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 <i>B65D 33/25</i> (2006.01) <i>A61M 1/06</i> (2006.01)
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 61/307,752 24 February 2010 (24.02.2010) US</p> <p>(71) Applicant (<i>for all designated States except US</i>): ILLINOIS TOOL WORKS INC. [US/US]; 3600 West Lake Avenue, Glenview, IL 60026 (US).</p> <p>(72) Inventor; and</p> <p>(75) Inventor/Applicant (<i>for US only</i>): MATIAS, Victor [US/US]; 2304 County Grace, New Braunfels, TX 78130 (US).</p> | <p>(74) Agent: BROWN, Ronald, E.; Day Pitney LLP, 7 Times Square, New York, NY 10036-7311 (US).</p> <p>(81) Designated States (<i>unless otherwise indicated, for every kind of national protection available</i>): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.</p> <p>(84) Designated States (<i>unless otherwise indicated, for every kind of regional protection available</i>): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).</p> |
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- (54) Title:** STORAGE BAG FOR BREAST PUMP

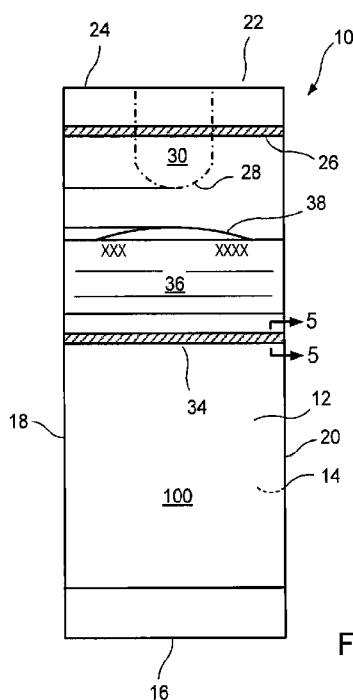


FIG. 1

- (57) Abstract:** The disclosure regards a storage bag (10) for breast milk or other liquids or materials. The storage bag includes first and second closures (26,34), wherein a first line of perforations (28) is U-shaped and extends through the first closure (26), thereby allowing an output of a breast pump or other device to be inserted through the area where material defined by the first line of perforations is removed. The first closure can further be used to engage the output of the breast pump or other device. A second closure (34) is formed further within the storage bag and defines a storage volume. A second line of perforations (38) is provided above the second closure. After the storage volume is filled, the second closure can be closed and the material above the second line of perforations can be removed.

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STORAGE BAG FOR BREAST PUMP

BACKGROUND OF THE DISCLOSURE

[0001] This application claims priority under 35 U.S.C. §119(e) of provisional patent application serial number 61/307,752, filed on February 24, 2010, the contents of which are hereby incorporated by reference in their entirety.

Field of the Disclosure

[0002] The present disclosure relates to a storage bag which is adaptable to a breast pump and further adaptable to the storage of breast milk, as well as being adaptable to serving as the bag for a baby bottle. The present disclosure may be applied to other liquids.

Description of the Prior Art

[0003] The advantages of breast-feeding are well-established. Similarly, the use of breast pumps is well-known to allow the mother who may be away from home, such as a working mother, to collect the breast milk for consumption by the baby. However, this typically requires the mother to transfer the breast milk between various containers, which may result in the spilling or contamination of the breast milk. Additionally, the use of several containers requires that these containers be kept meticulously clean.

SUMMARY AND OBJECTS OF THE DISCLOSURE

[0004] It is therefore an object of the present disclosure to allow the use of a breast pump while reducing the number of containers to which the breast milk must be transferred, thereby reducing the chances of spilling or contamination of the breast milk.

[0005] This and other objects are attained by providing a storage bag which is can receive the breast milk from the breast pump, store the breast milk, and provide a pour spout for pouring the breast milk into a baby bottle. Alternatively, the storage bag can be inserted directly into a baby bottle.

[0006] The bag includes a first closure (preferably adhesive, but may also be a zipper) with a first U-shaped perforation which extends therethrough, and further includes a second closure (preferably a zipper, but may also be adhesive) with a crescent-shaped perforation

thereover. The material within the first U-shaped perforation is removed in order to attach the storage bag to a breast pump. After the breast milk has been accumulated, the portion above the second perforation is removed and the second closure is closed. The milk can then be stored or transported. When it is time to use the milk, the second closure is opened and either the milk is poured into a baby bottle or the storage bag is inserted directly into a bottomless baby bottle and the crescent shape acts as pull tabs to pull over the bottle. The top cap of the bottle with the nipple is then screwed down to capture the tabs between the inside of the cap and the outside of the bottle.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Further objects and advantages of the disclosure will become apparent from the following description and from the accompanying drawings, wherein:

[0008] Figure 1 is a plan view of the storage bag of the present disclosure.

