June 15, 1965 S. A. SELINE, JR 3,189,246

GABLE TOP CONTAINER

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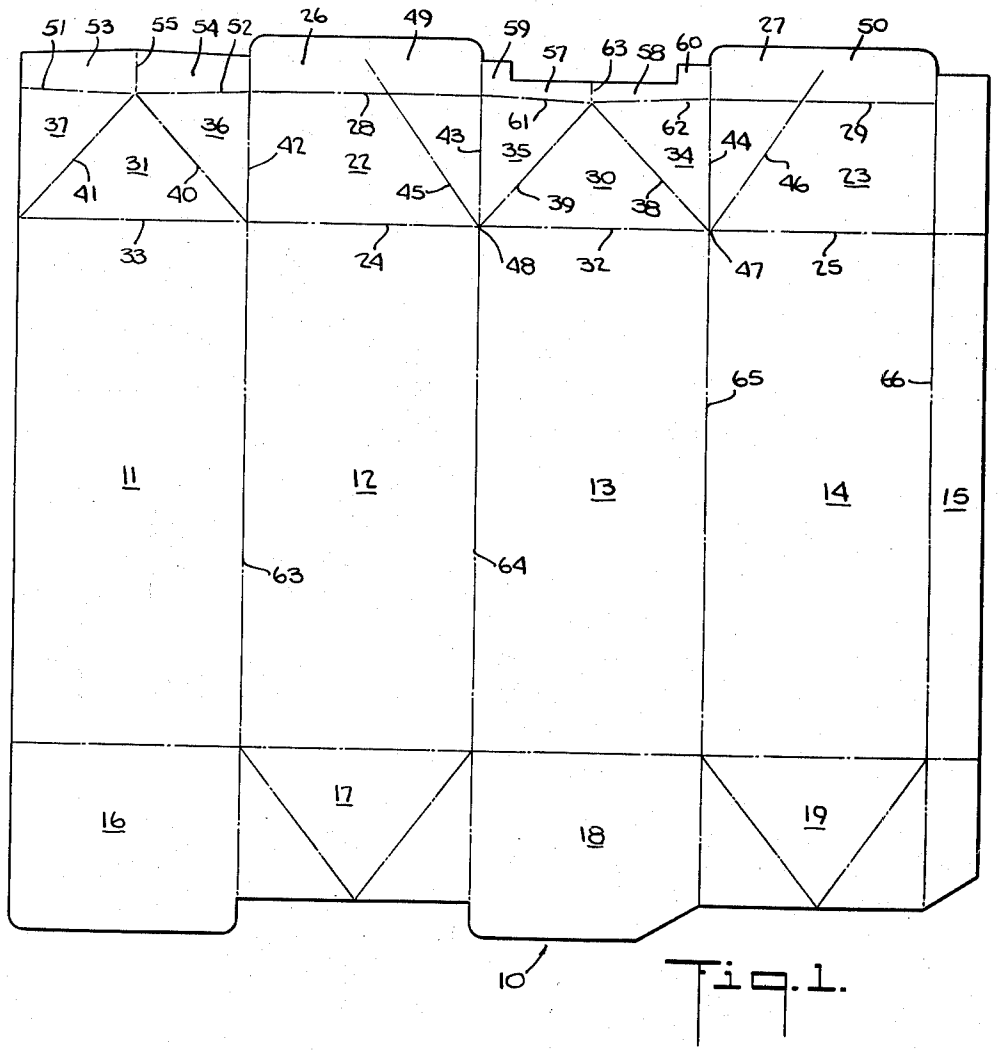


Fig. 1.

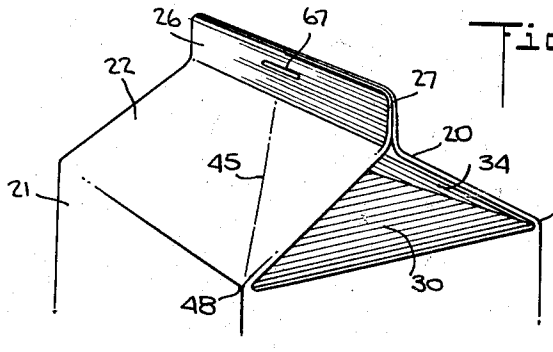


Fig. 3.

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GABLE TOP CONTAINER

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Fig. 2.

