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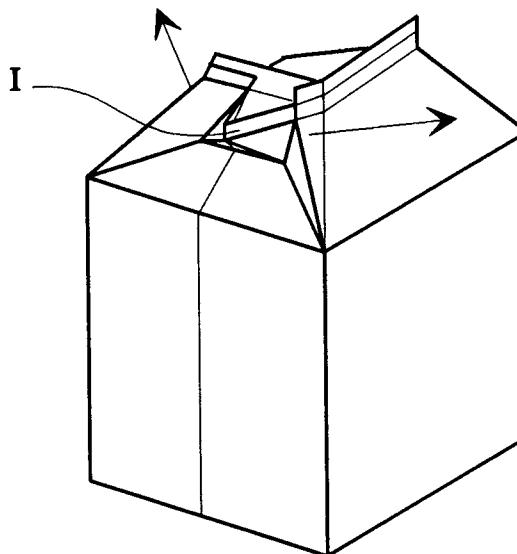
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(54) **Improved opening system for gable top shaped containers having a prefolded pouring spout.**

(57) The invention relates to a gable-top container comprising a container body, a bottom at a first end of the body, means for closing said container at a second end of the body, and means for sealing said closing means, said sealing means comprising areas of high adhesive force and low adhesive force, the areas of low adhesive force comprising two surfaces each having raised and lowered parts adjacent to and alternate with one another to form a pattern, said raised and lowered parts adhering to one another when the closing means is sealed characterized in that the lowered part of the surface comprises at the center a prefolded pouring spout.

**Fig. 2****EP 0 659 648 A1**

The invention relates to a gable-top container comprising a container body, a bottom at a first end of the body, means for closing said container at a second end of the body, and means for sealing said closing means, said sealing means comprising areas of high adhesive force and low adhesive force, the areas of low adhesive force comprising two surfaces each having raised and lowered parts adjacent to and alternate with one another to form a pattern, said raised and lowered parts adhering to one another when the closing means is sealed.

Such containers as described are known which have a gable-like closure on their top. For instance in GB 2,146,624 of Tetra Pak International AB is disclosed a container of this kind comprising one or more pressure equilizing openings placed at the upper part of the container. In EP 286,313 of Minnesota Mining is disclosed a gable-top sealable thermoplastic coated container having stiffening fillets secured to gable rib panels or roof rib panels to facilitate opening without tearing or delamination. In EP 185,325 of Tetra Pak International AB is described a package made of a supporting material such as cardboard, coated with a thermoplastic material, for liquids or the like, comprising a tubular main body with a base and a cover which is folded into a ridge shape and has a pouring spout which can be opened by opening sealed seams, wherein the sealing region of the spout contains sealing sections with strong adhesive power and adjacent sections with low adhesive power for peeling the sealing sections apart, and wherein the sealing section with low adhesive power is formed by a pattern of raised surfaces at a spacing from one another, alternating with adjacent sections at a lower level, wherein the region with low adhesive power extends into the ridge area and into the lateral triangular sections of the ridge. Areas with low adhesive power are so-called abhesive pads.

Containers as described are almost always produced from prefabricated blanks which have a suitable arrangement of fold lines which facilitate folding up and forming the container, by folding into their definitive positions the panels or areas which form the upper portion and the bottom. The container blanks are mostly coated with a thermoplastic material, for example polyethylene, which is used both to make the container liquid-tight and also to seal the container using heat and pressure so that it is correctly folded and sealed in its erected position. The upper part or the cover of the known containers is to be opened by pulling the sealing seams apart, in such a way as to form a pouring spout for satisfactorily pouring out the contents of the container.

Some seams are provided at least in part with a low level of adhesive force while the other seams

which are in the vicinity thereof have a substantial adhesive force in order to keep the container liquid-tight during transportation and prior to opening thereof.

These are various methods known of producing sealing seams with a low level of adhesive force. For instance the regions which are to have a low level of adhesive force could be coated with a special plastic material which has a higher sealing temperature than the remaining thermoplastic material. When then the sealing operation is carried out at lower temperature, the regions with a low adhesive force are in turn produced in the desired manner in the regions which have the special plastic material with a higher sealing temperature. There are also various configurations known with regard to the pouring spout formed by the sealing area with the low adhesive force characteristics.

