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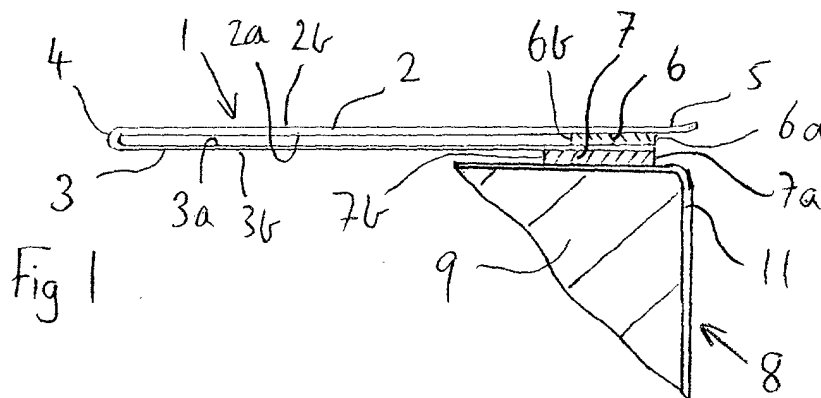
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(54) **Closure member for reclosable package**

(57) A closure for reclosing a package comprising a substrate comprising first (2) and second (3) superposed plies joined along a superposed edge (4) and having first faces (2a, 3a) facing one another and second faces (2b, 3b) facing outwardly, the first ply (2) having an edge portion (5) along an edge (6a) remote from the edge (4). On its first face (2a) adjacent the second ply (3), the first ply (2) has adhesive (6) between the edge (6a) and a line (6b) spaced therefrom but no adhesive between the edge (4) and the line (6b). The second ply has adhesive (7) on its second face (3b) remote from the first ply, between an edge (7a) remote from the edge (4) and a line (7b) spaced therefrom. When opened out flat (Figure 3) there is no exposed adhesive

on the first surface (2a) of the first ply (2) between the line (6b) and the line (7b) of the second ply. There is preferably no adhesive on the edge portion (5) of the first ply. The adhesive (7) between edge (7a) and line (7b) can attach the second ply to a package envelope (11).

After opening of the package at an opening near the edge (7a) of the second ply, the closure can be extended by peeling the first ply (2) from the second ply (3) and rolling the second ply (3) to form a fold line adjacent the line (7b) at the edge of the adhesive (7), to allow the tab (5) to be extended from the edge (7a) of the first ply and to be adhesively attached to a surface of a package envelope (11) on the other side of the package opening (11a) remote from the edge (7a) of the closure.



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Description

[0001] The present invention relates to a package which can be opened and then reclosed so as to preserve the contents substantially isolated from the ambient surroundings of the pack. One particular application for the present invention is in the reclosable packaging of foodstuffs.

[0002] There are known packages which can be reclosed, for example a gusseted type of bag which can stand upright and has ribs on each of the two superposed inner faces, allowing the ribs to be pressed together to interdigitate between the two adjacent faces to provide a means for holding the faces together.

[0003] Another known form of reclosable package includes a flap which is held down initially by means of a contact adhesive with a low peel strength, allowing the pack to be opened by raising of that flap and then reclosed by again pressing the flap into the closed position and relying on the pressure-sensitive adhesive to hold the flap closed. Such an arrangement is often used for paper tissues for use as handkerchiefs.

[0004] Another possibility for a reclosable pack uses shape-retaining tabs which can be folded over in order to hold the pack in a closed configuration, for example on a coffee pack which can be initially hermetically sealed and then, after opening by separating two adhesively held faces, the same faces can be pressed together again and the multi-ply closed portion of the pack folded over and held in the folded over configuration by means of the shape-retaining tabs.

[0005] We now propose to provide a closure which can be applied to the exterior of a hermetically sealed package and can serve as a lid or cover for reclosing an opening made when the pack is opened for partial removal or consumption of the contents. This is particularly suited for a package for foodstuffs.

[0006] According to a first aspect of the present invention there is provided a closure for reclosing a package, comprising first and second superposed plies each having opposite first edges and second edges and being joined at or near said first edges at to define an edge of the closure;

wherein the first ply has on its face adjacent the second ply adhesive between its said second edge and a line spaced therefrom, but no adhesive between the edge of the closure and said line, and has along its second edge an edge portion without adhesive; and

wherein the second ply has, on its face remote from the first ply, adhesive between its said second edge remote from said first edge and a line spaced therefrom but no adhesive on its face adjacent the first ply.

