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Corey

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(54) **ONE-PIECE EXPANDABLE POCKET**

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B42F 7/08 (2006.01)

(52) **U.S. Cl.**
CPC ***B42F 7/08*** (2013.01)

(58) **Field of Classification Search**
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USPC 229/67.1–67.4
See application file for complete search history.

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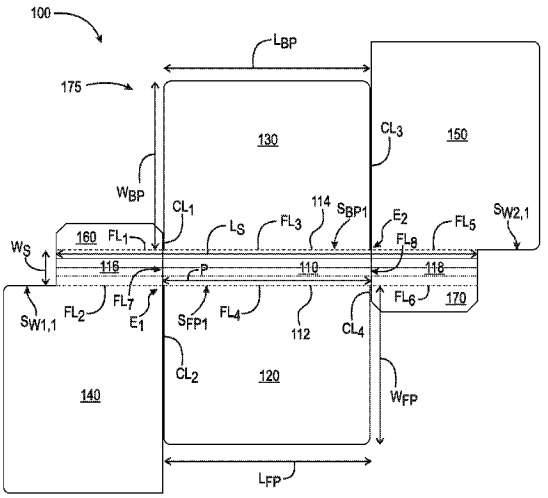
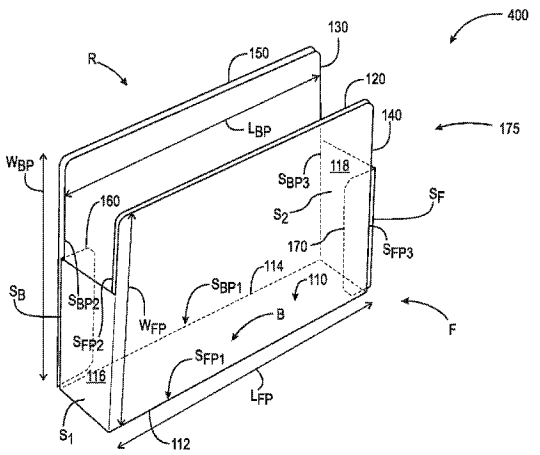
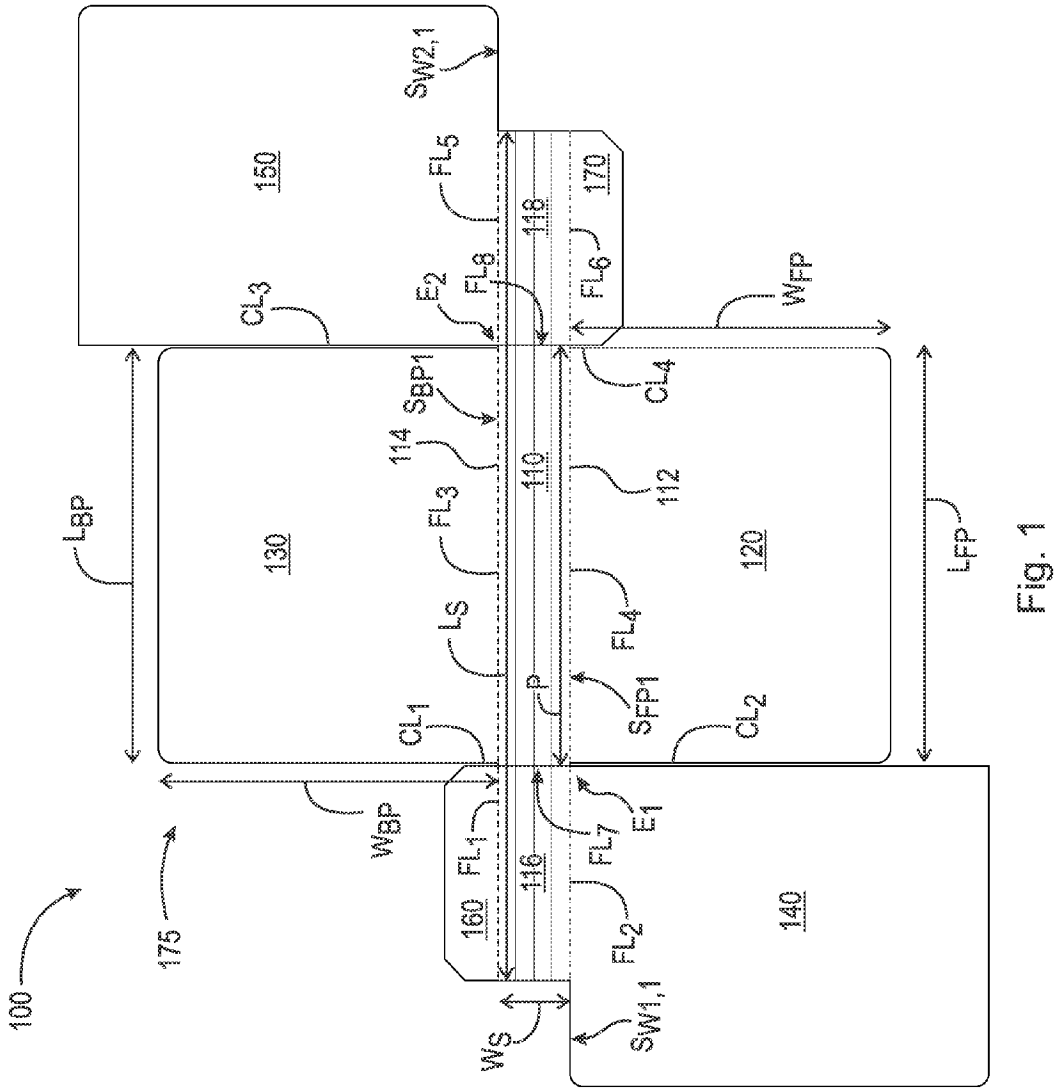
(57) **ABSTRACT**

An expandable pocket, including only a single sheet of material having A) a front panel, B) a back panel, C) a pleated spine extending along a pocket bottom and, on a first side, connected to the front panel along the front length and, on a second side, connected to the back panel along the back panel length, the spine further extending to form a first pocket side, and a second pocket side, D) a first wing connected to the spine or the front panel and, on a first face, secured to a front panel face, E) a second wing connected to the spine or the back panel and, on a first face, secured to a back panel face, F) a first back tab secured between the back panel and the second wing, and G) a first front tab secured between the front panel and the first wing.