[0009] Figure 2 is a plan view of the storage bag of the present disclosure with the material within the first perforation removed, so as to accommodate a breast milk pump.

[00010] Figure 3 is a plan view of the storage bag with the present disclosure with the material above the second perforation removed.

[00011] Figure 4 is a plan view of the storage bag of the present disclosure inserted into a baby bottle

[00012] Figure 5 is a cross-sectional view along plane 5-5 of Figure 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[00013] Referring now to the drawings in detail wherein like numerals indicate like elements throughout the several views, one sees that Figure 1 is a plan view of the storage bag 10 of the present disclosure. Storage bag 10 is typically made of polymeric material and is typically sterilized to maintain the safety of the breast milk. Storage bag 10 includes front and rear walls 12, 14 with a closed bottom such as a bottom seal 16, and first and second side seals 18, 20, wherein some embodiments may replace one of the seals with a fold. Alternatively, the storage bag 10 may be provided in a cylindrical tube and a bottom seal 16 thereby eliminating the side seals 18, 20 and further improving its compatibility with a

cylindrical baby bottle 300 (see Figure 4). A mouth 22 is formed at the top edge 24. First closure 26 is placed in the interior of storage bag 10, just below mouth 22, thereby providing a closing device for mouth 22. First closure 26 is preferably an adhesive such as one approved for direct food contact such as, but not limited to, Aqua Tack 320 from Aqua Based Technologies, a division of ADM Tronics Inc. Further the term “adhesive” may be construed to include a substantially chemical-free surface treatment which provides adhesion such as the “Dry Adhesive” product by Nano Terra. Moreover, first closure 26 may further be a zipper such as shown in Figure 5.

[00014] A first line perforations 28 has a U-shape, starting at the top edge 24 of both front and rear walls 12, 14 (or on both the front and rear of the tube, if storage bag 10 is provided in a tubular shape) and extending through a central portion of first closure 26, so that a U-shaped portion of material 30 (including a central portion of first closure 26) is defined by first line of perforations 28.

[00015] A second closure 34 (typically a zipper as shown in Figure 5, but may be an adhesive as described above with respect to first closure 26) is placed across the interior of the storage bag 10, typically somewhat above the vertical mid-point of the storage bag 10 thereby defining a breast milk storage volume 100 therebelow. A labeling portion 36 is provided on front wall 12, just above second closure 34, so that the user can label the storage bag 10, typically recording such information as the date and time that the storage bag 10 was filled. A second line of perforations 38 is placed across the front and rear walls 12, 14 of storage bag, immediately above the labeling portion 36. The second line of perforations 38 is typically has an upwardly arcing or crescent shape in order either to provide a pour spout or to provide pull tabs for use with a bottomless baby bottle 300 (see Figure 4). The first and second lines of perforations 28, 38 can be replaced by other lines of weakness, such as laser scored lines, etc.

[00016] The typical structure of zippers, typically made of polymeric material, which may be used as first and second closures 26, 34, is shown in Figure 5. Particularly with respect to second closure 34, it is imperative that the zippers are highly liquid-resistant as well as providing a very tight seal against any possible contamination. First double zipper profile 50 is attached to front wall 12 and includes first male interlocking element 52 and first female interlocking element 54. Second double zipper profile 60 is attached to rear wall 14 and includes second female interlocking element 62 and second male interlocking element 64.

First and second male interlocking elements 52, 64 are typically arrowhead shaped, which are tightly engaged by detent hooked arms 70, 72 of second female interlocking element 62 and detent hooked arms 66, 68 of first female interlocking element 54, respectively. Additionally, first and second female interlocking elements 54, 62 include first and second laterally extending barrier projections 74, 76 which increase the liquid resistance and contamination resistance of the closures 26, 34, when implemented as zippers. Typically, at least one of the projections 74, 76 of second closure 34 (when implemented as a zipper) will be visible, thereby confirming to the user that the second closure 34 is properly closed or interlocked.

