



(19) **United States**  
(12) **Patent Application Publication**  
**Wine et al.**

(10) **Pub. No.: US 2009/0142006 A1**  
(43) **Pub. Date: Jun. 4, 2009**

(54) **MULTICOMPARTMENT BAG HAVING RESEALABLE OPPOSED OPENINGS**

**Publication Classification**

(75) Inventors: **Denny Wine**, Whitsett, NC (US);  
**Hugh Farrell**, Burlington, NC (US);  
**Tim Mages**, Waxhaw, NC (US)

(51) **Int. Cl.**  
*B65D 30/22* (2006.01)  
*B65D 30/20* (2006.01)  
*B65D 33/00* (2006.01)  
*B65D 33/16* (2006.01)  
(52) **U.S. Cl.** ..... **383/38**; 383/120; 383/42; 383/97  
(57) **ABSTRACT**

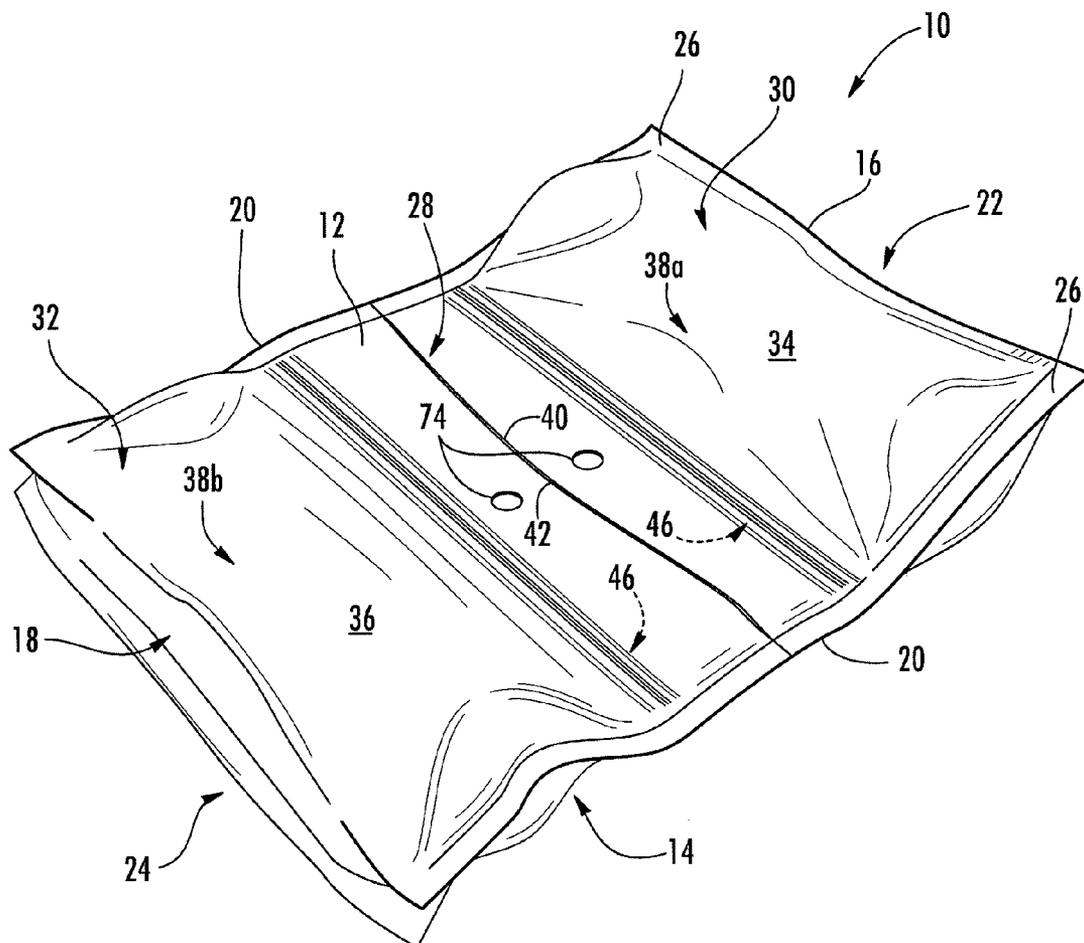
Correspondence Address:  
**ALSTON & BIRD LLP**  
**BANK OF AMERICA PLAZA, 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000 (US)**

The invention provides a multicompartment bag comprising a front sheet and a back sheet that are affixed to each other along adjacent peripheral edges, and that includes a line of separation in one of the sheets that defines first and second compartments disposed on opposite sides of the line of separation. Each compartment includes an interior space and an opening that is defined by a portion of the front sheet along the line of separation that is not affixed to the back sheet. Each compartment includes a resealable closure that is disposed adjacent to the openings of each compartment. The multicompartment bag is capable of being reversibly folded into a closed position in which the back sheet is folded to form an exterior surface that extends over and substantially covers the openings of the first and second compartments to thereby help prevent items in the compartments from accidentally spilling out of the compartments.

