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United States Patent	12384593
Kind Code	B2
Date of Patent	August 12, 2025
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Band-driven packaging

Abstract

A package insert comprises: first and second members; and a band. The first and second members are coupled to the band, such that movement of the first member in a first direction drives the band to cause movement of the second member in a second direction. The first member comprises a primary portion and an attachment portion that is configured to detachably couple the primary portion to the band.

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Appl. No.:	17/787268
Filed (or PCT Filed):	December 18, 2020
PCT No.:	PCT/GB2020/053300
PCT Pub. No.:	WO2021/123818
PCT Pub. Date:	June 24, 2021

Prior Publication Data

Document Identifier	Publication Date
US 20230048048 A1	Feb. 16, 2023

Foreign Application Priority Data

GB	1918914	Dec. 19, 2019
GB	2003619	Mar. 12, 2020

Publication Classification

Int. Cl.: B65D5/38 (20060101); B31B50/62 (20170101); B31B120/60 (20170101); B65D5/66 (20060101)

U.S. Cl.:

CPC B65D5/38 (20130101); B31B50/624 (20170801); B65D5/6617 (20130101); B31B2120/60 (20170801)

Field of Classification Search

CPC: B65D (27/00); B65D (2/04); B65D (23/14); B65D (27/14); B65D (27/30); B65D (27/38); B65D (79/00); B65D (5/5213); B65D (27/26); B65D (27/28); B65D (27/34)

USPC: 229/68.1; 229/69-76; 229/79-82; 229/300-316; 229/92.8; 229/87.05; 229/927; 229/928

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Background/Summary

- (1) This invention relates to a package insert, to a package and to a method of assembling a package.
- (2) Packages, including packages for containing articles and packages for containing information or other display items are frequently used as one-use disposable items, which has environmental implications. It is desirable to recycle such packages as much as possible.
- (3) However, some packages can be made of mixed materials that would come under different recycling categories. Such packages cannot be recycled as a single unit, but must be recycled as separate components. This is the case, for example, with band-driven package, which commonly feature a band of plastics materials used to drive components made of other non-plastics materials, such as cardboard.
- (4) In such band driven packages, it is necessary to ensure the band and other components are securely fastened together, so that the package can withstand ordinary wear and tear. It is also desirable to hide the band component from view, and hence from easy access, so that the underlying mechanism of the package cannot be easily seen. Whilst this results in a sturdy package, it means the package is hard to disassemble for recycling.
- (5) Band driven packages comprise a sleeve that is divided into two compartments by a divider. Structural rigidity of the two compartments is desirable to protect the contents of the package. This can be achieved by using a rigid or at least relatively stiff material for the components. However,

such rigid or stiff material may be particularly difficult to break apart for recycling purposes.

(6) It is an object of this invention to address at least one of the problems described above.

STATEMENTS OF THE INVENTION

(7) Against this background, the invention resides in a package insert comprising first and second members and a band. The first and second members are coupled to the band, such that movement of the first member in a first direction drives the band to cause movement of the second member in a second direction. The first member comprises a primary region and an attachment region that is configured to detachably couple the primary region to the band.

(8) The attachment region may be configured to be detachable from the band so that the attachment region and the primary region may be detachable from the band. Alternatively, the attachment region may be configured to be detachable from the primary region so as to decouple the primary region from the band and the attachment region.

(9) The first member may be movable between a closed configuration in which the first member has been displaced in the first direction to a minimum possible extent, and an open position in which the first member has been displaced in the first direction to a maximum possible extent.

(10) The attachment region may be configured to be detachable from the band and/or from the primary region when the package is arranged in the open configuration and a force is applied to the first member in the first direction.

(11) The attachment region may be frangibly coupled to the primary region. To this end, a boundary between the attachment region and the primary region may be defined by a perforation or score.

(12) The primary region may comprise an aperture and the attachment region may protrude into the aperture to anchor the primary region to the attachment region. The attachment region may be fitted to the aperture of the primary region with a press-fit.

(13) The attachment region may comprise an attachment feature for attaching the first member to the band.

(14) The attachment feature may comprise an opening and an anchoring feature adjacent to the opening. An end of the band may protrude through the opening to define an attachment loop. The anchoring feature may protrude into the attachment loop.

(15) The anchoring feature may comprise a flap.

(16) The first member may comprise a double wall. The flap may be provided on a first wall of the double wall and the opening being defined in a second wall of the double wall

(17) The flap may be defined by a hinged portion of the first wall.

(18) The hinged portion of the second wall may reveal a further opening when the flap is opened.

(19) The second member may comprise an attachment portion that is detachably coupled to the band. All features described above in relation to the first member may apply in respect of the second member also.

(20) The first member and the band may be made of different materials, optionally materials that have different recycling categories. For example, the band may comprise a plastics material and the first member may comprise a non-plastics material, such as cardboard.

(21) The anchoring feature may comprise two flaps arranged to face generally towards each other to protrude into the attachment loop from opposite directions.

(22) The packaging insert may further comprise a panel, the band encircling the panel.

(23) The invention also extends to a package comprising the package insert above.

(24) The package may comprise a sleeve, the package insert being housed within the sleeve, such that the sleeve is arranged to selectively block access to the first member. The sleeve and the panel of the insert may be contiguous, for example being formed together from a single piece, such as a blank. In other examples, the sleeve and the panel of the insert may be separate components.

(25) The invention extends further to a package comprising a first member, a sleeve for selectively blocking access to the first member and a drive component for driving the first member out of the

sleeve. The drive component and the first member are made of different materials, and the first member is detachably coupled to the drive component.

(26) The invention extends still further to a method of assembling a packaging insert, the packaging insert comprising first and second members and a band, the first member comprising an attachment feature for detachably coupling the first member to the band, the attachment feature comprising an opening and an anchoring feature adjacent to the opening, the method comprising: feeding an end of the band through the opening to define an attachment loop, and inserting the anchoring feature into the attachment loop to couple the first member to the band.

(27) From another aspect, the invention resides in a package insert comprising: a substrate encircled by a band, and a moveable member couplable to the band, such that movement of the moveable member in a first direction drives the band around the substrate. The moveable member comprises a running surface configured to lie parallel to and facing the substrate, and a recess for accommodating an adhesive material for coupling the moveable member to the band, such that the adhesive material lies flush or sub-flush with the running surface.

(28) The recess may comprise a base that is recessed from the running surface, so as to form a depression or indentation in the running surface. The package insert may comprise an adhesive material accommodated in the recess, wherein the adhesive material lies flush or sub-flush with the running surface. In other words, the adhesive material may be provided in the recess such that the adhesive material does not protrude or project above the running surface of the moveable member.

(29) Accommodating the adhesive material in the recess so that it lies flush or sub-flush with the running surface is advantageous, as it guards against the adhesive material transferring to the band or other components of the package before it is intended, which could otherwise lead to the moveable catching on the band and thus prevent the moveable member from running smoothly over the band. In the finished package, this feature also ensures that the or each moveable member can lie flat against the substrate, without being spaced away from the substrate in the region of the adhesive.

(30) The moveable member may be coupled to the band by the adhesive material.

(31) The moveable member may comprise first and second walls that are parallel and in contact.

(32) The moveable member may comprise a recess region. In the recess region, the first wall may comprise an aperture and the second wall may be continuous, such that the first and second walls together define the recess in the moveable member.

(33) The second wall may define a base of the recess.

(34) The package insert may comprise a further moveable member that is couplable to the band such that movement of the further moveable member in a second direction drives the band around the substrate.

(35) The invention also resides in a package comprising the package insert of any preceding paragraph.

(36) The invention further resides in a package comprising a substrate encircled by a band and a moveable member coupled to the band by an adhesive material, such that movement of the moveable member in a first direction drives the band around the substrate. The moveable member comprises a running surface configured to lie parallel to and facing the substrate and a recess that accommodates the adhesive material such that the adhesive material lies flush or sub-flush with the running surface.

(37) The recess may comprise a base that is recessed or set back from the running surface.

(38) A spacing between the running surface and the base may define a depth of the recess, and a depth of the adhesive material may not exceed the depth of the recess. In this way, the adhesive material is fully contained within the recess, and does not protrude or project above the running surface of the moveable member. This prevents accidental transfer of the adhesive material to other components of the package before it is intended.

(39) The invention further resides in a method of making the package described above. The method

comprises: providing a moveable member comprising a running surface and a recess in the running surface; arranging an adhesive material in the recess such that the adhesive material lies flush or sub-flush with the running surface; arranging the moveable member so that the adhesive material faces a band; applying pressure to the band and/or moveable member in the region of the adhesive material to adhere the moveable member to the band.

(40) The method may comprise arranging the band and the moveable member in a sleeve, and applying pressure to the band and/or the moveable member in the region of the adhesive material via the sleeve.

(41) The method may comprise arranging the band in the sleeve before arranging the moveable member in the sleeve.

(42) In this way, the invention allows for the sleeve and band of the package to be assembled, and for the or each moveable member to be subsequently incorporated into the package, simply by inserting the or each member into the package and applying pressure to the package, i.e. by pinching the package between the thumb and forefinger, so as to attach the moveable member(s). That is, the sleeve and band assembly may be pre-fabricated, before retrofitting the moveable member(s) in the package simply by inserting them into the sleeve and applying pressure in the appropriate region(s) by squeezing, pinching or pressing the sleeve.

(43) The method may comprise arranging the band around a substrate. The method may comprise arranging the band around the substrate before adhering the moveable member to the band.

(44) The substrate may be formed as a separate piece from the sleeve, which is attachable to the sleeve in order to form a package.

