

(12) STANDARD PATENT
(19) AUSTRALIAN PATENT OFFICE

(11) Application No. **AU 2007248825 B2**

(54) Title
Wide mouth gusseted pouches

(51) International Patent Classification(s)
B65D 33/00 (2006.01)

(21) Application No: **2007248825**

(22) Date of Filing: **2007.04.03**

(87) WIPO No: **WO07/130245**

(30) Priority Data

(31) Number
11/429,555

(32) Date
2006.05.05

(33) Country
US

(43) Publication Date: **2007.11.15**

(44) Accepted Journal Date: **2011.09.29**

(71) Applicant(s)
Illinois Tool Works Inc.

(72) Inventor(s)
Ausnit, Steven;Greco, Charles G.

(74) Agent / Attorney
Phillips Ormonde Fitzpatrick, 367 Collins Street, Melbourne, VIC, 3000

(56) Related Art
US 2003/063820
US 2003/101552

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
15 November 2007 (15.11.2007)

PCT

(10) International Publication Number
WO 2007/130245 A1

(51) International Patent Classification:
B65D 33/00 (2006.01)

(21) International Application Number:
PCT/US2007/008047

(22) International Filing Date: 3 April 2007 (03.04.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/429,555 5 May 2006 (05.05.2006) US

(71) Applicant (for all designated States except US): **ILLINOIS TOOL WORKS INC.** [US/US]; 3600 West Lake Avenue, Glenview, IL 60026 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GRECO, Charles G.** [US/US]; 3600 West Lake Avenue, Glenview, IL 60026 (US). **AUSNIT, Steven** [US/US]; 3600 West Lake Avenue, Glenview, IL 60026 (US).

(74) Agent: **HAUPTMAN, Benjamin J.**; Lowe Hauptman & Berner, LLP, 1700 Diagonal Rd., Suite 300, Alexandria, VA 22314 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

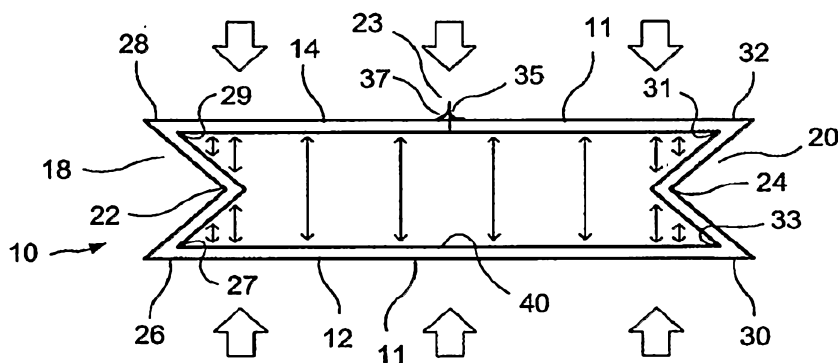
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: WIDE MOUTH GUSSETED POUCHES



(57) Abstract: A reclosable gusseted bag (10) is disclosed wherein a single web multiple alignment zipper (40) is placed around the interior of the mouth of the bag (10), downwardly adjacent from the upper edge of the front panel (12), rear panel (14) and side gussets (18, 20) thereby resulting in an increased size of opening as the mouth of the gusseted bag. The use of a single web multiple alignment zipper (40) allows opposing portions of the web to engage each other within a range of alignments thereby allowing for simplified use by the consumer.

WIDE MOUTH GUSSETED POUCHESFIELD OF THE INVENTION

5 The present invention relates to a reclosable zippered gusseted pouch with a multi-track, variable-alignment zipper placed within the perimeter of its film walls. As the gussets and bag walls behind the multi-track zipper are pressed together, the zipper tracks interlock in the area of both the gussets and bag walls.

10

DESCRIPTION OF PRIOR ART

A reference herein to a patent document or other matter which is given as prior art is not to be taken as an admission that that document or matter was, in
15 Australia, known or that the information it contains was part of the common general knowledge as at the priority date of any of the claims.