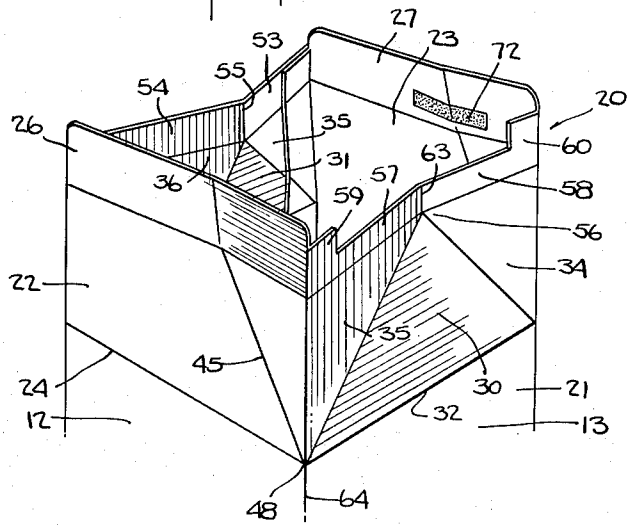


Fig. 4.

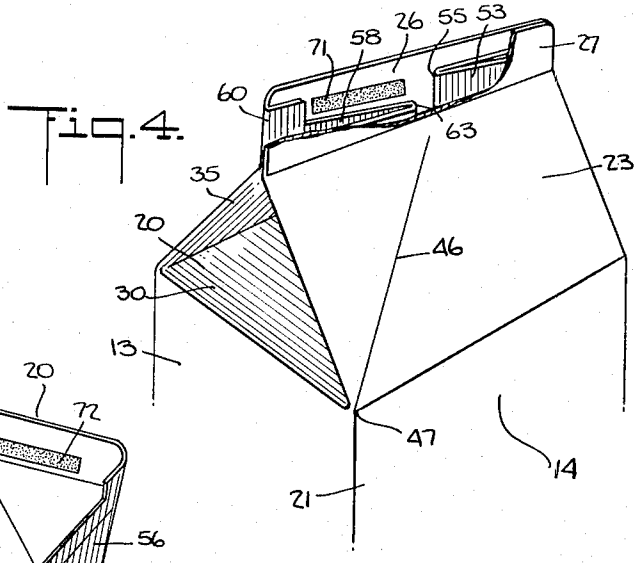
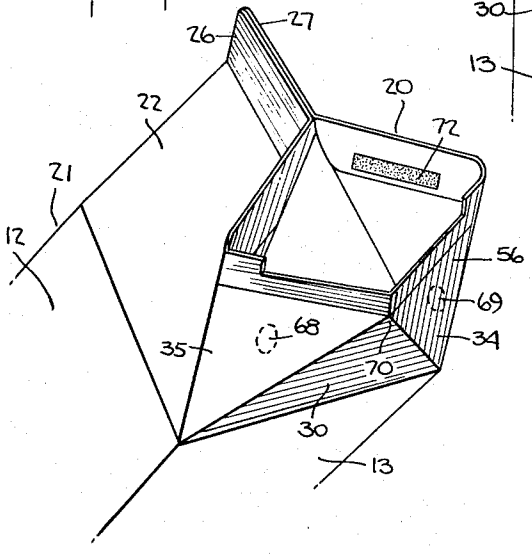


Fig. 5.



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3,189,246

GABLE TOP CONTAINER

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This invention relates to an improved gable top container for holding fluids, and more particularly to a gable top carton having an improved form of spout.

Cartons having gable tops are used extensively for packaging milk, buttermilk, orange juice and other fluid products. The gable top is particularly useful since a container seal and spout may be conveniently combined by the proper folding of panels into the gable configuration. Heretofore, the design of the spout for gable top cartons has possessed a number of disadvantages, several of which will be discussed in detail below.

It is an object of this invention to provide an improved design of a gable top carton.

It is another object to provide a gable top carton with an improved spout, the design of which provides a better seal and a spout which is more reliable in operation than prior devices.

It is an additional object to provide a gable top carton with sealing surfaces of reduced area, resulting in a savings of heat energy.

It is an additional object to provide a spout which will readily snap open with a minimum of difficulty with no contamination of the contents of the container.

