

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
23 March 2006 (23.03.2006)

PCT

(10) International Publication Number
WO 2006/029531 A3

(51) International Patent Classification:

B42B 5/08 (2006.01) **B44F 11/02** (2006.01)
B44C 5/02 (2006.01) **B29C 51/00** (2006.01)
B42B 7/00 (2006.01) **B29D 31/00** (2006.01)
B29C 61/00 (2006.01)

(21) International Application Number:

PCT/CA2005/001415

(22) International Filing Date:

16 September 2005 (16.09.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/610,170 16 September 2004 (16.09.2004) US

(71) Applicants and

(72) Inventors: **CONRAD, Wayne, Ernest** [CA/CA]; 9 King Street, Hampton, Ontario L0B 1J0 (CA). **CONRAD, Nina, Kanevsky** [CA/CA]; 9 King Lane, Hampton, Ontario L0B 1J0 (CA). **CONRAD, Helmut, Horst, G.** [CA/CA]; 9 King Lane, Hampton, Ontario L0B 1J0 (CA). **HILLS, Ron** [CA/CA]; 21 King Lane, Hampton, Ontario L0B 1J0 (CA).

(74) Agent: **BERESKIN & PARR?**; 40 King Street West, 40th Floor, Toronto, Ontario M5H 3Y2 (CA).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, 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, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, 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:

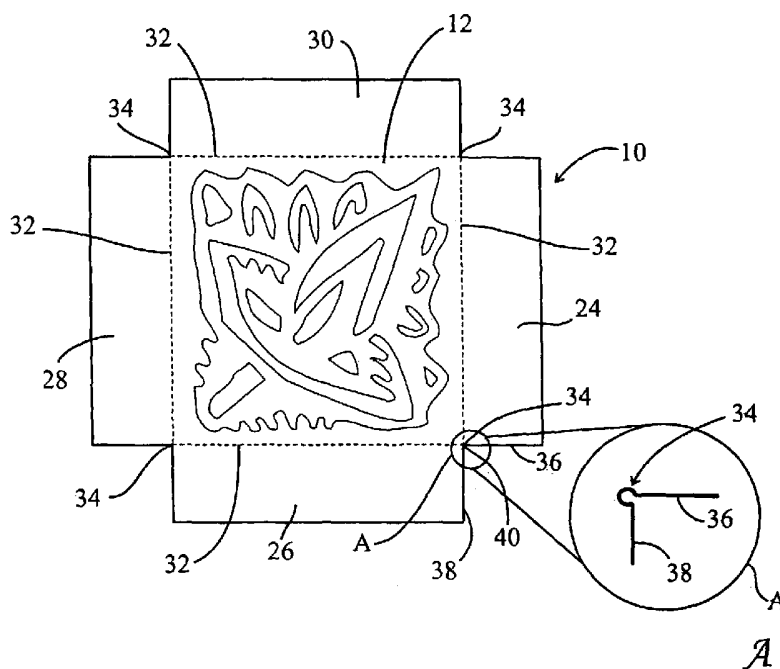
— with international search report

(88) Date of publication of the international search report:

26 May 2006

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: A DEFORMABLE SUBSTRATE AND A METHOD OF CONFIGURING THE SUBSTRATE TO REDUCE THE PROPAGATION OF STRESS ALONG A FOLD LINE THEREON



(57) Abstract: A non-cellulose based deformable substrate having at least one fold line is configured to be able to be directly mounted on a frame or included in a publication. The substrate is configured to reduce the propagation of stress along the at least one fold line.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2005/001415

