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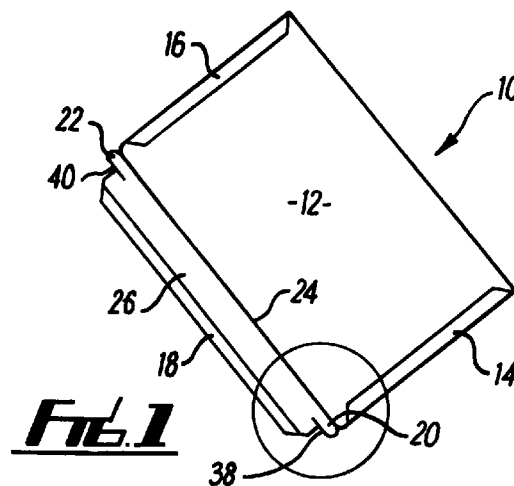
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(54) **Combination envelope sealing and tear tape and method of making same**

(57) A mailing envelope or carton having a closure flap (18) disposed adjacent the opening of said envelope wherein a combination sealing and opening tape (26) is disposed on the closure flap (18). Said sealing and opening tape (26) comprises a mono-oriented film having a layer of pressure-sensitive adhesive on each side thereof and a release liner covering the outer layer.



EP 0 755 868 A1

Description

The present invention relates to shipping containers in the nature of envelopes and cartons. More specifically, it relates to mailing envelopes and cartons which are provided with a single means for sealing and opening said envelopes and cartons.

Mailing envelopes and shipping cartons made of paper and paper products such as cardboard are well known in the art. Recently, such envelopes and containers have found widespread use in the overnight, private company delivery business. In such cases, the envelopes and cartons employed are provided with sealing means such as an adhesive-coated tape and a tear strip or tear tape for opening the envelope or carton after it has been sealed. In the know prior art, said tear tapes or strips are separate from the sealing means, i.e. the sealing means is one component and the tear strip or tape is a separate component. In view of this construction, the method of making the envelope or carton is time consuming and costly as application operations for the adhesive as well as the tear tape or strip must be made.

It is, therefore, an object of the present invention to provide a shipping envelope or carton with a single component sealing and opening means.

It is a further object of the present invention to provide a method of making a shipping envelope or carton having combined sealing and opening means.

It is another object of the present invention to provide a shipping or mailing envelope or carton which has a closure flap which carries a combined sealing and opening means.

According to a first aspect of the present invention there is provided a mailing envelope or carton having a closure flap disposed adjacent the opening thereof, characterised in that the mailing envelope or carton comprises combination sealing and opening means disposed on the inner surface of said flap, said sealing and opening means including a mono-oriented plastic film disposed along the length of said flap and having notches disposed in at least one end thereof, a coating of a pressure-sensitive adhesive on each surface of said film, and a release liner disposed on the outer coating of said pressure-sensitive adhesive.

Thus the present invention is directed to a shipping or mailing envelope or carton which has a closure flap which carries a sealing and opening component comprising a double-coated, pressure-sensitive adhesive tape based on mono-oriented plastic film and the like which has been notched at its extremities so as to provide very straight and easy tears.

According to a second aspect of the present invention there is provided a method of making a combination sealing and opening means for a mailing envelope or carton having a closure flap disposed adjacent the opening of said envelope or carton, said method comprising the steps of

applying a layer of pressure-sensitive adhesive to each side of a mono-oriented plastic film to form an adhesive tape,
applying a release liner to one of said adhesive layers,
affixing said adhesive tape to the inside surface of said closure flap adjacent the opening of said envelope or carton; and
notching at least one end of said tape.

Preferably said mono-oriented film is a uniaxially-oriented polypropylene film.

The pressure-sensitive adhesive is preferably an acrylic pressure-sensitive adhesive or a rubber-based pressure-sensitive adhesive.

Figure 1 is a perspective view of an envelope formed in accordance with the present invention.

Figure 2 is an enlarged view of the area 2-2 of Figure 1; and

Figure 3 is an enlarged cross-sectional view of the closure and opening tape of the present invention.

The envelope of the present invention is shown at 10 in Figure 1. As illustrated, the envelope 10 is comprised of a front panel (not shown) and a rear panel 12. The front panel is provided with overlapping flaps 14 and 16 which are glued to the rear panel 12 so as to form a pocket. A third flap 18 is disposed adjacent the top edge of the front panel and is employed to seal off the envelope 10.

