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(54) Title: IMAGE PROCESSING DEVICE FOR DEFECT INSPECTION AND IMAGE PROCESSING METHOD FOR DEFECT INSPECTION

(54) 発明の名称: 欠陥検査用画像処理装置および欠陥検査用画像処理方法

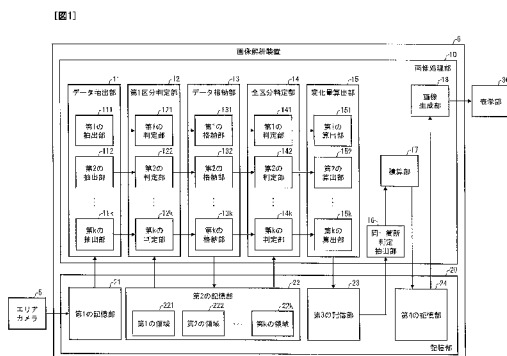


FIG. 1:
5 AREA CAMERA
6 IMAGE ANALYSIS DEVICE
10 IMAGE PROCESSING UNIT
11 DATA EXTRACTION UNIT
111 FIRST EXTRACTION UNIT
112 SECOND EXTRACTION UNIT
11k k-TH EXTRACTION UNIT
12 FIRST SECTION JUDGMENT UNIT
121, 141 FIRST JUDGMENT UNIT
122, 142 SECOND JUDGMENT UNIT
12k, 14k k-TH JUDGMENT UNIT
13 DATA STORAGE UNIT
131 FIRST STORAGE UNIT
132 SECOND STORAGE UNIT
13k k-TH STORAGE UNIT
14 ENTIRE SECTION JUDGMENT UNIT
15 CHANGE AMOUNT CALCULATION UNIT
151 FIRST CALCULATION UNIT
152 SECOND CALCULATION UNIT
15k k-TH CALCULATION UNIT
16 IMAGE GENERATION UNIT
17 INTEGRATING UNIT
16 SAME PART JUDGMENT EXTRACTION UNIT
30 DISPLAY UNIT
21 FIRST STORAGE UNIT
22 SECOND STORAGE UNIT
221 FIRST AREA
222 SECOND AREA
22k k-TH AREA
23 THIRD STORAGE UNIT
24 FOURTH STORAGE UNIT
20 STORAGE UNIT

(57) Abstract: Provided are an image processing device and the like capable of detecting various kinds of defects which cause various changes in ray paths at the same time with sufficient accuracy. An image processing device (image analysis device) for defect inspection (6) processes image data obtained by temporally continuously shooting formed sheets in motion with an area camera (5), and is provided with a data extraction unit (11), a data storage unit (13), a change amount calculation unit (15), a same part judgment extraction unit (16), and an integrating unit (17). The data extraction unit (11) extracts, for a plurality of different positions on the image data, pieces of line data on the same position from different pieces of image data. The data storage unit (13) chronologically draws up the plurality of pieces of line data for each position on the image data and generates a plurality of pieces of line synthesis image data. The change amount calculation unit (15) performs differential operator computation with respect to the plurality of pieces of line synthesis image data and generates a plurality of pieces of emphasis image data. The same part judgment extraction unit (16) extracts data showing the same part of the formed sheet from the plurality of pieces of emphasis image data. The integrating unit (17) integrates luminance values of the extracted emphasis image data for each pixel and generates image data for defect inspection.

(57) 要約:

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