[0007] A second aspect of the invention provides a package comprising a bag, pouch or wrapping around a product with a predefined mode of opening to leave an opening in the bag, pouch or wrapping, and including a closure according to the first aspect mounted on the bag, pouch or wrapping to one side of the opening to be

achieved by said predefined mode of opening, by bringing into contact with the bag, pouch or wrapping the adhesive applied to said second ply wherein the length of said closure between the line and said edge, when the first and second plies are pulled into a substantially planar configuration, is greater than the width of said opening to be closed by the closure.

[0008] A third aspect of the invention provides a method of opening and reclosing a package according to the second aspect, comprising:-

rupturing said bag, pouch or wrapping in the predefined mode of opening to provide an opening in the bag, pouch or wrapping of the package;

removing at least part of the product from within the package;

detaching the first ply from the second ply at a region remote from the edge of the closure by peeling the adhesive applied to said first ply;

extending the assembly of the first and second plies by withdrawing said second ply from adjacent the bag, pouch or wrapping of the package; and then wrapping the first and second plies around the package to cover the opening and attaching the first ply to the bag, pouch or wrapping of the package to the side of the opening remote from that where the second ply is still attached to the bag, pouch or wrapping by means of said adhesive so as to cover the opening with said first and second plies.

[0009] Preferably the peel strength of the adhesive which holds the first and second plies together before use of the closure is lower than the strength of the adhesive which holds the second ply in contact with the exterior of the package, thereby guarding against total removal of the closure from the package when attempting to separate the first and second plies for use of the closure.

[0010] In order that the present invention may more readily be understood the following description is given, merely by way of example, with reference to the accompanying drawings in which:-

Figure 1 is a side elevational view of the corner of a closed package showing an embodiment of a closure in accordance with the present invention mounted on the exterior of the package;

Figure 2 is a plan view of the closure of Figure 1, but with the package omitted for purposes of clarity;

Figure 3 is a view corresponding to Figure 1 but showing the closure device when extended for application to close the opening formed as a result of opening of the package;

Figure 4 is a transverse-sectional view of an alternative version of the closure, taken on the line IV-IV of Figure 5;

Figure 5 is a plan view, corresponding to Figure 2, but showing the closure of Figure 4; and

Figure 6 is a transverse sectional view, again on the line IV-IV of Figure 5, but showing the closure of Figure 4 when in the same configuration as is illustrated in Figure 3.

[0011] Referring now to the drawings, Figure 1 shows a closure member 1 in the form of a label comprising a first ply 2 superposed over a second ply 3 and joined thereto at an edge 4. In this embodiment plies 2 and 3 are parts of a single sheet of plastic film material folded over at edge 4.

[0012] The first ply 2 is extended at a flap 5, and alongside the flap 5 is an application of pressure-sensitive adhesive 6 extending between one edge 6a which in this case is in register with the right-hand edge of a main portion of the first ply 2, and a second edge 6b which is spaced from the edge 6a in a direction towards, but stopping far short of, the opposite edge 4 of the first ply 2. This pressure-sensitive adhesive 6 between the edge lines 6a and 6b, which need not occupy the entire area therebetween is intended to hold the undersurface 2a of the first ply 2 in contact with the upper surface 3a of the second ply 3 both before and after the first application of the closure 1 to a package 8, in this case near one corner of the package. The intention is that the pressure-sensitive adhesive on the undersurface 2a of the first ply 2 allows peeling of the first ply from the second ply when the closure is to be operated for reclosing the package, as will be described below.

[0013] A further application of pressure-sensitive adhesive 7 is evident on the underside 3b of the second ply 3 between a first edge 7a, in this case in register with the edge 6a of the first-mentioned pressure-sensitive adhesive 6, and a further edge 7b spaced therefrom in a direction towards, but far short of, the fold line joining the remote ends of the first and second plies 2 and 3 at edge 4. In Figure 1 the edge lines 7a and 7b are wider apart than the edge lines 6a and 6b of the first application of adhesive on the underside 2a of the first ply, but this relationship can be reversed, or the adhesive applications 6 and 7 can have the same width. The adhesive 7 does not need to occupy the entire area between the edge 7a and the line 7b.