A. CLASSIFICATION OF SUBJECT MATTER IPC: B42B 5/08 (2006.01), B44C 5/02 (2006.01), B42B 7/00 (2006.01), B29D 31/00 (2006.01), B29C 61/00 (2006.01), B44F 11/02 (2006.01), B29C 51/00 (2006.01) 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) IPC: B42B 5/00, 5/02, 5/04, 5/06, 5/08, 5/10, 5/12, 7/00 (2006.01); B42C 1/00, 3/00, 5/00, 5/02, 5/04, 5/06 (2006.01); B42D 1/00, 1/04, 13/00, 15/00 (2006.01); B29C 51/00, 61/00 (2006.01); B29D 31/00 (2006.01); B44C 5/02 (2006.01); B42 F 3/00 (2006.01); B44F 11/02 (2006.01). Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used) DELPHION; ESP@CENET; USPTO; QPAT; TECHSOURCE																							
C. DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>US 2,180,551 A (SAWDON ET AL.) 21 NOVEMBER 1939 the entire document</td> <td>65, 69-73</td> </tr> <tr> <td>A</td> <td></td> <td>1-4, 6-12, 14, 15, 55, 56, 58-67, 69-73</td> </tr> <tr> <td>Y</td> <td>US 2002/0141849 A1 (TROVINGER ET AL.) 03 OCTOBER 2002 the entire document</td> <td>72</td> </tr> <tr> <td>A</td> <td></td> <td>1-4, 65, 66, 67, 69-73</td> </tr> <tr> <td>A</td> <td>US 6,360,887 B1 (PETTY) 26 MARCH 2002 the entire document</td> <td>1-4, 6-12, 14-19, 21-29, 31-44, 46-49, 55, 56, 58-67, 69-73</td> </tr> <tr> <td>A</td> <td>US 5,098,127 A (WILLIAMSON ET AL.) 24 MARCH 1992 the entire document</td> <td>1-4, 6-12, 14, 15, 55, 56, 58-67, 69-73</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	US 2,180,551 A (SAWDON ET AL.) 21 NOVEMBER 1939 the entire document	65, 69-73	A		1-4, 6-12, 14, 15, 55, 56, 58-67, 69-73	Y	US 2002/0141849 A1 (TROVINGER ET AL.) 03 OCTOBER 2002 the entire document	72	A		1-4, 65, 66, 67, 69-73	A	US 6,360,887 B1 (PETTY) 26 MARCH 2002 the entire document	1-4, 6-12, 14-19, 21-29, 31-44, 46-49, 55, 56, 58-67, 69-73	A	US 5,098,127 A (WILLIAMSON ET AL.) 24 MARCH 1992 the entire document	1-4, 6-12, 14, 15, 55, 56, 58-67, 69-73
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																					
Y	US 2,180,551 A (SAWDON ET AL.) 21 NOVEMBER 1939 the entire document	65, 69-73																					
A		1-4, 6-12, 14, 15, 55, 56, 58-67, 69-73																					
Y	US 2002/0141849 A1 (TROVINGER ET AL.) 03 OCTOBER 2002 the entire document	72																					
A		1-4, 65, 66, 67, 69-73																					
A	US 6,360,887 B1 (PETTY) 26 MARCH 2002 the entire document	1-4, 6-12, 14-19, 21-29, 31-44, 46-49, 55, 56, 58-67, 69-73																					
A	US 5,098,127 A (WILLIAMSON ET AL.) 24 MARCH 1992 the entire document	1-4, 6-12, 14, 15, 55, 56, 58-67, 69-73																					
☒ 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 application or patent 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 25 January 2006 (25-01-2006)		Date of mailing of the international search report 30 January 2006 (30-01-2006)																					
Name and mailing address of the ISA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001(819)953-2476		Authorized officer Gregory Myslicki (819) 956-5824																					

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2005/001415

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,590,912 A (STEVENS) 07 JANUARY 1997 the entire document	1-4, 6-12, 14, 15, 55, 56, 58-67, 69-73
A	US 6,409,447 B2 (MALMROS) 25 JUNE 2002 the entire document	1-4, 6-12, 14, 15, 55, 56, 58-67, 69-73
A	US 3,950,869 A (SAMARIN) 20 APRIL 1976 the entire document	42-44, 46-49, 74-76, 78-81
A	US 2,314,087 A (HELLER) 16 MARCH 1943 the entire document	1-86

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2005/001415

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of the first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons :

1. ☐ Claim Nos. :
because they relate to subject matter not required to be searched by this Authority, namely :
2. ☐ Claim Nos. :
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically :
3. ☐ Claim Nos. :
because they are dependant claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows :

Group A: Claims 1 to 64 and 74 to 86 relate to a publication, member or art reproduction comprising a substrate having at least one fold line, wherein the substrate is configured to reduce the propagation of stress along the at least one fold line.

Group B: Claims 65 to 73 relate to publication having pages, and a substrate having an opening for passage therethrough of an elongate member.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claim Nos. :
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claim Nos. :

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/CA2005/001415

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s) Date	Publication
US2180551 A	21-11-1939	NONE	
US 2002/0141849 A1	03-10-2002	EP1372983 A1 JP2004532132T T US6682285 WO02078973 A1	02-01-2004 21-10-2004 27-01-2004 10-10-2002
US6360887 B1	26-03-2002	AU3451999 A AU5357998 A CA2272926 A1 CA2327267 A1 EP1009685 A1 EP1131258 A1 US5669491 A US6105762 A US6296112 B1 US2002027089 A1 WO9822370 A1 WO9952793 A1	01-11-1999 10-06-1998 28-05-1998 21-10-1999 21-06-2000 12-09-2001 23-09-1997 22-08-2000 02-10-2001 07-03-2002 28-05-1998 21-10-1999
US5098127 A	24-03-1992	NONE	
US5590912 A	07-01-1997	CA2115189 A1 EP0634294 A2 US5419587 A US5568942 A	15-01-1995 18-01-1995 30-05-1995 29-10-1996
US6409447 B2	25-06-2002	NONE	
US3950869 A	20-04-1976	NONE	
US2314087 A	16-03-1943	US2314088 A	16-03-1943