11 Claims, 7 Drawing Sheets



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175
150
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112
114
116
118
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FL_5
FL_8
FL_6
E_2
CL_3
W_{FP}
CL_4
S_{BP1}
L_{BP}
FL_3
L_S
FL_4
S_{FP1}
P
CL_1
CL_2
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FL_1
FL_7
E_1
FL_2
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W_S
L_{FP}

Fig. 1

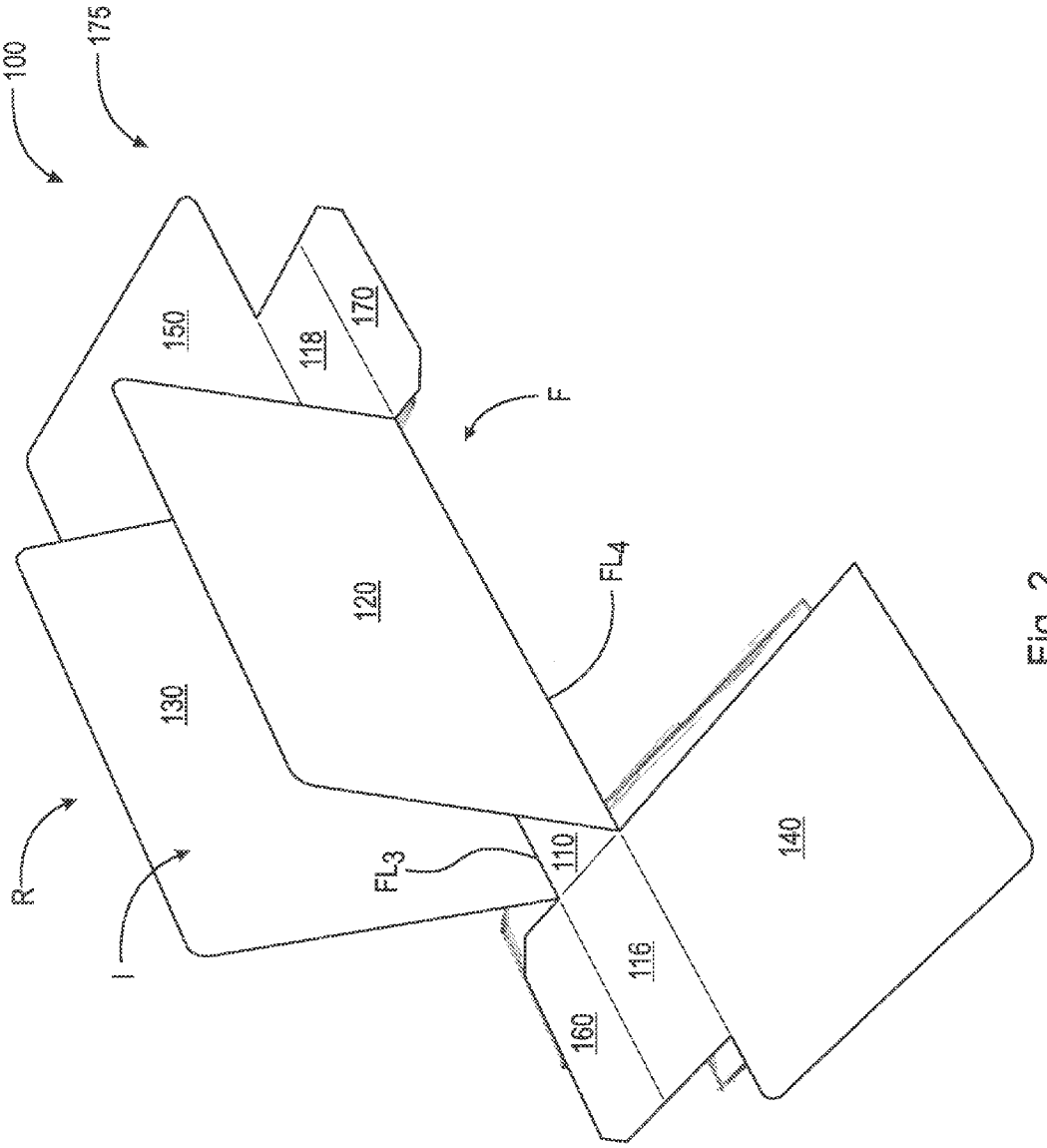
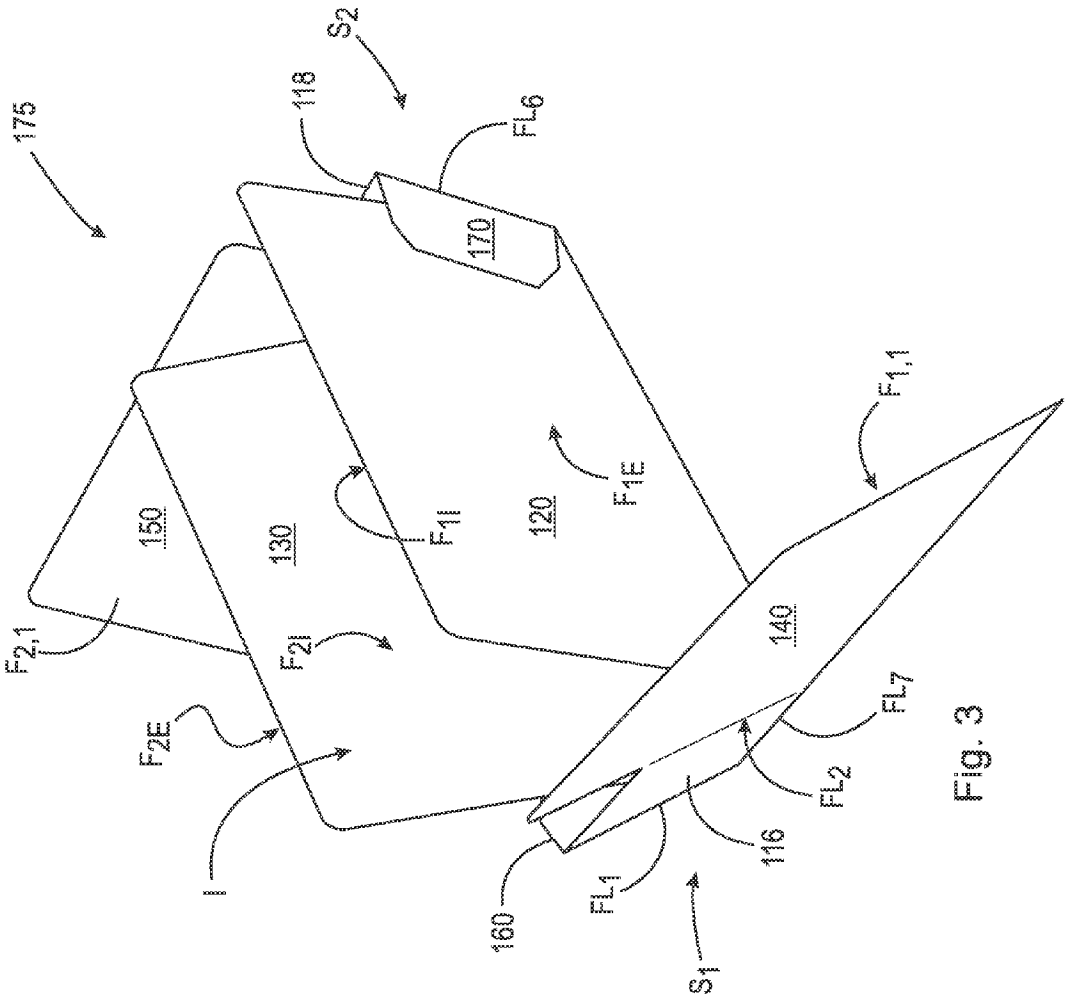