Said sealing area could be formed by a pattern of raised surfaces which alternate with areas which are disposed therebeside and at a lower level.

There are many disadvantages using the existing type of gable-top shaped containers like the difficulty to open the container due to uncorrect positioning of the abhesive pads. Another disadvantage of the known containers is that the cardboard of the container creases which results in lowering the stiffness of the container.

Furthermore it is well known that the consumer wants a sealing seam which can be easily opened, at at least one location on the cover. Unfortunately, the existing containers still have a sealing seam which appears to be a problem to open for them. The existing cartons have to be opened by means of 2 consecutive actions (1) the wings of the top panel have to be moved outwards completely, breaking the top seal; and (2) upon pushing onto the ends of the wings the pour spout is formed. In particular the second movement is not easily understood and done by consumers.

Results of a non correct second movement are: need of tools, use fingers that become dirty, damage to the package, incorrect pouring spout giving spillage and uncontrolled dosage.

The present invention accomplishes that the second action for opening the cartons is eliminated and that only the first movement is required.

A solution to above-mentioned problem is provided by the present invention wherein the lowered part of the surface as described above comprises at the center a prefolded pouring spout.

The characteristic new feature is formed preferably by six layers, wherein said layers are formed by six adjacent areas (1, 2, 3, 4, 5, 6) extending from the container as depicted in figure 2b.

In a further embodiment said pouring spout is a pulling device, which upon complete opening forms a larger second shaped pouring spout. A further

embodiment is wherein said pulling device is composed of a carrier with a self adhesive layer. Said carrier can be made of any kind of material like paper, carton, cotton, plastic, metal, alufoil and the like.

Gable-top cartons have the top panels sealed together in a liquid-tight manner. The opposed side panels have the front and rear panels folded in and sealed in between them. Said second pouring spout is part of the outer area of the prefolded pouring spout or is sealed or glued to the outer area of the prefolded pouring spout i.e. the pour spout forming package panel. In closed carton position the second pouring spout is folded in between the gable panels. Upon folding the wings, the prefolded pouring spout becomes clearly visible. Whereas previously one had to push onto the ends of the unfolded wings, a simpler action now opens the pour spout. So the consumer will immediately understand how to open the container.

The pouring spout is positioned at a height allowing for carton opening with minimal pull strength. This position is normally as high as possible but depending from the roof angle.

The spout is smaller than a classical opening. This has the advantage that a refill operation is easier. When refilling it is best to pour from a small orifice into a large opening.

Because the spout is prefolded the tip of the opening is very sharp resulting in more controlled dosing when the product is used directly out of the pack. This is important as the products are getting more and more concentrated and therefore the recommended usage is smaller and need to be accurate.

As a variation thereof, if a large opening is wanted the spout can be used as a pulling device. With this the same opening is reached as with the normal laminate carton, but the second movement (pulling) is more obvious, easier to understand and more natural than the pushing. The advantage of the sharp opening remains.

The execution of this prefolded spout can be done with the same dimensions of board, requiring no extra material. The only requirements are additional score lines and folding.

By scoring the center of the side panel adjacent to the spout the formation of the large spout is obtained in a smooth way.

When only the small spout is used the pack is better reclosable than the normal execution. This is done by pushing the prefolded spout back to the center of the gable. When the wings are pulled back, the spout pops out due to material memory. The closing is better because the area where the gable seal is open is smaller compared to the normal execution.

As a variation the prefolded spout also helps to open the pack in the normal way. By pushing on the wings the large spout can easily be formed because the small spout is already oriented in the right way. Herewith the consumers who are used to the normal way of opening do not have to change their habit.

The spout is made by prefolding the board on the inside of the opening on the normal laminate carton to the front side. As shown on the top view of the attached drawing the key element is the area at the top of the laminate, where the spout is formed by 6 layers of board (Figure 5). The drawing also shows one of the possible solutions on how to fold the base of the spout.

Furthermore the basis of the spout can be formed in a large number of ways. The spout can be of any size and may even stick out of the closed laminate. The spout according to the invention can be executed on plastic refill packs such as the pouch. In another execution there could be two spouts on one package in order to have the maximum benefit and comfort to use the package.

