

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
12 April 2001 (12.04.2001)

PCT

(10) International Publication Number
WO 01/25820 A3

(51) International Patent Classification⁷: G01N 33/20,
21/76, G06K 19/06, G01B 15/06, A61N 5/00, G21G 5/00

(21) International Application Number: PCT/US00/26415

(22) International Filing Date:
26 September 2000 (26.09.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/157,573 4 October 1999 (04.10.1999) US

(71) Applicant (for all designated States except US): EDAX
INC. [US/US]; 91 McKee, Mahwah, NJ 07430 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): KAISER, Bruce,
John [US/US]; 6308 Christopher Winds Court, St. Louis,
MO 63129 (US). PRICE, L., Stephen [US/US]; 2435
Harris Avenue, Richland, WA 99352 (US). WATSON,
David, J. [US/US]; 1109 Sanford Avenue, Richland,
WA 99352 (US). MEYER, Gerhard, A. [US/US]; 6734
Berend Street, Worthington, OH 43085 (US).

(74) Agent: HORTON, Kenneth, E.; Parsons Behle & La-
timer, Suite 1800, 201 South Main Street, Salt Lake City,
UT 84111 (US).

(81) Designated States (national): AL, AM, AT, AU, AZ, BA,
BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES,
FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP,
KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN,
MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK,
SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG,
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

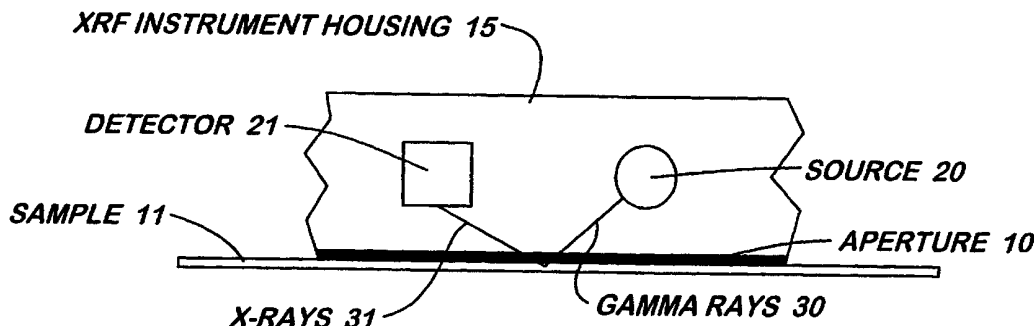
Published:

- 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:
14 June 2001

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: METHODS FOR IDENTIFICATION AND VERIFICATION



(57) Abstract: An apparatus and method in which one or more taggants are detected by X-ray fluorescence analysis to identify or verify the article or its point of manufacture. The taggants are manufactured as part of the article or are placed into a coating, label, or otherwise embedded within the article for later verification of the presence or absence of the taggant. The detection apparatus (25) has an instrument housing (15) which contains various components. Gamma rays (30) from a source (20) are optionally focused by aperture (10) to impinge on a sample (11), which contains at least one taggant.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/26415

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G01N 33/20, 21/76; G06K 19/06; G01B 15/06; A61N 5/00; G21G 5/00

US CL : 436-73, 172; 235/491; 378/58; 250/492.2

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. : 436-73, 172; 235/491; 378/58; 250/492.2

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)

WEST 2.0

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,476,382 A (WHITE) 09 October 1984, col. 1, line 53 - col. 4, line 31; col. 6, lines 45-48; col. 8, line 66 - col. 10, line 14.	1-18
X	US 4,251,726 A (ALVAREZ) 17 February 1981, col. 2, lines 20-43 and abstract.	1, 3, 5, 7, 9, 11, 13, 15, 17
X	US 5,185,773 A (BLOSSFELD et al) 09 February 1993, col. 1, line 40 - col. 2, line 55.	1, 3
X	US 5,527,707 A (FUKAZAWA) 18 June 1996, col. 4, lines 25-58.	1, 3
A	US 4,767,205 A (SCHWARTZ et al) 30 August 1988, see entire document.	



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

29 JANUARY 2001

Date of mailing of the international search report

APR 05 2001

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

LATOYA CROSS

Telephone No. (703) 308-0661

DEBORAH THOMAS
PARALEGAL SPECIALIST

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/26415

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 4,363,965 A (SOBERMAN et al) 14 December 1982, see entire document.	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US90/26415

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international 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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

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

Please See Extra Sheet.

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 an additional fee, this Authority did not invite payment of any additional fee.
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 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.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/26415

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group I, claim(s) 1-4, drawn to a method of detecting at least one taggant and analyzing an article.

Group II, claim(s) 5-8, 11-18, drawn to a method for coating an article and an article made by the method.

Group III, claim(s) 9-10, drawn to a taggant solution.

The inventions listed as Groups I-III do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Each group contains at least one taggant which radiates at least one X-ray as the special technical feature. The claims lack unity because the special technical feature does not make a contribution over the prior art, see White or Alvarex designated as X references.