Fig. 2


175
S2
118
FL6
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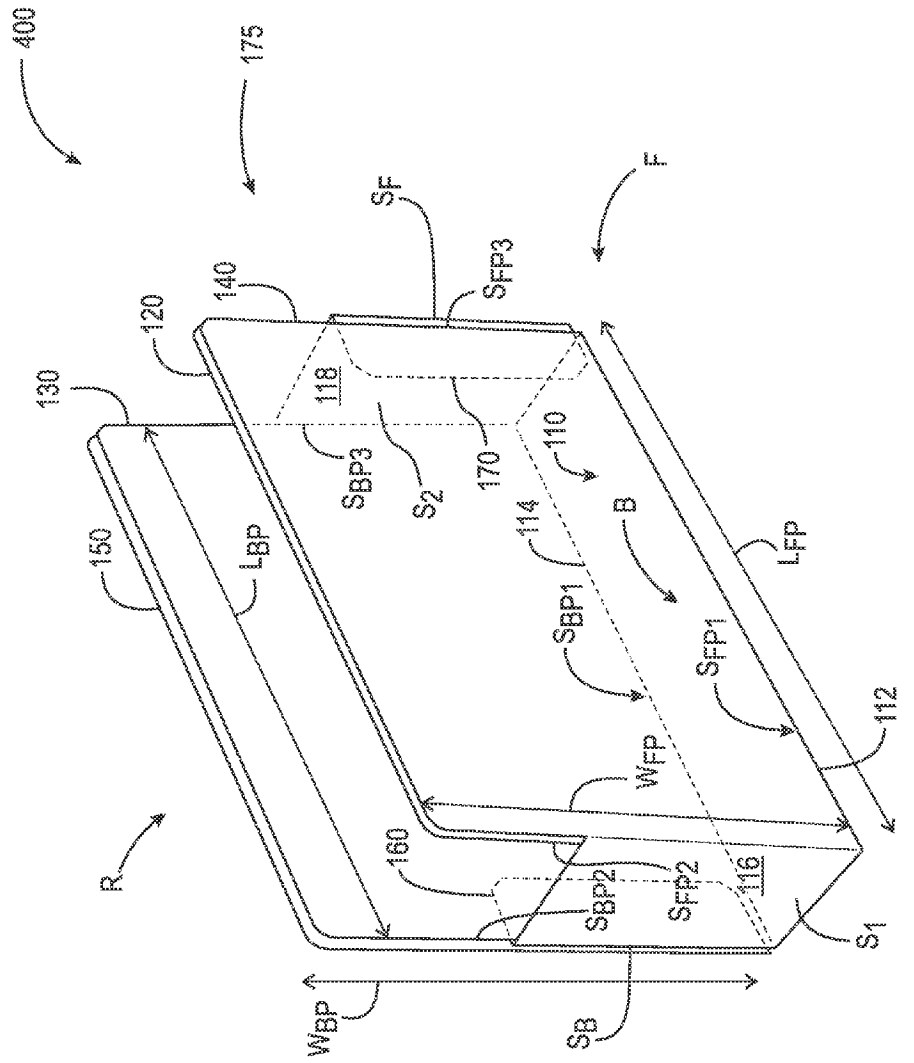
F1,1
F1E
F1I
120
150
130
F2,1
F2I
140
FL7
F2E
FL2
I
116
160
FL1
S1