(45) In other embodiments the substrate and the sleeve may be formed from a continuous piece.

(46) The substrate and sleeve may be formed of a blank comprising a sleeve portion and a substrate portion. The method may comprise: arranging a band to encircle the substrate portion of the blank, and subsequently folding the sleeve portion of the blank around the substrate portion, to house the substrate in the sleeve; and arranging the moveable member in the sleeve such that the adhesive material faces the band.

(47) The method may comprise: providing a further moveable member comprising a running surface and a recess in the running surface; arranging an adhesive material in the recess of the further moveable member, such that the adhesive material lies flush or sub-flush with the running surface of the further moveable member; arranging the band over the adhesive in the recess of the further moveable member; applying pressure to the band and/or further moveable member in the region of the adhesive material to adhere the further moveable member to the band.

(48) Pressure may be applied to the moveable member and the further moveable member simultaneously. For example, a user may hold the package in both hands, and pinch the package in the region of the adhesive material of the moveable member and the further moveable member at the same time.

(49) The invention further resides in a method of making the package of any of the preceding paragraphs, comprising: providing a sleeve and a substrate housed in the sleeve, the substrate being encircled by a band; providing a moveable member comprising a running surface and a recess in the running surface; arranging an adhesive material in the recess such that the adhesive material lies flush or sub-flush with the running surface; arranging the moveable member in the sleeve such that the adhesive material faces the band; applying pressure to the sleeve in the region of the adhesive material to adhere the moveable member to the band.

(50) The substrate and sleeve may be formed of a blank comprising a sleeve portion and a substrate portion, and the step of providing a sleeve and a substrate housed in the sleeve may comprise arranging a band to encircle the substrate portion of the blank, and folding the sleeve portion of the blank around the substrate portion.

(51) From another aspect, the invention resides in a sleeve blank for forming a sleeve for housing first and second members. The sleeve blank comprises a lower panel for forming a base of the

sleeve; a upper panel for forming a top of the sleeve; a divider panel for dividing a space between the lower panel and the upper panel into lower and upper compartments; a first side wall joining a first edge of the lower panel to a first edge of the divider panel; a second side wall joining a second edge of the lower panel to a second edge of the upper panel; and a protrusion that protrudes from the first side wall beyond the first edge of the divider to support a first edge of the upper panel in the assembled sleeve.

(52) The first side wall may define a first side wall plane, and the protrusion may protrude away from the first sidewall substantially in the first side wall plane.

(53) The first side wall may have a first wall height $h_{sub.1}$, the protrusion may have a protrusion height $h_{sub.p}$, and the second side wall may have a second wall height $h_{sub.2}$ that is approximately equal to the sum of the first wall height $h_{sub.1}$ and the protrusion height $h_{sub.p}$.

(54) The second wall height $h_{sub.2}$ may be approximately equal to the protrusion height $h_{sub.p}$.

(55) The first side wall may be joined to the divider panel by a foldable boundary, and the protrusion may extend beyond the foldable boundary.

(56) A boundary between the protrusion and the divider panel may be defined by a cut.

(57) The divider panel may comprise a cut-out adjacent to the foldable boundary that accommodates the protrusion when the blank is in an unfolded configuration.

(58) The cut-out in the divider panel may be substantially the same shape as the protrusion.

(59) The protrusion may comprise a first edge joined to the first sidewall and a second edge opposite the first edge, the second edge being a free edge.

(60) A length of the first edge may be greater than a length of the second edge.

(61) The protrusion may comprise third and fourth edges joining the first and second edges. The third and fourth edges may be sloped to define an acute angle to the first edge and an obtuse angle to the second edge.

(62) The protrusion may be continuous with the first side wall.

(63) The sleeve blank may further comprise a secondary lower panel and a third side wall joining the upper panel to the secondary lower panel.

(64) The sleeve blank may comprise a plurality of protrusions that protrude from the first side wall beyond the first edge of the divider to support a first edge of the upper panel in the assembled sleeve.

(65) The invention also extends to a sleeve comprising the sleeve blank of any preceding claim, arranged in a folded configuration such that the lower panel, upper panel and divider panel are substantially parallel.

(66) The invention extends further to a package comprising the sleeve described above, a first member arranged in the lower compartment of the sleeve; and a second member arranged in the upper compartment of the sleeve.

(67) The package may comprise a band encircling the divider, the first and second members being coupled to the band.

(68) Optional and advantageous features of this aspect of the invention are set out in the appended claims. It will be appreciated that optional and/or preferred features of each aspect may be used alone or in appropriate combination with the other aspect also.

Description

BRIEF DESCRIPTION OF THE FIGURES

(1) In order that the invention may be more readily understood, reference will now be made, by way of example, to the accompanying drawings, in which:

(2) FIG. 1 is a perspective view of a latchable package according to an embodiment of the invention in a first or secured configuration;

- (3) FIG. 2 is a perspective view of the latchable package of FIG. 1 in a second or access configuration;
- (4) FIG. 3 is a perspective view of a latchable insert, a support and a structure that constitute disassembled components of the package of FIG. 1;
- (5) FIG. 4 is a perspective view of the latchable insert of FIG. 3;
- (6) FIG. 5 is a plan view of a sleeve blank for forming a sleeve forming part of the package of FIG. 1;
- (7) FIG. 6 is a plan view of the sleeve formed by the sleeve blank of FIG. 5;
- (8) FIG. 7 is a plan view of a blank for forming another first member for use the package of FIG. 1;
- (9) FIG. 8 is a perspective view of the first member of FIG. 7;
- (10) FIG. 9 is a plan view of the first member of FIG. 8;
- (11) FIG. 10 is a plan view of the blank of FIG. 7;
- (12) FIG. 11 is another plan view of the first member of FIG. 8;
- (13) FIG. 12 is a plan view of a band forming part of the package of FIG. 1;
- (14) FIG. 13 is a perspective view of the first member of FIG. 7 with the band;
- (15) FIG. 14 is a perspective view of an assembled package incorporating the first member of FIG. 8;
- (16) FIG. 15 is a side view of the package of FIG. 8;
- (17) FIG. 16 is a perspective view of the assembled package of FIG. 14 in an open configuration;
- (18) FIG. 17 is a perspective view of first and second members according to another embodiment;
- (19) FIG. 18 is a perspective view of a band for use with the first and second members of FIG. 17;
- (20) FIG. 19 is a perspective view of the first and second members of FIG. 17 attached to the band of FIG. 18;
- (21) FIGS. 20 to 24 illustrate a further embodiment of a package insert;
- (22) FIG. 25 is a plan view of an alternative sleeve blank for forming a sleeve for use in a package;
- (23) FIG. 26 is a cut-away side view of a sleeve formed by folding the blank of FIG. 25;
- (24) FIG. 27 is a partial enlarged view of FIG. 26 in the vicinity of a protrusion forming part of the sleeve;
- (25) FIG. 28 is a perspective view of the folded sleeve of FIG. 26;
- (26) FIG. 29 is a plan view of a moveable member of a package insert according to an embodiment of the invention;
- (27) FIG. 30 is a cross-sectional side view of the moveable member of FIG. 29;
- (28) FIG. 31 is a plan view of a sleeve blank for forming an alternative moveable member;
- (29) FIG. 32 is a cross-sectional side view of a moveable member formed by the sleeve blank of FIG. 31;
- (30) FIG. 33 is a side view of a package, illustrating the moveable members of FIGS. 29 and 32 being inserted into a sleeve of the package; and
- (31) FIG. 34 is a side view of the package of FIG. 33.

DETAILED DESCRIPTION OF EMBODIMENTS OF THE INVENTION

- (32) FIGS. 1 to 3 illustrate an arrangement in the form of a package insert for use in a package such as that described in the Applicant's European Patent Application, EP1140639.
- (33) The arrangement includes a first member 12 and a second member 14 that are coupled to one another via a drive member 16 or component in the form of a band. When incorporated into a package the arrangement may be housed in a sleeve 18, with the band 16 arranged to encircle a divider 20 that defines a first chamber 22 and a second chamber 24 within the sleeve 18 of the package, and the first and second members 12, 14 housed in the first and second chambers 22, 24 respectively, when the package is in a closed position. The package is configured such that movement of the first member 12 in a first direction out of the sleeve 18 drives movement of the second member 14 in a second, opposing, direction out of the sleeve 18.
- (34) Referring now to FIG. 1 in particular, the first member 12 is a substantially flat panel having a

front end **12a** and a rear end **12b**, and comprising a front edge **26**, a rear edge **28**, a left edge **30**, a right edge **32**, an upper surface (not shown) and a lower surface **34**.

(35) The first member comprises an attachment region comprising a first tear region **38** a first bonding region and a primary region that forms the remainder of the first member. The attachment region defines a portion of the first member **12** that can be pulled away from the remainder of the first member **12**, i.e. the primary region, with ease on application of a force by a user. As will be explained, the attachment region is configured to detachably couple the primary region of the first member to the band. This attachment region **38** is beneficial, as it allows the different components of the arrangement to be separated from one another more easily than would otherwise be possible, for easy recycling of the arrangement. For example, in this arrangement the attachment region allows for the cardboard primary regions of the first and second members to be completely separated from the plastic band.

(36) The first tear region **38** is rectangular in shape in this example, although the first tear region **38** may be other shapes in other embodiments. The first tear region **38** includes a rear edge **40**, a front edge **42**, a left edge **44** and a right edge **46**. In this embodiment, the rear edge **40** of the first tear region **38** is defined by a central portion of the rear edge **28** of the first member **12**, and a first perforation **48** defines the front, left and right edges **42**, **44**, **46** of the first tear region **38**. In this way, the attachment region of the first member is frangibly coupled to the primary region of the first member.

