



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 698 560 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

06.09.2006 Bulletin 2006/36

(51) Int Cl.:

B65D 33/25 (2006.01)

B65D 33/04 (2006.01)

B65D 75/58 (2006.01)

(21) Application number: **06250814.8**

(22) Date of filing: **16.02.2006**

(84) Designated Contracting States:

**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI
SK TR**

Designated Extension States:

AL BA HR MK YU

(72) Inventor: **Cornelisse, Jan Willem**

4905 AW Oosterhout (NL)

(74) Representative: **Finnie, Peter John**

Gill Jennings & Every LLP

Broadgate House

7 Eldon Street

London EC2M 7LH (GB)

(30) Priority: **01.03.2005** **US 68705**

(71) Applicant: **ILLINOIS TOOL WORKS INC.**

Glenview

Illinois 60026-1215 (US)

(54) **Diagonal front panel zipper opening on flexible pouches**

(57) A reclosable bag is formed with a diagonal opening in the front sheet of web. A zipper is formed over the diagonal opening. The diagonal opening is typically formed at a forty-five degree angle from the top seal, but may be within the range of thirty to sixty degrees from the top seal. This bag is manufactured from a supply of web which may have the diagonal openings pre-formed, or which may form the diagonal openings as part of the manufacturing process.

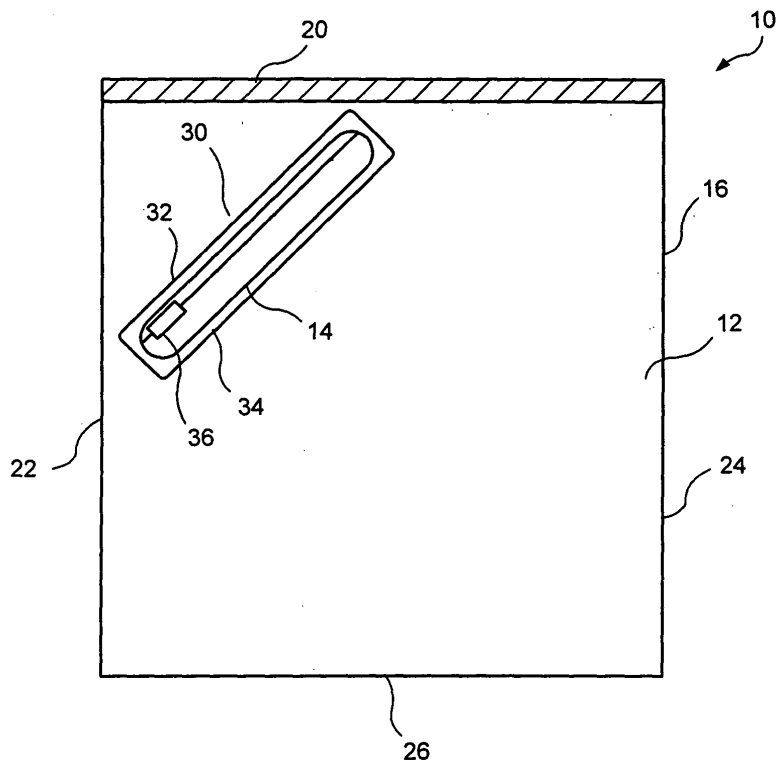


FIG. 1

EP 1 698 560 A1

Description**Field of the Invention**

5 [0001] The present invention relates to flexible pouches with a diagonal zipper opening in the front panel.

Background to the Invention

10 [0002] In the prior art, reclosable bags have typically been formed in square or rectangular configurations with the mouth or zipper opening either parallel or perpendicular to the various sides of the reclosable bag. While this is shown in various prior art references, typical reclosable bags are shown in U.S. Patent No. 5,951,453 entitled "Reclosable Bag Assembly and Method of Making Same", issued on September 14, 1999 to Yeager and U.S. Patent No. 6,270,257 entitled "Reclosable Bag with Profile Strip Fastener Assembly Having Improved Opening Feature", issued on August 7, 2001 to Yeager. However, in some applications, a diagonal zipper may be desirable for functional or aesthetic reasons.

Summary of the Invention

15 [0003] It is therefore an object of the present invention to provide a reclosable bag wherein the zipper opening is oriented diagonally on the front panel of the reclosable bag.

20 [0004] It is therefore a further object of the present invention to provide a method for manufacturing a reclosable bag wherein the zipper opening is oriented diagonally on the front panel of the reclosable bag.