Fig. 3


400
175
F
S_F
S_{FP3}
140
120
130
118
S_{BP3}
S_2
170
110
114
B
150
L_{BP}
S_{BP1}
S_{FP1}
L_{FP}
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160
S_{BP2}
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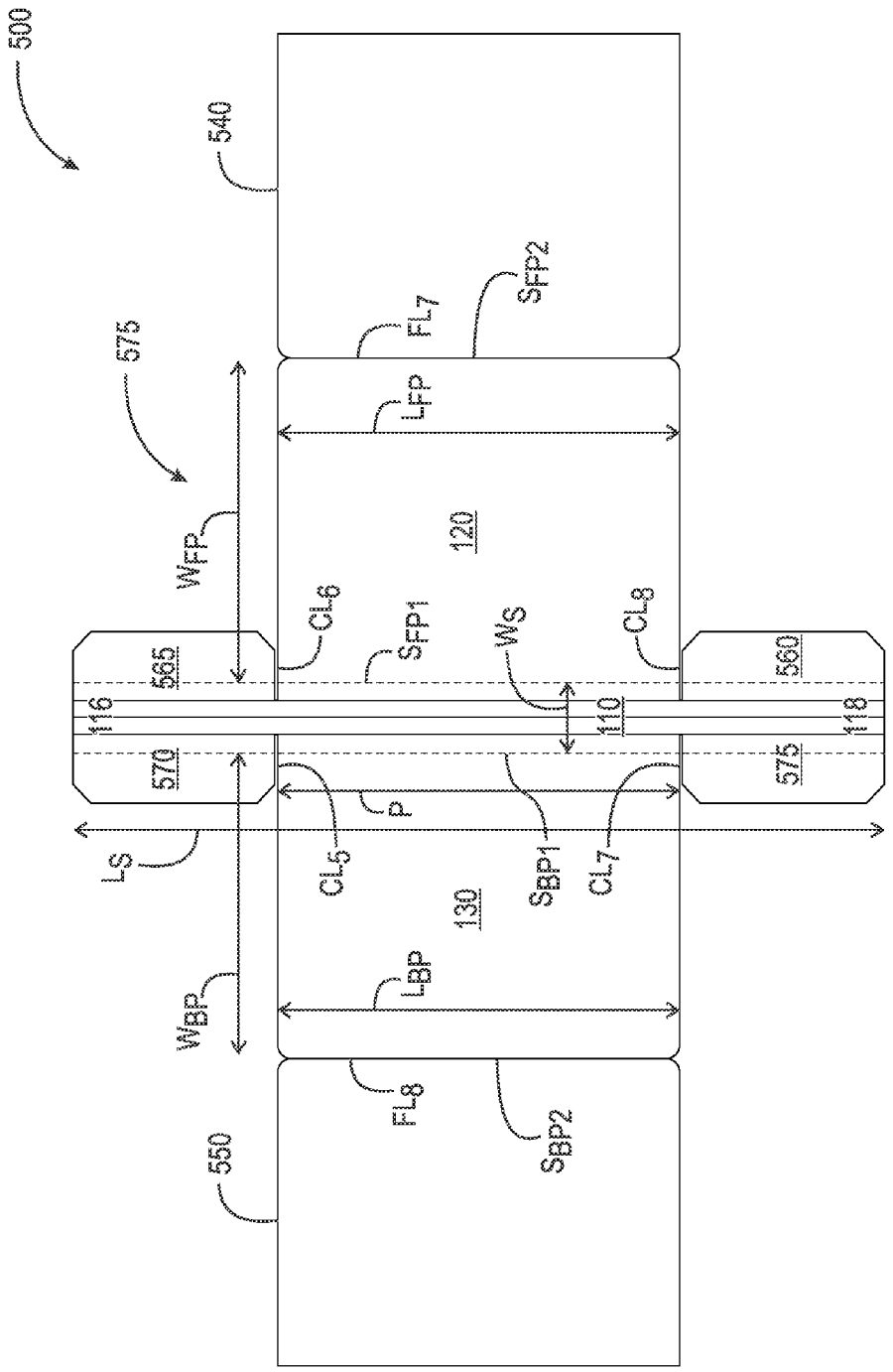
116
S_1
R
W_{BP}
S_B

Fig. 4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540
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LFP
120
WFP
CL6
SFP1
WS
CL8
565
560
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110
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SBP1
CL7
130
LBP
WBP
FL8
SBP2
550

Fig. 5

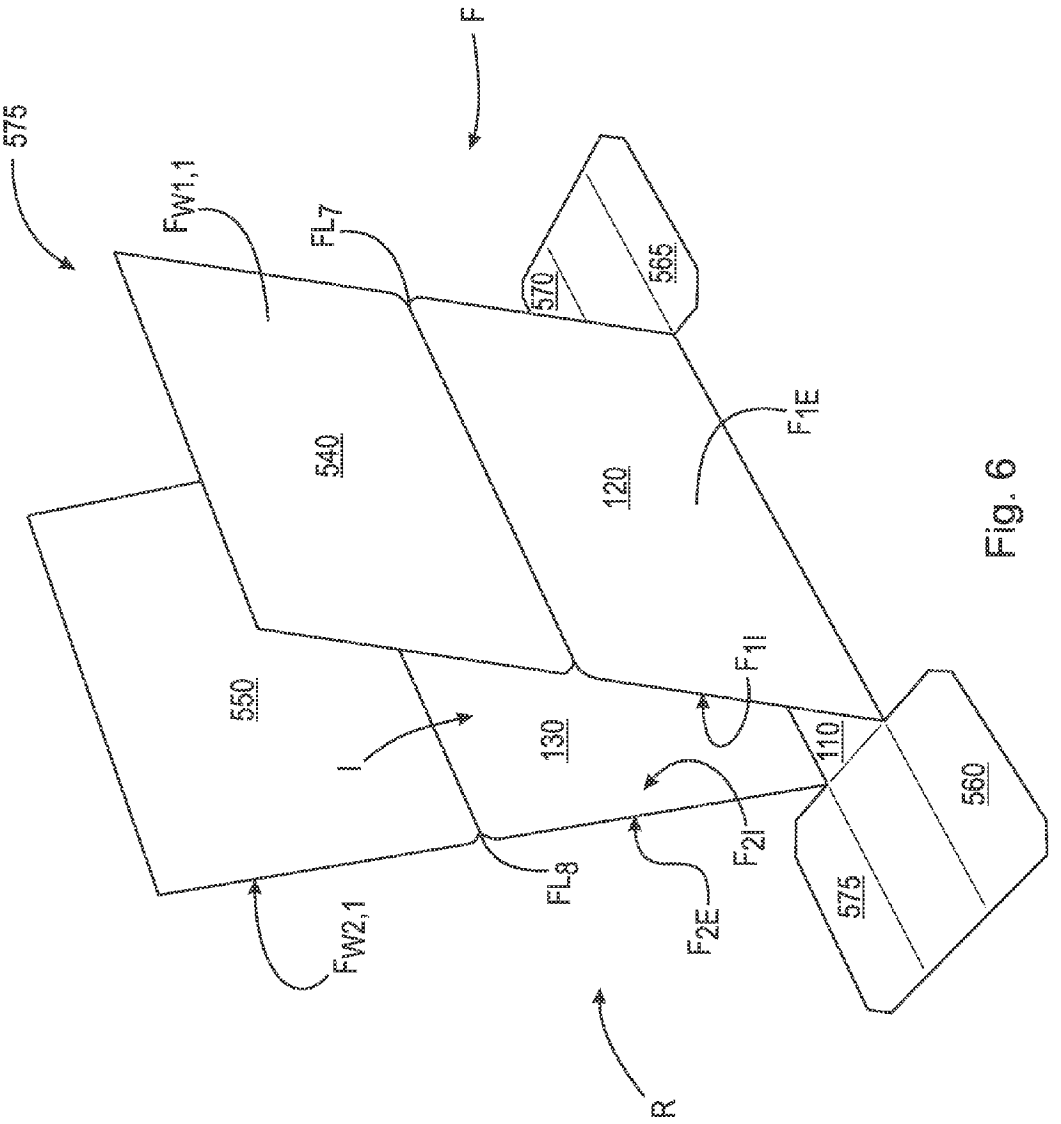
575
F
FW1,1
FL7
570
565
540
120
F1E
550
130
I
F1I
110
560
575
FW2,1
FL8
F2E
F2I
R

