June 19, 1962 M. W. KUCHENBECKER 3,039,668

CONTAINER

Filed Sept. 8, 1960

Fig. 2

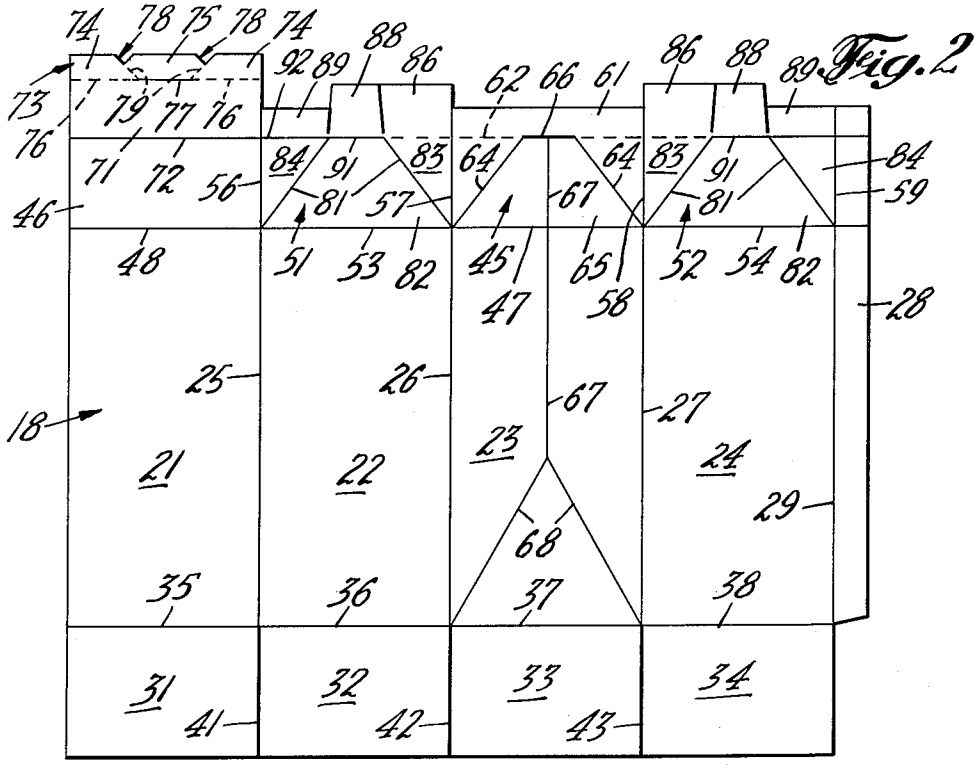


Fig. 1

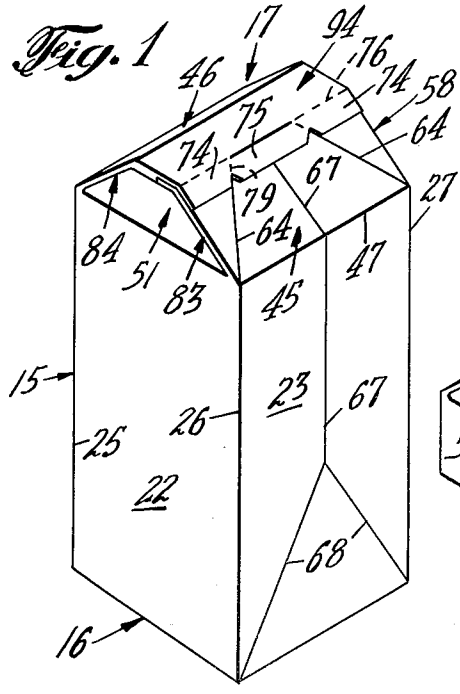


Fig. 3

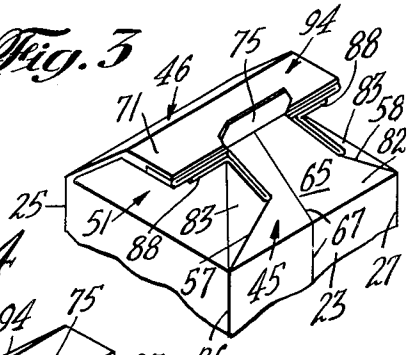
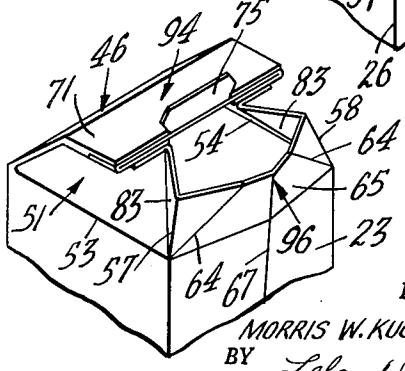