(37) The first bonding region **50** is provided in the first tear region **38** of the first member **12**. The first bonding region **50** comprises a first adhesive strip **52** that attaches the first member **12** to the band **16** when the arrangement is assembled, as is illustrated in FIG. 2. The first adhesive strip **52** is rectangular in this embodiment, and is provided generally centrally in the first tear region **38**. The first adhesive strip **52** is dimensioned so as to be contained entirely within the first tear region **38** when attached to the first member **12**, with a first peripheral gap **54** provided between edges of the first adhesive strip **52** and the first tear region **38**. The adhesive is ideally fully contained within the first tear region such that no adhesive is on the primary region of the first member when the arrangement is disassembled to enable quick and easy recycling of the first member.

(38) Referring now to FIG. 2, the second member **14** is also a substantially flat panel having a front end **14a** and a rear end **14b**, and comprising a front edge **56**, a rear edge **58**, a left edge **60**, a right edge **62**, an upper surface **64** and a lower surface (not shown).

(39) The front edge **56** of the second member **14** comprises a rectangular cut-out region **68** provided centrally along the width of the second member defined between its left and right edges **60**, **62**.

(40) The second member **14** comprises an attachment region comprising a second tear region **70** and a second bonding region, and a primary region that forms the remainder of the second member. In a similar manner for the first member, the attachment region of the second member defines a portion of the second member **14** that can be pulled away from the primary region of the second member **14** with ease on application of a force by a user. The attachment region of the second member is thus configured to detachably couple the primary region of the second member to the band.

(41) The second tear region **70** includes a front edge **72**, a rear edge **74**, a left edge **76** and a right edge **78**. The front edge **72** of the second tear region **70** is defined by a central portion of the front edge **56** of the second member **14**, and encompasses the portion of the front edge **56** that defines the rectangular cut-out **68**. A second perforation **80** defines the rear, left and right edges **74**, **76**, **78** of the second tear region **70**.

(42) A second bonding, or attachment, region **82** is provided in the second tear region **70** of the second member **14**. The second bonding region **82** comprises a second adhesive strip **84** that attaches the second member **14** to the band **16** when the arrangement is assembled, as illustrated in FIG. 2. The second adhesive strip **84** is rectangular in this embodiment, and is dimensioned so as to

be contained entirely within the second tear region **70** when attached to the second member **14**, with a second peripheral gap **86** between edges of the second adhesive strip **84** and the second tear region **70**.

(43) Still referring to FIG. 2, the band, or belt member **16**, comprises a strip of sheet material joined at its ends to form a continuous loop. The band **16** includes an interior surface **88** that defines an inner volume in which the divider **20** is received in use, and an exterior surface **90** that faces away from the inner volume. As illustrated in FIG. 2, when incorporated in the arrangement of this embodiment, the band **16** is arranged such that it generally defines a rectangle in plan view (see FIG. 11), and comprises upper and lower halves **92**, **94** joined by front and rear edges **96**, **98** provided at front and rear ends **16a**, **16b** of the band **16**. The sheet material is typically a low-friction material, such as plastics film, that is selected so that the band **16** slides easily about the divider **20** when the arrangement is incorporated into a package for use.

(44) When the arrangement is assembled as shown in FIG. 2, the first or front end **16a** of the band **16** is bonded to the first member **12** at the first bonding region **50**, and the second or rear end **16b** of the band **16**, i.e., a portion **17** of the band, is bonded to the second member **14** at the second bonding region **82**. In this way, the first member **12** and the second member **14** are coupled to one another via the band **16**.

(45) When the arrangement is integrated into a package, the band **16** is arranged to encircle the divider **20** of the package, which divides a tubular passage formed by the sleeve into a first, or upper, passage **100** which contains the first member **12** and a second, or lower, passage **102** which contains the second member **14**. When a user pulls the first member **12** out of the sleeve **18** in a first direction, the first member **12** causes the band **16** to turn about the divider **20**, since the first member **12** is secured to the band **16** at the first bonding region **50**. Movement of the band **16** about the divider **20** causes the second member **14** to move in a second direction, opposed to the first direction, since the second member **14** is attached to the band **16** at the second bonding region **82**. When the bonding regions **50**, **82** reach the ends of the divider **20**, the first member **12** can be pulled no further in the first direction, and the package is in the fully open position, with the first and second members **12**, **14** both extending out of the sleeve **18**.

(46) When the user pushes the first member **12** in the second direction, the first member causes the band **16** to turn about the divider **20** such that the second member **14** moves in the first direction, back into the sleeve **18**. When the first and second bonding regions **50**, **82** reach the opposite ends of the divider **20**, the first member **12** can be pushed no further into the package, and the package is in the fully closed position, with the first and second members **12**, **14** both housed within the sleeve **18** in the first and second chambers **22**, **24**, respectively.

(47) When a package incorporating the arrangement is to be disposed of, it is advantageous for the constituent parts to be easy to separate from each other, so as to allow for the package to be quickly and easily disassembled for recycling. The arrangement of FIGS. 1 to 3 enables this through incorporation of the tear regions **38**, **70** of the first and second members **12**, **14**, which allows the plastics material of the band to be separated from the cardboard material of the first and second members. In other words, the easy separation of materials having different recycling categories is enabled. When a package is to be disposed of, the user simply removes the arrangement from the package, and separates the band **16** from the first and second members **12**, **14**, such that the first and second members **12**, **14** can be recycled together with the rest of the cardboard components of the package.

(48) Separating the band **16** from the first and second members **12**, **14**, i.e. separating the components of the arrangement, may be achieved as follows. With the arrangement in the configuration shown in FIG. 2, the user grips the first member **12** at its front end **12a** with one hand and grips the second member **14** at its rear end **14b** with the other hand. The user then pulls the first member **12** in a first pull direction indicated by arrow A, and the second member **14** in a second pull direction indicated by arrow B, such that the first and second members **12**, **14** are pulled away

from one another, in opposite directions. When the band **16** extends between the first and second members **12, 14** and is taut, the user simply continues to pull until the first and second tear regions **38, 70** separate from the surrounding regions of the first and second members **12, 14**, respectively. For this, the package is configured such that a greater force is required to separate the first and second members **12, 14** from the band **16**, than is required to remove the first and second tear regions **38, 70**, respectively, from the surrounding region of the first and second members **12, 14**. Thus, when a user pulls the first and second members **12, 14** away from one another as described above, the tear regions **38, 70** separate from their respective members **12, 14** before the members **12, 14** separate from the band **16**.

(49) FIG. **3** illustrates the arrangement in a disassembled state, after the components of the arrangement have been pulled apart for disposal. As shown, the tear regions **38, 70** of the first and second members **12, 14** remain attached to the band. Thus, the first and second members **12, 14** are now ready to be recycled with other suitable cardboard components of the package, being free from the plastic material of the band **16** or any adhesive, which all remains attached to the band **16**. In this example, the attachment regions of the first and second members are configured to be detachable from the primary regions of the first and second members. In other embodiments, as will be illustrated in the following, it is possible for the attachment region to instead be detachable from the band.

(50) FIGS. **4** to **16** illustrate an arrangement and a package according to another embodiment of the invention. As in the previous embodiment, the arrangement of this embodiment is configured so as to be easily separable for disposal. Furthermore, the arrangement of this embodiment of the invention is advantageous because its features provide for easy assembly of the arrangement, thus saving time, effort and cost in the assembly process, as will be explained.

(51) Referring first to FIG. **4**, this shows the arrangement of this embodiment incorporated into a sleeve **218** to provide a package of the invention. As in the previous embodiment, the arrangement comprises a first member **212**, a second member **214** and a band **216**, and is housed in a sleeve **218** when assembled in the package.

(52) Turning now to FIG. **5**, the sleeve **218** comprises a flat blank **300**, which has a first or inner surface **302** on one side and a second or outer surface (not visible in FIG. **5**) on the other side. The sleeve **218** is manufactured by cutting and creasing or scoring a sheet of flexible cardboard, plastics, tear-resistant laminate, or other material. In the embodiment shown, the sleeve **218** is made from a 0.5 mm thick mineral-filled polypropylene sheet, such as that sold under the registered trade mark PRO-Print. In this way, the sheet is flexible enough to allow for the bending that is necessary to form the sleeve **218**, but is stiff enough to provide structural support.

(53) The blank **300** comprises a front end **300a** and a rear end **300b** and consists of seven integral, substantially oblong sections or panels **304, 306, 308, 310, 312, 314, 316**, each extending from the front end **300a** to the rear end **300b** of the blank **300**. Four of the sections, namely a divider **304**, a lower inner wall **308**, an upper wall **312** and a lower outer wall **316** are relatively wide, and three, namely a left inner wall **306**, a right outer wall **310**, and a left outer wall **314**, are relatively narrow. The lower inner wall **308**, the upper wall **312** and the lower outer wall **316** are of substantially the same length: that length is greater than the width of the sections in the drawings, but it need not be greater. The divider **304** is shorter in length than the lower inner wall **308**, the upper wall **312** and the lower outer wall **316**.

(54) The sections **304, 306, 308, 310, 312, 314, 316** of the blank **300** are integral and demarcated from each other by folds or scores **318**. The folds **318** are all made such that the first surface **302** of the flat blank **300** lies inward and the sleeve **218** is formed into a fully-folded configuration, shown in FIG. **6**, by folding the flat blank **302** along the folds **332** successively in a coil-like manner, starting with the divider.