Fig. 6

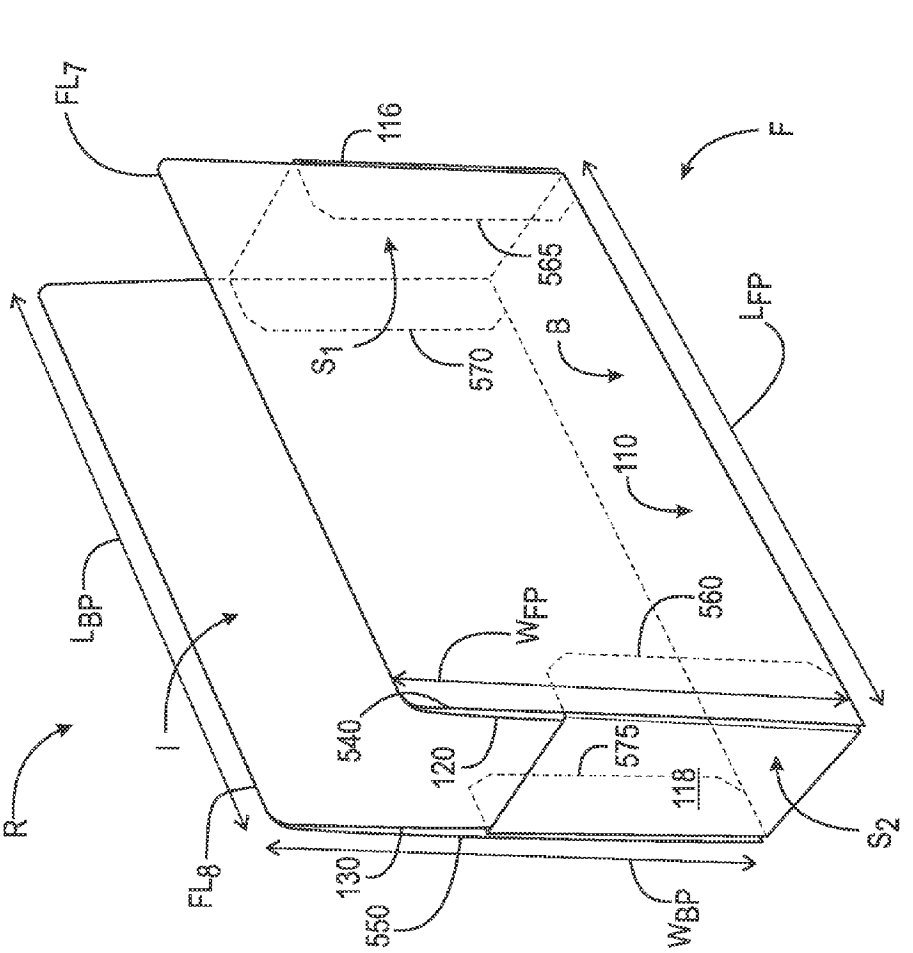
600
FL7
116
F
565
S1
570
B
LFP
110
LBP
WFP
560
540
120
575
118
S2
R
I
FL8
130
550
WBP

Fig. 7

ONE-PIECE EXPANDABLE POCKET

FIELD OF THE INVENTION

The present invention relates to expandable pockets and, in particular, expandable pockets formed by folding a single sheet of material.

BACKGROUND OF THE INVENTION

Expandable pockets made of multiple pieces of material, such as a front panel, a back panel, and an accordion-pleated spine to fasten the panels together are known. However, such multi-piece folders are relatively difficult to manufacture. For example, multi-piece, expandable folders are hand-assembled by gluing the front and back panels to the spine, which decreases the rate of production. An additional drawback of conventional multi-piece folders arises during use. For example, when the folder is filled with documents or other materials, tears occur at stressed locations, particularly glued locations such as where the panels are adjoined to the spine.

U.S. Pat. No. 5,711,750 to Christensen et al. and U.S. Pat. No. 5,720,427 to Kachel et al. assigned to Smead Manufacturing Company, and hereinafter referred to as "the Smead patents," disclose a plurality of embodiments of reinforced expandable pockets. According to one of the embodiments, disclosed in FIGS. **21** and **22**, a pocket is manufactured by folding a single sheet of material. The pocket shown in FIG. **22**, comprises a front cover **242** formed by two side panels **202** and **204**, and a short panel **210**, and a back panel formed by two side panels **206** and **208** and a short panel **214**. Short panel **210** is located between the side panels **202** and **204**, and the side panels and short panel are glued together to form the front cover; similarly, short panel **214** extends between the side panels **206** and **208**, and the side panels and short panel are glued together to form the back cover. The short panels each extend from the spine and extend along the entire length of the bottom of the pocket.