(73) Assignee: **N.S. Flexibles, LLC**

(21) Appl. No.: **11/947,903**

(22) Filed: **Nov. 30, 2007**



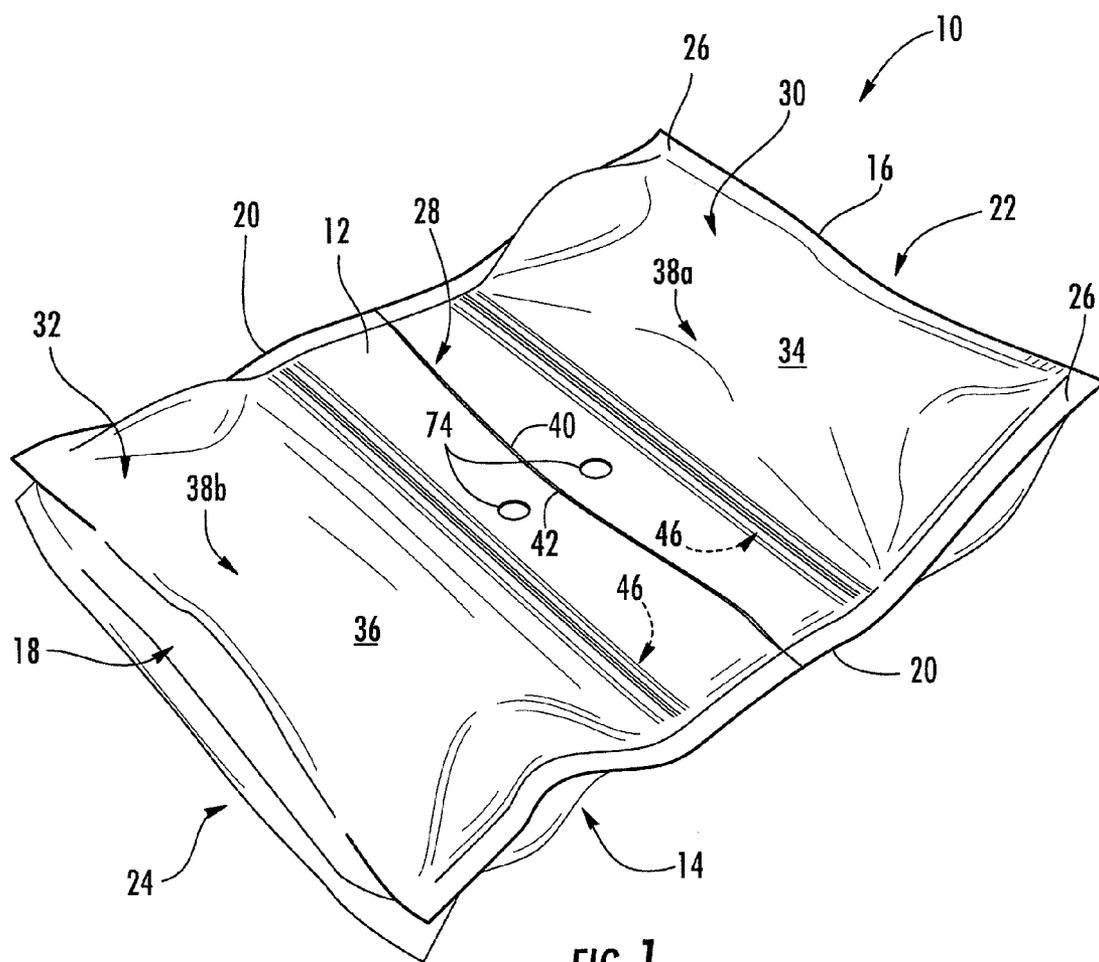


FIG. 1

