

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 February 2007 (08.02.2007)

PCT

(10) International Publication Number
WO 2007/016536 A3

(51) International Patent Classification:
B42D 15/10 (2006.01) **B42D 15/00** (2006.01)

(21) International Application Number:
PCT/US2006/029868

(22) International Filing Date: 1 August 2006 (01.08.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/703,860 1 August 2005 (01.08.2005) US
60/794,826 26 April 2006 (26.04.2006) US

(71) Applicant (for all designated States except US): **DOCUMENT SECURITY SYSTEMS, INC.** [US/US]; 28 Main Street East, Suite 1525, Rochester, NY 14614 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WICKER, David, M.** [US/US]; 4507 Red School Road, Dansville, NY 14437 (US). **CATON, Michael, Scott** [US/US]; 6000 Fisher Road, Oakfield, NY 14125 (US).

(74) Agents: **SPENARD, David, A.** et al.; **McDERMOTT WILL & EMERY LLP**, 600 13th Street, NW, Washington, DC 20005-3096 (US).

(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, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, 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, 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
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
7 February 2008

(54) Title: COVERT DOCUMENT SYSTEM

(57) Abstract: This invention relates generally to document protection methods and product. More specifically, the present invention relates to a method for hiding information in a document by means of a latent image or message, which is practically invisible to the naked eye and may only be revealed through use of a matching viewing device. The present invention further relates to a method for creating original documents containing latent messages, which are revealed when the document is read by a viewing device. In one embodiment, print elements such as lines, dots, spots, swirls, or images are used to form covert information. The covert information print elements are disposed at an angle to print elements of a background, thus creating a covert document. In another embodiment, print elements of the covert information are used with a solid background.



WO 2007/016536 A3

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2006/029868

A. CLASSIFICATION OF SUBJECT MATTER
 INV. B42D15/10 B42D15/00

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)

B42D

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)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97/20298 A (GRAPHIC SECURITY SYSTEMS CORP [US]; ALASIA ALFRED [US]) 5 June 1997 (1997-06-05) page 3, lines 26-35 page 6, lines 1-5 page 15, line 22 - page 16, line 13 page 24, line 5 - page 25, line 2 -----	1-6, 15, 17-22, 37-40, 43
X	WO 02/00446 A (RUE DE INT LTD [GB]; KAY RALPH [GB]; HOLMES BRIAN WILLIAM [GB]) 3 January 2002 (2002-01-03) page 5, lines 5-20 -----	1-6, 15, 17-22, 37-40, 43

☐ 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.

Z document member of the same patent family

Date of the actual completion of the international search

13 August 2007

Date of mailing of the international search report

13/12/2007

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Acton, Paola

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/029868

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of 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. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims 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. ☐ Claims Nos.:
because they are dependent 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:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an 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 reportcovers only those claims for which fees were paid, specifically claims 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 claims Nos.:

see additional sheet (s)

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-6, 15, 17-22, 37-40, 43

directed to providing print structures with specific structures

2. claims: 7, 24

directed to providing a specific detecting viewing device

3. claims: 8, 26

directed to providing a specific viewing device in the form of a scanner

4. claims: 9, 26, 35

directed to providing a viewing device which is easily destroyable

5. claims: 10, 28

directed to how to make the masking of the covert information

6. claims: 11, 36

directed to increasing the security of the covert image by inserting a print code

7. claims: 12-14, 29-33

directed to providing a specific background

8. claims: 16, 34

directed to providing specific colours for the background and the covert information

9. claim: 23

directed to providing a background in the form of a foil

10. claims: 27, 41, 43

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

directed to providing a viewing device comprising different
viewing areas

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2006/029868

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9720298	A	05-06-1997	AT 220818 T	15-08-2002
			AU 713560 B2	02-12-1999
			AU 1146097 A	19-06-1997
			BR 9612772 A	24-10-2000
			CA 2239086 A1	05-06-1997
			CN 1207818 A	10-02-1999
			DE 69622434 D1	22-08-2002
			DE 69622434 T2	20-02-2003
			EP 0877998 A1	18-11-1998
			HK 1017936 A1	05-09-2003
			HU 9902077 A2	28-10-1999
			IL 124682 A	08-08-2001
			NO 982445 A	29-07-1998
			NZ 324582 A	28-01-1999
			PL 326891 A1	26-10-1998
			RU 2176823 C2	10-12-2001
			US 6859534 B1	22-02-2005
			US 5708717 A	13-01-1998
			ZA 9610012 A	17-06-1997
WO 0200446	A	03-01-2002	AU 6621101 A	08-01-2002
			CA 2412514 A1	03-01-2002
			CZ 20024259 A3	14-05-2003
			EP 1294576 A1	26-03-2003
			JP 2004502188 T	22-01-2004
			US 2004100707 A1	27-05-2004