

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
10 July 2003 (10.07.2003)

PCT

(10) International Publication Number  
WO 2003/056408 A3

(51) International Patent Classification<sup>7</sup>: G06K 19/02

[US/US]; 1 Coventry Lane, Andover, MA 01810 (US).  
BLOOMBERG, Bentley [US/US]; 63 Parker Street,  
Maynard, MA 01754 (US).

(21) International Application Number:  
PCT/US2002/041470

(74) Agent: STEWART, Steven, W.; Digimarc Corporation,  
19801 SW 72nd Avenue, Suite 250, Tualatin, OR 97062  
(US).

(22) International Filing Date:  
23 December 2002 (23.12.2002)

(25) Filing Language: English

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,  
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,  
SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN,  
YU, ZA, ZM, ZW.

(26) Publication Language: English

(30) Priority Data:  
60/344,698 24 December 2001 (24.12.2001) US  
60/344,687 24 December 2001 (24.12.2001) US

(71) Applicant (*for all designated States except US*): DIGI-  
MARC ID SYSTEMS, LLC [US/US]; Suite 250, 19801  
SW 72nd Avenue, Tualatin, OR 97062 (US).

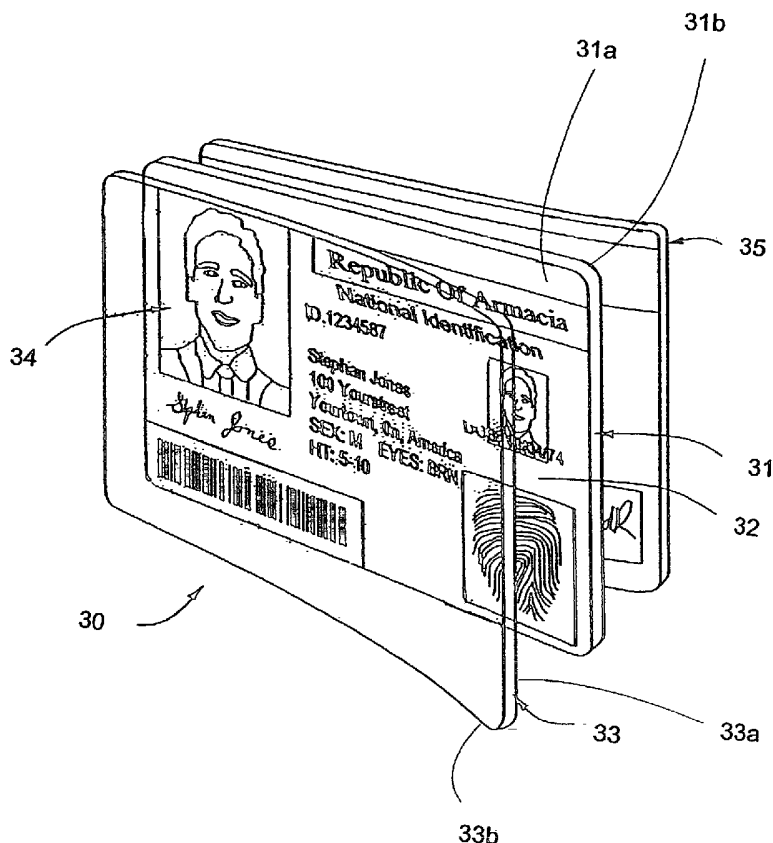
(84) Designated States (*regional*): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK,

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): JONES, Robert

[Continued on next page]

(54) Title: INK WITH COHESIVE FAILURE AND IDENTIFICATION DOCUMENT INCLUDING SAME



(57) Abstract: The present invention provides ink that is designed to cohesively fail upon a de-lamination attack. A resulting failure pattern is preferably difficult to predict. The ink (32,34) is applied to an identification document (30) including a core (31) and laminate layer (33,35). The ink is characterized such that an adhesive strength of the ink to the core and an adhesive strength of the ink to the laminate layer is each greater than the cohesive strength of the ink itself. Thus, the ink rips apart in a somewhat random-like manner upon a de-lamination attack. The ink can be arranged in interwoven or interlocking patterns or in other desired patterns and locations.

WO 2003/056408 A3



TR), OAPI patent (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:**  
29 January 2004

**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.*

INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US02/41470

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC(7) :G06K 19/02  
US CL :235/488  
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. : 235/488, 487, 491, 494; 902/25, 28, 29; 428/42.1, 195; 156/233; 524/145; 503/227

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Extra Sheet.


**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,120,882 A (FAYKISH et al) 19 September 2000 (19.09.2000), see figures 1-3; column 1, lines 10-15; column 2, line 53 - column 3, line 1; column 4, line 39 - column 5, line 59.	1-5, 9-17, 19, 20 ----- 6, 18
X --- Y	US 5,658,411 A (FAYKISH) 19 August 1997 (19.08.1997), see figures 1-5; column 6, lines 3-62.	1-5, 15-17, 19, 20 ----- 6, 18
X --- Y	US 4,121,003 A (WILLIAMS) 17 October 1978 (17.10.1978), see figures 1-4A; column 1, lines 13-34; column 2, lines 30-68; column 3, line 39 - column 4, line 20; column 5, line 22-52.	1-5, 15-17 ----- 6, 18

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

* Special categories of cited documents:	"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
"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
"E" earlier document published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

Date of the actual completion of the international search 19 MARCH 2003	Date of mailing of the international search report <b>09 JUL 2003</b>
--	--

Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer JARED J. FUREMAN Telephone No. (703) 305-0424 
---	---

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/41470

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 3,929,701 A (HALL et al) 30 December 1975 (30.12.1975), see column 1, lines 5-10; column 2, lines 1-5, 33-44.	6, 18
Y	JP 63-146909 A (MATSUHIRA) 18 June 1988 (18.06.1988), see entire document.	6, 18
A	US 5,380,695 A (CHIANG et al) 10 January 1995 (10.01.1995), see entire document.	1-20

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/41470

B. FIELDS SEARCHED

Electronic data bases consulted (Name of data base and where practicable terms used):

USPAT, USPGPUB, EPO, JPO, DERWENT, IBM TDB

search terms: document, id, identification, card, substrate, media, medium, ink, printing, de-laminate, de-lamination, delaminate, delamination