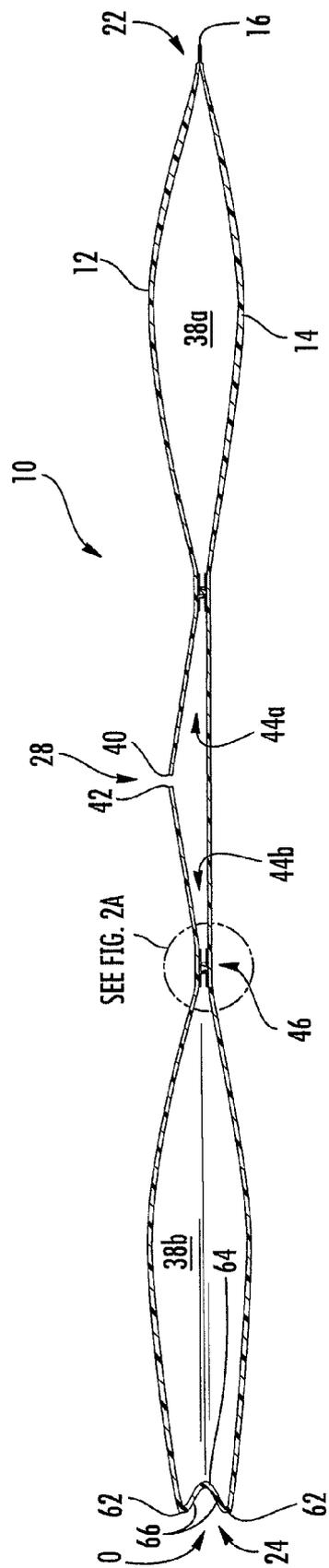


FIG. 2

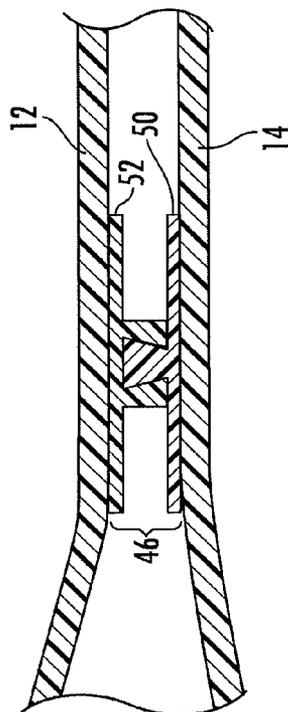
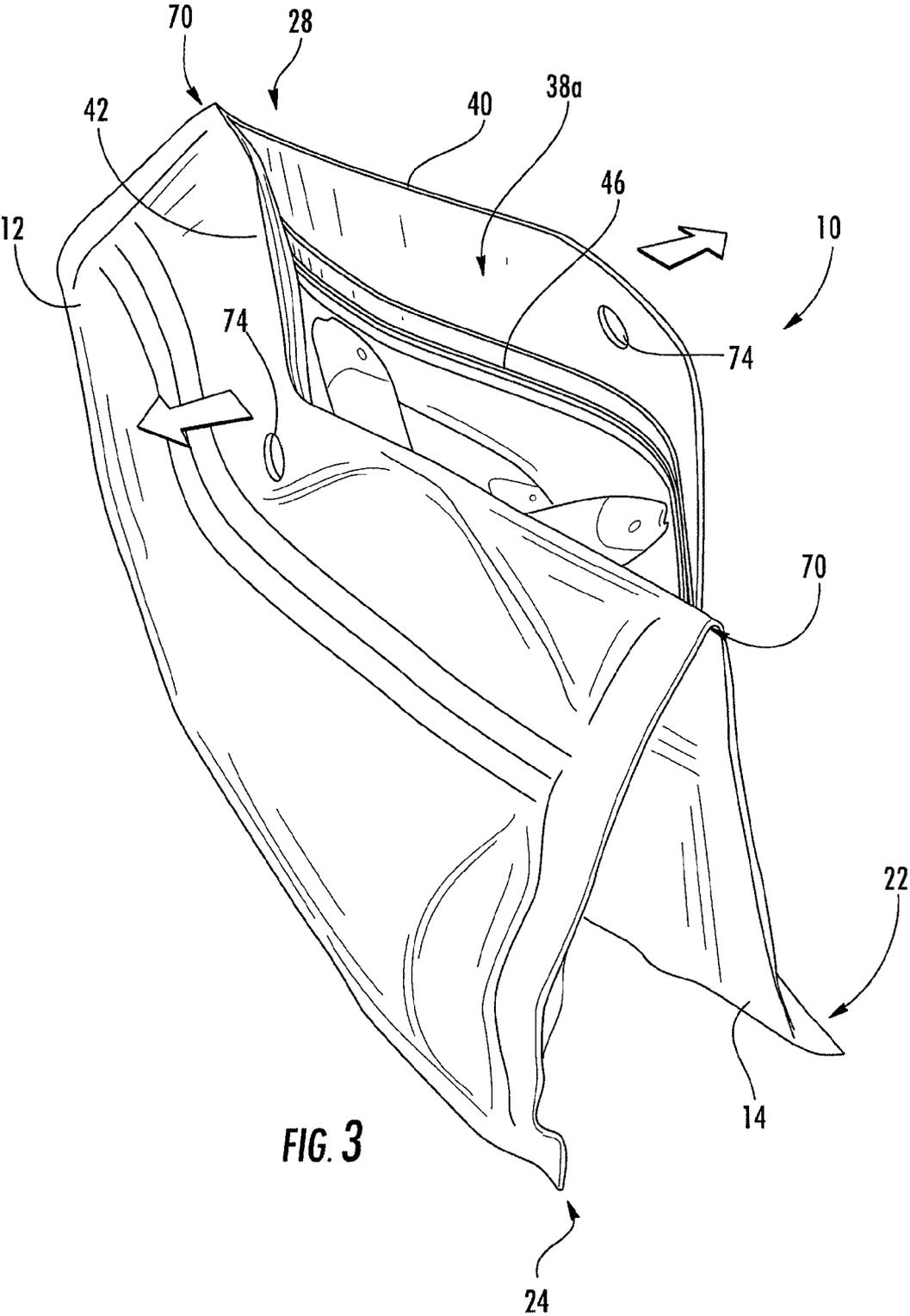
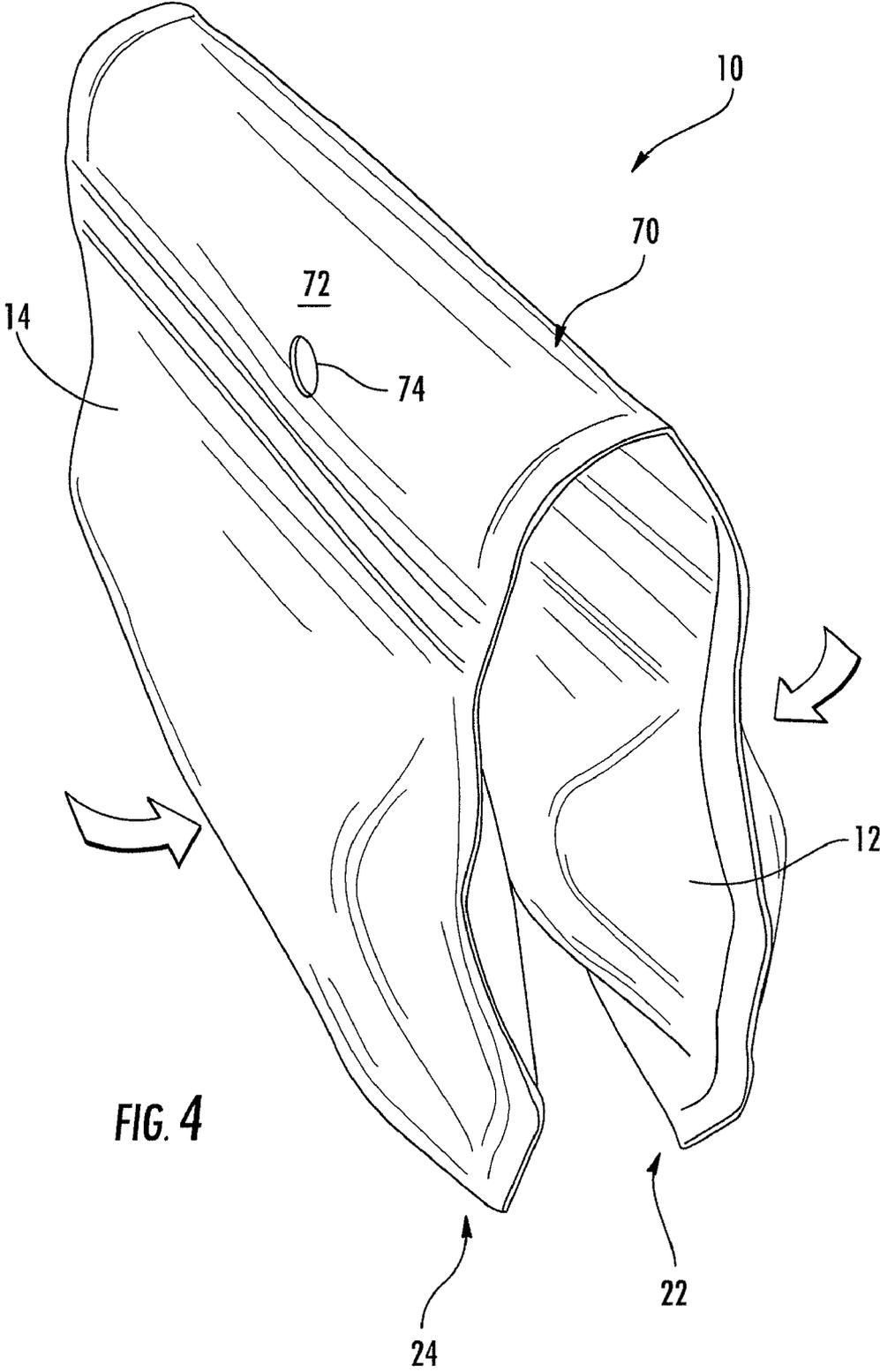