The containers according to the present invention can be used for packaging all kinds of liquids which must be poured out without preferably spilling the contents of the container.

Liquids to be packaged are for instance milk, beverages, oil, fabric softeners, household cleaners, dishwashing products or the like.

Further advantages, features and possible uses of the present invention, will be apparent from the following description in conjunction with the drawings in which:

Fig. 1. is a perspective view of a container with a gable-shaped cover in the closed condition.

Fig. 2. shows the same container as shown in Fig. 1, but demonstrates the view for opening the pouring spout clearly showing the prefolded pouring spout (I).

Fig. 2a. is a front view of a container with the prefolded pouring spout.

Fig. 2b. is a top view of a container with a possible formation of the prefolded spout formed by six layers, said layers are formed by six adjacent areas (1, 2, 3, 4, 5, 6) extending from the container.

Fig. 3. shows the same container as in Fig 1 and/or 2 wherein clearly is demonstrated how to further open the container by pulling in the direction of the arrow as indicated.

Fig. 4. is a perspective top view onto the gable-shaped cover of the container after it has been completely opened.

Claims

1. A gable-top container comprising a container body, a bottom at a first end of the body, means for closing said container at a second end of the body, and means for sealing said closing means, said sealing means comprising areas of high adhesive force and low adhesive force, the areas of low adhesive force comprising two surfaces each having raised and lowered parts adjacent to and alternate with one another to form a pattern, said raised and lowered parts adhering to one another when the closing means is sealed characterized in that the lowered part of the surface comprises at the center a prefolded pouring spout. 5 10 15
2. A gable-top container according to claim 1 characterized in that the pouring spout is formed by six layers, wherein said layers are formed by six adjacent areas (1,2,3,4,5,6) extending from the container. 20
3. A gable-top container according to claim 2 characterized in that the pouring spout is a pulling device. 25
4. A gable-top container according to claim 3 wherein the pulling device upon complete opening forms a larger second-shaped pouring spout. 30

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Figures

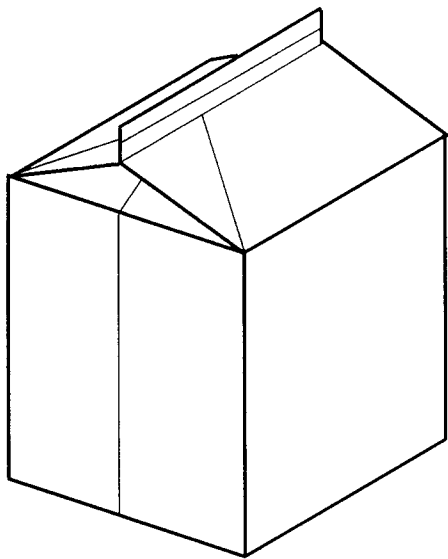


Fig. 1

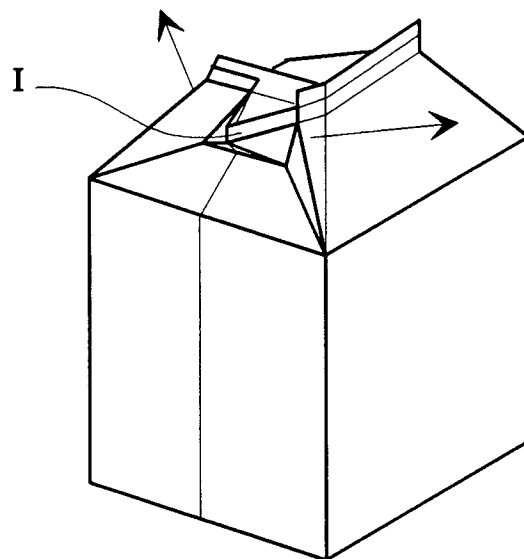


Fig. 2

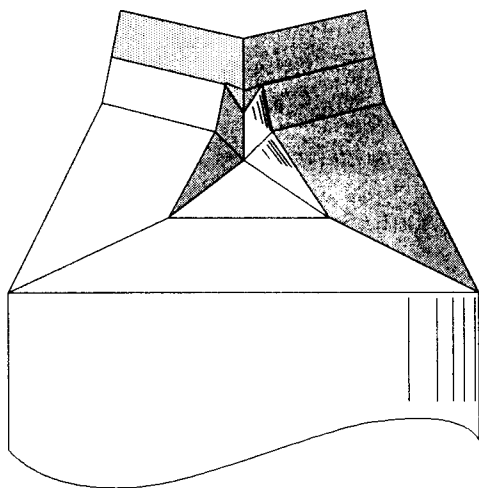


Fig. 2a)