Fig. 4



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United States Patent Office 3,039,668 Patented June 19, 1962

3,039,668

CONTAINER

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Filed Sept. 8, 1960, Ser. No. 54,621
8 Claims. (Cl. 229—17)

The present invention relates to a carton or container particularly adapted to the packaging and dispensing therefrom of flowable products, such as liquids, granulated substances and the like, and has particular reference to a top end closure which includes a conveniently available dispensing spout.

The carton is readily formed from paperboard and may be made from a unitary blank of such material treated to provide liquid leak-proofness so that the carton may be used for milk.

An object of the invention is to provide a top end closure for such a carton or container which includes a conveniently available dispensing spout in the front of the closure and formed in the closure in such a manner as to shield and protect the dispensing surfaces of the spout against contamination.

Another object is the provision of such a top end closure and an included dispensing spout which may be readily opened by a tearing of panel portions of the closure and a forcing of the dispensing spout into dispensing position.

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.

Referring to the drawings:

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

FIG. 2 is a plan view of a unitary blank from which the container in FIG. 1 is formed;

FIG. 3 is a perspective view of the upper end of the container showing the container partially open; and

FIG. 4 is a view similar to FIG. 3 showing the container fully open.

As a preferred and exemplary embodiment of the instant invention, the drawings illustrate a substantially rectangular container preferably coated interiorly and exteriorly with a film of polyethylene, and comprising a body **15**, a bottom **16** and a top end closure **17** (FIG. 1) made from a single paperboard blank **18** (FIG. 2) of generally rectangular configuration. The container shown preferably is provided with a peak or gable shaped top end closure although the invention is equally well adapted to a flat top end closure if desired.

The blank **18** (FIG. 2) is suitably cut and creased to divide it into a number of walls, panel portions and tab portions. Four main wall panels **21**, **22**, **23**, **24** are respectively separated from each other and hingedly connected together along crease lines **25**, **26**, **27**. A glue flap **28** is hingedly connected along one side edge of wall **24** by a crease line **29**.

Bottom closure flaps **31**, **32**, **33**, **34** are respectively connected to walls **21**, **22**, **23**, **24** along crease lines **35**, **36**, **37**, **38**. The bottom closure flaps are separated by cut lines or narrow cut out portions **41**, **42**, **43**.

Top front and rear or first panel portions **45**, **46**, are hingedly connected to walls **23**, **21** respectively along crease lines **47**, **48**. In a similar manner top end or second panel portions **51**, **52**, are hingedly connected to walls **22**, **24**, respectively along crease lines **53**, **54**. These first and second panel portions **45**, **46**, **51**, **52**, are hingedly connected to each other along their lateral edges by

crease lines **56**, **57**, **58**. The second panel portion **52** is also connected to the glue flap **28** along a crease line **59**.

All of the first and second panel portions **45**, **46**, **51**, **52**, are provided with end seam tabs extending from their upper edges. In the front first panel portion **45** an end seam tab **61** is provided. This tab **61** extends entirely across the panel portion and is hingeable along a perforated, scored or otherwise first line of weakness **62** which connects the tab **61** to the panel portion **45**. The front first panel portion **45** also includes a pair of spout crease lines **64** which converge from the crease line **47** toward and preferably terminate at the first line of weakness **62**, with the converging ends of the crease lines **64** spaced apart to set off a trapezoidal shaped sub-panel **65** in the first panel portion **45**. The first line of weakness **62** in the space between the ends of the converging crease lines **64** preferably includes a slit or entirely cut-through portion **66**.

The front first panel portion **45** also includes a medial crease line **67** which extends into the wall panel **23** for a major portion of its length and connects with a pair of diverging crease lines **68**.