FIG. 2A





**MULTICOMPARTMENT BAG HAVING RESEALABLE OPPOSED OPENINGS**

**FIELD OF THE INVENTION**

[0001] The present invention is directed to a multicompartment bag, and in particular, to a multicompartment bag having resealable closures.

**BACKGROUND OF THE INVENTION**

[0002] Various bags have been developed for storing and containing items therein. For example, bags have been developed for storing, sorting, organizing, packing, packaging, and preserving various items.

[0003] In order to help facilitate temporary closure and easy access to the contents of the bag, resealable closures (commonly referred to as a zipper) have been developed that permit the bag to be opened and reclosed. For example, resealable closures have been developed that include two strips, one along each side of the bag opening, capable of being squeezed together either manually or by a slider moving over both strips from one end along their lengths to the other end. Typically, one strip has an undercut groove or series of grooves into which snaps a corresponding male element or series of male elements to form a seal along the opening of the bag.

[0004] Resealable multicompartment bags have also been developed for storing items separately in the same bag. For example, multicompartment bags have been developed in which two compartments are disposed in a side-by-side relation and share a common wall. Generally, the openings of the compartments in such bags are located near the top of the bag for easy access. In most cases these bags tend to perform adequately. However, in some cases the resealable closure may not function correctly or the user may have not properly sealed the resealable closure, which can result in spillage of the contents of one or more of the compartments. This problem may be particularly true in the case of multicompartment bags where the openings of each compartment are disposed adjacent to the top end of the bag.

[0005] A further disadvantage of such bags is costs that can be associated with bag construction. Typically, these bags include at least three panels of sheet material to form a two compartment bag, which can increase the costs associated with making the bag.

[0006] Accordingly, a need exists for a relatively low cost multicompartment bag that can be used to help prevent accidental spillage of the bag's contents.

