

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
22 March 2007 (22.03.2007)

PCT

(10) International Publication Number
WO 2007/032900 A3

- (51) International Patent Classification:
B65C 9/46 (2006.01) B32B 38/14 (2006.01)
B32B 7/12 (2006.01)
- (21) International Application Number:
PCT/US2006/033586
- (22) International Filing Date: 28 August 2006 (28.08.2006)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/712,640 29 August 2005 (29.08.2005) US
60/789,505 4 April 2006 (04.04.2006) US

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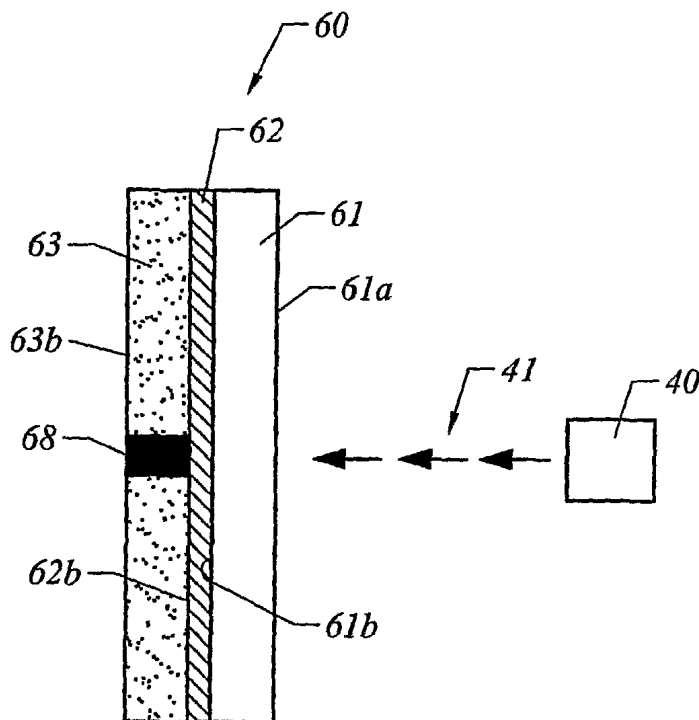
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, 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, 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,

[Continued on next page]

(54) Title: MULTI-LAYER, LIGHT MARKABLE MEDIA AND METHOD AND APPARATUS FOR USING SAME



(57) Abstract: A multi-layer laminate media is provided on which information may be applied in machine or human readable form on a visible front surface by the output of one or more lasers, or other high intensity light source. In a preferred embodiment, the media has three layers including a substrate, a thermochromic layer and a light absorbent layer located intermediate the media substrate and the thermochromic layer. The light absorbent layer is adapted to absorb light from the light source and convert the absorbed light into heat. The heat is immediately conducted into selected portions of the thermochromic layer which is in thermal contact with the light absorbent layer, causing portions of the thermochromic layer to change visual appearance such as color to create the desired mark. The media optimally includes obscuration materials to reduce the visibility of the light absorbent layer to the naked eye. The light absorbent layer is preferably a low cost absorber such as carbon black. An alternate form of the invention is a two layer laminate media including a substrate and a thermochromic layer. The invention is usable in conjunction with labeling produce items. The invention includes a method and apparatus for using media in conjunction with labeling produce items.

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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).

(88) Date of publication of the international search report:
4 June 2009

Published:

— *with international search report*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US06/33586

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: **B65C 9/46(2006.01);B32B 7/12(2006.01),38/14(2006.01)**

 USPC: 156/277,387,DIG 47;428/343;430/336,346,348,363
 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)
 U.S. : 156/277,387,DIG 47; 430/332,336,338,346,348,351,363

 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 practicable, search terms used)
 Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,234,798 A (HENINGER et al.) 10 August 1993 (10.08.1993), column 1, line 64 - column 10, line 51).	1-6, 9-11, 13-17, 19-21, 23, 28, 29
X	US 5,766,828 A (PATEL et al.) 16 June 1998 (16.06.1998), column 4-11.	1,9,11-13,15-18,21,25,30,32,34,37,38,40,62,63,65,66
X	US 2004/0213922 A1 (ABRAMS et al.) 28 October 2004 (28.10.2004), [0024]-[0033].	1,9-11,13,15-17,19,21,25,26
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Y		30-40,62-64
X	US 2004/0234756 A1 (MATHIAPARANAM et al.) 25 November 2004 (25.11.2004), [0029]-[0071].	65,66
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Y		1,2,4-6,9-13,15-21,24,25,27-40,62-64

Further documents are listed in the continuation of Box C. See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance	"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
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Date of the actual completion of the international search 16 May 2008 (16.05.2008)	Date of mailing of the international search report 27 MAY 2008
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer Melvin C. Mayes Telephone No. 571-272-1700 DEBORAH A. THOMAS PARALEGAL SPECIALIST <i>Dat</i>

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US06/33586

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,536,778 A (KRECKEL et al.) 16 July 1996 (16.07.1996), column 8, lines 29-30.	24,31

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US06/33586

Continuation of B. FIELDS SEARCHED Item 3:

EAST

search terms: label, thermochromic, translucent, absorbent, laser