[0014] The package 8 includes a product 9 which has a plastic envelope 11 in the form of a bag, pouch or wrapping shrunk thereover so as to provide a taut covering to the package.

[0015] Figure 2 is a plan view of the closure of Figure 1 but in this case the package 8 has been omitted in order to allow the configuration of the closure to be more readily visible.

[0016] When the package 8 is to be opened in order to allow consumption or at least removal of part of the product 9 enclosed within the envelope 11 a strip of the envelope 11 is removed, or the envelope is opened in any other manner, so as to leave an opening 11a exposing part of the product 9 within the package 8. Once part of the product 9 has been removed it is desirable to be

able to reclose the pack, and at least when this product 9 is a foodstuff the reclosing should be capable of substantially isolating the product 9 from the ambient surroundings of the pack.

[0017] For the purposes of reclosing the pack, the underside 2a of the first ply 2 of the closure 1 is peeled from the upper side 3a of the second ply 3 at the first pressure-sensitive adhesive 6 between the edge lines 6a and 6b, starting from edge line 6a and peeling towards the edge line 6b. This is assisted by the user being able to grasp the tab 5 which is preferably free of adhesive on both sides. When the first ply has been thus peeled away, the tab 5 can be pulled rightwardly as viewed in the drawings until the second ply 3 has been mainly pulled off the surface of the envelope 11 forming the upper surface of the pack 8, and the fold line has travelled as far as the edge line 7b of the application of adhesive 7 holding the closure 1 on the pack 8, as viewed in Figure 3. At this point there is a generous flap, comprising all of the first ply 2 and the majority of the second ply 3, able to be wrapped around the corner of the pack 8 and down the vertical edge of the pack so as to cover the opening 11a in the envelope 11 and to allow closing by application of the pressure-sensitive adhesive 6 between the edge lines 6a and 6b near the flap 5 of the first ply 2 to another part of the exterior of the envelope 11 on the side of the mouth 11a remote from that side where the adhesive 7 between edge lines 7a and 7b holds the closure 1 attached to the pack 8.

[0018] If desired, there may be an additional application of adhesive on the underside 3b of the second ply 3, for example adjacent the edge line 4 as shown at 15 in Figures 4 to 6, in order to hold the second ply down in contact with the package but to allow peeling of the second ply 3 away from the package 8 when reclosing is required.

[0019] Advantageously the film material of the first and second plies 2 and 3 is transparent so as to allow printing on the envelope 11 of the package to be visible through the closure device and then serve as a transparent label for the package 8. In particular, materials which could be used for the closure include polyethylene, polypropylene, polyester, and even plastified paper.

[0020] It is important that there be no adhesive other than the adhesive 6 on the inwardly facing surfaces 2a, 3a of the first and second plies 2 and 3 in the Figure 1 configuration so that, when those inwardly facing surfaces 2a, 3a are brought round into contact with the exterior of the envelope 11 in the closed configuration, the undersurface of the planar film comprising the first ply 2 and the majority of the second ply 3 in Figure 3, in contact with the product 9, does not bring any adhesive into contact with the food product 9. Furthermore, because that undersurface has been formed by the two contiguous facing surfaces 2a, 3a of the closure in the Figure 1 configuration it will not have been possible for any potential purchasers of the package to finger the

surfaces which will eventually contact the foodstuff product 9 because these surfaces will have been in contact with one another and hence not accessible for handling by a potential purchaser. While the present invention does not aim to provide complete sterility of the surface which will eventually contact the foodstuff product 9 in the closed configuration, it does maintain that surface substantially free of any major pollution before use of the closure 1 to reclose the package.

[0021] The embodiment shown in Figures 1 to 3 is merely one example of the closure in accordance with the present invention and the closure may indeed be made by other means. For example, as shown in Figure 4, an alternative embodiment may have the first and second plies 2 and 3 formed in separate sheets of plastic film. Instead of being joined at a fold line 4 the plies 2 and 3 are welded along a region 14 in Figure 4 to permit the two plies 2 and 3 to be opened out when the device is to be used for reclosing the package, in the manner described with reference to Figures 1 to 3.