**BRIEF SUMMARY OF THE INVENTION**

[0007] The present invention provides a multicompartment bag comprising a front sheet and a back sheet that are affixed to each other along adjacent peripheral edges, and that includes a line of separation in one of the sheets that defines first and second compartments disposed on opposite sides of the line of separation. Each compartment includes an interior space and an opening that is defined by a portion of the front sheet along the line of separation that is not affixed to the back sheet. Preferably, each compartment includes a resealable closure that is disposed adjacent to the openings of each compartment.

[0008] In one embodiment, the line of separation extends laterally across the width of the front sheet from one side edge to an opposite side edge, and the back sheet is continuous

sheet material. The line of separation comprises a cut or incision that divides the front sheet into two separate sections that are each oriented on opposite sides of the line of separation and are affixed to the back sheet to define the first and second compartments. The line of separation can be created in the front sheet towards a central or middle region of the front sheet so that the sheet is divided into two sections having approximately the same size. The line of separation forms abutting inner edges that are disposed opposite each other on the front sheet and that extend along the length of the line of separation. The front sheet is not affixed to the back sheet along a substantial portion of the lengths of inner edges to thereby define openings to each respective compartment of the bag. In one embodiment, the openings are disposed directly opposite each other in a face-to-face relation on the same side of the bag when the bag is in a relatively flat and un-folded state.

[0009] In one embodiment, the resealable closures are positioned so that they are parallel to the line of separation (e.g., the opening of each compartment) and extend laterally across the bag between opposing sides of the bag. Preferably, the resealable closures are spaced from the inner edges defined by the line of separation by a distance that is between about 1/2 to 1/2 inches.

[0010] In a preferred embodiment, the multicompartment bag is capable of being reversibly folded or bent between a closed and open position. When in the open position, the first and second compartments are positioned outwardly of the back sheet and are oriented in a side-by-side relation with the back sheet disposed in a folded or bent state therebetween. In this open position, folding of the back sheet permits the openings of the first and second compartments to be disposed upwardly so that both compartments can be simultaneously accessible if desired. As a result, a user of the bag can access both compartments without having to worry about switching the orientation of the bag or otherwise manipulating the bag. In the closed position, the orientation of the fold in the back sheet is reversed so that the back sheet forms an exterior surface that extends over and substantially covers the openings of the first and second compartments. In this configuration, the folded over back sheet helps to create a secondary closure mechanism that covers the openings and can thereby help prevent items in the compartments from accidentally spilling out of the compartments.

**BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S)**

[0011] Having thus described the invention in general terms, reference will now be made to the accompanying drawings, which are not necessarily drawn to scale, and wherein:

[0012] FIG. 1 is a perspective view of a multi-compartment bag that is in accordance with the present invention;

[0013] FIG. 2 is a cross-sectional view of an embodiment of the multicompartment bag depicted in FIG. 1;

[0014] FIG. 2A is a partial view of the bag in FIG. 2A depicting a magnified view of the resealable closure;

[0015] FIG. 3 is a perspective view of the multicompartment bag in which the bag is folded in an open position to permit access to both compartments of the bag; and

[0016] FIG. 4 is a perspective view of the multicompartment bag in which the bag is folded in a closed position to help prevent contents from spilling out of the compartments.

#### DETAILED DESCRIPTION OF THE INVENTION

[0017] The present invention now will be described more fully hereinafter with reference to the accompanying drawings, in which some, but not all embodiments of the inventions are shown. Indeed, these inventions may be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will satisfy applicable legal requirements. Like numbers refer to like elements throughout.

[0018] A multicompartment bag in accordance with one embodiment of the present invention as indicated generally in the drawing figures by the reference character 10. As best seen in FIGS. 1 and 2, the multicompartment bag includes front and back sheets 12, 14 formed of a flexible material that are arranged in opposing face-to-face relationship with one another. In the illustrated embodiment, the front and back sheets 12, 14 are of a generally rectangular shape, each having a top edge 16, a bottom edge 18 and opposite side edges 20 that extend longitudinally from the top edge 16 to the bottom edge 18. In some embodiments the front and rear sheets may comprise two separate sheets, or alternatively, a single sheet that has been center-folded at bottom edge 18. The embodiment illustrated in FIG. 1 has a top end 22 and an opposite bottom end 24. In the context of the invention, the term "bag" is used in a generic sense and should be recognized to include packages, sacks, pouches, satchels and the like.

[0019] The front and back sheets 12, 14 are affixed to one another along adjacent peripheral edges by side seams 26. The side seams 26, as well as the other seams of the multicompartment bag to be described presently, can be formed by any of various methods conventionally used in the packaging industry, including seams formed mechanically, such as by sewing or stapling, adhesively, or by fusion, such as by forming seals by with heat or ultrasonic energy. In the particular embodiment illustrated, the front and back sheets are made from a heat sealable material and the side seams 26 are formed by producing a fusion bond or seal between contacting interior surfaces of the front and back sheet using pressure and heat or ultrasonic energy as is well known. Although referred to herein as "heat seals", it should be understood that this term is intended to apply both to seals formed by heating the contacting surfaces with a heated anvil or platen, as well as to heating and fusion produced by other methods, such as application of ultrasonic energy.