Briefly, the gable top container of this invention comprises a pair of opposed inclined walls, joined and sealed along the interfaces of horizontal panels disposed on each uppermost edge of one of said walls, thus forming a peaked roof over said container. A pair of opposed triangular side panels are inclined inwardly under the inclined walls, each triangular panel having a pair of opposed triangular flap portions hingedly secured on each of the side edges thereof. These flap portions rest against the underside of the walls and each has a quadrilateral strip portion hingedly disposed along the top edge thereof, the strip portions on adjacent flap portions being hingedly joined to one another along a common edge. The strip portions are secured between said uppermost edges. One pair of the flap portions is adapted to provide a retractable spout for said container, the strip portions of said pair having opposed L-shaped recessed portions along their upper edges and communicating with one another to provide reduced sealing areas of said strip portions with respect to said uppermost edges. On the interior areas on the horizontal panels of the inclined walls, defined by the opposed L-shaped recessed portions, an abhesive or release agent is coated thereon to prevent sealing of these interior areas when the container is assembled and sealed.

The above and other objects of the present invention will appear from the following description which is to be read in conjunction with the accompanying drawings where like components in the several views are identified by the same reference numerals. It should be understood, however, that components of which this invention consists may be variously arranged and organized, and that this invention is not limited to the specific arrangement and organization of the instrumentalities as herein shown and described.

In the drawings:

FIGURE 1 is a plan view of the flat blank out of which the improved container of this invention is formed;

FIGURE 2 is an enlarged fragmentary perspective view of the open gable top prior to sealing;

FIGURE 3 is an enlarged fragmentary perspective view of the upper part of the container with the gable top sealed;

FIGURE 4 is an enlarged fragmentary, partially sectioned, perspective view of the assembled and sealed gable top; and

FIGURE 5 is an enlarged fragmentary perspective view of the container with the spout of the gable top unit's open position.

Referring to FIGURE 1, a flat blank **10** is shown. From the blank **10**, the improved gable top container of this invention is made. Blank **10** is made of a heat sealable material such as polyethylene or paper coated with a wide variety of plastic compounds. The art requires that the carton material used must have the property of producing cartons with fluid-tight seals at all joined portions of the assembled container.

Flat blank **10** is divided into areas which will be described shortly. These areas are defined by a series of scored lines on which the blank is folded to produce the completed container in three dimensions. Thus, four side panels **11**, **12**, **13**, **14** are provided with a side flap **15** which is sealed against the underside of panel **11** when the container is assembled. A conventional bottom closure is provided and is made up of mutually overlapping panels **16**, **17**, **18**, **19**.

The gable top **20** of the finished container **21** (FIG. 3) is constructed from the following components which are clearly visible in the flat blank **10** of FIG. 1. A pair of rectangular walls **22**, **23** hingedly secured along the upper perimeter of side panels **12** and **14** on scored lines **24**, **25** provide the sides of gable top **20**; and when these walls **22**, **23** are folded over, they assume the shape of a peaked roof covering container **21**. Along the top edge of the walls **22**, **23** are disposed horizontal panels **26**, **27** on hinged or scored lines **28**, **29**. Panels **26**, **27** are later joined to form the top closure of the gable top **20**.

On alternate sides **11**, **13** of the blank **10** are triangular side panels **30**, **31** separated from the container side panels **13** and **11** by scored lines **32**, **33**. On each of the two sides of triangular side panels **30**, **31** are a pair of opposed triangular flap portions **34**, **35** and **36**, **37**. Each pair of the said flap portions is hingedly joined to the triangular panels **30**, **31** on scored lines **38**, **39** and **40**, **41**. The lines which separate flap portions **36** and **35** from rectangular wall **22**, and which separate flap portion **34** from wall **23** are scored lines **42**, **43** and **44**.

Rectangular walls **22**, **23** and their adjoining horizontal panels **26**, **27** are each provided with flared scored lines **45**, **46**, running from corners **47**, **48** on the first or spout side of the gable top **20** upwardly toward the upper central portions **49**, **50** of panels **26**, **27**.

Superadjacent the triangular flap portions **36**, **37** on scored lines **51**, **52** are small quadrilateral strips **53**, **54**. These latter strips are joined to each other on a common scored line **55**. Strips **53**, **54** are on the second side of the gable top **20**, opposite that side which provides the spout **56** of the finished container **21**.

