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(54) Titre : FLAN POUR ENVELOPPE ET ENVELOPPE A DISPOSITIF DE FERMETURE ET D'OUVERTURE
(54) Title: BLANK FOR A CONTAINER, AND A CONTAINER HAVING A CLOSING AND OPENING SYSTEM

(57) Abrégé/Abstract:
A blank for a container and the container afford a structure wherein the adhesive closure for the container also forms a tear strip to allow easy opening of the envelope once it is sealed.
Abstract of the Disclosure

A blank for a container and the container afford a structure wherein the adhesive closure for the container also forms a tear strip to allow easy opening of the envelope once it is sealed.
Blank For A Container, and A Container having a Closing and Opening System

5 Background of the Invention

Field of the Invention

This invention relates to an improvement in a blank for making a container or envelope and in one aspect relates to an improved closing and opening system for containers such as envelopes.

Description of the Prior Art

The commercially available envelopes for mailing and for overnight delivery parcels have adhesive closure systems and many have tear strips for facile opening. One such opening system is illustrated in USA Letters Patent No. 4,781,296 for use on envelopes of tough non-woven thermoplastic fibers. Another easy open strip is shown in USA Letters Patent No. 4,778,059 showing a tear strip for use on a corrugated shipping carton. Similarly, USA Letters Patent No. 5,098,757, available from the assignee of this patent (application) illustrates a further structure for a tear strip for a corrugated package or carton. This later patent discloses a hot melt coated tear tape adhered to the outside surface of the inside liner along the desired line of opening and a hot melt coated tear guide tape, at least as wide as the tear tape, adhered to the inside surface of the outside liner. The two adhesives are separate and do not join one another but both serve to provide the desired even tear line.

USA Letters Patent No. 4,877,139 discloses a container having an opening-closing flap provided with a strip of adhesive disposed along a straight line on the inside surface of the flap for sealing the container, and a non-tearable guide strip disposed along the outside surface and a non-tearable elongate straight tear band attached to the inside surface of the flap along a perforated punch line to allow the opening with one edge of
the tear band aligned with an edge of the guide strip so that when the flap is sealed by the adhesive and the tear band is freed and pulled away from the container, the container is opened with a tear line which extends along the container flap in a straight line.

The present invention affords a single adhesive strip on the closing-opening flap to seal the container closed and to provide a facile tear strip to open the flap and container once it is sealed.

The present invention further has the advantage that the manufacturer of the container or envelope has only one tape or ribbon to inventory. Only one tape to guide and apply during manufacture of the envelopes. And, only one piece of tape applying equipment on the line.

Summary of the Invention

The present invention is directed to a blank and to a container, e.g. an envelope or box, made from a blank to provide an easy to close and easy to open container for articles. The closure and opening system uses a single strip of adhesive on a closure flap. The adhesive, a ribbon or strip, e.g. a tape, has good tensile strength and it may be reinforced with filaments extending lengthwise or longitudinal of the strip of adhesive, or comprise a polymeric backing having the necessary strength properties and coated on opposite sides with adhesive.

A blank for forming a container comprises a sheet of material such as linerboard, which is generic for many types of sheet stock used for making folders, envelopes, corrugated packaging, etc., which sheet is formed with a plurality of score lines forming front and back panels, connecting flaps, and a closure flap or flaps. The panels are generally of equal dimension joined by a score line to each other or by score lines to a connecting flap. The panels may have one or more tabs extending from other free edges and separated by a score line to fold and engage another flap or the other panel to form the container. One of the panels has cuts formed along the free edge to form a pull tab, and the other panel has a flap connected by
another score line for forming an opening and closing flap for the container. The flap has ends formed with cuts to define pull tabs, and the adhesive ribbon or strip extends along the flap between the pull tabs for sealing the flap to the other panel and for use to tear the flap free of the panel.

A container formed from the blank has panel means forming two opposing parts of the container, a plurality of tabs for closing the sides or for closing a side and the bottom edge of said container, and one of said panels has a closing and opening flap (sealing flap) along the top edge thereof adapted to fold over the outside surface of the other panel, or over a flap on the other panel, to close and seal the container. The sealing flap has an inside surface and an outside surface and ends adjacent the sides of the panel means, and a ribbon or strip of adhesive is disposed along the inside surface of the sealing flap and generally parallel with a second edge of the panel means to seal the sealing flap to the other panel of the panel means and form a closure with the opposite panel. The adhesive has sufficient bond strength to the sealing flap and to the other panel to tear the flap and at least a portion of the other panel to afford easy opening of the flap and access to the inside surfaces of the container when an end of the strip is pulled in a direction back upon itself.