[00017] The sequence of using the storage bag 10 is shown in Figures 2-4. As shown in Figure 2, first line of perforations 28 is torn so as to remove U-shaped portion of material 30. Second closure 34 is disengaged. The output 200 (shown in phantom) of breast milk pump is placed within the storage bag 10 through the port 30' where U-shaped portion of material 30 (Figure 1) was removed. The output 200 of breast milk pump may inserted as far as storage volume 100. Additionally, first closure 26 may be engaged around output 200 to temporarily secure the output 200 to the storage bag 10 (an embodiment with adhesive as the first closure 26 is well-adapted to this engagement), so that the storage bag 10 is prevented from falling off when filled with milk while second closure 34 is open. Once the operation of the breast milk pump is completed, the user withdraws output 200 from storage bag 10, closes second closure 34 and tears along second line of perforations 38 to achieve the configuration shown in Figure 3. Some users may prefer to tear along second line of perforations 38 prior to closing second closure 34. With the configuration of Figure 3 (with second closure 34 closed), the storage bag 10 may be transported or stored. When it is time to use the stored milk, the user may open second closure 34 and pour the milk into another container, using the crescent shape provided by second line of perforations 38 as a pour spout. Alternatively, the milk may remain in the storage bag 10, the storage bag 10 inserted into a baby bottle 300 (see Figure 4, typically a bottomless baby bottle) and the crescent shape provided by second line of perforations 38 will provide pull tabs for the user to pull a portion of the walls of the storage bag over the bottle. The top cap 302, including nipple 304, is then screwed down to capture the pull tabs between the inside of the top cap 302 and outside of the bottle 300.

[00018] This disclosure is not limited to the storage of breast milk and may be used for storage and transportation of other fluids or even powdered or granular material.

[00019] Thus the several aforementioned objects and advantages are 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 scope is to be determined by that of the appended claims.

CLAIMS

What is Claimed is:

1. A storage bag including:
 - a wall structure defining a storage volume, a closed bottom and an open top;
 - a first closure closing the open top;
 - a second closure at a position in the wall structure between the first closure and the closed bottom, wherein the storage volume is formed between the second closure and the closed bottom;
 - a first line of weakness having a U-shape and extending from the open top and passing through the first closure; and
 - a second line of weakness extending across the wall structure between the first closure and the second closure.
2. The storage bag of Claim 1 wherein the first closure is adhesive and the second closure is a zipper.
3. The storage bag of Claim 2 wherein the first line of weakness has a U-shape with ends that terminate at the open top, and which defines an area which includes a portion of the first closure.
4. The storage bag of Claim 3 wherein tearing along the first line of weakness removes a portion of the first closure.
5. The storage bag of Claim 4 wherein tearing along the first line of weakness and removing the area defined by the first line of weakness creates a port for receiving material for the storage volume.

6. The storage bag of Claim 5 wherein the second line of weakness has an upwardly arcing shape.
7. The storage bag of Claim 6 wherein a labeling area is provided on the wall structure between the second zipper and the second line of weakness.
8. The storage bag of Claim 7 wherein the zipper includes a first zipper profile with a first interlocking element and a second interlocking element and a second zipper profile with a third interlocking element and a fourth interlocking element, wherein the first interlocking element engages the third interlocking element and the second interlocking element engages the fourth interlocking element.
9. The storage bag of Claim 8 wherein the adhesive is a surface treatment.
10. The storage bag of Claim 9 wherein the wall structure comprises polymeric material.
11. A breast milk storage bag including:
 - a wall structure defining a breast milk storage volume, a closed bottom and an open top;
 - a first closure closing the open top;
 - a second closure at a position in the wall structure between the first closure and the closed bottom, wherein the breast milk storage volume is formed between the second closure and the closed bottom;
 - a first line of weakness having a U-shape and extending from the open top and passing through the first closure; and
 - a second line of weakness extending across the wall structure between the first closure and the second closure.

12. The breast milk storage bag of Claim 11 wherein the first closure is adhesive and the second closure is a zipper.

13. The breast milk storage bag of Claim 12 wherein the first line of weakness has a U-shape with ends that terminate at the open top, and which defines an area which includes a portion of the first closure.

14. The breast milk storage bag of Claim 13 wherein tearing along the first line of weakness removes a portion of the first closure.

15. The breast milk storage bag of Claim 14 wherein tearing along the first line of weakness and removing the area defined by the first line of weakness creates a port for receiving an output from a breast milk pump whereby breast milk is supplied to the storage volume.

16. The breast milk storage bag of Claim 15 wherein the second line of weakness has an upwardly arcing shape thereby providing either a pour spout for the breast milk or pull tabs to insert the breast milk storage bag into a baby bottle after the second line of weakness has been torn.

17. The breast milk storage bag of Claim 16 wherein a labeling area is provided on the wall structure between the second closure and the second line of weakness.

