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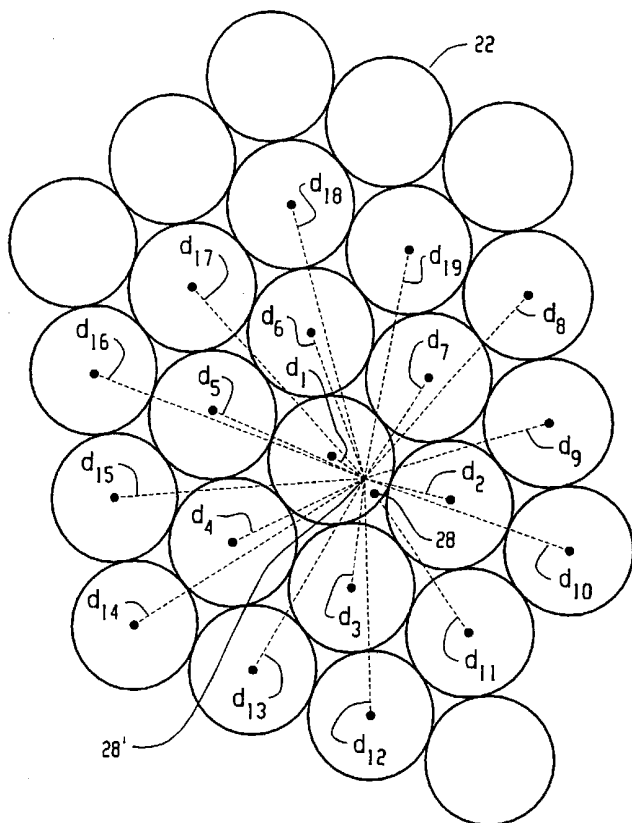
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[Continued on next page]

(54) Title: EVENT LOCALIZATION AND FALL-OFF CORRECTION BY DISTANCE-DEPENDENT WEIGHTING



(57) Abstract: A nuclear camera system includes a detector (12) for receiving radiation from a subject (14) in an exam region (16). The detector (12) includes a scintillation crystal (20) that converts radiation events into flashes of light. An array of sensors (22) is arranged to receive the light flashes from the scintillation crystal (20). Each of the photomultiplier sensors (22) generates a respective sensor output value in response to each received light flash. A processor (26) determines when each of the radiation events is detected. At least one of an initial position and an energy of each of the detected radiation events is determined in accordance with respective distances (d₁...d₁₉) from a position of the detected event to the sensors (22). An image representation is generated from the initial positions and energies.

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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

Inte. onal Application No

PCT/US 01/17869

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01T1/164

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 7 G01T

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)

WPI Data, EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 757 956 A (COMMISSARIAT ENERGIE ATOMIQUE) 3 July 1998 (1998-07-03)	1-6, 9-11,31, 34-36, 43,46
A	page 7, line 24 - line 30 page 16, line 1 -page 23, line 9; figure 5 page 30, line 8 - line 10 page 31, line 13 - line 28 ---	37
A	US 5 576 547 A (FERREIRA ABEL ET AL) 19 November 1996 (1996-11-19) column 4, line 63 -column 5, line 14 --- -/--	1

Further documents are listed in the continuation of box C.

Patent family members are listed in 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.
- "&" document member of the same patent family

Date of the actual completion of the international search

16 January 2002

Date of mailing of the international search report

26.04.02

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

Int. Patent Application No

PCT/US 01/17869

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>GEAGAN M J ET AL: "Correction of distortions in a discontinuous image" NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH, SECTION - A: ACCELERATORS, SPECTROMETERS, DETECTORS AND ASSOCIATED EQUIPMENT, NORTH-HOLLAND PUBLISHING COMPANY. AMSTERDAM, NL, vol. A353, no. 1, 30 December 1994 (1994-12-30), pages 379-383, XP004005899 ISSN: 0168-9002 cited in the application -----</p>	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/17869

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 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:

see additional 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.:

1-30, 31, 32, 34, 35-46

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

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: 1-30, 31, 32, 34, 35-46

2. Claims: 33, 47

INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No PCT/US 01/17869
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2757956 A	03-07-1998	EP 0950197 A WO 9829763 A JP 2001507452 T US 6348692 B	20-10-1999 09-07-1998 05-06-2001 19-02-2002

US 5576547 A	19-11-1996	US 5410153 A	25-04-1995
