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Patent Services M/S AB/2B, 101 Columbia Road, P. O. Box 2245, Morristown, New Jersey 07962-2245 (US).

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(74) Agent: **BEATUS, Carrie**; Honeywell International Inc., Law Department AB/2B, 101 Columbia Road, P. O. Box 2245, Morristown, New Jersey 07962-2245 (US).

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(71) Applicant (for all designated States except US): **HONEYWELL INTERNATIONAL INC.** [US/US]; 101 Columbia Road, Morristown, New Jersey 07962 (US).

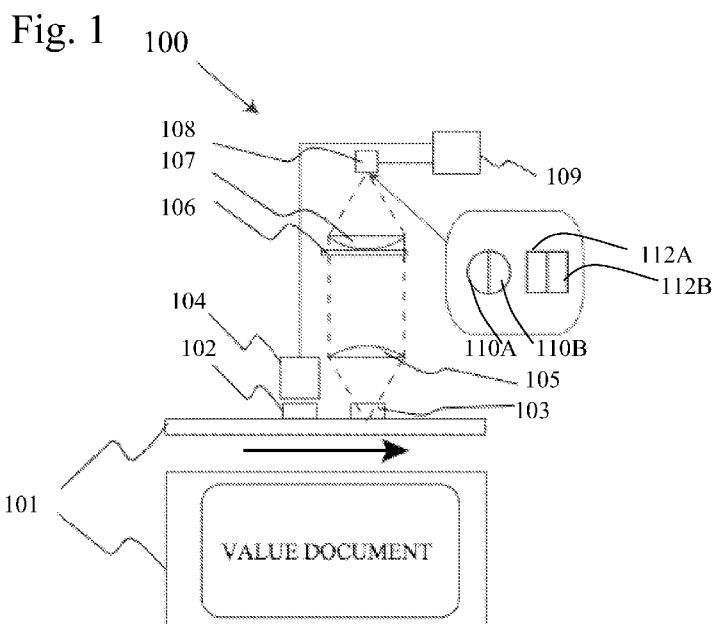
(72) Inventors; and

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(75) Inventors/Applicants (for US only): **RAPOPORT, William, Ross** [US/US]; Honeywell International Inc., Patent Services M/S AB/2B, 101 Columbia Road, P. O. Box 2245, Morristown, New Jersey 07962-2245 (US). **KANE, James** [US/US]; Honeywell International Inc., Patent Services M/S AB/2B, 101 Columbia Road, P. O. Box 2245, Morristown, New Jersey 07962-2245 (US). **LAU, Carsten** [DE/US]; Honeywell International Inc.,

[Continued on next page]

(54) Title: AUTHENTICATION APPARATUS FOR MOVING VALUE DOCUMENTS



(57) Abstract: An authentication apparatus used to authenticate a moving value document with uniform or non-uniform distribution of a pre-selected covert composition that includes an active ion that emits optical radiation at a pre-selected wavelength when excited by exciting incident light. The optical radiation is imaged onto at least one photodetector having first and second detector elements. The imaged intensities are captured at pre-determined times relating to the velocity of the value document. The ratio between the second detector element and the first detector element measured at the same image location or different image locations represents the characteristic decay time intensity data of the pre-selected wavelength emission. The authenticity of the value document is rejected when the pre-selected wavelength emission is not received by the at least one photodetector or when the output electronic signal ratio does not meet expected value.

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- *with international search report (Art. 21(3))*
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**A. CLASSIFICATION OF SUBJECT MATTER****G07D 7/12(2006.01)i, G06K 9/58(2006.01)i**

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)

G07D 7/12; G06K 7/10; G07D 7/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) &amp; Keywords: detector, light, intensity

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006-0204145 A1 (-) 14 September 2006 see paragraph [0001]-paragraph [0134]; claims 23-50 and figures 1a-4b.	1-9
A	JP 2009-223607 A (ARUZE CORP) 01 October 2009 see paragraph [0001]-paragraph [0048]; claims 1-4 and figures 1-5.	1-9
A	JP 2008-197850 A (INTERNATL CURRENCY TECHNOLOGIES CORP) 28 August 2008 see paragraph [0001]-paragraph [0023]; claims 1-27 and figures 1-15.	1-9

 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

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"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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2010/057564**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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