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Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

[Continued on next page]

(54) **Title**: CONTINUOUS CHARTING OF NON-UNIFORMITY SEVERITY FOR DETECTING VARIABILITY IN WEB-BASED MATERIALS

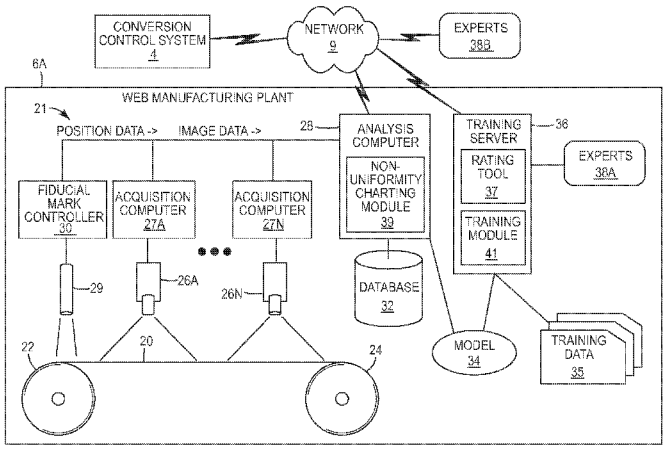

FIG. 2

(57) **Abstract**: A computerized inspection system is described for detecting the presence of non-uniformity defects in a manufactured web material and for providing output indicative of a severity level of each defect. The system provides output that provides the severity levels of the non-uniformity defects in real-time on a continuous scale. Training software processes a plurality of training samples to generate a model, where each of the training samples need only be assigned one of a set of discrete rating labels for the non-uniformity defects. The training software generates the model to represent a continuous ranking of the training images, and the inspection system utilizes the model to compute the severity levels of the web material on a continuous scale in real-time without limiting the output to the discrete rating labels assigned to the training samples.

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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)

G01N 21/89; G01N 23/225; G06K 9/46; G01N 21/956; G01N 21/88; G06K 9/62; H01L 21/66; G01N 21/892

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) & Keywords: non-uniformity, severity, detecting, variablity, trainung image, defect, discrete, rating label.web material

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6999614 B1 (BAKKER, DAVID et al.) 14 February 2006 See the abstract, column 4, line 40 - column 5, line 37, fig.2.	1-13
A	KR 10-2001-0101697 A (OLYMPUS CORP.) 14 November 2001 See pages 2,5,6,8, figs.1,4.	1-13
A	JP 2010-054346 A (HITACHI HIGH-TECHNOLOGIES CORP) 11 March 2010 See the abstract, paragraphs [0016,0017,0037-0042], figs.1,2,6.	1-13
A	JP 2008-175588 A (KAGAWA UNIV. et al.) 31 July 2008 See the abstract, paragraphs [0015,0016,,0021-0023], fig.1.	1-13
A	US 6539106 B1 (GALLARDA, HARRY S. et al.) 25 March 2003 See the abstract, claim 1, fig.3.	1-13
A	JP 2004-047939 A (HITACHI HIGH-TECHNOLOGIES CORP) 12 February 2004 See the abstact, calim 1.	1-13

☐ 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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"&" document member of the same patent family

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Name and mailing address of the ISA/KR	Authorized officer
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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