These and other novel features of the invention will be more fully described hereinbelow.

**Brief Description of the Drawings**

The present invention will be described with reference to the accompanying drawing wherein:

Figure 1 is a plan view of a blank for forming a container according to the invention;

Figure 2 is a plan view of a second blank for forming a container according to the present invention;

Figure 3 is fragmentary detail sectional view of the blank of Figure 1 taken along the line 3-3 on Figure
Figure 4 is an elevational view of an envelope formed according to the present invention from the blank of Figure 1;

Figure 5 is fragmentary detail sectional view of the blank of Figure 2 taken along the line 5-5 on Figure 2;

Figure 6 is an elevational view of an envelope formed according to the present invention from the blank of Figure 2;

Figure 7 is an elevational view of an envelope formed from the blank of Figure 1 with the flap in closed position;

Figure 8 is a detail sectional view taken along line 8-8 of Figure 7; and

Figure 9 is a fragmentary detail view, partially in section of a further embodiment of a container according to the present invention formed by closing the sealing flap onto another flap on the second edge of the opposite panel to form a box like container.

Description of the Preferred Embodiments

The present invention provides an improved container, e.g. an envelope for delivery of an article such as used for overnight carton mailers, corrugated box mailers, CD mailers, computer disk mailers, photograph mailers, book mailers and other prepared envelopes for use in mailing documents without folding the contents, or small packages for such articles as food items, e.g. bacon, luncheon meats, cheese, or paper items, e.g. stationary, paper, labels, and other articles commonly packaged.

The blank 10 illustrated in Figure 1 is a blank to form an envelope. The blank 10 comprises a sheet of linerboard, fiberboard clay coated white, having a score line 11 dividing the sheet into a pair of panels 13 and 14 along a first edge, the inside surfaces of the panels are exposed, and they are of generally equal dimension. The panels 13 and 14 are of generally equal dimension, even if
one panel 13 has a riser or narrow strip 12 extending beyond the second edge of the panel 14, see Figure 4. The strip 12 affords ease in opening the envelope for the insertion of an article, e.g. for the mechanical insertion of material into the envelope. The side edges of the panel 13, as illustrated, have tabs 16 joined thereto by score lines 17. The tabs 16 are adapted to fold over the sides of the panel 14 when it is folded along the score line 11 to form the sides of the envelope, as seen in Figure 4.

Beyond the strip 12, the panel 13 has a score line 18 joining a sealing flap 20 to the top or second edge of the panel 13. The flap 20 has ends which terminate adjacent to the side edges of the panel 13 and the flap ends are cut to form a cut line extending from the ends into the flap 20 and the ends are formed by cut lines defining tabs 21, 22 having a arrow shaped end or a rounded end, to characterize a tab. Positioned along the free edge of the sealing flap 20 and between the tabs 21 and 22, is adhered an oriented ribbon or strip of adhesive 25, preferably a strip of pressure sensitive adhesive. The adhesive is reinforced to have good tensile strength. Discussion of the adhesive will follow. In the illustrated embodiment the adhesive 25 is continuous and extends generally the length of the sealing flap 20 and parallel to the edge of the sealing flap 20. Positioned over the strip of adhesive is a removable liner 27, positioned to protect the exposed side of the adhesive strip 25 until it is desired to seal the flap 20 to the outside surface of the panel 14. The liner 27 is then removed and the sealing flap 20 is folded to position the adhesive 25 along the edge of the panel 14. It is to be noted that the top edge or second edge of the panel 14 is also formed with cut lines to form tab shaped ends 28 and 29 at the sides. These tabs 28 and 29 register with the tabs 21 and 22 respectively, when the flap is folded over the top edge of the panel 14 and the adhesive 25 is secured along the second edge of the panel 14, see Figures 7 and 8.
In the manufacture of the blanks, the adhesive can be applied to the liner board or to a cut blank. Thus, the adhesive is applied either continuously on the sheet or intermittently on the blanks using industry standard pressure wheels and cutters, or vacuum wheel applying equipment.