(55) The upper wall **312** of the sleeve **218** comprises a curved indentation **320** or cut-out at the front end **300a** of the blank **300**. The lower inner and outer walls **308, 316** each comprise a

rectangular indentation or cut-out **322** at the front end of the blank. When folded, the curved indentation **320** of the upper wall **312** and the rectangular indentations **322** of the lower inner and outer sections **308**, **316** of the sleeve **218** are aligned with each other. In the assembled package, the curved indentation **320** may align with a curved indentation of a blister-pack housed within the package.

(56) FIGS. **7** and **8** show the first member **212** of the arrangement of this embodiment in isolation.

(57) Referring first to FIG. **7**, the first member **212** comprises a blank **324** that includes first and second panels **326**, **328**, each of which are substantially planar in this embodiment. The first panel **326** has a front end **330**, a rear end **332**, a left side **334**, a right side **336**, a first or inner surface (not shown in FIG. **7**) and a second or outer surface **338**. Correspondingly, the second panel **328** has a front end **342**, a rear end **344**, a left side **346**, a right side **348**, a first or inner surface (not shown in FIG. **7**) and a second or outer surface **350**. The first and second panels **326**, **328** each comprise an attachment region or portion **354a**, **354b**, which together define a first attachment region or portion **354** of the first member **212** when the first member **212** is formed, at which the band **216** is attached to the first member **212** when the arrangement is assembled, as will be explained. The remainder of the first member, surrounding the first attachment region, defines a primary region of the first member.

(58) The attachment region **354a** of the first panel **326** is located towards the rear end **332** of the first panel **326**, and centrally across the width of the first panel **326** defined between the left and right side edges **334**, **336** of the first panel **326**. The attachment region **354a** of the first panel comprises an attachment feature in the form of an anchoring feature **356**. The anchoring feature comprises first and second flaps **356a**, **356b**, that are generally rectangular in shape in this embodiment, and are defined by cuts in the first panel **326**. The first and second flaps **356a**, **356b** together extend over approximately half of the width of the first panel **326**.

(59) The first flap **356a** comprises front and rear edges **358**, **360** joined by left and right side edges **362**, **364**. The left side edge **362** adjoins to a surrounding region of the first panel at a first fold or score **366**, also referred to as a hinged portion of the first panel. The front, rear and right side edges **358**, **360**, **364** are defined by first front, first rear, and side cuts in the first panel **326**, such that these edges are not connected to the surrounding region of the first panel **326**.

(60) The second flap **356b** comprises front and rear edges **368**, **370** joined by left and right side edges **372**, **374**. The right side edge **374** adjoins to a surrounding region of the first panel **326** at a second fold or score **376**, also referred to as a hinged portion of the second panel. The front, rear and left side edges **368**, **370**, **372** are defined by second front, second rear and the side cut in the first panel **326**, such that these edges are not connected to the surrounding region of the first panel **326**. The right side edge **364** of the first flap **356a** and the left side edge **372** of the second flap **356b** lie adjacent and are parallel to one another.

(61) The distance between front and rear edges of the first and second flaps **356a**, **356b** defines a width of the attachment region **354a** of the first panel **326**. The distance between the left side edge **362** of the first flap **356a** and the right side edge **374** of the second flap **356b** defines a length of the attachment region **354a** of the first panel **326**. The length of the attachment region **354a** is approximately half the width of the first panel **326**.

(62) The first and second flaps **356a**, **356b** are configured to be foldable between an unfolded position in which the flaps **354a**, **354b** are flush with the surrounding portion of the first panel **326**, and a folded position in which the flaps **356a**, **356b** are bent or folded along the folds **366**, **376**, so as to extend generally perpendicularly to the plane of the first panel **326**. When the flaps **356a**, **356b** are in the folded position, a band-receiving aperture **356** is created in the first panel **326**, in the area that houses the flaps **356a**, **356b** in their unfolded position. In other words, the hinged portions adjoining the flaps to the primary region of the member reveal an opening in the first panel.

(63) The attachment region **354b** of the second panel **328** is located towards the rear end **344** of the

second panel **328**, and centrally across the width of the second panel **328** defined between the left and right side edges **346**, **348** of the second panel **328**. The attachment region **354b** of the second panel **328** comprises an attachment feature that comprises an opening. The opening is in the form of an elongated band-receiving slot **378** defined by front and rear edges **380**, **382** and left and right side edges **384**, **386**. The distance between front and rear edges **380**, **382** of the slot **378** defines a width of the attachment region **354b** of the second panel **328**. The distance between the left and right side edges **384**, **386** of the slot **378** defines a length of the attachment region **354b** of the second panel **328**. The length of the attachment region **354b** is approximately half the width of the second panel **328**.

(64) The first and second panels **326**, **328** adjoin at a blank fold or score **388** provided between their front ends **330**, **342**. To form the first member **212**, the blank **324** is folded at the blank fold **388**, and the inner surfaces **338**, **350** of the first and second panels **326**, **328** are bonded to each other by means of adhesive provided on one or both of the inner surfaces **338**, **350**. Thus, the first and second panels are arranged one on top of the other, in a face-to-face arrangement. When the first member is formed, the first and second panels are coplanar to define a double wall, with the first panel defining a first wall and the second panel defining a second wall.

(65) When formed, the front and rear ends and the left and right sides of the first and second panels **326**, **328** align to form front and rear ends **212a**, **212b** and left and right sides **230**, **232** of the first member **212**, respectively, as shown in FIG. **8**. The distance between the front and rear ends **212a**, **212b** of the first member **212** defines a length of the first member **212** and the distance between the left and right sides **230**, **232** of the first member **212** defines a width of the first member **212**.

(66) Furthermore, as seen in FIG. **9** the attachment regions **354a**, **354b** of the first and second panels **326**, **328** align to form the first attachment region **354** of the first member **212**. The attachment regions **354a**, **354b** of the first and second panels **326**, **328** extend across substantially the same width of the first member **212**, this being approximately half the width of the first member **212**, and are provided centrally, in the same position across the width of the first member **212**. The slot **378** of the attachment region **354b** of the second panel **328** is positioned centrally across the width of the first and second flaps **356a**, **356b**, and extends across approximately $\frac{1}{6}$ of the width of the first and second flaps **356a**, **356b** in this embodiment. The slot of the second panel is adjacent the flaps of the first panel when the first member is formed.

(67) Referring to FIGS. **10** and **11**, the second member **214** of the arrangement of this embodiment is identical to the first member **212**, apart from that the second member **214** includes a rectangular cut-out **390** at the rear edges **392**, **394** of the first and second panels **396**, **398**, that together define a rectangular cut-out **390** of the second member **214** when the second member **214** is formed. When the arrangement is incorporated in the sleeve **218**, the rectangular cut-out **390** of the second member **214** aligns with the rectangular and curved indentations or cut-outs **320**, **322** of the sleeve **218** when the package is in the closed position.

(68) Referring to FIG. **12**, the band **216** of this embodiment is identical to the band **16** of the embodiment of FIGS. **1** to **3**, and will not be described again in detail here for conciseness.

(69) To assemble the arrangement of this embodiment the band **216** is attached to the first and second members **212**, **214** at their respective attachment regions **354**.

(70) To attach the band **216** to the first member **212**, the first and second flaps **356a**, **356b** of the first member are folded outwards, along their joining edges **366**, **376**, into the unfolded position illustrated in FIG. **13**. The rear end of the band **216b** is slotted through the band-receiving slot **378** and the band-receiving aperture **356** in succession, and is pulled in a first band direction, X, so that a first minor portion of the band **216** extends from the band-receiving aperture **356**. In this example, the first band direction X is substantially perpendicular to the plane of the first member **212**, but it should be understood that this is not required. The upper and lower halves **292**, **294** of the band **216** that define the first minor portion are arranged to create a first minor volume, defined between interior surfaces of the first minor portion of the band **216**, in which the flaps **356a**, **356b**

can be received. The flaps **356a**, **356b** are then folded inwards along their joining edges **366**, **376**, into the unfolded or flush position, such that inner surfaces of the flaps **356a**, **356b** engage with the interior surface of the band **216**. With the flaps **356a**, **356b** in the unfolded position, the front end **216a** of the band **216** is pulled in a second band direction Y, generally opposite to the first band direction X, until the interior surface of the band **216** engages with the outer surfaces of the flaps **356a**, **356b**. The band is now attached to the first member **212**, and the flaps **356a**, **356b** are essentially surrounded by the band **216** to form a mechanical connection between the band **216** and the first member **212**.

(71) The method for attaching the band **216** to the second member **214** is essentially the same as the method for the first member **212**. The first and second flaps **356a**, **356b** of the second member **214** are folded outwards, along their joining edges **366**, **376**, into the unfolded position. The front end **216a** of the band **216** is slotted through the band-receiving slot **378** and the band-receiving aperture **356** in succession, and is pulled in the second band direction, Y, so that a second minor portion of the band **216** extends from the band-receiving aperture **356**. The upper and lower halves **292**, **294** of the band **216** that define the minor portion are arranged to create a second minor volume, defined between interior surfaces of the first minor portion of the band **216**, in which the flaps **356a**, **356b** can be received. The flaps **356a**, **356b** are then folded inwards along their joining edges **366**, **376**, into the unfolded or flush position, such that inner surfaces of the flaps **356a**, **356b** engage with the interior surface of the band **216**. With the flaps **356a**, **356b** in the unfolded position, the band **216** is pulled in the first band direction X until the interior surface of the band **216** engages with the outer surfaces of the flaps **356a**, **356b**. The band **216** is now attached to the second member **214**, and the flaps **356a**, **356b** are essentially surrounded by the band **216** to form a mechanical connection between the band and the second member **214**.