Superadjacent the triangular flap portions **34**, **35** on the spout side of gable top **20** are recessed, L-shaped strips **57**, **58**. Strips **57**, **58** are narrower than the quadrilateral strips **53**, **54**, and are provided with small tabs **59**, **60** integrally formed at opposite corners thereof. The recessed, L-shaped strips **57**, **58** are separated from flap portions **34**, **35** by scored lines **61**, **62** and are separated from each other by a common scored line **63**.

In the container of this invention, it is the provision of the recessed, L-shaped strips **57**, **58** with tabs **59**, **60** which results in a marked improvement in spout **56** and gable top **20**. The narrower design of strips **57**, **58** results in a savings in heat energy, while small tabs **59**, **60** provide a means whereby the gable top **20** can be sealed

with a minimum of difficulty. When the consumer forms the spout 56 in order to pour out the fluid contents of container 21, the minimal sealing area of tabs 59, 60 renders it easier to open the top and form spout 56, and eliminates the threat of contamination by the consumer of the container's fluid contents. The difficulties attending the formation of prior art spouts made such contamination likely.

FIGURE 2 is a fragmentary perspective view of the partially assembled container 21. Prior to assembly, flat blank 10 is printed with an abhesive material. An abhesive or release agent is a material such as a silicon emulsion or cellophane which prevents the heat sealing of the surfaces to which it is applied. In the case of the invention described herein, an abhesive is coated or printed on the interior surfaces of horizontal panels 26, 27 in the areas 71, 72, defined by the recessed portions of the opposed L-shaped strips 57, 58. See FIGS. 2, 4 and 5. The presence of an abhesive at 71, 72 will prevent the sealing of those interior surfaces of the panels 26, 27 and make it easier for the consumer to form spout 56.

Flat blank 10 is then folded on the side scored lines 63, 64 and 65, 66 to form a hollow tube which defines the container 21. Flap 15 is secured to the underside of side panel 11 by the application of heat and pressure. Bottom closure flaps 16, 17, 18, 19 are folded to form a permanent and fluid-tight bottom closure (not shown). Rectangular walls 22, 23 are bent inwardly on scored lines 24, 25 so that each panel inclines slightly over container 21. Triangular panels 30, 31 are bent inwardly on scored lines 32, 33 under panels 22, 23. The container 21 with the unsealed gable top 20 would assume the form shown in FIGURE 2 just prior to sealing.

To complete the assembly, rectangular walls 22, 23 are bent toward each other until the inner surfaces of horizontal panels 26, 27 approximately touch each other. Triangular side panels 30, 31 are pushed toward each other until the pairs of triangular flap portions 34, 35 and 36, 37 bend outwardly over panels 30, 31 and lie adjacent the underside of walls 22, 23. The quadrilateral strips 53, 54 are inserted between horizontal panels 26, 27. As a result of the design herein, only the tabs 59, 60 of strips 57, 58 are inserted between the panels 26, 27. Heat and pressure are used to seal gable top 20 by securing panel 26 to panel 27, and further by securing strips 53, 54 and tabs 59, 60 between strips 26, 27. The finished gable top 20 assumes the form illustrated in FIGURE 3. A staple 67 may be inserted through strips 26, 27. It reinforces the heat seal and assists in holding panels 26, 27, strips 53, 54 and tabs 59, 60 together. Care must be taken to avoid interfering with the operation of spout 56 when a staple 67 is used.

When a consumer decides to use the fluid contents of container 21, pressure is applied outwardly at a pair of opposed points 68, 69 on the underside of rectangular walls 22, 23. (See FIG. 5.) The pressure is applied to the triangular flap portions 34, 35 in the vicinity of the area 68, 69, which in turn transmits the force to the walls 22, 23. The seal between tabs 59, 60 and horizontal panels 26, 27 is broken with ease. The presence of the abhesive on areas 71, 72 makes the rupturing of the seal on the spout side of the gable top much easier. The rectangular walls 22, 23 are bent backward along flared scored lines 45, 46. This action causes spout 56 to snap outwardly.

To cause retraction of spout 56, a small inwardly directed force is exerted at apex 70. The spout 56 will snap back into place. The flared portions of rectangular panels 22, 23 are pressed back into their initial position. This effects a temporary closure of gable top 20.