In the prior art, gusseted packages have been used in order to create a free-standing package with increased volumetric capacity. While these packages
20 have been satisfactory for their intended purposes in many respects, they typically have had their gussets sealed together so that only the front panel opened for access to the contents of the package. Smaller sized gusseted bags are particularly problematic in this respect.

25 It would be desirable to provide a gusseted container which achieves a large opening for dispensing of products therefrom, and to provide a corresponding manufacturing process which is relatively simple and economical.

SUMMARY OF THE INVENTION

30

According to a first aspect of the present invention there is provided a container including:

a front panel and a rear panel;

a first gusset joining a first side of said front panel to a first side of said rear panel;

a second gusset joining a second side of said front panel to a second side of said rear panel;

5 an opening being formed by an edge of said front and rear panels and said first and second gussets;

a zipper sealed to an interior of said front and rear panels and said first and second gussets, extending around an entire interior periphery of the container, downwardly adjacent from said opening; and

10 wherein said zipper includes a web with a plurality of engaging track elements extending continuously around an entire periphery of the container, parallel to said opening, whereby a first portion of said web can engage a second portion of said web in a plurality of different configurations and thereby through a plurality of alignments.

15

According to a second aspect of the present invention there is provided a container including:

a front panel and a rear panel;

20 a first gusset joining a first side of said front panel to a first side of said rear panel;

a second gusset joining a second side of said front panel to a second side of said rear panel;

an opening being formed by an edge of said front and rear panels and said first and second gussets; and

25

a variable alignment multi-track zipper web sealed to an interior of said front and rear panels and said first and second gussets, wherein track elements of the zipper web extend continuously around an entire interior periphery of the container, downwardly adjacent from and parallel to said opening, wherein ends of said zipper web abut each other.

30

A gusseted pouch or reclosable container is provided with a single web multiple-alignment zipper within the internal perimeter of the mouth thereof.

2a

This causes the gussets to close on both the front and back panels. By pulling apart the front and rear panels, the zipper will release the gussets thereby giving the pouch an opening equal to the internal diameter of the film forming the pouch walls.

5 The use of a single web multiple alignment zipper reduces the production costs of this container.

Such a container will increase the consumer's access to the contents of the package. Such a container can be applied to many markets, such as, but not limited to, cookies, snack foods and pet foods.

10

BRIEF DESCRIPTION OF THE DRAWINGS

Advantages of the invention will become apparent from the following description and from the accompanying drawings, wherein:

15

Figure 1 is a front plan view of the reclosable gusseted bag of the present invention.

Figure 2 is a cross-sectional view along plane 2-2 of Figure 1, showing the single web multiple alignment zipper.

20

Figure 3 is a cross-sectional view along plane 3-3 of Figure 1, showing the single web multiple alignment zipper extending around the periphery of the interior of the partially open mouth of the reclosable gusseted bag of the present invention.

25

Figure 4 is a cross-sectional view along plane 3-3 of Figure 1, showing the reclosable gusseted bag of the present invention in the fully open position.

Figure 5 is a cross-sectional view along plane 3-3 of Figure 1, showing the reclosable gusseted bag of the present invention in the closed position with the gussets in the internal position.

Figure 6 is a cross-sectional view along plane 3-3 of Figure 1, showing the forces as the reclosable gusseted bag of the present invention is opened with the gussets in the internal position.

Figure 7 is a cross-sectional view along plane 3-3 of Figure 1, showing the reclosable gusseted bag of the present invention in the closed position with the gussets in the external position.

Figure 8 is a cross-sectional view along plane 3-3 of Figure 1, showing the forces as the reclosable gusseted bag of the present invention is opened with the gussets in the external position.

Figure 9 is a perspective view of the reclosable gusseted bag of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings in detail wherein like numerals indicate like elements throughout the several views, one sees that Figure 1 is a front plan view of the reclosable gusseted bag 10 of the present invention, Figure 3 is a cross-sectional view of the top of reclosable gusseted bag 10 of the present invention and Figure 9 is a perspective view of the reclosable gusseted bag 10 of the present invention.