With reference to figures 2 and 3, it will be noted that the flap 18 is provided with tabs 20 and 22 disposed on each side of said flap 18 adjacent a fold line 24. In addition, a pressure-sensitive adhesive closure and opening tape 26 is disposed on the inner surface of the flap 18 adjacent to the fold line 24. Said tape 26 has a length sufficient to cover the length of the flap 18, including said tabs 20 and 22, and width of sufficient amount to cover the majority of the inner surface of the flap 18 so as to present a strong bonding area for bonding said flap 18 to the rear panel 12 of the envelope.

As best seen in Figure 3, the closure and opening tape 26 is comprised of a plurality of layers and may be generally described as a double-coated mono-oriented film with a 2-side silicon-coated release liner. The mono-oriented film is shown at 28 and may be any uniaxially-oriented plastic film that will provide strength in the machine direction, i.e. along the longitudinal axis of the film. In the typical application, said film will have a gage thickness of from about 1.0 mil to about 10 mil, preferably from about 1.5 mil to about 4.0 mil. Such film exhibits strengths of from about 50 lbs./in. to about 500 lbs./in.; preferably such films should exhibit strengths of from about 90 lbs./in. to about 250 lbs./in. Films of these strength characteristics prevent premature breakage and allow straight tears in the machine direction after they have been notched. Examples of suitable films are polypropylene, polyester, polyethylene, etc., i.e. any

uniaxially-oriented plastic film.

As also shown in Figure 3, the film 28 is coated on each side thereof with an adhesive 30 and 32. Said adhesive may be any rubber-based or acrylic pressure-sensitive adhesive. Suitable adhesives are well known in the art and are available from suppliers such as National Starch & Chemical Co., Monsanto Co., etc..

The final layer of the closure and opening tape 26 is the 2-side silicon-coated release liner 34 which is applied to the outer adhesive layer 32. As is known in the art, said liner is removed just prior to closure of the flap 18 so that the adhesive layer 32 may bond the flap 18 to the rear panel 12.

The method of producing the envelope constituting the present invention is simple and straightforward. The sealing and opening tape 26 is prepared by standard coating methods and permanently affixed to the flap 18 via the adhesive 30. Once the tape 26 is affixed to the flap 18, the tape 26 is nicked or notched at 38 and 40 adjacent the tabs 20 and 22 at each end thereof. This permits the tape 26 to split along the nick or notch and run the width of the envelope thereby opening the envelope with a scissor-like action with an extremely clean tear. The strength in the machine direction of the tape 26 allows it to tear the envelope open without stretching or breaking. Further, the weakness of the tape 26 in the cross-machine direction aids it in tearing in the machine direction from the nick or notch 38 or 40.

Having thus described the invention, it should be understood that the specific form of the invention herein illustrated and described is intended to be representative only as certain changes may be made therein without parting from the teaching of the disclosure.

Claims

1. In a mailing envelope or carton having a closure flap disposed adjacent the opening thereof, the improvement which comprises

combination sealing and opening means disposed on the inner surface of said flap, said sealing and opening means including a mono-oriented plastic film disposed along the length of said flap and having notches disposed in at least one end thereof, a coating of a pressure-sensitive adhesive on each surface of said film, and a release liner disposed on the outer coating of said pressure-sensitive adhesive.

2. The mailing envelope or carton of claim 1 wherein said plastic film is a uniaxially-oriented polypropylene film.

3. The mailing envelope or carton of claim 2 wherein said pressure-sensitive adhesive is an acrylic pressure-sensitive adhesive.

4. The mailing envelope or carton of claim 2 wherein said pressure-sensitive adhesive is a rubber-based pressure-sensitive adhesive.