18. The breast milk storage bag of Claim 17 wherein the zipper includes a first zipper profile with a first interlocking element and a second interlocking element and a second zipper profile with a third interlocking element and a fourth interlocking element, wherein the first interlocking element engages the third interlocking element and the second interlocking element engages the fourth interlocking element.

19. The breast milk storage bag of Claim 18 wherein the adhesive is a surface treatment.
20. The breast milk storage bag of Claim 19 wherein the wall structure comprises polymeric material.

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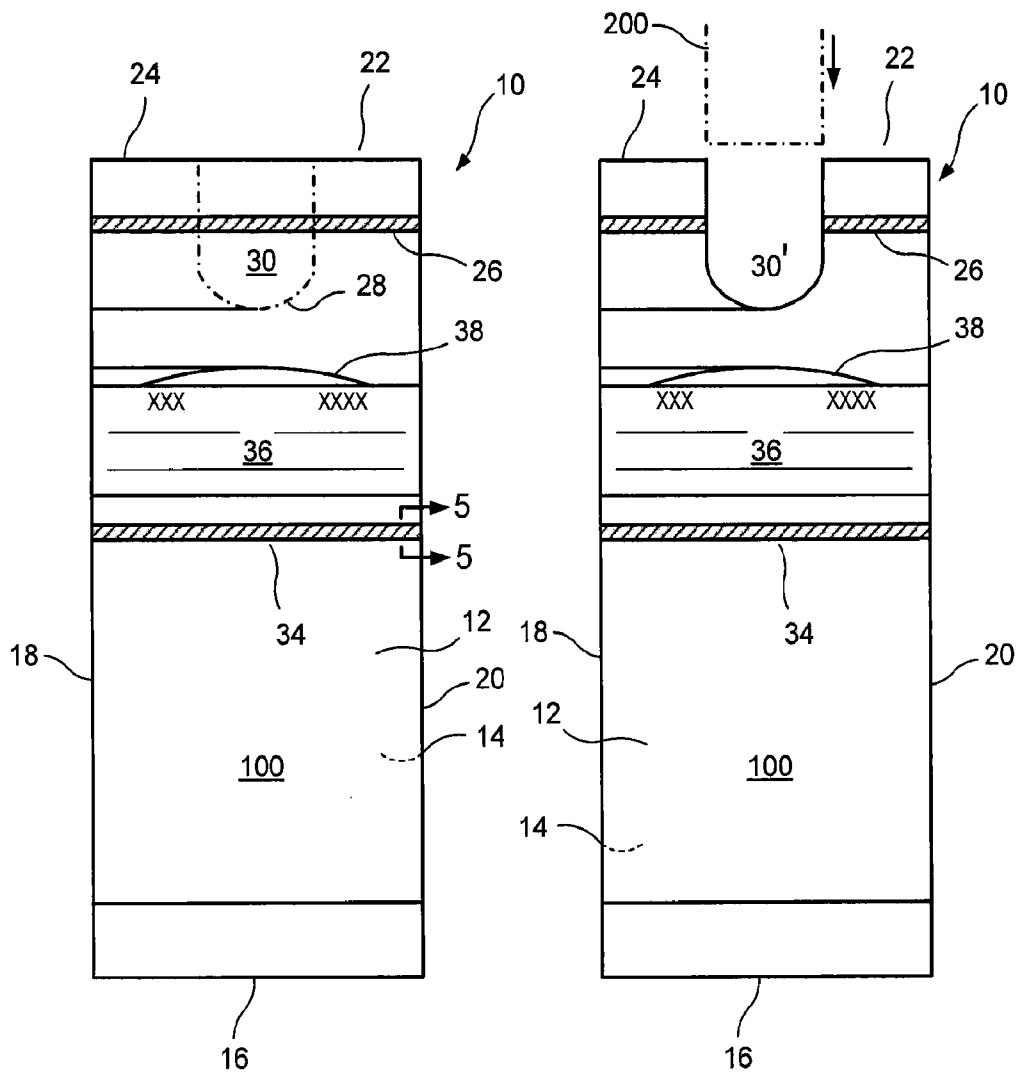


