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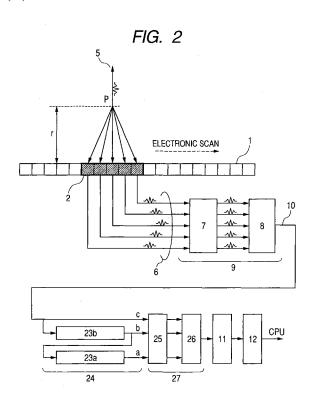
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[Continued on next page]

(54) Title: MEASURING APPARATUS



(57) Abstract: Provided is a measuring apparatus, including: a moving mechanism for moving a probe (1) in an elevation direction; a first delay and sum circuit (9) for performing delay and sum of reception signals at individual positions along the elevation direction to output a first add signal (10); a signal extraction circuit (24) for letting an output of the first delay and sum circuit (9) to pass through delay circuits (23a, 23b) to output in parallel first add signals obtained at different positions; a second delay and sum circuit (27) for performing delay and sum of the first add signals output from the signal extraction circuit (24) to output a second add signal; and an image processing circuit (11,12,CPU) for generating image data by using the second add signal. Accordingly, image resolution in the elevation direction may be improved with a simple structure without deteriorating an image acquisition speed in the measuring apparatus for obtaining an ultrasonic image.



MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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A. CLASSIFICATION OF SUBJECT MATTER INV. G01S7/52 G01S1 G01S15/89 G10K11/34 G10K11/35 ADD. 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) G01S G10K 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) EPO-Internal C. DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. Category* Y US 2009/177088 A1 (HASEGAWA YASUNOBU [JP] 1 - 7ET AL) 9 July 2009 (2009-07-09) * abstract; figures 1A,1B,3A,3B paragraphs [0026], [0028] - [0030] 1-7 Y US 5 186 175 A (HIRAMA MAKOTO [JP] ET AL) 16 February 1993 (1993-02-16) * abstract; figures 5,16,17 column 8, line 16 - line 53 column 9, line 22 - line 25 column 11, line 64 - column 12, line 33 Α US 6 258 030 B1 (HIRAMA MAKOTO [JP]) 1-7 10 July 2001 (2001-07-10) * abstract; figures 4-6 column 6, line 11 - column 9, line 31 X Further documents are listed in the continuation of Box C. See patent family annex. Special categories of cited documents: *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 "A" document defining the general state of the art which is not considered to be of particular relevance invention earlier document but published on or after the international *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to 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) 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 docu-O' document referring to an oral disclosure, use, exhibition or ments, such combination being obvious to a person skilled in the art. document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 19/01/2011 12 January 2011 Authorized officer Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016 Knoll, Bernhard

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