[0022] The detailed differences between the embodiment of Figures 1 to 3 and that of Figures 4 to 6 comprise mainly (i) the fact that there are two separate first and second plies rather than a single folded sheet, and additionally (ii) there is a further application of pressure-sensitive adhesive 15 under the adhesively bonded region 14 joining the two plies 2 and 3 together, and furthermore (iii) a release sheet 16 covers both the high peel strength adhesive remote from the bonded region 14 and also the lower peel strength adhesive 15 at the bonded region 14.

[0023] In order to allow unfolding of the first ply 2 for extension of the closure 1 for use, there is a plurality of stamped regions 17 (in this case three such regions) at the edge of the bonded region 14. Each of these stamped zones is of a C-shape with intumed ends and this arranges that when the first ply 2 is pulled to the right far enough to bring the two plies 2 and 3 substantially parallel to one another as shown in Figure 6 the tension in the first ply 2 is absorbed at these stamped regions and does not exert a peeling action on the bonded region 14 tending to separate the plies 2 and 3.

[0024] The device of Figures 4 to 6 is initially supplied in the Figure 4 configuration with the release sheet 16 attached, and then the release sheet 16 is detached in order to allow the two strips of adhesive 6, 15 under the second ply 3 to be applied against the envelope 11 (Figures 1 to 3) of the package. In order to extend the closure for use, to bring it from the Figure 4 configuration into the Figure 6 configuration, it is opened by lifting the tab 5 to detach the nearby pressure-sensitive adhesive portion 6 between the edge lines 6a and 6b from the second ply 3 and then further tension applied to the first ply 2 can peel the weaker pressure-sensitive adhesive 15 from the envelope 11 and allow the closure to be applied around the pack to close again the opening formed in the package, as described above with reference to Figures 1 to 3.

[0025] If desired, the release sheet 16 of Figure 4 can equally be employed with the embodiment of Figures 1 to 3. Furthermore, as indicated above, the optional further adhesive 15 can also be employed with the embodiment of Figures 1 to 3.

[0026] It will of course be appreciated that Figures 4 and 6 are cross-sectional views whereas Figures 1 and 3 are side elevational views.

[0027] A further possibility is for the adhesive bond shown in Figures 4 to 6 to be placed by a weld between the two sheets, either a chemical weld or a heat weld, which has greater peel resistance and which therefore allows the bond to be used without the need for the die stamped regions 17 shown in Figures 4 and 5.

