, at the longitudinal edges of the seam and thus tears off the tabs 38, 39, 45, 46, from the triangular wing portions 36, 37, of the inner closure panel 20 and the adjacent triangular wing portions 44 of the outer panels 18, 19. As the tearing action progresses it tears the central tab 40 from the trapezoidal section 35 and thus releases the trapezoidal section 35 and its triangular wing portions 36, 37, 44, from the seam 47 as shown in FIG. 7. In this condition, the trapezoidal section and the wing portions are free of all tab portions.

By spreading the wing portions 44 apart and squeezing the upper adjacent corners of the body side walls 22, 24, the trapezoidal section may be readily moved out as shown in FIG. 4 to provide a conveniently shaped and proportioned pouring spout to dispense the contents of the container. Following opening of the container, the section 35 has its portions extending from and in the plane of their respective portions of side wall 23, i.e., portions 35A and 35B of section 35 extend in the planes of portions 23A and 23B respectively.

The crease lines 48, 49, 50, in the trapezoidal section 35 and the side wall 23 of the container provide for the extension of this pouring spout into the side wall 23 and thereby elongate the spout into a full dispensing guide and control means for more advantageous pouring or dispensing by eliminating a dam effect at the crease line 28. Because these crease lines 48, 49, and 50, extend substantially to the bottom of the container they form the formerly flat wall 23 into a trough-like formation (see FIGURES 4 and 5) which starts guiding and directing the fluid as soon as the container is tipped toward pouring position and into a narrow stream. The wall portions 23A and 23B form the side of the this modified V-shaped trough in which fold line 48 is at the bottom during pouring. Because of this, the fluid has already been directed into a narrow stream even before it reaches trapezoidal section 35. During pouring the crease line 48 passes through a horizontal plane before a majority of the bottom wall passes through that plane to direct or guide the fluid into a narrow stream which is much narrower than the original width of the wall 23 as soon as the fluid leaves the region of the bottom 16.

It is also noted that the forming of this wall into a trough-like formation draws the sides 26 and 27 closer together than they were prior to opening of the container so that the wall panels 22 and 24 are disposed in planes, which, if extended, would intersect each other in front of the crease line 48. This provides a better gripping surface because during pouring the panels 22 and 24 are furthest apart at the panel 25 which is in the palm of the hand of the user. Even if the container becomes wet and slippery the user is not apt to drop it or have it slip out of his hands.

After a dispensing operation the spout may be pushed back into its original position as shown in FIG. 1 and the partially torn off end seam 47 pressed down over the opening to temporarily reclose the container.

The dispensing spout may be maintained in its outward position as illustrated in FIG. 5 by removing wing portions 36 and 37 from their position illustrated in solid lines in FIG. 4 to their position illustrated in dotted lines in FIG. 4 or in solid lines in FIG. 5. In FIG. 5 the wing portions 36 and 37 and 44 have been pressed inwardly towards each other to the position indicated by the dash dot lines 52 and 53 in FIG. 4 wherein each wing portion is at an angle to its next adjacent wing portion and the extreme parts of the wings on opposite sides of the spout are more remote from each other than the mean parts to maintain the spout in the dispensing position. It is apparent that the inner panel 20 or the trapezoidal section 35 cannot be infolded to the position illustrated in FIG. 1 so long as the wing portions 36, 37, and 44, are in the position represented by dash dot lines 52 and 53 in FIG. 4 and as represented in FIG. 5. When these wing portions are folded inwardly towards each other it is noted that they partially close the opening at the top of the container and limit the width of the opening to the width of the seam 47 on the length of the tear line 34.

FIG. 6 represents an alternate construction of a container incorporating the present invention. The alternate container 15A is of a full peaked construction provided with primary fold line 48A and secondray fold lines 49A and 50A. The fold lines 48A, 49A, and 50A divide the side wall of the container 15A and form it into a trough-like shape for pouring in the same manner as the corresponding fold lines in the wall 23 in the preferred embodiment. The construction of the container 15A may be of any standard well-known commonly used design and type which provides a dispensing spout when opened.