To afford facile opening of the envelope, see Figure 7, a tab 21 or 22, together with the respective tab 28 or 29, are peeled back upon themselves tearing the flap and second edge of the panel 14 free from the envelope to break the seal and permit the remaining portion of the flap 20 to be moved to allow access to the contents of the envelope.

The adhesive 25 is preferrably a pressure sensitive adhesive. The pressure sensitive adhesive can be a hotmelt, water based or solvent based adhesive. The adhesive 25 illustrated has a plurality of fibers 26 of a strong material such as polyester, Nylon, fiberglass, Rayon, or other continuous filament, embedded in the layer of adhesive. The fibers extend the length of the strip of adhesive. Alternatively, the adhesive 25 is a double coated tape, having a strong backing material, such as oriented polyester, with a layer of the adhesive coated and adhered to each side. The internal bond strength of the adhesive, and the bond of the adhesive to the surfaces of the linerboard exceed the strength of the bond of the fibers forming the linerboard. This permits the adhesive strip 25 to form a firm bond to close the flap and when the tabs 22 and 29, for example, are pulled and peeled back upon the envelope the adhesive bond with the flap 20 in the area of tab 22 has sufficient strength to tear the edge of panel 14 with tab 29 to open the envelope. The adhesive with the longitudinal fibers has a lower shear strength to permit the adhesive to tear lengthwise along the sealing flap 20. This permits the adhesive to tear lengthwise, as is done to afford the tearing of the central portion of the flap and adhesive which closure system is the subject of
the next embodiment of the invention.

Referring now to Figure 2, a blank 30 is illustrated wherein the peeling of the tab tears a portion of the sealing flap 40 along its length through the middle of the flap to open the envelope, but a portion of the sealing flap 40, the adhesive 45 and a portion of the other panel remain sealed.

The blank 30 comprises a sheet of linerboard having a score line 31 dividing the sheet into a pair of panels 33 and 34, along a first edge, of generally equal dimension. One of the panels could be provided with a window, not shown, covered or not with clear film, to display the contents inside, or an address area on the contents. The panels 33 and 34 are of generally equal dimension, even if one panel 33 has a riser or narrow strip 32 extending beyond the second edge of the panel 34. This narrow strip 32 affords ease in opening the envelope for the insertion of an article. The side edges of the panel 33, as illustrated, have tabs 36 joined thereto by score lines 37. The tabs 36 are adapted to fold over the sides of the panel 34 when it is folded along the score line 31 to be bonded to the front or outside surface of panel 34 in the usual manner to form the envelope.

Beyond the strip 32, the panel 33 has a score line 38 joining the sealing flap 40 to the top edge of the panel 33. The flap 40 has ends which terminate adjacent to the edges of the panel 33 and the ends are cut to form a cut line extending from the ends into the flap 40 and the ends are formed by cut lines with tabs 41, 42 having an arrow shaped end or a rounded end, to characterize a pull tab. Positioned along and adhered adjacent to the free edge of the flap 40 and between the tabs 41 and 42, is a ribbon or strip of adhesive 45, preferably a strip of pressure sensitive adhesive as discussed above. Positioned over the adhesive 45 is a removable release liner 47, positioned to protect the exposed side of the adhesive 45 until it is desired to seal the flap 40 to the outside
surface of the panel 34. The liner 47 is easily removed and the flap 40 is folded to position the adhesive 25 along the edge of the panel 34. It is to be noted that the top edge or free edge of the panel 34 is also formed with cut lines to form tab shaped ends 48 and 49 at the sides. These tabs 48 and 49 register with the tabs 41 and 42 respectively, when the flap is folded over the top edge of the panel 34 and the adhesive 45 is secured along the edge of the panel 34.

Opening this envelope requires simply grasping a tab 41 or 42 and the corresponding tab 48 or 49 and tearing the tab along the cut lines 50 and 51 to tear the center portion of the flap 40 and the corresponding portion of the adhesive from the envelope. Figures 5 and 6 illustrate that the fibers and adhesive separate the flap 40 from the edge of the panel 34 but when peeled away, the adhesive will tear lengthwise and a portion of the flap is removed and the edge of the flap 40 remains sealed to the panel 34.