BRIEF SUMMARY OF THE INVENTION

A disadvantage of an expandable folder configured as described in the Smead patents is that the short panel, which is glued and extends along the bottom of the pocket, is subjected to some of the greatest amounts of stress during use of the pocket. Such a design subjects a weak aspect of the folder to some of the greatest amount of stress. Aspects of the present invention are directed to one-piece folders having improved durability.

According to an aspect of the invention an expandable pocket comprises a single sheet of material comprising A) a front panel forming a front of the pocket, having a front panel length and a front panel width, B) a back panel forming a back of the pocket, having a back panel length and a back panel width, C) a pleated spine extending along a bottom of the pocket and, on a first side of the spine, connected to a first side of the front panel along the front panel length (on the bottom of the pocket) and, on a second side of the spine, connected to a first side of the back panel along the back panel length (on the bottom of the pocket), the spine further extending along a second side of the front panel and a second side of the back panel in the direction of the front panel width and the back panel width to form a first pocket side, and extending along a third side of the front panel and a third side of the back panel in the direction of the front panel width and the back panel width to form a second pocket side, D) a first wing connected to one of the spine and the front panel and, on a first face of the first wing, secured to a face of the front panel, E) a second wing connected to one of the spine and the back panel and, on a first face of the second wing, secured to a face of the back panel, F) a first back tab connected to a back side of the first pocket side and secured between the back panel and the second wing, and G) a first front tab connected to a front side of the second pocket side and secured between the front panel and the first wing.

In some embodiments, the first wing has a first side of the first wing connected to the first spine portion on the first side of the spine, and the second wing has a first side of the second wing connected to second spine portion on the second side of the spine.

In some embodiments, the first wing is connected to a forth side of front panel that is opposite the first side of the front panel and the second wing is connected to a forth side of back panel that is opposite the first side of the back panel.

The front panel and first wing may be a same size and a same shape as each other such that the faces of the front panel and the first wing are coextensive, and/or the back panel and second wing may be a same size and a same shape as each other such that the faces of the back panel and the second wing are coextensive.

In some embodiments, at least one of the face of the front panel and the face of the second panel is an exterior face.

In some embodiments, at least one of the face of the front panel and the face of the second panel is an interior face.

In some embodiments, the pocket further comprises H) a second back tab connected to a back side of the second pocket side and secured between the back panel and the second wing, and I) a second front tab connected to a front side of the first pocket side and secured between the front panel and the first wing.

According to another aspect of the invention an expandable pocket, comprises a single sheet material comprising A) a pleated spine having a spine length and a spine width, B) a front panel having a first side connected to the spine on a first side of the spine along the spine length, the front panel having a front panel length and a front panel width, C) a back panel having a first side connected to the spine on a second side of the spine along the spine length, the back panel having a back panel length and a back panel width, the front panel and the back panel extending over a same central portion of the spine length, the spine length extending beyond the central portion at a first end to form a first spine portion and at a second end to form a second spine portion, D) a first tab connected to the first spine portion on the second side, E) a second tab connected to the second spine portion on the first side, F) a first wing having a first side that is connected to one of (1) the first spine portion on the first side of the spine and (2) a second side of the front panel that is opposite the first side of the front panel, and G) a second wing having a first side that is connected to one of (1) the second spine portion on the second side of the spine and (2) a second side of the back panel that is opposite the first side of the back panel. The sheet of material is folded such that front panel faces the back panel to partially form a pocket interior and the front panel and the back panel defining a pocket front and a pocket back, respectively, and folded such that the first spine portion faces the second spine portion and further forms the pocket interior, and the first spine portion and the second spine portion defining a first pocket side and a second pocket side, respectively. A first face of the first wing faces a face of the front panel and is secured thereto. The second tab is secured between the first wing and the front panel. A first face of the second wing faces a face of the back panel and is secured thereto. The first tab is secured between the second wing and the back panel.

The term "secured", as the term is used herein, means attached directly or indirectly using a glue, other adhesive material or other techniques of attaching. The term "connected", as the term is used herein, means bordering and forming a continuous sheet of material therewith.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

The nature and mode of operation of the present invention will now be more fully described in the following detailed description of the invention taken with the accompanying drawing figures, in which:

FIG. **1** is a plan view of an example of an embodiment of an expandable pocket blank according to aspects of the present invention in an unfolded state;

FIGS. **2-3** are schematic illustrations of the expandable folder blank of FIG. **1** in a partially-folded states;

FIG. **4** is an expandable folder formed by folding the blank of FIG. **1**;

FIG. **5** is a plan view of another example of an embodiment of an expandable pocket blank according to aspects of the present invention in an unfolded state;

FIG. **6** is a schematic illustration of the expandable folder blank of FIG. **5** in a partially-folded state; and

FIG. **7** is an expandable folder formed from by folding the blank of FIG. **5**.

DETAILED DESCRIPTION OF THE INVENTION

FIG. **1** is a plan view of an example of an embodiment of an expandable pocket blank **100** according to aspects of the present invention, in an unfolded state. Expandable pocket blank **100**, comprises a single sheet material **175**, that has been shaped, cut in selected locations, and otherwise processed (e.g., by adding fold lines) to facilitate folding to form an expandable pocket.

Single sheet of material **175** comprises a pleated spine **110**, a front panel **120**, a back panel **130**, a first wing **140**, a second wing **150**, a first tab **160** and a second tab **170**. The shapes of these components are apparent from the plan view. In the illustrated embodiment, the components are generally rectangular but may have other shapes. Cut lines CL_1, CL_2, CL_3 and CL_4 are added, as shown, to facilitate movement of the components relative to one another during folding to produce a pocket. Fold lines FL_1, FL_2, FL_3, FL_4, FL_5, FL_6, FL_7 and FL_8 are present to facilitate folding at designated locations. Other than at locations identified as cut lines, the sheet of material remains intact as a single sheet. Accordingly, it is to be appreciated that, although sheet of material **175** has been modified as set forth above, the components of the sheet remain connected at selected locations so as to remain a single sheet of material after the blank is formed (shown in FIG. **1**) and after the blank is folded to form a finished pocket (shown in FIG. **4**).