The periphery of gusseted bag 10 is typically formed from a single web sheet 11. Single web sheet 11 is formed to include front panel 12, rear panel 14 and left and right gussets 18, 20 formed between panels 12, 14. Panels 12, 14 are sealed together along bottom seal 16 (bottom seal 16 could be a direct seal between the

panels 12, 14 or a further gusset could be placed therebetween, particularly if a free-standing bag is desired). Left and right gussets 18, 20 are V-shaped with apices 22, 24.

Apices 22, 24 are formed as folds or creases in single web sheet 11.
5 Similarly, folds or creases 26, 28, 30, 32 are formed in single web sheet 11 as shown in Figure 3. Lateral edges 33, 35 of web sheet 11 are sealed together by fin seal 37, which protrudes from a central area of rear panel 14.

An alternative embodiment forms the panels 12, 14 and gussets 18, 20 from four separate sheets with seals therebetween in place of creases 26, 28, 30, 32. A
10 further alternative embodiment uses a film tube with the gussets 18, 20 formed therein.

Gussets 18, 20, of course, increase the volume which may be formed between front panel 12 and rear panel 14 when gusseted bag 10 is filled. Gussets 18, 20 further increase the size of the mouth 34 formed between the top edges of
15 front panel 12 and rear panel 14.

A single web multiple alignment zipper 40 is sealed to the interior of the periphery of web sheet 11 (thereby including front and rear panels 12, 14 and gussets 18, 20) downwardly adjacent from the top edge thereof which forms mouth 34. The single web multiple alignment zipper 40 extends around the entire interior
20 perimeter of the mouth 34 with the ends of the zipper 40 abutting inwardly from fin seal 37 as shown in Figures 3 and 4. Alternatively, in order to reduce manufacturing tolerances for bags which do not require as reliable of a seal formed by zipper 40 (such as, for example, large dry products such as dog food), zipper 40 may extend into fin seal 37 and be crushed therein.

Additionally, as shown in Figure 3, notches 27, 29, 31, 33 may be cut into single web multiple alignment zipper 40 at the locations of creases 26, 28, 30, 32 in order to facilitate the folding of zipper 40.

Figure 2 is a cross-sectional view of single web multiple alignment zipper 40 which has been folded upon itself and is shown twice in cross section (that is, a first portion on front panel 12, a second portion on rear panel 14). Such a single web multiple alignment zipper 40 has a plurality (at least two, typically three to five, but perhaps more, such as the six engaging elements illustrated on each portion of the web in Figure 2) of engaging elements 42 on the whereby a first portion of the single web multiple alignment zipper 40 can align and engage with a second portion thereof in one of a plurality of different configurations throughout a range of alignments. That is, varying the alignment will cause different engaging elements from a first portion of zipper 40 to engage between given engaging elements of an opposing second portion of zipper 40 while resulting in a reliable engagement. In the present configuration, a first portion of the single web multiple alignment zipper 40 on the front panel 12 engages with the portion of the single web multiple alignment zipper 40 on the rear panel 14 as well as respective facing portions of gussets 18, 20 when the gussets are folded in the internal configuration as shown in Figures 3, 5 and 6. When the gussets 18, 20 are folded in the external configuration as shown in Figures 7 and 8, portions of the zipper 40 on the front portion of gussets 18, 20 engage with portions of zipper 40 on the respective rear portions of gussets 18, 20.

The multiple alignment capability of zipper 40 allows the user to more easily re-engage the zipper 40 after the initial opening of the gusseted bag 10. Single web multiple alignment zipper 40 can be a string zipper (i.e., flangeless) or include one or two flanges.