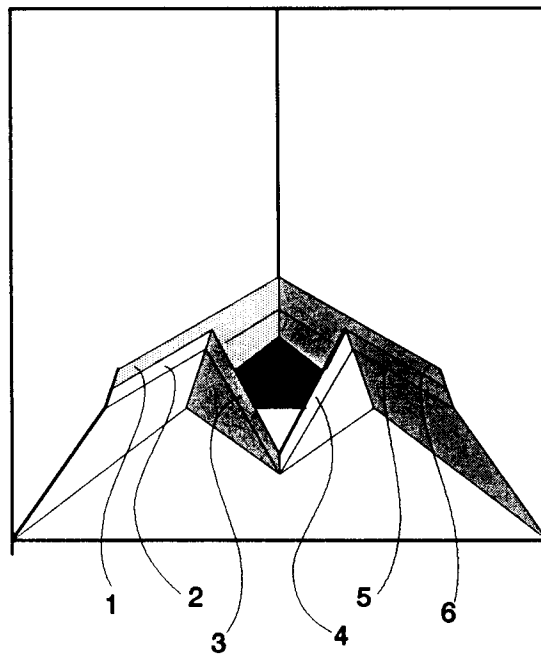


Fig. 2b)

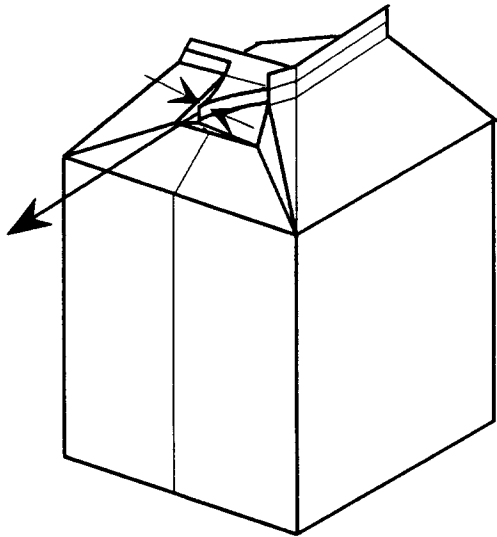


Fig. 3

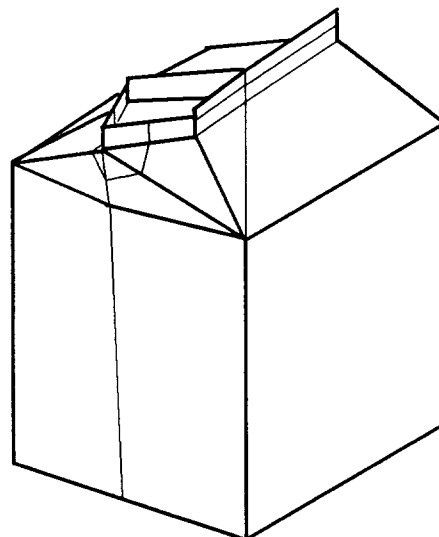


Fig. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 93 87 0240

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US-A-3 327 920 (HYNES) * column 2, line 43 - column 3, line 59; figures 1-4 *	1-4	B65D5/06
X	DE-A-39 42 061 (SCHERZ) * column 3, line 9 - line 42; figures 3,4 *	1-4	
X	NL-A-7 206 454 (CONICAL CONTAINERS CO.) * page 4, line 3 - page 5, line 9; figures 1-6 *	1-4	
X	FR-A-2 274 508 (SIK-HOO) * page 3, line 6 - page 4, line 7; figures 2-5 *	1,3,4	
X	US-A-2 321 139 (GRUGER) * figures 1-9 *	1-4	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B65D
Place of search THE HAGUE		Date of completion of the search 10 May 1994	Examiner Berrington, N
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			