[0020] At least one of the sheets includes a line of separation 28 that extends along a length or width of the sheet and divides the sheet into two sections to define first and second compartments 30, 32. In the illustrated embodiment, the line of separation 28 extends laterally across the width of the front sheet 12 from one side edge to the opposite side edge, whereas the back sheet 14 is continuous. As shown, the line of separation divides the front sheet into two separate sections 34, 36 that are each oriented on opposite sides of the line of separation and are affixed to the back sheet to define first and second compartments 30, 32 having interior space 38a, 38b. In one embodiment, the line of separation is created in the front sheet towards a central or middle region of the front sheet so that the sheet is divided into two sections 34, 36 having approximately the same size. Preferably, the line of separation is

disposed approximately half-way between the top and bottom edges of the bag. However, it should be recognized the line of separation can be created at other positions on the front sheet and is not limited to being disposed towards the central or middle region of the sheet.

[0021] The line of separation can be formed by creating a cut or incision in the front sheet that extends along the length or width of the front sheet. In one embodiment, the cut (i.e., line of separation) is created in the front sheet after the peripheral edges of the front and back sheets have been affixed to each other to form the bag. Alternatively, the front sheet can comprise two separate and independent sheets (e.g., sections 34, 36) that can each be independently affixed to the back sheet to form compartments 30, 32. In some embodiments, it may be desirable to have the line of separation extend from one side edge to the opposing side edge so that the front sheet is essentially split into two separated and unconnected sections. For example, in the embodiment illustrated in FIG. 1, the line of separation 28 extends between side edges 20 through side seams 26. Having the line of separation extend between the opposing edges of the bag may be desirable to help facilitate folding of the bag so that both compartments can be easily accessed by a user. In other embodiments, it may be desirable to have the line of separation extend towards the side edges, but not to extend through side seams 26 (See for example, FIG. 3).

[0022] Each section 34, 36 of the front sheet includes an inner edge 40, 42, respectively, that extend along the length of the line of separation 28. The inner edges 40, 42 are disposed on opposite sides of the line of separation and abut each other. As shown, the front sheet is not affixed to the back sheet along at least a portion of inner edges 40, 42 to thereby define openings 44a, 44b into the interior spaces 38a, 38b of each respective compartment. Preferably, the front sheet is not affixed to the back sheet along a substantial portion of the lengths of inner edges 40, 42. For example, in the illustrated embodiment, the front sheet is affixed to the back sheet along top edge 16 and side edges 20, but is not affixed to the back sheet along inner edge 40 to thereby define first compartment 30 having opening 44a. As can best be seen in FIG. 2, the line of separation defines openings 44a, 44b to each compartment of the bag that are disposed directly opposite each other in a face-to-face relation on the same side of the bag when the bag is in a relatively flat and un-folded state. Collectively, the top edge, bottom edge, opposite side edges 20, and inner edges 40, 42 define a bag having dual compartments that each include opposing openings 44a, 44b and interior spaces 38a, 38b for containing articles therein.

[0023] The multicompartment bag 10 also includes a pair of resealable closures 46 that are disposed in the interior space of each compartment. The resealable closures typically are positioned so that they are parallel to the line of separation (e.g., the opening of each compartment) and extend laterally across the bag between opposing side seams 26. The resealable closures are preferably disposed towards the opening of each compartment and are spaced inwardly from the inner edges 40, 42. For example, in the illustrated embodiment, the resealable closures are positioned in each compartment so that they are spaced about 1 inch from the line of separation. Preferably, the resealable closures are spaced from the inner edges by a distance that is between about 1/2 to 1 1/2 inches, and more preferably, from between about 3/4 to 1 1/4 inches. In this

way, a portion of the front sheet adjacent to the inner edge **40**, **42** is accessible to be manually grasped for opening the resealable closure.

**[0024]** The resealable closure can be any of various known configurations that allow for opening and reclosing of each compartment. In the illustrated embodiment, the resealable closure comprises a pair of cooperating interlocking strips that are configured to releasably interconnect and to form a "press and seal" or zipper-type releasable interconnection. This type of resealable closure typically includes a rib-like male profile strip and a cooperating groove-like female profile that receives the rib-like male profile to form a seal. The closure can be closed simply by applying pressure along the length of the strips, or in some embodiments a zipper-type slider can be provided to facilitate opening and closing. These two strips are bonded to the interior surfaces of the front and back sheets **12**, **14** in a suitable manner, preferably by heat sealing.

**[0025]** As can best be seen in FIG. 2A, the resealable closures **46** comprise two strips of cooperating and interlocking sealing closures **50**, **52** that are attached to an inner surface of one of the front or back sheets in a face-to-face opposing relationship. Preferably, the strips comprise polymeric material that can be heat sealed directly to the inner surfaces of the front and back sheets. In the illustrated embodiment, sealing closure **50** has a male-like profile and sealing closure **52** has a female-like profile that is configured and arranged to receive the male-like profile of sealing closure **50**.