(72) When the first and second members **212**, **214** are attached to the band **216** as described, the arrangement is ready to be incorporated into a sleeve **218** to form a package, as shown in FIG. 4.

(73) Referring first to FIG. 4, this shows the arrangement of this embodiment incorporated into a sleeve **218** to provide a package of the invention. FIGS. 14 to 16 illustrate further views of the arrangement incorporated in the sleeve **218** of FIG. 5 to form a package.

(74) FIGS. 14 and 15 show the arrangement fully housed within the sleeve **218** in a fully retracted position that corresponds to a fully closed position of the package. FIGS. 14 and 15 illustrate the positions of the first and second attachment regions **354** when the package is in the closed position. FIG. 16 shows a perspective view of the package when the arrangement is in a fully extended position that corresponds to a fully open position of the package.

(75) The arrangement of this embodiment is disassembled in essentially the same manner as in the previous embodiments, in that the first and second members, in particular primary regions of the first and second members, are gripped by a user and pulled away from one another to disengage the mechanical engagement between the band and the flaps of the first and second members. In this way, the attachment regions of this embodiment are configured to be detachable from the band, rather than from the primary regions of the first and second members. Thus, this embodiment advantageously provides complete separation of the plastics material of the band and the cardboard material of the first and second members.

(76) An arrangement in accordance with a further embodiment of the invention will now be described with reference to FIGS. 17 to 19. As in the previously described embodiments, the arrangement of this embodiment includes substantially planar, generally rectangular, first and second members **412**, **414** that are coupled to each other by a band **416**.

(77) The first member **412** has a front end **412a** and a rear end **412b**, and comprising a front edge **426**, a rear edge **428**, a left edge **430**, a right edge **432**, an upper surface **436** and a lower surface **434**. Correspondingly, the second member **414** has a front end **414a** and a rear end **414b**, and comprising a front edge **456**, a rear edge **458**, a left edge **462**, a right edge **460**, an upper surface **464** and a lower surface **466**. The second member **414** further comprises a rectangular cut-out

region **468** provided at its front edge **456**, and located centrally along a width of the second member **414** defined between its left and right edges **462**, **460**.

(78) The first member **412** comprises a first aperture or opening defined in a primary region of the first member. The first aperture is provided towards a rear end **412b** of the first member **412**, a small distance back from a rear edge **428** of the first member **414**. In this embodiment, the first opening **500** is generally circular and defines a through-hole in the first member **412**. That is, the first opening **500** extends through the full thickness of the first member **412** defined between upper and lower surfaces **436**, **434** of the first member **412**. In this embodiment the first opening **500** is formed as a die-cut hole. In other embodiments, the first opening **500** may be formed by another method, and the first opening **500** may extend only partially through the thickness of the first member **412**.

(79) The attachment region **482** of the second member **414** comprises a second aperture or opening defined in a primary region of the second member. The second aperture is provided towards a front end **414a** of the second member, a small distance back from a front edge **456** of the second member **414**, and comprises a second aperture or opening **502** that is essentially identical to the first opening **500** of the first member **412**, although this is not a requirement. That is, the attachment region **482** of the second member **414** comprises a generally circular opening **502** in the form of a through-hole, formed by die-cutting. In other embodiments it would be possible for the second opening **502** to differ from the first opening **500** in shape, form, and/or method of manufacture.

(80) As in previous embodiments, the first and second members **412**, **414** each include attachment regions **450**, **482** at which the first and second members **412**, **414** are attached to the band **416** when the arrangement is assembled.

(81) In this embodiment, the first and second attachment regions are provided in the form of first and second adhesive studs. The first and second adhesive studs are identical, and each comprise a generally cylindrical body having first and second, substantially flat, faces joined by a curved outer surface. The body of each of the adhesive studs is dimensioned so as to be received in the first and second openings in a close-fit.

(82) Turning now to FIG. **18**, the general form and material of the band **416** is the same as in previous embodiments. When incorporated in the arrangement of this embodiment, the band **416** is arranged such that it generally defines a rectangle in plan view and comprises upper and lower halves **492**, **494** joined by front and rear edges **496**, **498** provided at front and rear ends **416a**, **416b** of the band **416**.

(83) To assemble the arrangement of this embodiment, the first and second adhesive studs **504**, **506** are attached to the band **416** by means of an adhesive. In particular, the first adhesive stud **504** is bonded or attached to the exterior surface of the upper half **492** of the band **416** via the first face **504a** of the stud, at a position towards the rear end **416b** of the band **416** and centrally across a width of the band **416** defined between left and right side edges of the band **416**. The second adhesive stud **506** is bonded or attached to the exterior surface of the lower half **494** of the band **416** via the first face **506a** of the stud **506**, at a position towards the front end **416a** of the band **416** and centrally across the width of the band **416**.

(84) To attach the first member **412** to the band **416**, the first opening **500** of the first member **412** is aligned with the first adhesive stud **504**, such that the front and rear ends **416a**, **416b**, **412a**, **412b** of the band **416** and the first member **412** are generally aligned, and the lower surface **434** of the first member **412** and the exterior surface of the upper half **492** of the band are facing one another. The first adhesive stud **504** is then inserted into the first opening **500**, in which it is received in a close-fit. In other words, the first adhesive stud **504** is push-fit into the first opening **500**. In this way, the first member **412** and the band **416** are coupled to one another. Specifically, the attachment region of the first member in the form of the first adhesive stud detachably couples the primary region of the first member to the band.

(85) A similar procedure is followed to attach the second member **414** to the band **416**. The second

opening **502** of the second member **414** is aligned with the second adhesive stud **506**, such that the front and rear ends **416a**, **416b**, **414a**, **414b** of the band **416** and the second member **414** are aligned, and the upper surface **464** of the second member **414** and the exterior surface of the lower half **494** of the band **416** are facing one another. The second adhesive stud **506** is then inserted, or push-fit, into the second opening **502**, such that the second member **414** and the band **416** are coupled to one another. That is, the attachment region of the second member in the form of the second adhesive stud detachably couples the primary region of the second member to the band.

(86) In other embodiments, the shape, dimensions and method of making the openings **500**, **502** of the first and second members **412**, **414** may differ from the embodiment of FIGS. **17** to **19**, and/or may differ from each other. For example, although the openings **500**, **502** of the first and second members **412**, **414** are through-holes in this embodiment, the first and second openings **500**, **502** may extend only partially through the thickness of the or each member **412**, **414** in other embodiments.

(87) Furthermore, the shape and dimensions of the adhesive studs **504**, **506** may differ from that described. In one embodiment, the studs **504**, **506** may each comprise a circumferential flange extending about their first faces **504a**, **506a**. In this way, the studs **504**, **506** may attach the band **416** to the members **412**, **414** in a purely mechanical manner, without the need for an adhesive such as glue. In this case, the band **416** may comprise apertures through which the adhesive studs **504**, **506** are received before being inserted in a push-fit into the openings **500**, **502** of the first and second members **412**, **414**, such that the circumferential flanges of the studs **504**, **506** form limiting and holding means. That is, the flanges may act to prevent the studs **504**, **506** from being pushed too far through the openings of the members **412**, **414**, especially in the case where the openings **500**, **502** of the members **412**, **414** are through-holes. Furthermore, when the arrangement is assembled, the circumferential flanges engage with the interior surface of the band **416**, such that the band **416** is sandwiched and held between the circumferential flange of the adhesive studs **504**, **506** and the lower and upper surfaces **434**, **464** of the first and second members **412**, **414**.

(88) To disassemble the arrangement of this embodiment, a user grips the primary regions of the first and second member, and tugs or pulls the first and second members away from one another. The first and second adhesive studs are pulled out of the first and second apertures of the first and second members. Thus, when the arrangement of this embodiment is disassembled, the first and second adhesive studs of the first member remain attached to the band, and the primary regions of the first and second members are separated from the attachment regions, i.e. the adhesive studs, of the first and second members. In this embodiment, the attachment regions, i.e. the first and second adhesive studs, are configured to be detachable from the primary regions of the first and second members.

(89) FIGS. **20** to **24** illustrate an arrangement in accordance with another embodiment of the invention. As in the previous embodiments, the arrangement comprises a first member **712**, a second member **714** and a band **716**, and may be housed in a sleeve such as that of FIGS. **5** and **6** when assembled in a package.

(90) The first member has a front end, a rear end, a left side, a right side, a first or inner surface and a second or outer surface. Correspondingly, the second member has a front end, a rear end, a left side, a right side, a first or inner surface and a second or outer surface.

(91) The first member comprises a primary region **718** and a rectangular aperture **720** or through-hole defined in the primary region. The rectangular aperture **720** is located towards the rear end of the first member, and centrally across the width of the first member defined between the left and right side edges of the first member. Correspondingly, the second member comprises a primary region and a rectangular aperture or through-hole located towards the front end of the second member, and centrally across the width of the second member defined between the left and right side edges of the second member.

(92) The band of this embodiment is identical to the bands of the previous embodiments and will

not be described again in detail here for conciseness.

(93) The first and second members further each comprise an attachment region that detachably couples the primary region of the first and second members to the band.

(94) The attachment regions comprise first and second coupling means **722**, **724**, respectively, for detachably coupling the band to the members. The first and second coupling means **722**, **724** are identical to each other in this embodiment. Thus, only the first coupling means will be described for conciseness.