Figure 3 shows the contact area encompassing the entire interior perimeter of gusseted bag 10 and the simple force needed to close the gusseted bag 10. Figure 5 discloses the contact area created when gusseted bag 10 is closed. Figure 6 shows that when the consumer or user pulls on the front and rear panels 12, 14 thereby exerting force X, the zipper 40 releases around the entire interior perimeter of gusseted bag 10, thereby exerting force Y and releasing the gussets and giving the maximum opening achievable as shown in Figure 4.

10 The manufacture of gusseted bag 10 typically includes applying zipper 40 in a transverse direction along single web sheet 11. Web sheet 11 is then dragged over a forming collar (not shown) where various folds 20, 22, 26, 28, 30, 32 are formed thereby forming gussets 18, 20. Lateral edges of web sheet 11 are brought together and fin seal 37 is formed. Bottom seal 16 is formed and the
15 resulting bag 10 is separated from the subsequent bags. Alternately, if the zipper 40 is applied after the gussets 18, 20 have been formed, gussets 18, 20 should typically be in the open or outwardly folded position during application of zipper 40.

20 Thus, the several aforementioned advantages can be most effectively attained. Although preferred embodiments of the invention have been disclosed and described in detail herein, it should be understood that this invention is in no sense limited thereby and its spirit and scope is to be determined by that of the disclosure herein.

The claims defining the invention are as follows:

1. A container including:
 - a front panel and a rear panel;
 - a first gusset joining a first side of said front panel to a first side of said rear panel;
 - a second gusset joining a second side of said front panel to a second side of said rear panel;
 - an opening being formed by an edge of said front and rear panels and said first and second gussets;
 - a zipper sealed to an interior of said front and rear panels and said first and second gussets, extending around an entire interior periphery of the container, downwardly adjacent from said opening; and
 - wherein said zipper includes a web with plurality of engaging track elements extending continuously around an entire periphery of the container, parallel to said opening, whereby a first portion of said web can engage a second portion of said web in a plurality of different configurations and thereby through a plurality of alignments.
2. The container of Claim 1 wherein said front panel, said rear panel, and said first and second gussets are formed from a single sheet of web.
3. The container of Claim 1 wherein said front panel, said rear panel and said first and second gussets are each formed from a separate sheet of web.
4. The container of any one of Claims 1 to 3 wherein notches are formed in said zipper at locations where said first and second gussets join said front and rear panels.
5. The container of Claim 2, wherein said front panel, said first gusset, said rear panel and said second gusset are separated by successive folds formed in said single sheet of web, and further wherein said first gusset and said second gusset include central folds therein.

6. The container of Claim 2 or 5, wherein lateral edges of said single sheet of web are sealed together.

5 7. The container of Claim 2, 5 or 6, wherein lateral edges of said single sheet of web are sealed together as a fin seal along said rear panel.

8. The container of any one of Claims 1 to 7 wherein said zipper is a single web.

10 9. The container of any one of Claims 1 to 8 wherein said plurality of engaging elements includes at least three engaging track elements.

15 10. The container of any one of Claims 1 to 9 wherein said plurality of engaging elements includes at least six engaging track elements.

11. The container of any one of Claims 1 to 10 wherein ends of said zipper abut each other.

20 12. A container including:
a front panel and a rear panel;
a first gusset joining a first side of said front panel to a first side of said rear panel;

25 a second gusset joining a second side of said front panel to a second side of said rear panel;

an opening being formed by an edge of said front and rear panels and said first and second gussets; and

30 a variable alignment multi-track zipper web sealed to an interior of said front and rear panels and said first and second gussets, wherein track elements of the zipper web extend continuously around an entire interior periphery of the container, downwardly adjacent from and parallel to said opening, wherein ends of said zipper web abut each other.

05 Sep 2011

2007248825

13. The container of Claim 12 wherein said front panel, said rear panel, and said first and second gussets are formed from a single sheet of web.

14. The container of Claim 12 wherein said front panel, said rear panel, and said first and second gussets are each formed from separate sheets of web.

15. The container of Claim 13 wherein said front panel, said first gusset, said rear panel and said second gusset are separated by successive folds formed in said single sheet of web, and further wherein said first gusset and said second gusset include central folds therein.