**[0026]** In one embodiment, the bag includes at least one end having a gusset. In this regard, FIG. 2 illustrates an embodiment of the invention in which the bottom end **24** of the bag includes a gusset **60** that allows the compartment to expand to accommodate products in the compartment. As shown, the gusset comprises two outer folds **62** and an inner fold **64** that is disposed in between the outer folds **62**. The outer folds **62** fold a portion of the front and back sheets, referred to as gusset side walls **66**, inwardly towards the top end **22** of the bag, which culminate at inner fold **64**. Upon filling, inner fold **64** along with gusset sidewalls **66** can move downwardly to expand out the bottom end **24** of the bag. FIGS. 3 and 4 illustrate an embodiment of the invention in which the multicompartment bag does not include a gusset at the bottom end **24** or top end **22** of the bag.

**[0027]** In one embodiment, the multicompartment bag **10** depicted in FIG. 2 can be formed by providing a single sheet of material in which a central/middle region of the sheet is folded to create the bottom end **24** of the bag. As discussed previously, the bottom end of the bag can also be folded to form gusset **60**. Folding of the sheet material forms front and back sheets **12**, **14** that are disposed opposite each other in a face-to-face relation. The top edges of the thus created first and second sheets, as well as the side edges, can then be affixed to each other to form a bag having top end **22**, bottom end **24**, and side edges **20**. In a subsequent step, a cutting instrument, such as blade, can be used to cut the front sheet into two sections to thereby form the line of separation and the first and second compartments. In automated systems, it is generally desirable to attach the resealable closures to the sheet material prior to folding and forming the bag.

**[0028]** The multicompartment bag **10** of the present invention can be fabricated from any of a wide variety of flexible sheet materials conventionally used in the manufacture of bags including paper, coated paper, nonwoven sheet materials, films and laminates. In the embodiment shown in the

drawings, the bag is formed from sheets of thermoplastic polymer film. The front and back sheets **12**, **14** can be formed from a single ply of film or from a multi-ply film laminate. When the front and back sheets are made from a single ply of flexible polymer film, they may be conveniently printed on either or both surfaces with printed information, indicia, logos and the like. When the front and back sheets are made from a multi-ply material, printing may be applied to either or both exterior surfaces of the multi-ply material, or alternatively, one of the plies can be reverse printed with the desired information so that the printing is encapsulated within the multi-ply laminate. In this event, the exterior ply is typically transparent and the interior ply can be transparent or opaque. The single or multi-ply films can be formed from various thermoplastic polymers including polyethylene, polypropylene, polyester and nylon. When heat sealability is desired, the heat sealable surface preferably includes a sealable polymeric material such as polyethylene or ethylene copolymers.

**[0029]** In a further aspect of the present invention, the multicompartment bag is capable of being reconfigured by being reversibly folded or bent between a closed and open position. In this regard, FIG. 3 depicts the multicompartment bag in an open position that permits a user to access the openings of the first and second compartment. As shown, the fold **70** or bend is present in an area of the back sheet that is adjacent with the line of separation in the front sheet. For example, in the illustrated embodiment the fold **70** extends laterally across the width of the back sheet and is disposed opposite the line of separation **28**. In the open position, the line of separation faces outwardly from the bag so that the first and second compartments are likewise positioned outwardly of the back sheet and are oriented in a side-by-side relation with the back sheet disposed in a folded or bent state therebetween. Folding the bag along fold **70** permits the openings of the first and second compartments to be disposed upwardly so that both compartments can be simultaneously accessible if desired. As a result, a user of the bag can access both compartments without having to worry about switching the orientation of the bag or otherwise manipulating the bag. Further, in embodiments in which the compartments are about the same size, both compartments of the bag can be opened at the same time without having to worry about product falling out of one of the compartments.

**[0030]** FIG. 4 illustrates the multicompartment bag in a closed position. In the closed position, the orientation of fold **70** is reversed so that the back sheet forms an exterior surface **72** or covering of the bag. In this configuration, the line of weakening and the first and second compartments are disposed inwardly of the back sheet and are disposed directly opposite each other in a side-by-side relation. Preferably, the back sheet forms an exterior surface of the bag that extends over and substantially covers the openings of the first and second compartments. As a result, the fold **70** helps to create a secondary closure mechanism that covers the openings and can thereby help prevent items in the compartments from falling out of the compartments. This may be particularly useful in the event the resealable closures have not been properly or completely closed.

**[0031]** As shown in FIGS. 1-4, the multicompartment bag may also include an aperture **74** formed in the front and back sheets. The aperture **74** can be used for hanging the multicompartment bag on a holder, such as a peg, for retail display and sale. In the illustrated embodiment, each compartment of the multicompartment bag is depicted as having an associated

aperture. The apertures are generally disposed opposite each other between the line of separation and the resealable closures. Preferably, the apertures are configured and arranged so that they are aligned with each other when the bag is in a fold state. (See briefly FIG. 4).

**[0032]** Many modifications and other embodiments of the invention set forth herein will come to mind to one skilled in the art to which the invention pertains having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Therefore, it is to be understood that the invention is not to be limited to the specific embodiments disclosed and that modifications and other embodiments are intended to be included within the scope of the appended claims. Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation.