(95) The first coupling means **722** comprises a first adhesive strip **726** and a first coupling member **728**. The first adhesive strip is rectangular in shape, and is dimensioned so as to extend across substantially the full width of the band when attached to the band in the assembled state of the arrangement, as best appreciated with reference to FIG. **22**.

(96) The first coupling member **728** is formed of a folded, generally flat, blank that comprises five rectangular sections or panels. Specifically, the blank of the first coupling member includes three major panels and two minor panels. The three major panels define a central panel **731** of the blank and first and second outer panels **732**, **734** respectively of the blank. The minor panels comprise a first minor panel **736** that is positioned between the first outer panel **732** and the central panel **731**, and a second minor panel **738** that is positioned between the second outer panel **734** and the central panel **731**. The panels of the blank are integral and demarcated from each other by folds or scores **740**. Specifically, a first fold adjoins the first outer panel **732** and the first minor panel **736**, a second fold adjoins the first minor panel **736** and the central panel **731**, a third fold adjoins the central panel **731** and the second minor panel **738**, a fourth fold adjoins the second minor panel **738** and the second outer panel **734**.

(97) When the blank is folded at the scores to form the first coupling member **728**, the minor portions are substantially perpendicular to the major portions, and the first coupling member **728** defines a top-hat profile, which is best illustrated in FIG. **22** which shows the first coupling member **728** integrated into the arrangement. As will be explained, an outer surface of the central panel **731** defines a band-engagement surface and an inner surface of the central panel **731** defines an adhesive-strip engagement surface. The outer panels **732**, **734** define member-engaging surfaces that engage with the first and second member **712**, **714** in the assembled arrangement for mechanical coupling of the members to the band **716**. The minor panels **736**, **738** have a width that is substantially equal to, or slightly greater than, a thickness of the first member **712** defined between its upper and lower surfaces **750**, **752**. The central panel has a width that is substantially equal to, or slightly less than, a width of the aperture of the first member.

(98) As noted, the second coupling means **724** is identical to the first coupling means **722**, comprising a second adhesive strip **826** and a second coupling member **828** identical to the first adhesive strip **726** and the first coupling member **728** of the first coupling means **722**, and will therefore not be described here in detail. Like parts of the first and second coupling means are provided with like reference numerals.

(99) To assemble the arrangement of this embodiment, the first and second coupling means **722**, **724** are attached to the band **716**, and the first and second members **712**, **714** are then attached to the band **716** at, and by means of, the first and second coupling means **722**, **724**.

(100) In the assembled arrangement, the first coupling means **722** is attached to the exterior surface **754** of the upper half **756** of the band **716**, at the rear end of the band, and the second coupling means is attached to the exterior surface of the lower half **760** of the band **716**, at the front end of the band **716**.

(101) The first coupling means **722** is attached to the band **716** as follows. The first coupling member **728** is positioned towards the rear end, and centrally across the width, of the band **716**. The outer surface of the central panel **731** is engaged with the exterior surface **754** of the upper half **756** of the band **716**. The adhesive strip **726** is positioned across the width of the band **716**, such that a central region of the adhesive strip **726** contacts and adheres to the inner surface of the

central panel **731**. Outer regions of the adhesive strip **726** at either side of the central region contact and adhere to the exterior surface **754** of the upper half **756** of the band **716**. In this way, the adhesive strip **726** bonds the first coupling member **728** to the band. When the first coupling member **728** is attached to the band in this way, the outer panels or flaps of the first coupling member **728** are spaced from the band **716** by a gap by virtue of the minor panels of the first coupling member. The size of the gap, corresponding to a width of the minor panels, is dimensioned to be substantially equal to a thickness of the first member **712** defined between its upper and lower surfaces.

(102) The method of attaching the second coupling means to the second member is substantially the same as the method for attaching the first coupling means to the first member. The second coupling member is positioned towards the front end, and centrally across the width, of the band. The outer surface of the central panel is engaged with the exterior surface of the lower half of the band. The adhesive strip is positioned across the width of the band, such that a central region of the adhesive strip contacts and adheres to the inner surface of the central panel, and outer regions of the adhesive strip at either side of the central region contact and adhere to the exterior surface of the lower half of the band. In this way, the adhesive strip bonds the second coupling member to the band. When the second coupling member is attached to the band in this way, the outer panels of the second coupling member are spaced from the band by a gap by virtue of the minor panels of the second coupling member. The size of the gap, corresponding to a width of the minor panels, is dimensioned to be substantially equal to a thickness of the second member defined between its upper and lower surfaces.

(103) Once the first and second coupling means are attached to the band, the first and second members are coupled or attached to the band via the first and second coupling means.

(104) To couple the first member to the band, the outer panels of the first coupling member are folded inwardly towards one another, and are inserted through the aperture in the first member. Specifically, the first and second outer panels are pivoted about the first and fourth folds until the first and second outer panels extend substantially perpendicularly with respect to the plane of the central panel. Because the width of the central panel of the first coupling member is substantially equal to the width of the aperture of the first member, this allows the first and second outer panels to be inserted through the first aperture simultaneously.

(105) Once the first and second outer panels are received in the first aperture, the lower surface of the first member is brought into contact with the exterior surface of the band, and the first and second outer panels are folded outwards, away from one another, until the member-engaging surfaces of the outer panels engage the upper surface of the first member. In this way, the first member is coupled to the band via the first coupling means.

(106) The second member is coupled to the second coupling means of the band in essentially the same manner as the first member is coupled to the first coupling means, and will therefore not be described here in detail for conciseness.

(107) As in previous embodiments, the arrangement of this embodiment is advantageous, as it is easy to disassemble into its constituent parts, and thus provides a benefit in terms of ease of disposal for recycling. Separating the band from the first and second members, i.e. disassembling the arrangement, may be achieved in essentially the same manner as for previous arrangements. That is, a user may grip the first and second members at their front and rear ends respectively, and pull or tug the first and second members in opposite directions to release the mechanical engagement between the first coupling member and the first member and the second coupling member and the second member. In this way, the first and second outer panels are pulled out of the apertures of the first and second members. The first and second attachment regions of the first and second members remain attached to the band, and the primary regions of the first and second members are separated for easy recyclability.

(108) When disassembled in this way, the first and second coupling means remain attached to the

band, but the first and second members are completely separated from the band and other parts of the arrangement for recycling.

(109) In each of the embodiments described, the primary regions of the first and second members are formed of a non-plastics material, in these examples of cardboard, and the band is formed of a plastics material.

(110) FIGS. 25 to 28 illustrate an alternative sleeve for use in a package.

(111) Referring in particular to FIG. 25, the sleeve comprises a flat blank **802**, which is substantially the same as the flat blank of FIG. 4, manufactured in the same way by cutting and creasing or scoring a sheet of flexible cardboard, plastics, tear-resistant laminate, or other material. The sheet is flexible enough to allow for the bending that is necessary to form the sleeve **800**, but is stiff enough to provide structural support.

(112) As with the blank of FIG. 4, the blank **802** of FIG. 25 consists of seven integral, substantially oblong sections or panels **812**, **814**, **816**, **818**, **820**, **822**, **824**. Four of the sections, namely a divider panel **812**, a lower panel **816**, an upper panel **820** and a secondary lower panel **824** are relatively wide, and three, namely a first side wall **814**, a second side wall **818**, and a third side wall **822**, are relatively narrow. In the assembled sleeve, the divider panel **812** divides the space between the upper and lower panels **816**, **820**, to define upper and lower compartments in the sleeve.

(113) The sections **812**, **814**, **816**, **818**, **820**, **822**, **824**, each of the blank **802** are integral and demarcated from each other by folds or scores **832** (see inset of FIG. 25). In particular, the first side wall **814** joins a first edge **834** of the divider panel **812** to a first edge **836** of the lower panel **816**, and meets those edges at boundaries defined by folds. The second side wall **818** joins a second edge **838** of the lower panel **816** to a second edge **842** of the upper panel **820** and meets those edges at boundaries defined by folds. The third side wall **822** joins a first edge **844** of the upper panel **820** to a second edge **846** of the secondary lower panel **824** and meets those edges at boundaries defined by folds.

(114) The sleeve blank **802** of FIG. 25 differs from the sleeve blank of FIG. 4 primarily in that the sleeve blank **802** of FIG. 25 additionally comprises protrusions **840** that protrude from the first side wall **814** of the blank **802**. In particular, the first side wall **814** defines a side wall plane and the protrusions **840** protrude away from the first sidewall **814** substantially in the first side wall plane.

(115) As can be best seen in FIG. 26, in the folded sleeve, the protrusions **814** protrude from the first side wall **812** beyond the first edge **834** of the divider panel **812** to support the upper panel **820** along its first edge **844**. In this way, the protrusions **840** act to hold the upper panel **820** away from the divider panel **812** at its first edge **834**, thereby preventing compression of the upper compartment of the sleeve.

(116) Referring to FIG. 27, which shows an enlarged view of a protrusion **840** with the sleeve **800** in the folded configuration, the first side wall **812** has a first height $h_{\text{sub.1}}$, while the second side wall **818** has a second height $h_{\text{sub.2}}$ that is greater than the first height $h_{\text{sub.1}}$. The protrusion **840** has a protrusion height $h_{\text{sub.p}}$, selected such that $h_{\text{sub.1}} + h_{\text{sub.p}} = h_{\text{sub.2}}$. In this way, when the upper panel **820** rests on the protrusions **840**, the upper panel **820** is held at the same height above the lower panel (not visible) on each of the left and right sides: at one side by the second side wall **818** at height $h_{\text{sub.2}}$, and on the other side by the combination of the first side wall **814** and the protrusion **840** at height $h_{\text{sub.1}} + h_{\text{sub.p}} = h_{\text{sub.2}}$. Thus, the upper panel **820** is held parallel to the lower panel.