Pleated spine **110** has a spine length L_S and a spine width W_S. Pleated spine **110** can be constructed in any suitable manner. For example, pleat formation may be facilitated by forming fold lines in the material. For example, fold lines may be formed by milling, scoring or cutting.

Front panel **120** having a first side S_{FP1} that is connected to the spine **110** on a spine first side **112** along the spine length L_S. The front panel has a front panel length L_{FP} and a front panel width W_{FP}. Back panel **130** having a first side S_{BP1} that is connected to the spine **110** on a spine second side **114** along the spine length L_S. Back panel **130** has a back panel length L_{BP} and a back panel width W_{BP}.

Front panel **120** and back panel **130** extend over a same central portion P of the spine length L_S. Spine length L_S extends beyond central portion P at a first end E_1 to form a first spine portion **116**. The spine length L_S extends beyond the portion P at a second end E_2 to form a second spine portion **118**.

First tab **160** is connected to first spine portion **116** on second side **114** of the spine. The second tab **170** is connected to second spine portion **118** on first side **112** of the spine.

In the illustrated embodiment, first wing **140** has a first side $S_{W1,1}$ that is connected to first spine portion **116** on first side **112**, opposite first tab **160**; and second wing **150** has a first side $S_{W2,1}$ that is connected to second spine portion **118** on second side **114**, opposite the second tab **170**.

Although in the illustrated embodiment first wing **140** and second wing **150** are shown as connected to spine **110**, as discussed with reference to FIGS. **5**, **6** and **7** below, first wing **140** and second wing **150** may instead be connected to front panel **120** and back panel **130**, respectively.

Single sheet of material **175** may comprise a conventional heavy stock paper (e.g., 30, 25 or 20 point pressboard) or any other suitable material for the manufacture of expandable pockets. The spine, including its portions **116** and **118**, forms a continuous portion of sheet of material **175**; and front panel **120**, back panel **130**, first wing **140**, second wing **150**, first tab **160** and second tab **170** are connected to the spine to form continuous portions of the sheet of material **175** so as to maintain the single piece construction. Front panel **120** and first wing **140** may be the same size and shape as each other such that, after folding in the manners set forth herein, the faces of the front panel and the first wing are coextensive; and similarly, the back panel **130** and second wing **150** may be the same size and shape as each other such that, after folding, the faces of the back panel and the second wing are coextensive.

FIGS. **2-3** are schematic illustrations of expandable pocket blank **100** of FIG. **1** in a partially-folded state. As illustrated in FIG. **2**, sheet of material **175** is folded about fold lines FL_3 and FL_4) such that front panel **120** faces the back panel **130** to partially form a pocket interior I, and to define a pocket front F and a pocket back R, respectively. As illustrated in FIG. **3**, the sheet of material **175** is further folded about fold lines FL_7 and FL_8 (shown in FIG. **1**) such that the first spine portion **116** faces the second spine portion **118** and further forms pocket interior I. First spine portion **116** and second spine portion **118** define a first pocket side S_1 and a second pocket side S_2, respectively.

First wing **140** is folded along fold line FL_2 such that a first face $F_{1,1}$ of first wing **140** faces an exterior face F_{1E} of the front panel **120** and is secured thereto. Second tab **170** is folded along fold line FL_6 so as to extend between the first wing **140** and the front panel **120**, and is secured between the first wing and the front panel. Similarly, second wing **150** is folded along fold line FL_5 (shown in FIG. **1**) such that a first face $F_{2,1}$ of the second wing **150** faces an exterior face F_{E2} of the back panel **130** and is secured thereto. The first tab **160** is folded along fold line FL_1 so as to extend between the second wing **150** and the back panel **130**, and is secured between the second wing and the back panel.

FIG. **4** is an expandable pocket **400** formed from the blank **100** of FIG. **1**. Expandable pocket **400** comprises single sheet of material **175** that has been folded and secured as indicated above. The front panel **120** forms front F of the pocket, having front panel length L_{FP} and front panel width W_{FP}. The back panel **130** forms back R of the pocket, having back panel length L_{BP} and back panel width W_{BP}.

Pleated spine **110** extends along bottom B of the pocket and is connected, on first side **112** of the spine, to first side S_{FP1} of

front panel **120** along front panel length L_{FP} and, is connected on a second side **114** of the spine to first side S_{BP1} of the back panel **130** along the back panel length L_{BP}. Spine **110** further extends, along a second side S_{FP2} of the front panel and a second side S_{BP2} of the back panel in the direction of the front panel width W_{FP} and the back panel width W_{BP} to form a first pocket side S_1. The spine also extends along a third side S_{FP3} of the front panel and a third side S_{BP3} of the back panel in the direction of the front panel width W_{FP} and the back panel width W_{BP} to form a second pocket side S_2.

First wing **140** is secured on a first face $F_{1,1}$ (shown in FIG. **3**) to an exterior face (also referred to as an outer face) F_{1E} (shown in FIG. **3**) of the front panel. Second wing **150** is secured on a first face $F_{2,1}$ to an outer face F_{2E} of the back panel. As indicated above, although in the illustrated embodiment first wing **140** and second wing **150** are shown as connected to spine **110**, as discussed with reference to FIGS. **5** and **6** below, first wing **140** and second wing **150** may be connected to front panel **120** and back panel **130**, respectively. As indicated above, first wing **140** is connected to the first spine portion **116** on the first side **112**, opposite the first tab **160**; and the second wing **150** extends along the second spine portion **118** on the second side **114**, opposite the second tab **170**.

First tab **160** is connected to a back side S_B of the first pocket side S_1 and is secured between the back panel **130** and the second wing **150**.

Second tab **170** is connected to a front side S_F of the second pocket side S_2 and is secured between the front panel **120** and the first wing **140**.

Although in FIGS. **3** and **4**, first wing **140** is folded to face an exterior face F_{1E} of the front panel, in some embodiments, the first wing **140** is folded to face an interior face F_{1I} (shown in FIG. **3**) of the front panel, and second tab **170** extends between and is secured between the first wing and the front panel; and although, in said figures, second wing **150** is folded to face an exterior face F_{2E} (shown in FIG. **3**) of the back panel, in some embodiments, the second wing **150** is folded to face an interior face F_{2I} of the back panel, and first tab **160** extends between and is secured between the second wing and the back panel.