16. The container of any one of Claims 12 to 15 wherein said zipper web is a single strip.

17. The container of any one of Claims 12 to 16 wherein said variable alignment web includes at least three engaging track elements.

18. The container of any one of Claims 12 to 17 wherein said variable alignment web includes at least six engaging track elements.

19. A container according to any one of the embodiments substantially as herein described and with reference to the accompany drawings.

1/3

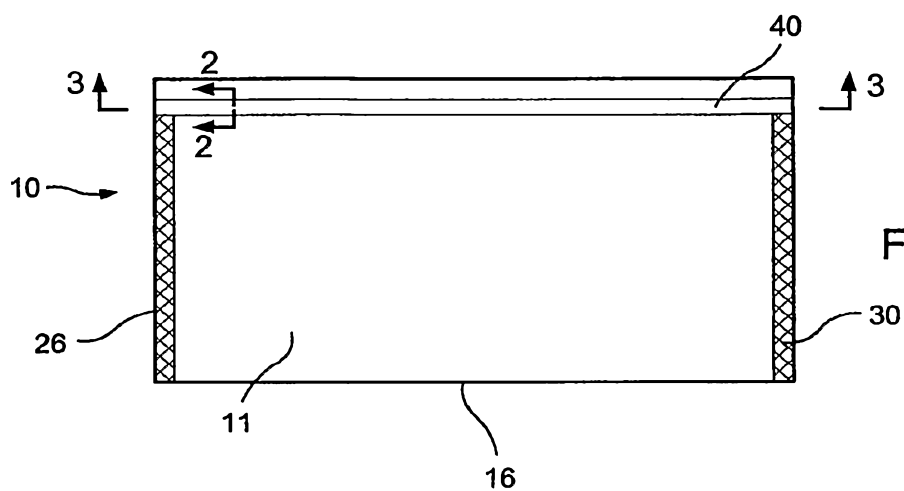


FIG. 1

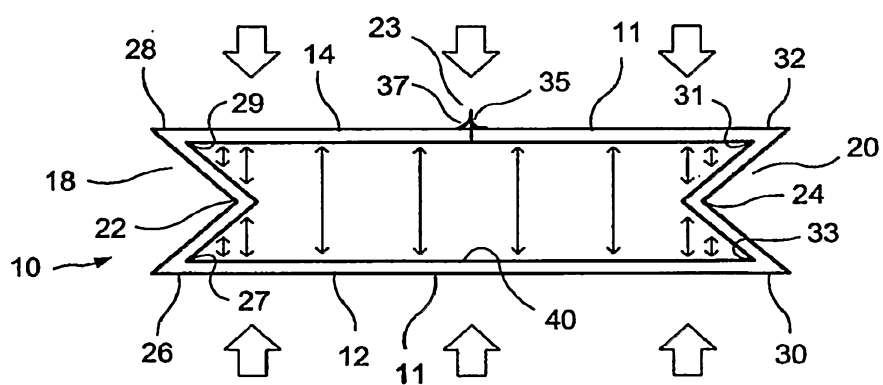


FIG. 3

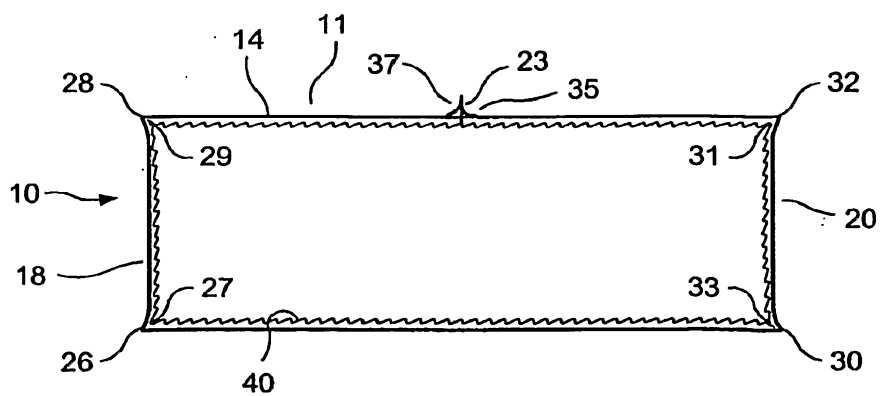