(117) Referring back to FIG. 25, and in particular the inset of FIG. 25 showing a magnified portion in the vicinity of the protrusion **840**, the protrusion **840** is formed by being 'reclaimed' from the divider panel **812**.

(118) In particular, the fold or boundary **832a** between the divider panel **812** and the first side wall **816** is interrupted by the protrusion **840**. In the area of this interruption, the divider panel **812** comprises a cut-out **850**, and the protrusion **840** protrudes beyond the foldable boundary **832a** into the cut-out **850**. Said another way, the portion that is cut out of the divider **812** by the cut-out **850**

forms the protrusion, so that the shape of the cut out defines the shape of the protrusion.

(119) When the blank **802** is laid flat, as in FIG. **25**, the cut-out **850** in the divider panel **812** accommodates the protrusion **840**. However, when the blank **802** is folded to form the sleeve such that the first side wall **814** lies orthogonal to the divider panel **812**, as shown in FIG. **28**, the protrusion **840** remains in the plane of the first side wall **814**, rather than the plane of the divider panel **812**, such that the protrusion **840** stands proud of the first side wall **814** and extends upwardly to protrude above the divider **812**. This also reveals the cut-out **850** in the divider panel **812**.

(120) Referring still to FIG. **28**, the protrusion **840** comprises a first edge **852** joined to the first side wall **814** and a second edge **854** opposite the first edge **852**. The second edge **854** is a free edge that, in the folded sleeve, supports the upper panel. The first and second edges **852**, **854** of the protrusion **840** are joined by respective third and fourth edges **856**, **858**.

(121) In this embodiment a length of the first edge **852** is greater than a length of the second edge **854**.

(122) The third and fourth edges **856**, **858** are sloped between the first and second edges **852**, **854**, and in particular define an acute angle to the first edge **852** and an obtuse angle to the second edge **854**. In this way, the protrusion **840** has a trapezoidal shape. The sloping of the third and fourth edges **856**, **858**, and the obtuse angle with the free edge **854** of the protrusion **840**, facilitates separation of the protrusion **840** from the divider panel **812** when the blank is folded for assembly, and also makes the free corners of the protrusion (i.e. the corners between the second edge **854** and the third and fourth edges **856**, **858**) more resistant to wear.

(123) FIGS. **29** to **33** illustrate an arrangement in accordance with another embodiment of the invention. As in the previous embodiments, the arrangement comprises substantially planar, generally rectangular, first and second members **912**, **914**, which are also referred to as moveable members. The first and second members **912**, **914** are each couplable to a band **916**, and in this way are couplable to each other by the band **916**.

(124) The first member **912** has a front end **912a** and a rear end **912b**, and comprises a front edge **926**, a rear edge **928**, a left edge **930**, a right edge **932**, an upper surface **936** and a lower surface **934**. In use, the upper surface **936** as shown defines a running surface that lies parallel to the divider and faces the band. The first member **912** further comprises a first recess **900** that defines a first recess region or attachment region **939** of the first member **912**. The remainder of the first member **912** not defined by the first attachment region **939** defines a primary region of the first member **912**.

(125) The first attachment region **939** defines a portion of the first member **912** at which the band **916** is attached when the arrangement is assembled. As in the other described embodiments, the first attachment region **939** is configured to detachably couple the primary region of the first member **912** to the band **916**.

(126) The first recess **900** is provided towards the rear end **912b** of the first member **912**, a small distance back from the rear edge **928** of the first member **912**, and centrally across the width of the first member **912** defined between its left and right edges **930**, **932**. The first recess **900** extends partially through the thickness of the first member **912** defined between the upper and lower surfaces **936**, **934**.

(127) In this embodiment, the first recess **900** is generally circular, and is formed as a debossed hole or depression in the upper surface **936** of the first member **912**. As illustrated in FIG. **30**, the first recess **900** has a slight taper, and terminates at a base **940** of the first recess **900**. A vertical spacing between the base **940** of the recess and the running surface **936** defines a depth of the recess.

(128) The first recess **900** extends approximately halfway through the thickness defined between the upper and lower surfaces **936**, **934** of the first member **912** in this embodiment. In other embodiments, the first recess **900** may extend through a greater or lesser extent of the thickness of

the first member **912**, and may take a different shape, so long as the first recess **900** is suitable for accommodating an adhesive material (not shown). As will be explained in more detail later, the adhesive material lies flush or sub-flush with the running surface **936** of the first member **912** when accommodated in the first recess **900**, and couples the first member **912** to the band **916** when the arrangement is assembled. The adhesive material may be glue, for example, or may take the form of any other suitable adhesive substance.

(129) Referring to FIGS. **31** and **32**, the second member **914** is of a different construction to the first member, but may perform essentially the same function. The second member comprises first and second panels or walls **926**, **928**, joined by a hinge **988**.

(130) FIG. **31** shows that second member **914** is formed by a blank **924**. In its unfolded state, the first and second panels **926**, **928** lie end-to-end, joined by the hinge **988**.

(131) The first panel **926** has a front end **930**, a rear end **932**, a left side **934**, a right side **936**, a first or inner surface (not shown in FIG. **31**) and a second or outer surface **938**. Correspondingly, the second panel **928** has a front end **942**, a rear end **944**, a left side **946**, a right side **948**, a first or inner surface (not shown in FIG. **31**) and a second or outer surface **950**.

(132) The first and second panels each include a rectangular cut-out **990** at their rear edges, which together define a rectangular cut-out of the second member **914** when the second member **914** is formed, that is positioned at the rear edge **958** of the second member **914**, and located centrally along a width of the second member **914** defined between its left and right edges **962**, **960**.

(133) The first panel **926** further comprises a panel aperture or opening **970** that is located towards the rear end **932** of the first panel **926**, and centrally across the width defined between the left and right side edges **934**, **936** of the first panel **926**. In this embodiment the panel opening **970** is formed as a die-cut hole, but in other embodiments the panel opening **970** may be formed by another method. Also, it would be possible for the panel opening **970** to extend only partially through the thickness of the first panel **926**.

(134) The hinge **988** is defined by a fold or score provided between the front ends **930**, **942** of the panels. To form the second member **914**, the blank **924** is folded at the blank fold **988**, and the inner surfaces of the first and second panels **926**, **928** are bonded to each other by means of adhesive provided on one or both of the inner surfaces. Thus, the first and second panels **926**, **928** are arranged one on top of the other, in a face-to-face arrangement. When the second member **914** is formed, the first and second panels **926**, **928** are coplanar to define a double wall, with the first panel **926** defining a first wall and the second panel **928** defining a second wall.

(135) Referring to FIG. **32**, when formed, the front and rear ends and the left and right sides of the first and second panels **926**, **928** align to form front and rear ends **914a**, **914b** and the left and right sides **930**, **932** of the second member **914**. The fully-formed second member also defines a left edge **962**, a right edge **960**, an upper surface **964** and a lower surface **966**.

(136) In use, the lower surface **966** defines a running surface that lies parallel to the divider and faces the band.

(137) The first and second panels **926**, **928** together create a second recess **980** that defines a second recess region or attachment region **954**. The second attachment region **954** is provided at the rear edge **958** of the second member, and is located centrally along a width of the second member **914** defined between its left and right edges **962**, **960**. The band **916** is attached to the second member **914** at this second attachment region **954** when the arrangement is assembled, which is configured to detachably couple the primary region of the second member **914** to the band **916**. As in the other described embodiments, the remainder of the second member **914**, surrounding the second attachment region, defines a primary region of the second member **914**.

(138) The second recess **980** is defined by the opening **970** in the first panel **926** and a continuous portion of the second panel **928** that overlies the opening **970** when the second member **914** is formed. In this way, the continuous portion of the second panel **928** forms a base **972** of the second recess **980**. As with the first recess **900** of the first member **912**, the second recess **980** of the

second member **914** accommodates an adhesive material (not shown) for coupling the second member **914** to the band **916**. The adhesive material lies flush or sub-flush with the lower surface **966** of the second member **914** when accommodated in the second recess **980**.

(139) As with the first member **912**, a spacing between the lower surface or running surface **966** and the base **972** defines a depth of the recess **980**.

(140) It should be understood that although the arrangement of FIGS. **29** to **34** has so far been described as including both first and second members **912**, **914**, this is not a requirement. In some embodiments, the arrangement may include only one of the first or second members **912**, **914**. Furthermore, in embodiments in which two members are included these members may be different, for example as is described in the embodiment of FIGS. **29** to **34**, or these two members may be substantially the same.

(141) A method of assembling a package incorporating the arrangement of the embodiment of FIGS. **29** to **32** will now be described with reference to FIGS. **33** and **34**. In this example, the arrangement of FIGS. **29** to **32** is incorporated into a sleeve such as that illustrated in FIGS. **5** and **6**.

(142) In a first step, a sleeve blank **300** such as that shown in FIG. **5** is provided, and the band **916** is arranged to encircle the divider **304** of the sleeve blank **300**. To achieve this, the strip of sheet material that forms the band **916** is arranged to encircle the divider **304** of the sleeve blank **300**, and the ends of the sheet material are joined to form the band **916** around the divider **304**. It should be noted that the divider **304**, also referred to as a substrate, may not be integral with a sleeve or other component of the package in all embodiments. In some examples, the divider **304** may simply be a planar sheet of material that can be fixed in a sleeve, for example using an adhesive or some mechanical means, in order to form the package.