25 [0005] These and other objects are attained by providing a reclosable bag wherein the zipper opening forms an angle in the range of 30-60 degrees, typically 45 degrees, from the orthogonal edges of the bag. The manufacturing process uses a web with pre-cut zipper openings formed at the desired diagonal angle, to which zippers are applied, and appropriate seals are formed to create the reclosable bag.

Brief Description of the Drawings

30 [0006] Further objects and advantages of the invention will become apparent from the following description and claims and from the accompanying drawings, wherein:

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

Figure 2 is a perspective view of the web from which the reclosable bag of the present invention is formed.

Detailed Description

35 [0007] Referring now to the drawings in detail wherein like numerals refer to like elements throughout the several views, one sees that Figure 1 is a front plan view of a reclosable bag 10 of the present invention. Reclosable bag 10 is formed from a front sheet 12 of web, which includes diagonal opening 14, and a rear sheet 16 of web (shown immediately behind front sheet 12). Front sheet 12 and rear sheet 16 are joined by top seal 20, side seals 22, 24 and bottom seal 26. As is known to those skilled in the art after review of this disclosure, front and rear sheets 12, 16 could be provided as a single sheet of web and one of the seals 20, 22, 24, 26 would, in such embodiments, be replaced by a fold.

40 [0008] Diagonal opening 14 is illustrated at a 45 degree angle from side seal 22, as well as from top seal 20. However, it is envisioned that diagonal opening 14 could vary in orientation from about 30 degrees to 60 degrees from side seal 22, and being oriented with respect to top seal 20 by the complementary angle thereof.

45 [0009] Diagonal opening 14 includes zipper 30 which typically includes profiles 32, 34 and slider 36 to allow for the selective opening and closing of recloseable bag 10. This allows the user to open diagonal opening 14 to obtain the contents, such as foodstuffs, of reclosable bag 10.

50 [0010] Figure 2 illustrates web 100 supplied from web supply 110 with a series of pre-formed periodic diagonal openings 16. Alternatively, registration of web 100 may be simplified in some applications by cutting diagonal opening 16 into web 100 during the process of forming bag 10. Web 100 would eventually form front sheet 12 of web. A separate sheet of uncut web (not shown) could be supplied during a form fill seal process to form rear sheet 16, after seals 20, 22, 24, 26 are formed. Alternatively, web 100 could be provided of a sufficient width that edges 102 and 104 could be brought together and sealed to form side seal 22 (side seal 24 being replaced by a fold).

Claims

1. A reclosable bag, comprising:

5 a front sheet of web,
a rear sheet of web sealed to said front sheet; and
a diagonal opening formed in said front sheet of web.

- 10 2. The reclosable bag of Claim 1 wherein said front sheet of web and said rear sheet of web are formed from different sheets of web and are sealed to each other about a periphery thereof.

3. The reclosable bag of Claim 1 wherein said front sheet of web and said rear sheet of web are formed from a single sheet of web which is folded, with edges of said front sheet sealed to edges of said rear sheet.

- 15 4. The reclosable bag of Claim 1 wherein said diagonal opening is oriented substantially forty five degrees from a top edge of the reclosable bag.

5. The reclosable bag of Claim 1 wherein said diagonal opening is oriented substantially in the range of thirty degrees to sixty degrees from a top edge of the reclosable bag.

- 20 6. A method of forming reclosable bags, including the steps of:

providing a first sheet of web with diagonal openings;
providing a second sheet of web; and
25 sealing said first and second sheets together to form the reclosable bag.

7. The method of forming reclosable-bags of Claim 6 wherein said diagonal openings have been previously formed in said first sheet of web.

- 30 8. The method of forming reclosable bags of Claim 6 wherein said diagonal openings are cut from said first sheet after said first sheet has been provided.