Figures 3 and 4 illustrate the completed envelope formed from the blank of Figure 1. Figures 5 and 6 illustrate the finished envelope formed from the blank of Figure 2. Figure 7 illustrates the envelope of Figure 4 closed to provide a container for documents, with the liner 27 removed and the adhesive 25 adhering the flap 20 to the panel 14. The adhesive thus forms a firm closure. The envelope is opened by grasping the tabs 22 and 29 or the tabs 21 and 28 to tear the portion of the flap 20 and the panel 14 to permit opening of the container.

Figure 8 provides a cross-section of the sealed closure to illustrate the position of the adhesive 25, the flap 20 and the panels 13 and 14.

Figure 9 illustrates how a sealing flap 60 with an adhesive 61 can form a similar closure for a container with panels 64 and 65 spaced apart, with each panel having a flap to be joined by the adhesive, see flap 66 on panel 65. The flaps 60 and 66 have ends formed similar to the
ends of the flaps 20 and 40, and the sides of panel 14 and 34, to form tabs to facilitate the opening of the container at the flaps 60, 66. Such a container can be used as discussed above for packaging articles such as food items, paper items, etc.

Having described the invention with reference to accompanying illustrations of the invention, it is contemplated that other engineering changes can be made without departing from the spirit or scope of the invention as set forth in the appended claims.
Claims

1. A blank for forming a container for an article comprising sheet means having a plurality of score lines forming a front (14) and a rear panel (13) each having an inside and an outside surface, one of said panels having tabs (16) joined thereto and separated by a score line (17) to fold and engage the other panel to form sides of the container having a first closed edge, and a flap (20) connected by a score line (18) to a second edge of the rear panel (13), said flap (20) forming an opening and closing flap for the container, characterized by the feature that said front panel (14, 34, 65) has cuts formed therein at least adjacent one side and adjacent a second edge to form a pull tab (28, 48), and that said opening and closing flap (20, 40, 60) has ends formed with cuts to define pull tabs (21, 22, 41, 42), and that a strip of reinforced adhesive (25, 45, 61) is adhered to and extends along the flap (20, 40, 60) between the pull tabs (21, 22, 41, 42) for engaging said front panel (14, 34, 65) adjacent said second edge for sealing the flap (20, 40, 60) to said front panel (14, 34, 65) adjacent to said second edge thereof and for use to tear the flap free of said front panel (14, 34, 65).

2. A blank according to Claim 1, characterized in that said flap (60) is joined to a second flap (66) formed on the second edge of the front panel (65) for spacing the panels.

3. A blank according to Claim 1 or 2 characterized in that said strip of adhesive (25, 45, 61) has sufficient bond strength to the flap and to said front panel to afford easy opening of the flap and access to the inside surfaces of the panels when an end of the flap (20, 40, 60) and the adhesive (25, 45, 61) is pulled in a direction back upon itself.

4. A blank formed into a container according to Claim 1 or 2 characterized in that said adhesive (25, 45) has a removable liner (27, 47) covering the adhesive and extending beyond the edges thereof.

5. A blank according to Claim 1, 2 or 3 characterized in that said sheet means is a single sheet of fiberboard.

6. A blank according to Claim 1, 3 or 4 characterized in that said adhesive (25, 45, 61) is reinforced by a continuous strip to permit easy continuous tearing of the flap.
7. A container formed of the blank according to Claim 1, 2 or 3 characterized in that said tabs (16, 36) are joined by score lines to said rear panel (13, 33) and are folded over the sides of the front panel (14, 34) to form the sides of the container.

8. A container formed of a blank according to Claim 1 or 7 characterized in that said strip of adhesive (25, 45) adhered to the flap (20, 40) is positioned on said flap (20, 40) to engage the outside surface of the front panel (14, 34) adjacent to the second edge between the pull tabs (28, 29, 48, 49) formed thereon by said cuts in said front panel (14, 34) to seal the container and to permit easy opening by grasping the pull tabs (21, 22, 41, 42) and the corresponding pull tabs (28, 29, 48, 49) to tear the panel and flap when the pull tabs and adhesive are pulled back upon the adhesive.

9. A blank according to Claim 5, characterized in that said fiberboard is clay coated white linerboard.

10. A blank according to Claim 3, 4 or 6 wherein said adhesive is a pressure sensitive hot melt adhesive.