The rear first panel portion **46** is provided with an end seam tab **71** which is hingedly connected to the panel portion along a crease line **72** which extends entirely across the panel portion and is in longitudinal alignment with the first line of weakness **62** so as to be coextensive therewith. The tab **71** is substantially twice the width of the tab **61** and along its upper edge is provided with a flap portion **73** comprising a pair of fixed flap sections **74** and an intermediate free flap section **75**. The fixed tab sections **74** are hingedly connected to the tab **71** along a pair of aligned second lines of weakness **76** which extend out into the lateral edges of the flap portion **73**. The free flap section **75** is hingedly connected to the tab **71** along a crease line **77** which connects with the inner ends of the second lines of weakness **76** and is coextensive with these lines of weakness. The free flap section **75** preferably is set off from the fixed flap sections **74** by notches **78** and short score lines or perforations **79**.

The top end or second panel portions **51**, **52** each include a pair of crease lines **81** which converge from the lower corners of the panel portion toward and terminating at the upper edge of the panel portion, the converging ends of the crease lines being spaced apart and thereby setting-off in the panel portion a trapezoidal shaped sub-panel **82** and a pair of triangular shaped third panel portions **83**, **84**. These third panel portions **83**, **84** hingedly connect the trapezoidal shaped sub-panels **82** of the second panel portions **51**, **52**, to the first panel portions **45**, **46**, along the lateral edges of the first and second panel portions as defined by their crease lines **56**, **57**, **58**, **59**.

Each of the second panel portions **51**, **52** along their top edge is provided with a wide end seam tab **86** which is hingedly connected to the triangular third panel portions **83** along an extension of the first line of weakness **62** which extends entirely across the third panel portions **83**. In a similar manner each of the second panel portions **51**, **52** along their top edge is provided with end seam tabs **88**, **89**, which are hingedly connected respectively to the trapezoidal sub-panels **82** and the third panel portions **84** along coextensive crease lines **91**, **92** which are coextensive with the crease line **72** and the first line of weakness **62**.

Such a blank is readily formed into a carton or container by folding it along the wall crease lines **25**, **26**, **27**, **29**, and securing the glue flap **28** to the inner face of the free lateral edge portion of the wall **21** to produce a rectangular, tubular body for the container. The bottom flaps **31**, **32**, **33**, **34**, are then folded inwardly in

overlapping relation and secured together in the usual manner to produce a bottom for the container. In this condition the container is filled with its product and the top closure is then folded into place to seal the filled container.

The top closure **17** as shown in FIG. 1 is formed by first bending the end seam tabs **88** outwardly. The second panel portions **51**, **52** are then bent inwardly into an inclined position as shown in FIG. 1 to produce the inclined second panel portions. This inward bending of the second panel portions **51**, **52** bends the triangular shaped third panel portions **83**, **84**, along their defining crease lines **81**, **56**, **57**, **58**, **59**, and simultaneously draws the first panel portions **45**, **46** inwardly over the top of the second panel portions **51**, **52** and results in the first panel portions assuming an inclined position with the third panel portions folded under and against the first panel portions adjacent their lateral edges as shown in FIG. 1.

Simultaneously with this folding of the first, second and third panel portions into closure forming position, the end seam tabs **61**, **71**, **86**, **89** are folded into overlapping relation on top of the outwardly bent tabs **88** and permanently secured in place by a suitable adhesive or other securing means to produce a horizontally positioned, flat top end seam **94** as best shown in FIG. 1, which unites all of the panel portions and seals the container.

With the end seam tabs secured together to produce the end seam **94**, the flap portion **73** extends down against the outer face of the front first panel portion **45** as shown in FIG. 1 with the fixed flap sections **74** secured to the front first panel portion **45** by a suitable adhesive or other means and with the free flap section **75** in position against the front first panel portion but unsecured in relation thereto. In this position of the flap portion **73**, the second lines of weakness **76** are directly over the top of and are coincident with the first line of weakness **62** in the front first panel portion **45** and the third panel portions **83** and the free flap section **75** covers and seals the slit **66** in the first line of weakness. This completely seals the container.