FIGS. **5**, **6** and **7** will be referred to together in the following discussion of another example of an embodiment 500 of an expandable pocket blank and a folder **600** according to aspects of the present invention. Like the embodiment illustrated in FIG. **1**, expandable pocket comprises a single sheet material **575**. Blank **500** is similar to blank **100** (shown in FIG. **1**) in regards other than those set forth below, including that rather than first wing **540** being connected to first spine portion **116**, first wing **540** is connected to a side S_{FP2} of front panel **120** that is opposite the first side S_{FP1} of the front panel (i.e., opposite where the front panel is connected to the spine) and rather than second wing **550** being connected to second spine portion **118**, second wing **550** is connected to a side S_{BP2} of back panel **130** that is opposite the first side S_{BP1} of the back panel (i.e., opposite where the back panel is connected to the spine). Cut lines CL_5, CL_6, CL_7, CL_8 facilitate folding of components to form a folder.

Sheet of material **575** is folded such that front panel **120** faces the back panel **130** to partially form a pocket interior I (shown in FIG. **6**), and to define a pocket front F and a pocket back R, respectively. The sheet of material **575** is further folded such that the first spine portion **116** faces the second spine portion **118** to further form pocket interior I (shown in FIG. **7**). First spine portion **116** and second spine portion **118** define a first pocket side S_1 and a second pocket side S_2, respectively.

First wing **540** is folded along a fold line FL_7 such that first face $F_{W1,1}$ of the first wing **540** faces an exterior face F_{1E} of the front panel and is secured thereto. First front tab **560** and second front tab **565** each extend between and are secured between the first wing **540** and the front panel **120**. Similarly, second wing **550** is folded along a fold line FL_8 such that a first face $F_{W2,1}$ of the second wing **550** faces an exterior face F_{2E} of the back panel and is secured thereto. First back tab **570** and second back tab **575** each extend between and are secured between the second wing **550** and the back panel **130**. Although in the illustrated embodiment two back tabs and two front tabs are present, in some embodiments according to this aspect of the invention (e.g., where the wings are connected to respective panels), only one front tab (e.g., tab **560**) and one back tab (e.g., tab **570**) are present.

Spine **110**, including its portions **116** and **118**, forms a continuous portion of sheet of material **575**; and the front panel **120**, back panel **130**, tabs **560**, **565**, **570** and **575** are connected to the spine to form continuous portions of the sheet of material **575**, and first wing **540**, second wing **550** are connected to the front panel and second panel, respectively, to form continuous portions of the sheet of material **575**. Accordingly, the single-sheet construction is maintained.

Although, in the illustrated embodiment, first wing **540** is folded to face an exterior face F_{1E} of the front panel, in some embodiments, the first wing **540** is folded to face an interior face F_{1I} of the front panel, and front tabs **560** and **565** extend between and are secured between the first wing **540** and the front panel **120**; and although, in the illustrated embodiment, second wing **550** faces an exterior face F_{2E} of the back panel, in some embodiments, the second wing **550**, is folded to face an interior face F_{2I} of the back panel, and back tabs **570**, **575** extend between and secured between the second wing and the back panel.

What is claimed is:

1. An expandable pocket, comprising:

a single sheet material comprising

A) a pleated spine having a spine length and a spine width,

B) a front panel having a first side connected to the spine on a first side of the spine along the spine length, the front panel having a front panel length and a front panel width,

C) a back panel having a first side connected to the spine on a second side of the spine along the spine length, the back panel having a back panel length and a back panel width, the front panel and the back panel extending over a same central portion of the spine length, the spine length extending beyond the central portion at a first end to form a first spine portion and at a second end to form a second spine portion,

D) a first tab connected to the first spine portion on the second side,

E) a second tab connected to the second spine portion on the first side,

F) a first wing having a first side that is connected to one of (1) the first spine portion on the first side of the spine and (2) a second side of the front panel that is opposite the first side of the front panel, and

G) a second wing having a first side that is connected to one of (1) the second spine portion on the second side of the spine and (2) a second side of the back panel that is opposite the first side of the back panel,

the sheet of material folded such that front panel faces the back panel to partially form a pocket interior and the front panel and the back panel defining a pocket front and a pocket back, respectively, and folded such that the first spine portion faces the second spine portion and further forms the pocket interior, and the first spine

portion and the second spine portion defining a first pocket side and a second pocket side, respectively,

a first face of the first wing facing a face of the front panel and secured thereto, the second tab secured between the first wing and the front panel, and

a first face of the second wing facing a face of the back panel and secured thereto, the first tab secured between the second wing and the back panel.

2. The pocket of claim **1**, wherein the first side of the first wing is connected to the first spine portion on the first side of the spine, and the first side of the second wing is connected to the second spine portion on the second side of the spine.

3. The pocket of claim **1**, wherein the first side of the first wing is connected to the second side of front panel that is opposite the first side of the front panel and the first side of the second wing is connected to the second side of back panel that is opposite the first side of the back panel.

4. The pocket of claim **1**, wherein the front panel and first wing are a same size and a same shape as each other such that the face of the front panel and the first face of the first wing are coextensive, and the back panel and second wing are a same size and a same shape as each other such that the face of the back panel and the first face of the second wing are coextensive.

5. The pocket of claim **1**, wherein at least one of the face of the front panel and the face of the back panel is an exterior face.

6. The pocket of claim **1**, wherein at least one of the face of the front panel and the face of the back panel is an interior face.

7. The pocket of claim **1**, further comprising H) a third tab connected to the first side of the first spine portion and secured between the back panel and the second wing, and I) a fourth tab connected to the second side of the second spine portion and secured between the front panel and the first wing.

8. The pocket of claim **2**, wherein at least one of the face of the front panel and the face of the back panel is an exterior face.

9. The pocket of claim **2**, wherein at least one of the face of the front panel and the face of the back panel is an interior face.

10. The pocket of claim **3**, wherein at least one of the face of the front panel and the face of the back panel is an exterior face.

11. The pocket of claim **3**, wherein at least one of the face of the front panel and the face of the back panel is an interior face.

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