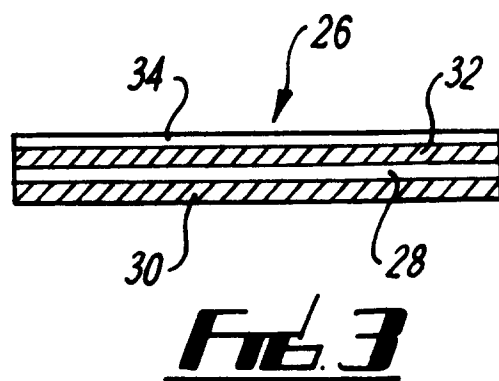
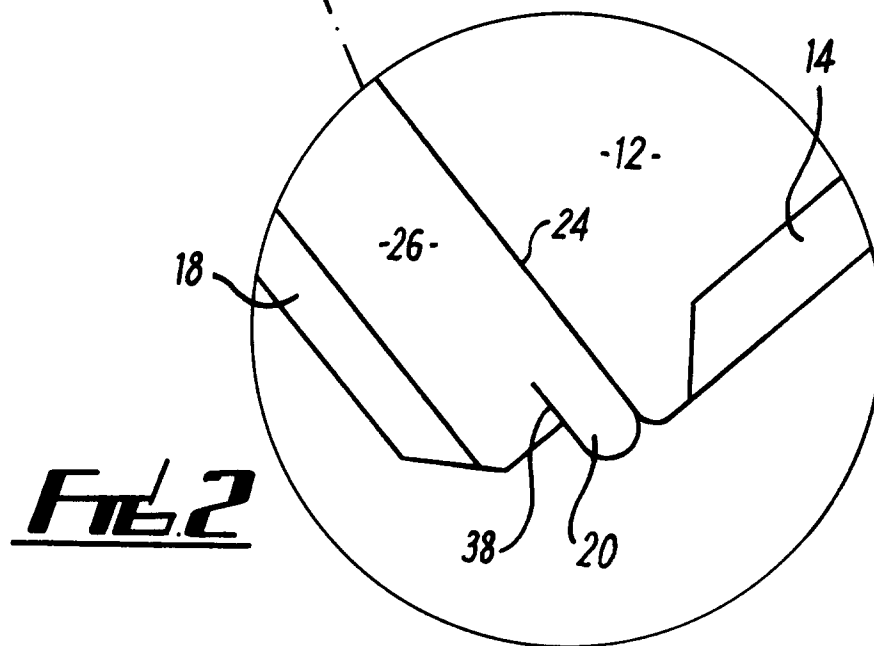
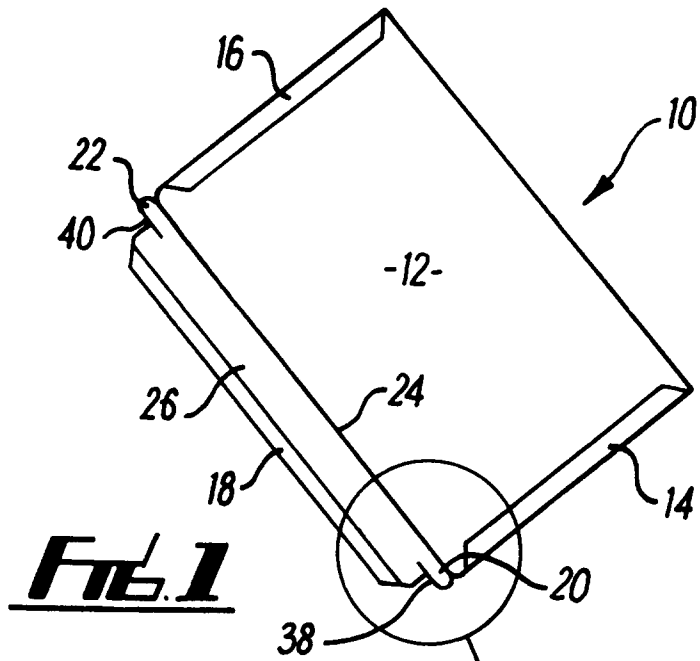
5. A method of making a combination sealing and opening means for a mailing envelope or carton having a closure flap disposed adjacent the opening of said envelope or carton, said method comprising

applying a layer of pressure-sensitive adhesive to each side of a mono-oriented plastic film to form an adhesive tape,
applying a release liner to one of said adhesive layers,
affixing said adhesive tape to the inside surface of said closure flap adjacent the opening of said envelope or carton; and
notching at least one end of said tape.

6. The method of claim 5 wherein said mono-oriented film is a uniaxially-oriented polypropylene film.

7. The method of claim 6 wherein said pressure-sensitive adhesive is an acrylic pressure-sensitive adhesive.

8. The method of claim 6 wherein said pressure-sensitive adhesive is a rubber-based pressure-sensitive adhesive.





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EUROPEAN SEARCH REPORT

Application Number
EP 96 30 4996

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)
Y	EP-A-0 447 209 (MINNESOTA MINING & MFG) 18 September 1991 * column 4, line 34 - line 55; figures 1,2 *	1-8	B65D27/38
Y	US-A-3 980 224 (YASUDA JYUNICHI) 14 September 1976 * column 2, line 20 - line 53; figures *	1-8	
A	US-A-4 781 296 (MORRIS WAYNE K ET AL) 1 November 1988 * column 2, line 52 - column 3, line 50; figures 1,2 *	1-8	
A	US-A-3 777 884 (HEDIN M) 11 December 1973 * column 2, line 52 - column 3, line 58; figures *	1-8	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.6) B65D
Place of search BERLIN		Date of completion of the search 10 October 1996	Examiner Olsson, B
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			

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