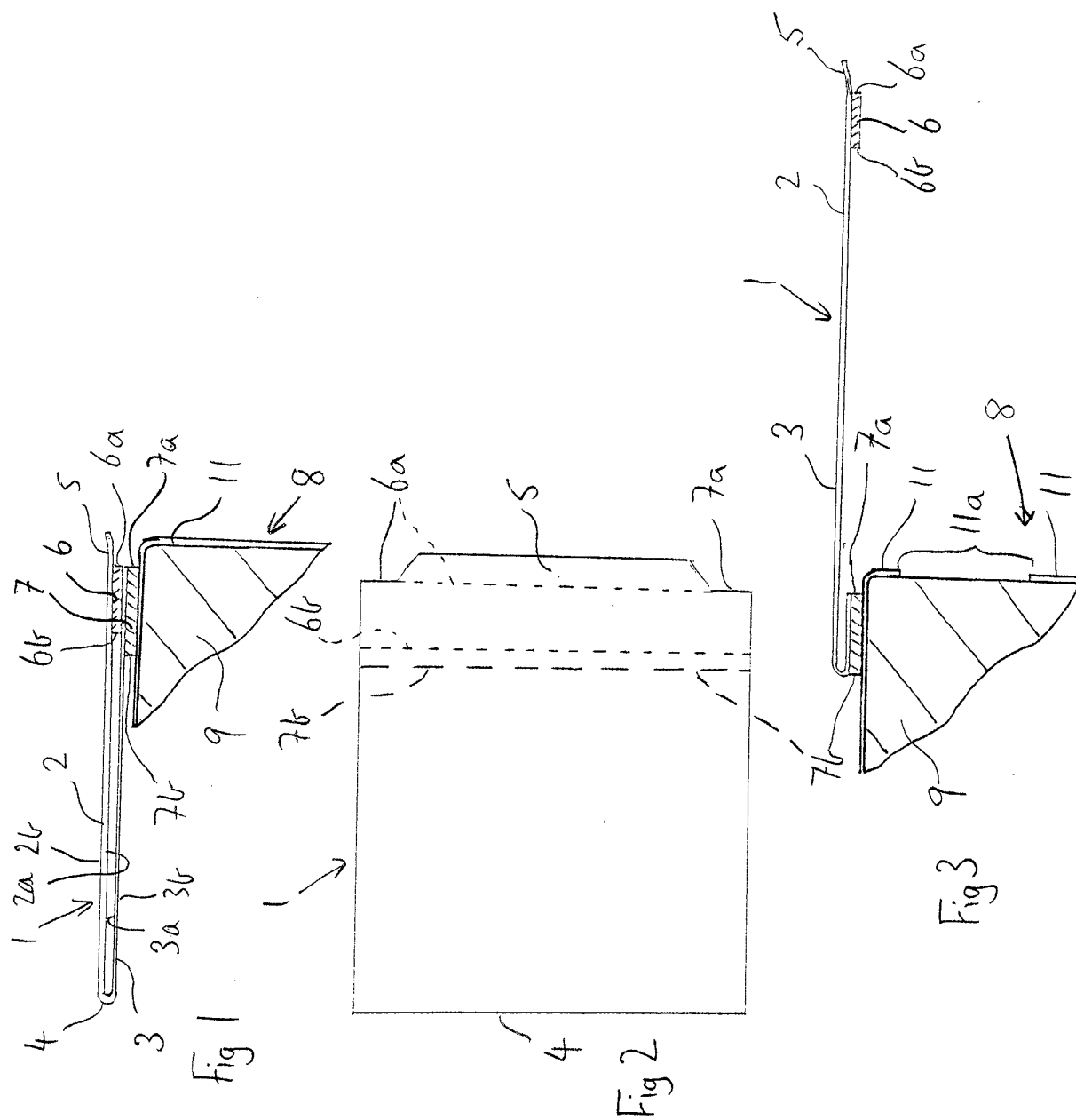
[0028] A further possibility for the weld between the two sheets would be to bond them using a laser seal in which case the seal region can be very narrow and close to the first edges of the superposed ply portions so as to save in the amount of material needed to produce the closure with adequate length between the two opposed second edges at which the adhesive applications 6 and 7 appear, when the plies have been opened out into the Figure 6 configuration.