That which is claimed:

1. A multicompartment bag comprising:  
a front sheet and a back sheet affixed to each other along adjacent peripheral edges, the front sheet having a line of separation defining first and second compartments disposed on opposite sides of the line of separation, wherein each compartment includes an interior space and an opening that is defined by a portion of the front sheet along the line of separation that is not affixed to the back sheet; and  
resealable closures disposed adjacent the openings in each of said first and second compartments for reversibly closing the opening of each compartment.
2. The multicompartment bag of claim 1, wherein the line of separation forms two inner edges in the front sheet that abut each other and extend along the line of separation to define the opening to each respective compartment.
3. The multicompartment bag of claim 2, wherein the resealable closures are spaced inwardly from the inner edges.
4. The multicompartment bag of claim 2, wherein the resealable closures are spaced inwardly from the inner edges by distance that is between about ½ to 1½ inches.
5. The multicompartment bag of claim 1, wherein the opening of each compartment is disposed in a face-to-face relation with the opening of the other compartment when the bag is disposed in a relatively unfolded state.
6. The multicompartment bag of claim 1, wherein the bag includes a top edge, a bottom edge, and opposite side edges extending longitudinally from said top edge to said bottom edge, and wherein the line of separation extends laterally between the opposite side edges.
7. The multicompartment bag of claim 6, wherein the front and back sheets are formed of a heat sealable polymer film, and wherein the edges of each sheet are affixed to each other by fusing the inwardly facing surfaces of the front and back sheets to one another.
8. The multicompartment bag of claim 6, wherein bag includes a gusset along the bottom edge.
9. The multicompartment bag of claim 1, wherein the line of separation is disposed towards a middle region of the front sheet.
10. The multicompartment bag of claim 1, wherein the front and rear sheets are affixed to each other with an adhesive, thermal bond, or ultrasonic fusion bond.
11. The multicompartment bag of claim 1, wherein the resealable closures are composed of two strips of cooperating and interlocking sealing closures that are attached opposite each other to an inner surface of the front and back sheets.

12. The multicompartment bag of claim 11, wherein one of the strips of the resealable closure has a male profile and the other strip has a female profile that is configured to receive the male profile.

13. A dual compartment bag comprising:  
front and back sheets affixed to each other along adjacent peripheral edges;  
a line of separation extending across a length or width of the front sheet and dividing the front sheet into two sections having abutting inner edges;  
first and second compartments disposed on opposite sides of the line of separation and each including an interior space being defined by the two sections of the front sheet that are each attached to the back sheet on opposite sides of said separation;  
openings to each compartment extending along at least a portion of the line of separation in which the front sheet is not affixed to the back sheet, wherein the openings of each compartment are disposed opposite each other; and  
resealable closures disposed adjacent the openings in each of said first and second compartments for reversibly closing the opening of each compartment.

14. The dual compartment bag of claim 13, wherein said line of separation divides the front sheet into two sections having approximately the same size.

15. The dual compartment bag of claim 13, wherein said resealable closures comprise a pair of cooperating strips that are attached opposite each other to an inner surface of the front and back sheets.

16. The dual compartment bag of claim 15, wherein said resealable closures comprise a press and seal zipper-type closure.

17. The dual compartment bag of claim 15, wherein the front and back sheets each comprise a heat sealable film of generally rectangular configuration, each having a top edge, a bottom edge, and opposite side edges extending longitudinally from said top edge to said bottom edge, and including heat seals extending along said opposite side edges and at least one of said top and bottom edge.

18. The dual compartment bag of claim 17, wherein the front and back sheets are formed from a single sheet of film that has been folded along one end so that the front and back sheets are oriented in a juxtaposed relation with each other, and wherein said folded end includes three folds to form a gusset.

19. The dual compartment bag of claim 17, wherein the line of separation extends laterally between the opposite side edges and is substantially parallel to at least one of the top or bottom edges.

20. The dual compartment bag of claim 16, wherein the line of separation is disposed approximately half-way between the top and bottom edges.

21. The dual compartment bag of claim 16, wherein the first and second sheets are formed of a heat sealable polymer film.

22. The dual compartment bag of claim 13, wherein resealable closures are spaced inwardly from said abutting inner edges.

23. The dual compartment bag of claim 13, wherein the bag has a closed position in which the back sheet is folded or bent so that it extends over and substantially covers the openings of the first and second compartments, and is reconfigurable to an open position in which the first and second compartments are

disposed in a side-by-side relation with the back sheet disposed in a folded or bent state therebetween.

**24.** A multicompartment bag comprising:

a front sheet and a continuous back sheet affixed to each other along adjacent peripheral edges, the front sheet having a line of separation defining first and second compartments disposed on opposite sides of the line of separation, wherein each compartment includes an interior space and an opening that is defined by a portion of the front sheet along the line of separation that is not affixed to the back sheet; and

resealable closures disposed adjacent the openings in each of said first and second compartments for reversibly closing the opening of each compartment, wherein the

continuous back wall of bag is folded along the line of separation so that the first and second compartments are disposed directly opposite each other in a side-by-side relation and the back wall forms an exterior surface of the bag that extends over and substantially covers the openings of the first and second compartments.

**25.** The multicompartment bag of claim **24**, wherein the line of separation forms two abutting inner edges in the front sheet that extend along the line of separation to define the opening to each respective compartment, and wherein resealable closures are spaced inwardly from said abutting inner edges.

\* \* \* \* \*