FIG. 7 illustrates a modification wherein fold lines 48B, 49B, and 50B, formed of intermittent line portions, are substituted in place of the single long crease line. In this instance the fold lines 48B, 49B and 50B would be formed

by a series of depressions, perforations or other means capable of controlling the location of the fold.

I claim:

1. A carton for flowable material comprising side walls having top and bottom ends, one of said side walls being a flat planar side wall of pre-set width and length with its length extending in a direction intersecting said ends and of extent greater than its width, end closure means secured to all of said side walls at said bottom ends thereof, said bottom end closure means completely closing and rigidly holding said side walls in a hollow tubular formation, top flexible partial closure means secured to the top ends of all of said side walls except said flat side wall, weakening means extending lengthwise in said flat side wall and substantially spanning the distance between the top and bottom ends thereof, said weakening means comprising straight line means and diverging line means, said straight line means extending from said top end lengthwise in and bisecting said flat side wall for a major part of the length thereof, said diverging line means merging with said straight line portion at a location remote from said top end a distance equal to at least a major part of the length of said flat side wall, said diverging line means extending from said location for a minor part of the length of said flat side wall and substantially to said bottom end of said flat side wall, said diverging line means diverging in a direction towards said bottom end, said weakening means rendering said flat side wall deformable into a trough upon flexing of said flexible closure means by exerting pressure against the top end of said flat side wall in a direction normal to its length, said trough being operative to direct any flowable material at said bottom end closure means into a stream of narrow width compared to said pre-set width of said flat side wall as the flowable material proceeds into and along the trough from the bottom end of the carton during dispensing thereof from the carton.

2. A self-sustaining tubular container comprising a body portion defined by four substantially rectangular side walls having bottom ends, a pair of outer closure panels extending from a pair of oppositely disposed side walls, a pair of inner closure panels extending from the remaining pair of opposite disposed side walls, said inner closure panels being integral with said outer closure panels and being folded under said outer closure panels, tab portions extending from said outer and said inner closure panels, said tab portions being disposed in oppositely directed overlapping relation and secured together to produce a flat, multi-layer lap seam disposed generally normal to all four side walls and entirely between said outer closure panels, tear means in a path extending between points remote from both ends of the seam and extending across at least one of said inner closure panels and into both of said outer closure panels along the longitudinal edges of said seam for at least a portion of its length and extending through a location at least adjacent one end of said seam to provide for endwise tearing away and thereby separation of said one of said inner closure panels and of at least one end portion of said seam to release at least one of said inner closure panels from said seam for displacement to a position outwardly from under said outer closure panels to produce a combined dispensing opening and pouring spout for said container, said one of said inner closure panels and the side wall from which it extends jointly defining a flat planar side wall having a top end, said planar side wall being of pre-set width and length with its length extending in a direction intersecting said ends and of extent greater than its width, end closure means secured to all of said side walls at said bottom ends thereof, said bottom end closure means completely closing and rigidly holding said side walls in a hollow tubular formation, weakening means extending lengthwise in said flat side wall and substantially spanning the distance between the top and bottom ends thereof, said weakening means comprising straight line means and diverging line means, said straight line means extending from said top end lengthwise in and bisecting said flat side wall for a major part of the length thereof, said diverging line means merging with said straight line portion at a location remote from said top end a distance equal to at least a major part of the length of said flat side wall, said diverging line means extending from said location for a minor part of the length of said flat side wall and substantially to said bottom end of said flat side wall, said diverging line means diverging in a direction towards said bottom end, said weakening means rendering said flat side wall deformable into a trough after said tearing away and upon flexing of said closure panels by exerting pressure against the top end of said flat side wall in a direction normal to its length, said trough being operative to direct any flowable material at said bottom end closure means into a stream of narrow width compared to said pre-set width of said flat side wall as the flowable material proceeds into and along the trough from the bottom end of the carton during dispensing thereof from the carton.

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