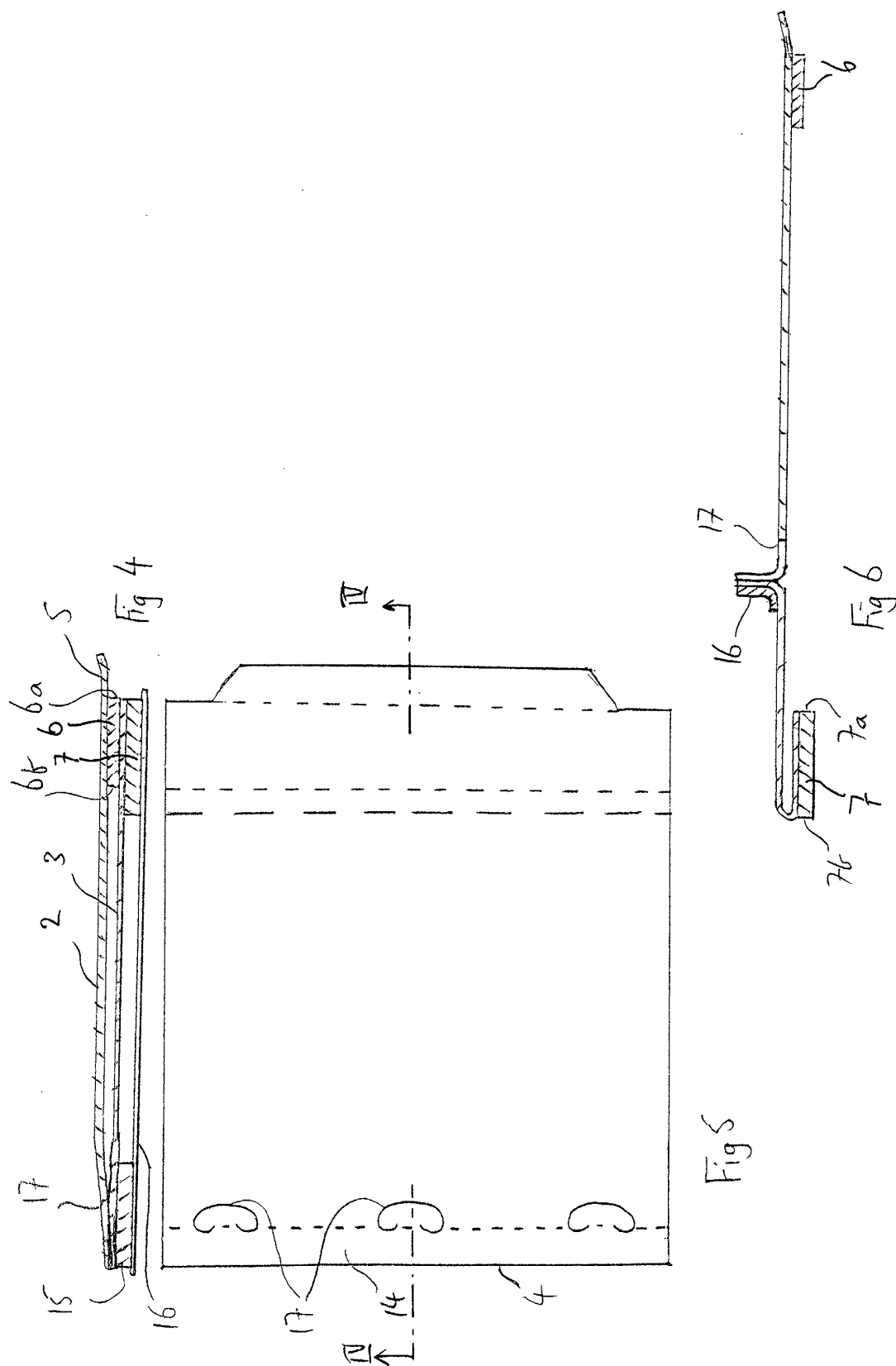
[0029] Of course, if the peel strength of the adhesive used in the embodiment of Figures 4 to 6 were high enough, which may indeed be the case, it is possible to use adhesive without the die-stamped regions 17, as just described with reference to the possibility of a heat weld, a chemical weld or a laser seal.

Claims

1. A closure for reclosing a package, comprising first (2) and second (3) superposed plies each having opposite first edges and second edges (6a, 7a) and being joined at or near said first edges at to define an edge (4) of the closure;
 wherein the first ply (2) has on its face (2a) adjacent the second ply (3) adhesive (6) between its said second edge (6a) and a line (6b) spaced therefrom, but no adhesive between the edge (4) of the closure and said line (6b), and has along its second edge (6a) an edge portion (5) without adhesive; and
 wherein the second ply has, on its face (3b) remote from the first ply, adhesive (7) between its said second edge (7a) remote from said first edge and a line (7b) spaced therefrom but no adhesive on its face (3a) adjacent the first ply.
2. A closure according to claim 1, wherein the adhesive on the first ply occupies the entire area of the first ply between said edge portion (5) and said line (6b) thereof, and wherein the adhesive on the second ply occupies the entire area between the second edge (7a) and said line (7b) thereof.