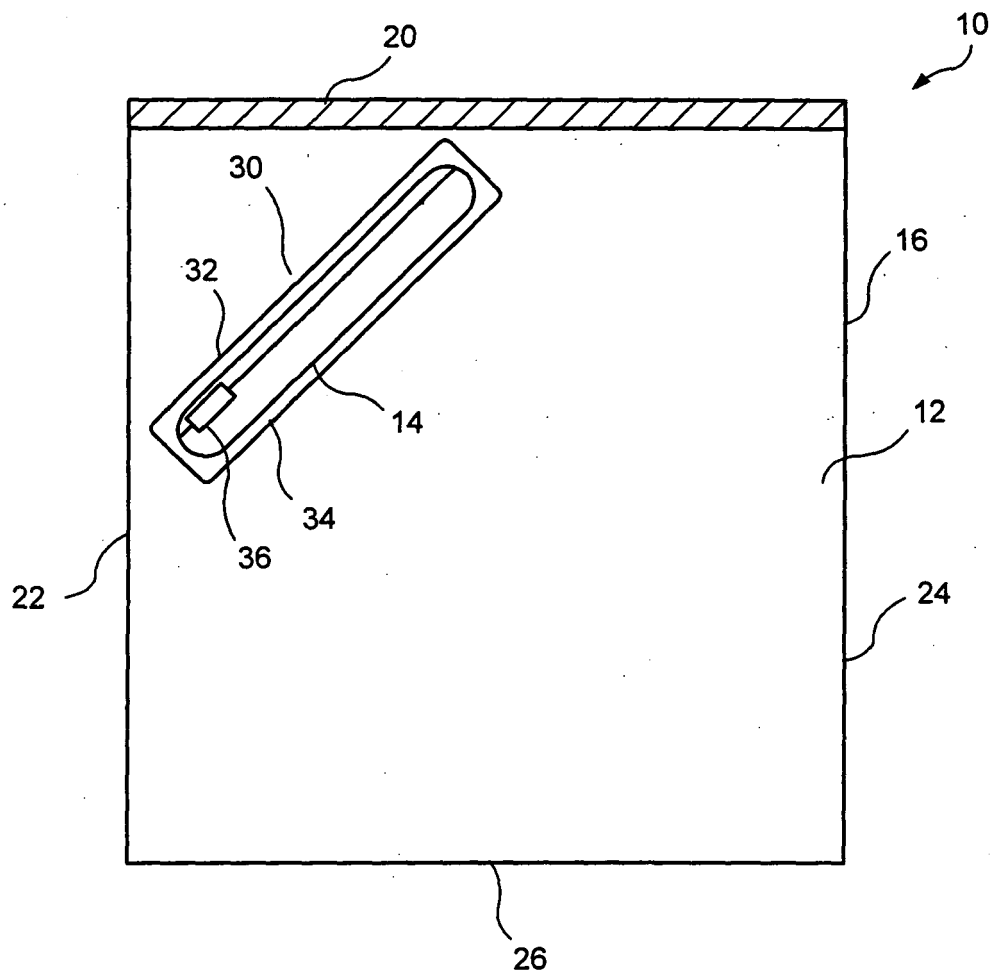


FIG. 1

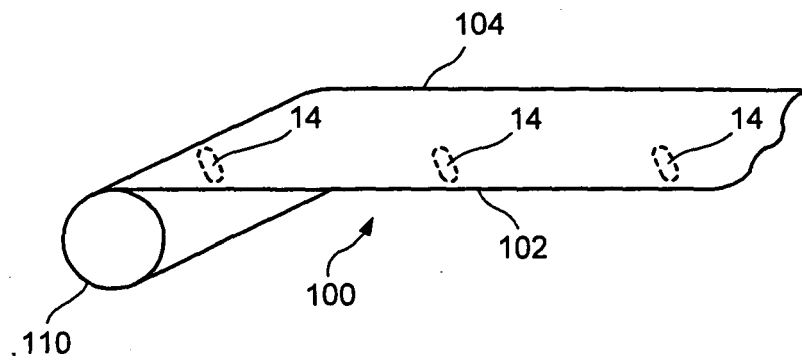


FIG. 2



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 25 0814

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 1 477 658 A (POLYPAPIER, SOCIETE INDUSTRIELLE D'EXTRUSION-LAMINATION) 21 April 1967 (1967-04-21) * the whole document *	1-8	INV. B65D33/25 B65D33/04 B65D75/58
X	WO 02/096331 A (THE PROCTER & GAMBLE COMPANY; HIROTSU, DENNIS, OSAMU) 5 December 2002 (2002-12-05) * page 8, line 33 - line 35; figure 1 *	1,2,4-7	
A	US 5 167 608 A (STEFFENS, JR. ET AL) 1 December 1992 (1992-12-01) * figures 9,10 *	1-8	
A	WO 2005/005274 A (NEW PACK KOREA CO., LTD; SONG, CHEL-JONG) 20 January 2005 (2005-01-20) * page 3, line 19 - page 4, line 9; figures 1,4 *	1-8	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 7 June 2006	Examiner Appelt, L
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

2
EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 25 0814

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

07-06-2006

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 1477658	A	21-04-1967	NONE	

WO 02096331	A	05-12-2002	BR 0210006 A	10-08-2004
			CA 2444439 A1	05-12-2002
			CN 1729127 A	01-02-2006
			EP 1401718 A2	31-03-2004
			JP 2004537474 T	16-12-2004
			MX PA03009965 A	12-02-2004

US 5167608	A	01-12-1992	NONE	

WO 2005005274	A	20-01-2005	NONE	