The container thus completely sealed includes in the top closure a conveniently available dispensing spout which may be readily formed, upon opening the container, and forcing the front first panel portion **45** outwardly. This is readily effected by severing the respective first and second lines of weakness **62**, **76**, simultaneously and lifting the free flap section **75**. This is best effected by first lifting the flap section **75** to the position shown in FIG. 3 and then gripping the lateral edge portions of the front first panel portion **45** and forcing them outwardly into a position normal to the front first panel portion as shown in FIG. 3. This tears or severs the first and third panel portions **45**, **83** along the first and second lines of weakness **62**, **76** from their respective tabs permanently embodied in the top end seam **94** and thereby releases the first and third panel portions for spout formation.

To produce the dispensing spout, the gripped lateral edge portions of the front first panel portion **45** preferably are bent back toward and slightly beyond their original position in the container. This return bending of the first panel portion forces the trapezoidal shaped sub-panel **65** outwardly in a manner which draws out the adjacent attached parts of the first and third panel portions, and bends the sub-panel along its medial crease line **67** to produce a many sided pouring spout **96** as shown in FIG. 4, the spout pouring edge being clean and free from interfering tabs, thereby producing a substantially drip free pouring edge for the spout.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description and it will be apparent that various changes may be made in the form, construction, and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. A gable-top dispensing container, the container top including a pair of opposed inclined first panel portions having upper edges spaced apart a pre-selected distance, a pair of opposed inclined second panel portions having upper edges, pairs of third panel portions hingedly connecting the lateral edges of said first panel portions to the adjacent lateral edges of said second panel portions, tab portions extending from the upper edges of said first, second and third panel portions and secured together in a flat top end seam uniting all of said panel portions, said end seam being disposed generally in a plane intersecting the planes of all of said panel portions and spanning the said pre-selected distance between said first panel portions, said flat top end seam being disposed entirely between said first panel portions, a first line of weakness in one of said first panel portions and extending completely across said one first panel portion and substantially into the third panel portions hingedly connected to each lateral edge of said one first panel portion, a flap portion connected to the end seam tab portion of the other of said first panel portions and folded over and against said first line of weakness in said one first panel portion, said flap portion extending completely across said one first panel portion and being divided into a pair of fixed sections secured to said one first panel portion and a free section unsecured in relation to said one first panel portion, and a second line of weakness in each of said fixed flap sections, said second lines of weakness being disposed adjacent said first line of weakness in said one first panel portion, said first and second lines of weakness providing means for ready severance of the parts of said one first panel portion and said third panel portions from said end seam tabs, whereby upon such severance and the lifting of said free tab portion said one first panel portion and said third panel portions may be forced outwardly to form a dispensing spout for said container.

2. A gable-top dispensing container of the character defined in claim 1 wherein said first line of weakness is disposed adjacent the top edge of said one first panel portion and the top edges of said third panel portions hingedly connected to each lateral edge of said one first panel portion.

3. A gable-top dispensing container of the character defined in claim 1 wherein said first line of weakness is disposed along the line of connection between said end seam tabs and said one first panel portion and along the line of connection between said end seam tabs and said third panel portions hingedly connected to each lateral edge of said one first panel portion.

4. A gable-top dispensing container of the character defined in claim 1 wherein said one first panel portion is provided with a pair of crease lines converging toward said first line of weakness to facilitate formation of said dispensing spout.

5. A gable-top dispensing container of the character defined in claim 1 wherein said one first panel portion is provided with a medial crease line disposed substantially normal to said first line of weakness to facilitate formation of said dispensing spout.

6. A gable-top dispensing container of the character defined in claim 1 wherein said one first panel portion is provided with a trapezoidal shaped sub-panel defined by crease lines converging toward and terminating at said first line of weakness and wherein said first line of weakness includes a slit extending between the terminal ends of said crease lines and wherein said free flap section extends over said slit.

7. A gable-top dispensing container of the character defined in claim 1 wherein said tab portions extending

from the upper edges of said first, second and third panel portions are arranged in overlapped horizontally disposed relation and secured together in a horizontal, flat, top end seam uniting all of said panel portions and wherein said first line of weakness is disposed adjacent a longitudinal edge of said end seam.

8. A gable-top dispensing container of the character defined in claim 1 wherein there is provided third lines of weakness in said flap portion adjacent said free section of said flap portion to facilitate lifting of said free section.

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