3. A closure according to claim 1 or 2, wherein the said first edges of said first and second plies (2, 3) are defined by a fold line of the closure and said plies (2, 3) comprise a single sheet of plastic film. 5
4. A closure according to claim 1 or 2, wherein said first and second plies (2, 3) are separate sheets joined at a bond region (14), preferably a heat weld or a laser seal, to form a folded closure which can be opened by pivoting adjacent the weld region (14). 10
5. A closure according to claim 4 wherein said bond region is formed by adhesively fastening the two plies (7, 3), and further including a plurality of stamped zones adjacent an edge of the bond region zone (14) remote from the first edges of the plies (2, 3) for limiting the separation of the first and second plies (2, 3) at said edge of the bond region (14) remote from the first edges of the plies (2, 3), 15
6. A closure according to any one of the preceding claims, wherein the peel strength of the adhesive (6) on the first ply (2) has a lower peel strength than that of the adhesive (7) applied to the second ply (3). 20
7. A closure according to any one of the preceding claims, and including further adhesive (15) applied to the face (3b) of the second ply (3) remote from the first ply (2) adjacent said first edges of the plies, said further adhesive (15) having a peel strength lower than that of the first mentioned adhesive (6) applied to the first ply (2). 25
8. A closure according to any one of the preceding claims, and including a release sheet (16) covering the adhesive (7) applied to the second ply (3) between the said second edge (7a) and the line (7b) prior to application of the closure to a package, this release sheet being removable in order to expose the adhesive (7) for application of the closure to the package. 30
9. A closure according to claim 8 when appendant to claim 7, wherein said release sheet (16) also covers said further adhesive (15) applied to the second ply (3) adjacent the edge (4) of the closure. 35
10. A closure according to any one of the preceding claims, wherein the opposing faces (2a, 3a) of the first and second plies (2, 3) are devoid of adhesive apart from the pressure-sensitive adhesive (6) applied to the first ply (2) between it said second edge (6a) and the line (6b) thereon. 40
11. A closure according to any one of the preceding claims, wherein the material of the first and second plies (2, 3) is transparent. 45
12. A package comprising a bag, pouch or wrapping (11) around a product (9) with a predefined mode of opening to leave an opening (11a) in the bag, pouch or wrapping, and including a closure according to any one of the preceding claims mounted on the bag, pouch or wrapping (11) to one side of the opening (11a) to be achieved by said predefined mode of opening, by bringing into contact with the bag, pouch or wrapping (11) the adhesive (7) applied to said second ply (3); wherein the length of said closure between the line (7b) of the second ply and the line (6b) of the first ply, when the first and second plies (2, 3) are pulled into a substantially planar configuration, is greater than the width of said opening to be closed by the closure. 50
13. A method of opening and reclosing a package according to claim 12, comprising:- 55
 - rupturing said bag, pouch or wrapping (11) in the predefined mode of opening to provide an opening (11a) in the bag, pouch or wrapping of the package;
 - removing at least part of the product (9) from within the package;
 - detaching the first ply (2) from the second ply (3) at a region remote from the edge (4) of the closure by peeling the adhesive applied to said first ply (2);
 - extending the assembly of the first and second plies (2, 3) by withdrawing said second ply from adjacent the bag, pouch or wrapping (11) of the package; and
 - then wrapping the first and second plies around the package to cover the opening (11a) and attaching the first ply (2) to the bag, pouch or wrapping (11) of the package to the side of the opening (11a) remote from that where the second ply (3) is still attached to the bag, pouch or wrapping (11) by means of said adhesive (7) so as to cover the opening (11a) with said first and second plies (2, 3).







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EUROPEAN SEARCH REPORT

Application Number
EP 02 25 3257

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.7)
X	US 5 035 518 A (MCCLINTOCK JACK M) 30 July 1991 (1991-07-30) * column 4, line 39 - line 49 * * column 10, line 20 - line 39; figures 21,21A *	1-3,6, 10,12,13	B65D17/50 B65D75/58
A	US 5 824 380 A (HAGEN RONALD G) 20 October 1998 (1998-10-20) * figures 1-7 *	1,12	
A	US 4 902 141 A (LINNEWIEL RON) 20 February 1990 (1990-02-20) * figures 1-5 *	1,12	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B65D
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 16 October 2002	Examiner Spettel, J
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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16-10-2002

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5035518	A	30-07-1991	NONE
US 5824380	A	20-10-1998	NONE
US 4902141	A	20-02-1990	IL 81120 A 07-10-1994
		AT 74094 T 15-04-1992	
		AU 614271 B2 29-08-1991	
		AU 8245587 A 07-07-1988	
		BR 8707114 A 02-08-1988	
		CA 1299931 A1 05-05-1992	
		DE 3777787 D1 30-04-1992	
		EP 0273894 A2 06-07-1988	
		ES 2031533 T3 16-12-1992	
		JP 1584695 C 22-10-1990	
		JP 2010192 B 07-03-1990	
		JP 63221183 A 14-09-1988	
		ZA 8709381 A 09-06-1988	