In FIGURE 4, a partial sectional view of the gable top 20 illustrates the disposition of the various sealed surfaces of the said top. Quadrilateral strips 53 and 54 are secured between horizontal panels 26, 27. The heat

sealing operation permanently secures strips 53, 54 between panels 26, 27. On the spout side, however, abhesive is applied to areas 71, 72. A heat seal is only effected between tabs 59, 60 and panels 26, 27. The strength of the seal is sufficient for transportation and handling of container 21, but may be ruptured with ease by the consumer according to the method described above.

The design of gable top containers of the prior art called for quadrilateral strips similar to 57, 58 on both the closed and spout sides. The use of comparatively wide strips on the spout side created a number of problems which have been effectively solved by the design of this invention which results in an improved container. The design herein eliminates bulky layers of carton material which would otherwise interfere with the proper sealing of the gable top. More positive pressure may thus be directly applied to the sealing areas of horizontal panels 26, 27, and an improved seal results. The appearance of the gable top 20 and container 21 is also improved; and the improved seal precludes the entry of contaminants through openings in the gable top which were present in the design of the prior art.

Abhesive need only be placed on the inner surface of horizontal panels 26, 27 in the areas 71, 72. This eliminates the requirement for two-sided abhesive printing. In addition, the sealing area is reduced. The smaller area on which the fluid contents of the container may adhere, reduces the danger of contamination of the fluid contents during sealing and also reduces the amount of heat required which would otherwise be used in converting the adherent fluid to steam.

Having thus described my invention, I claim:

1. A gable top for a container comprising a pair of opposed inclined walls each having an upright panel hingedly disposed on the uppermost edges thereof, said walls being inclined inwardly over said container to form a peaked roof, said panels being joined and sealed to each other, a pair of opposed triangular side panels inclined inwardly under said walls, each triangular panel having a pair of opposed triangular flap portions hingedly secured on each of the side edges thereof, said flap portions resting against the underside of said walls and each having a quadrilateral strip portion hingedly disposed along the top edges thereof, the strip portions on adjacent flap portions being hingedly joined to one another along a common edge, said strip portions secured between said upright panels, one pair of said flap portions adapted to provide a retractable spout for said container and the strip portions thereof having opposed rectangular recesesd portions of substantial depth and extent along their upper edges communicating with one another to provide reduced sealing areas of said strip portions with respect to said upright panels, the opposed inner surfaces of said upright panels, which surfaces are defined by said rectangular recessed portions of said strip portions, being coated with an abhesive substance.

2. A gable top for a container comprising a pair of opposed inclined walls each having an upright panel hingedly disposed on the uppermost edges thereof, said walls being inclined inwardly over said container to form a peaked roof, said panels being joined and sealed to each other, a pair of opposed triangular side panels inclined inwardly under said walls, each triangular panel having a pair of opposed triangular flap portions hingedly secured on each of the side edges thereof, said flap portions resting against the underside of said walls and each having a quadrilateral strip portion hingedly disposed along the top edge thereof, the strip portions on adjacent flap portions being hingedly joined to one another along a common edge, said strip portions secured between said upright panels, one pair of said flap portions adapted to provide a retractable spout for said container and the strip portions thereof having opposed L-shaped recessed portions of substantial depth and extent along their upper edges communicating with one another to provide reduced sealing areas of said strip portions with respect to said up-

right panels, the opposed inner surfaces of said upright panels which surfaces are defined by said rectangular recessed portions of said strip portions, being coated with an abhesive substance.

3. A gable top container comprising a pair of opposed inclined walls each having an upright panel hingedly disposed on the uppermost edges thereof, said walls being inclined inwardly over said container to form a peaked roof over said container, said panels being joined and sealed to each other, a pair of opposed triangular side panels inclined inwardly under said walls, each triangular panel having a pair of opposed triangular flap portions hingedly secured on each of the side edges thereof, said flap portions resting against the underside of said walls and each having a quadrilateral strip portion hingedly disposed along the top edge thereof, the strip portions on adjacent flap portions being hingedly joined to one another along a common edge, said strip portions secured between said upright panels, one pair of said flap portions adapted to provide a retractable spout for said container and the strip portions thereof having opposed

L-shaped recessed portions of substantial depth and extent along their upper edges communicating with one another to provide reduced sealing areas of said strip portions with respect to said upright panels, the opposed inner surfaces of said upright panels which surfaces are defined by said rectangular recessed portions of said strip portions, being coated with an abhesive substance.

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