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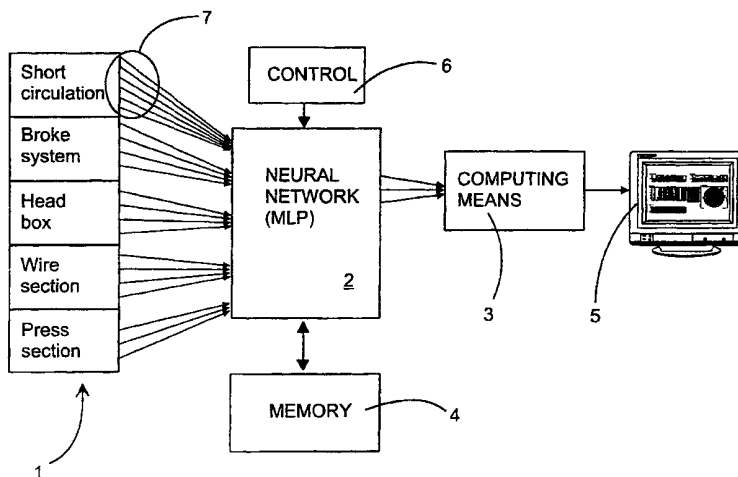
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(54) Title: METHOD AND SYSTEM FOR MONITORING AND ANALYZING A PAPER MANUFACTURING PROCESS



(57) Abstract: The invention concerns a method for monitoring and analyzing a paper manufacturing process, in which method a large number of quantities (x_i, t) are measured from the process, the measured quantities (x_i, t) are entered as an input vector (X, t) into a neural network, which, in response to the input vector, produces an output vector (Y, t) as a continuous quantity, at least one fingerprint consistent with a good process situation in regard of runnability, i.e. an optimal output vector (Y_0, t) is determined and stored in memory, the stored fingerprints and fingerprints or output vectors obtained in a normal process situation are compared substantially in real time, based on the comparison, a difference to be presented in a graphic form to the user is determined. According to the invention, a continuous time-dependent scalar quantity $k=k(t)$ to be presented as a result to the user is determined as a geometric distance between the instantaneous measured fingerprint (Y, t) and the taught fingerprint (Y_0), and the scalar quantity $k=k(t)$ is displayed via a display device to the user.



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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

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A. CLASSIFICATION OF SUBJECT MATTER				
IPC7: G05B 13/02, G05B 23/02, G05B 19/048, G01N 33/34, D21G 9/00 According to International Patent Classification (IPC) or to both national classification and IPC				
B. FIELDS SEARCHED				
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IPC7: G01N, G05B, G06F, G06T, D21G				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched				
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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
Y	WO 9629468 A1 (SIEMENS AKTIENGESELLSCHAFT), 26 Sept 1996 (26.09.96), page 2 - page 4, figures 1-4 --	1-9		
Y	EP 0895197 A1 (SULZER INNOTECH AG), 3 February 1999 (03.02.99), page 6 - page 9, figures 1-3 --	1-9		
Y	US 5960381 A (SINGERS, R.R. ET AL.), 28 Sept 1999 (28.09.99), column 5, line 24 - line 58, figures 1-3 --	3-5		
A	US 5671335 A (DAVIS, G.W. ET AL), 23 Sept 1997 (23.09.97), the whole document --	1-9		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.				
* Special categories of cited documents: <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"B" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </td> <td style="width: 50%; vertical-align: top;"> <p>"I" 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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p> </td> </tr> </table>			<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"B" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"I" 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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>
<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"B" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"I" 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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>			
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INTERNATIONAL SEARCH REPORT

International application No. PCT/FI 01/00324
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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INTERNATIONAL SEARCH REPORT

Information on patent family members

02/07/01

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