(143) With the band **916** in place, the sleeve blank **300** is folded along the folds **332** successively in a coil-like manner, starting with the divider **304**, to form a sleeve **218** that includes an upper passage **100** and a lower passage **102**.

(144) Referring to FIG. **33**, once the sleeve **218** is formed the first and second members **912**, **914** are prepared and incorporated into the package as follows.

(145) To prepare the first and second members **912**, **914** for integration in the sleeve **218**, an adhesive material is arranged in the first recess **900** of the first member **912** and the second recess **982** of the second member **914**. The adhesive material is arranged so as to lie flush or sub-flush with the upper surface **936** of the first member **912** and the lower surface **966** of the second member **914**, each of which define a running surface of their respective member **912**, **914**. In use, when the arrangement or package is assembled, the running surface will face the band **916**.

(146) Said another way, a depth of the adhesive material in a direction substantially orthogonal to the running surface does not exceed a depth of the respective recess.

(147) Arranging the adhesive material in this way is advantageous, as it guards against the adhesive material transferring to the band **916** or other components of the package before it is intended. In the finished article, it also ensures that the first and second members **912**, **914** can lie flat against the divider or substrate **304**, without being spaced away from the substrate **304** in the region of the adhesive.

(148) Once the adhesive material is arranged in the recesses of the first and second members **912**, **914**, the first and second members **912**, **914** are inserted into the sleeve **218**.

(149) The first member **912** is inserted into the lower passage **102** of the sleeve **218**, with the upper surface **936**, i.e. the running surface, of the first member **912** facing towards the band **916**. In this example, the first member **912** is inserted into the sleeve **218** so that the front end **912a** of the first member **912** enters the sleeve **218** before the rear end **912b** of the first member **912**. The first member **912** is then pushed into the sleeve **218** until the ends **912a**, **912b** of the first member **912** generally align with ends **218a** of the sleeve **218**, as is shown in FIG. **34**.

(150) The second member **914** is inserted into the upper passage **100** of the sleeve **218**, with the

lower surface **966**, i.e. the running surface, of the second member **914** facing towards the band **916**. In this example, the second member **914** is inserted into the sleeve **218** at the opposing end of the sleeve to that at which the first member **912** is inserted. The second member **914** is inserted into the sleeve **218** such that the front end **914a** of the second member **914** enters the sleeve **218** before the rear end **914b** of the second member **914**, and is then pushed into the sleeve **218** until the ends **914a**, **914b** of the second member **914** align with the ends **218a** of the sleeve **218**, as shown in FIG. **34**.

(151) Because the adhesive material lies flush or sub-flush with the running surface **936**, **966** of each member **912**, **914**, the running surface can run smoothly over the band **916**, without the adhesive material catching on the band **916** to inhibit movement.

(152) As noted above and as illustrated in FIG. **33**, the first and second members **912**, **914** are inserted into the sleeve **218** at opposing ends of the sleeve **218** in this example. However, the first and second members **912**, **914** may be inserted at the same end of the sleeve **218** in other embodiments. Furthermore, it should be understood that the first and second members **912**, **914** may be inserted into the sleeve **218** simultaneously, or may be inserted at different times.

(153) Once the first and second members **912**, **914** are in position in the sleeve **218**, with their ends **912a**, **912b**, **914a**, **914b** in general alignment with the ends **218a** of the sleeve **218** as shown in FIG. **34**, and their running surfaces **936**, **966** lying parallel to and facing the divider **304** and the band **916**, the first and second members **912**, **914** are ready for attachment to the band **916**.

(154) To attach the first member **912** to the band **916**, pressure is applied to the band **916** and/or to the first member **912** in the region of the adhesive material, in order to adhere or bond the first member **912** to the band **916**. When pressure is applied in this way, for example by a user pressing down on the sleeve **218** in the region of the adhesive material of the first member **912**, this pushes the portion of the first member **912** in the vicinity of the adhesive material towards and into contact with the band **916**. Continued pressure from the user pushes the adhesive material housed in the first recess **900** of the first member **912** into contact with the band, thereby attaching the first member **912** to the band **916** via the adhesive material.

(155) A similar method may be employed to the second member **914** to attach the second member **914** to the band **916**.

(156) It will be understood that the pressure for attaching the first and second members **912**, **914** may be applied manually or otherwise. It should also be appreciated that it is not required that pressure be applied directly to the band and/or the first or second members **912**, **914**. Instead, pressure may be applied to the band **916** and/or the first or second members **912**, **914** via another component of the package, i.e. via the sleeve **218** as in the embodiment of FIG. **34**.

(157) Furthermore, it should be understood that pressure may be applied to attach the first and second members **912**, **914** to the band **916** simultaneously or at different times. As one example, one method of applying this attachment pressure may be for a user to pinch the sleeve **218** between the thumb and forefinger of each hand, such that pressure is applied simultaneously to the band **916** and the first and second members **912**, **914** in the region of the adhesive material.

(158) Incorporating the adhesive in the recesses **900**, **980** of the first and second members **912**, **914** so that it is flush or sub-flush to the running surfaces **936**, **966** is advantageous as it ensures that adhesive material does not unintentionally transfer onto other components, or simply before it is intended to. This is especially important in the described example, in which the first and second members **912**, **914** are incorporated into the package after the sleeve **218** and the band **916** are already assembled. Transfer of the adhesive material before it is intended in this example could lead to the member **912**, **914** attaching to the wrong component, or at the wrong position, which would most likely result in the entire package being discarded. Transfer of adhesive material before intended could also lead to poor operation of the final package. For example, if a small amount of adhesive were to transfer to the band at the wrong position, this could result in less smooth running of the running surface of the member in the package. The invention therefore protects against the

unnecessary waste of materials, the loss of time in assembling a package that must ultimately be discarded, as well as helping to ensure the good working order of the final package.

(159) Furthermore, in the finished package, because the adhesive material lies flush or sub-flush with the running surface, and does not protrude above the running surface, the adhesive material does not cause the first or second members **912, 914** to be spaced away from the band **916**. This means that the first and second members **912, 914** can lie flat against the band **916**, with the band **916** lying flat against the divider. This ensures a compact package, and aids smooth running of the band-drive mechanism.

(160) The method described above in relation to FIGS. **33** and **34** is only one example of how a package incorporating the arrangement of FIGS. **29** to **32** could be assembled, and should not be taken as limiting.

(161) In one embodiment, the first and/or second members **912, 914** may be attached to the band **916** before the band **916** is incorporated into a sleeve **218**/package. For example, the band **916** could be arranged around a divider in a similar manner to as described above, but in this case the divider may form a separate component rather than being provided as an integral part of the sleeve **218**. Once the band **916** is arranged on the divider, the first and/or second members **912, 914** may be attached to the band in a similar manner to that described already. Once assembled, the arrangement may then be incorporated into a sleeve to form the final package. Alternatively, it would be possible for the first and/or second members **912, 914** to be attached to the band **916** before the band **916** is assembled on any sort of divider or substrate.

(162) Variations and modifications of the invention will be apparent to the skilled person that fall within the scope of the appended claims.

Claims

1. A package comprising a package insert and a sleeve, the package insert comprising: first and second members; and a band, the first and second members being coupled to the band such that movement of the first member in a first direction drives the band to cause movement of the second member in a second direction, wherein: the first member comprises a primary region and an attachment region that is frangibly coupled to the primary region so that the attachment region is detachable from the primary region to decouple the primary region from the band; a boundary between the attachment region and the primary region is defined by a perforation; a portion of the band is attached to the attachment region to couple the first member to the band, wherein said portion of the band extends over a majority of the attachment region; and wherein the package insert is housed within the sleeve, such that the sleeve is arranged to selectively block access to the first member.
2. The package of claim 1, wherein the attachment region is configured to be detachable from the band.
3. The package of claim 2, wherein the first member is movable between a closed configuration in which the first member has been displaced in the first direction to a minimum possible extent and an open position in which the first member has been displaced in the first direction to a maximum possible extent, and wherein the attachment region is configured to be detachable from one or both of the band and the primary region when the package is arranged in the open configuration and a force is applied to the first member in the first direction.
4. The package of claim 1, wherein the attachment region is fitted to the primary region with a press-fit.
5. The package of claim 2, wherein the attachment region comprises an attachment feature for detachably coupling the first member to the band.
6. The package of claim 5, wherein the attachment feature comprises an opening and an anchoring feature adjacent to the opening, wherein an end of the band protrudes through the opening to define

an attachment loop, and wherein the anchoring feature protrudes into the attachment loop.

7. The package of claim 6, wherein the anchoring feature comprises a flap.

8. The package of claim 7, wherein the first member comprises a double wall, the flap being provided on a first wall of the double wall and the opening being defined in a second wall of the double wall.

9. The package of claim 8, wherein the flap is defined by a hinged portion of the first wall.

10. The package of claim 1, wherein the second member comprises an attachment region that is detachably coupled to the band.

11. The package of claim 1, wherein the first member and the band are made of different materials, optionally materials that have different recycling categories.

12. The package of claim 1, wherein the band comprises a plastics material and the first member comprises a non-plastics material.

13. The package of claim 1 further comprising a panel, wherein the band encircles the panel.

14. The package of claim 1, wherein one or both of the first member and the second member comprises a recess for accommodating an adhesive material for coupling the one or both of the first member and the second member to the band.