FIG. 4

2/3

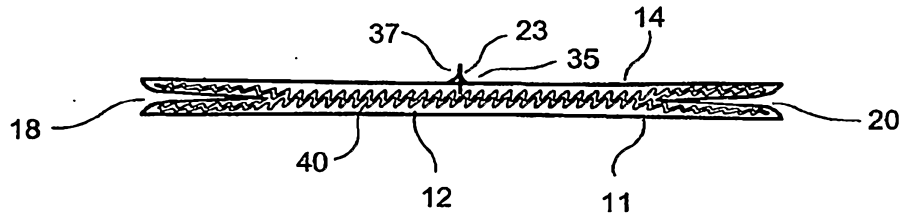


FIG. 5

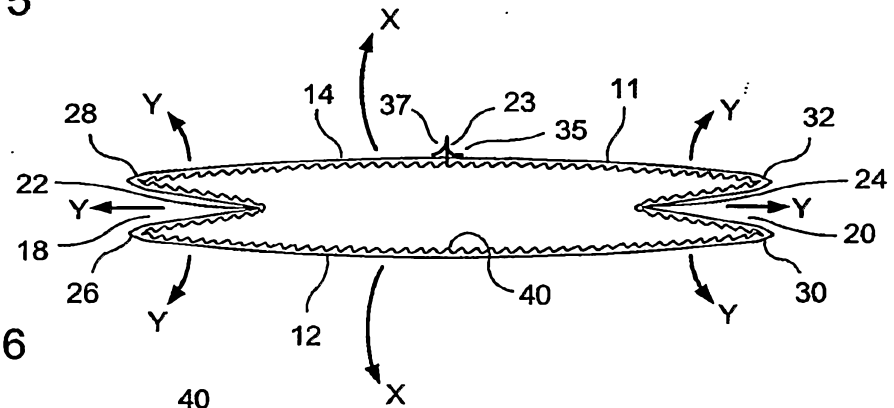


FIG. 6

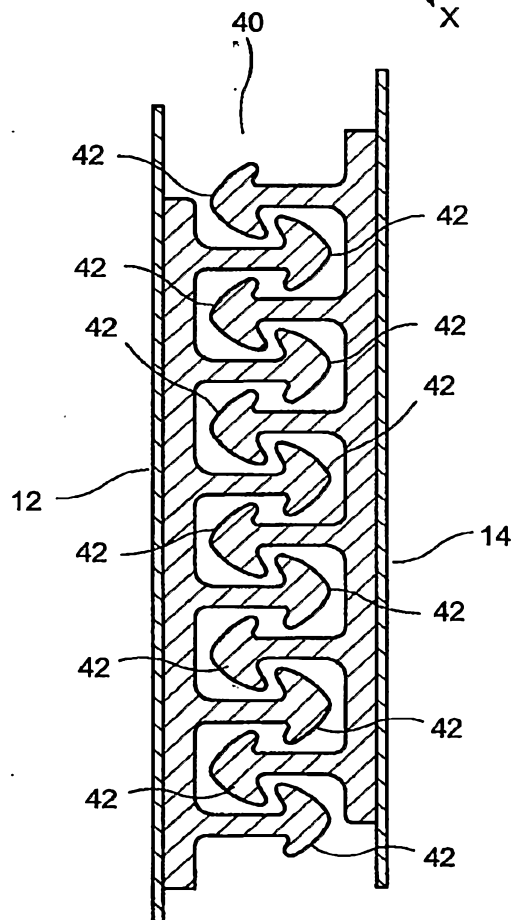


FIG. 2

3/3

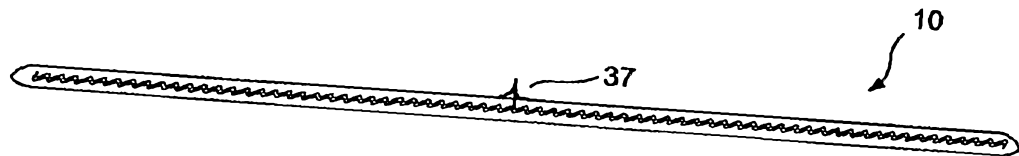


FIG. 7

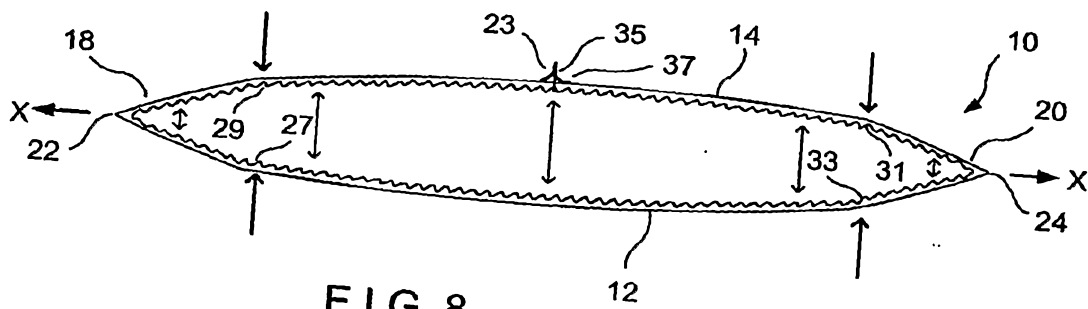


FIG. 8

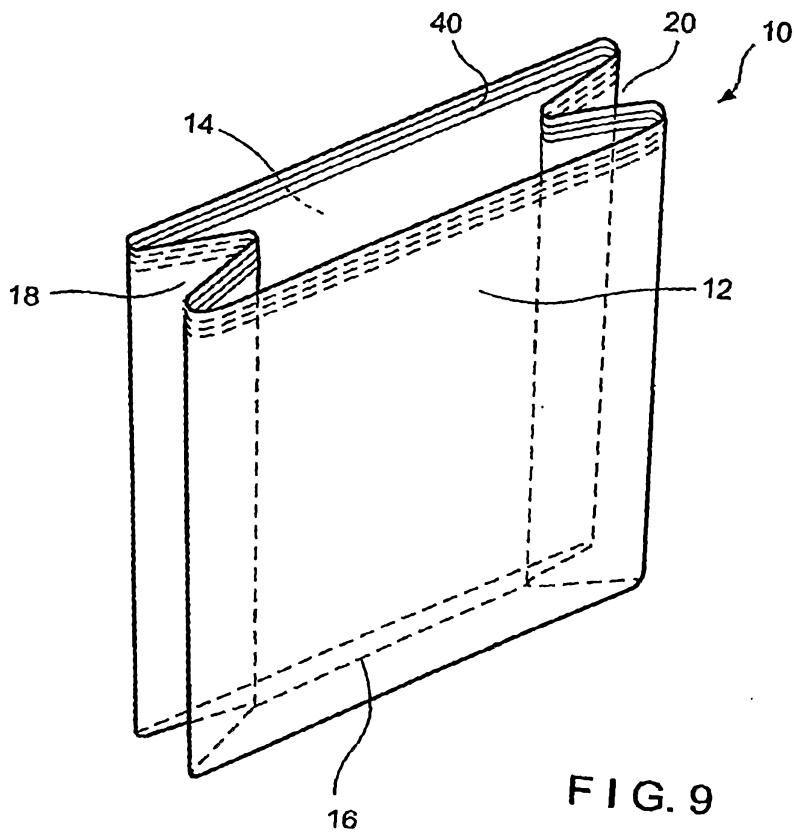


FIG. 9