FIG. 1

FIG. 2

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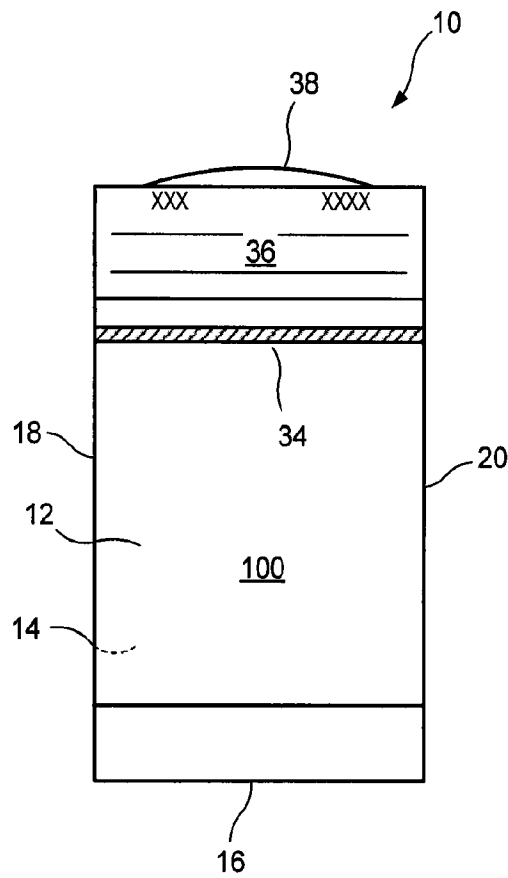


FIG. 3

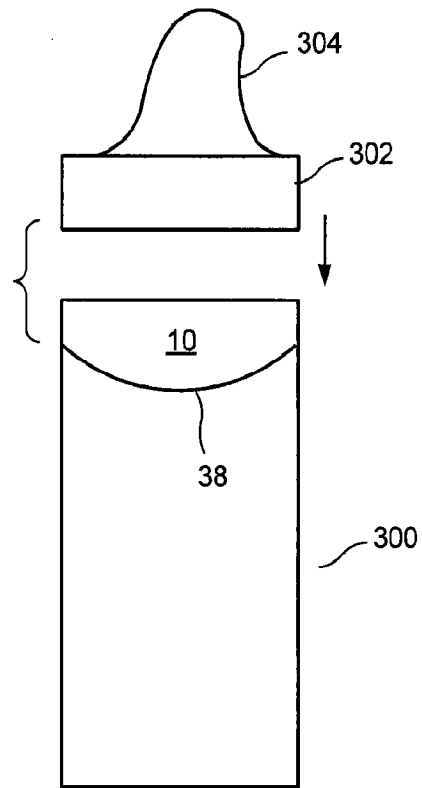


FIG. 4

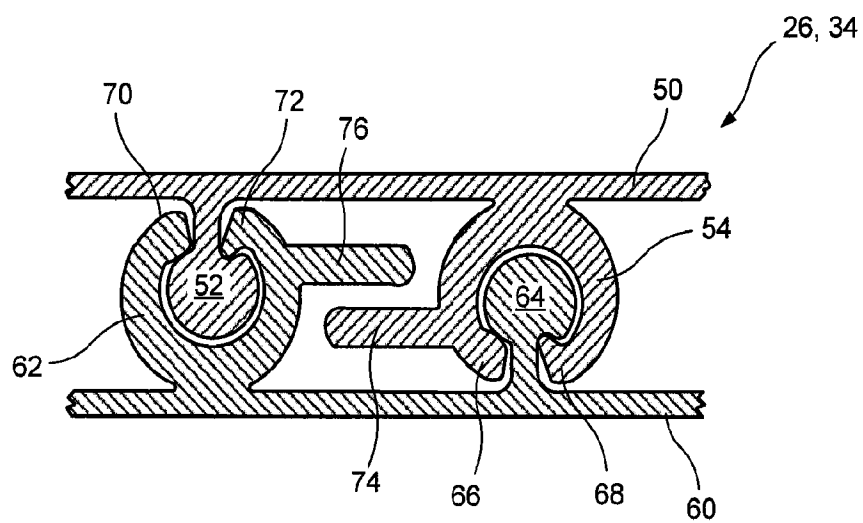


FIG. 5

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2011/025207

A. CLASSIFICATION OF SUBJECT MATTER INV. B65D33/18 B65D33/25 B65D75/58 A61J9/00 A61M1/06 ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) B65D A61J A61M		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EP0-Internal		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	----- EP 0 328 055 A2 (ABBOTT LAB [US]) 16 August 1989 (1989-08-16) column 2, line 44 - column 4, line 32; figures 1-7	1,11
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☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family		
Date of the actual completion of the international search 11 May 2011		Date of mailing of the international search report 19/05/2011
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Grondin, David

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2011/025207

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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