(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 401 783 A3**

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: **90110694.8**

(51) Int. Cl.5: **G06F 7/50**, G06F 11/00

(22) Date of filing: **06.06.90**

(30) Priority: **06.06.89 JP 142226/89**

(43) Date of publication of application:
12.12.90 Bulletin 90/50

(84) Designated Contracting States:
DE FR NL

(88) Date of deferred publication of the search report:
30.10.91 Bulletin 91/44

(71) Applicant: **NEC CORPORATION**
7-1, Shiba 5-chome Minato-ku
Tokyo 108-01(JP)

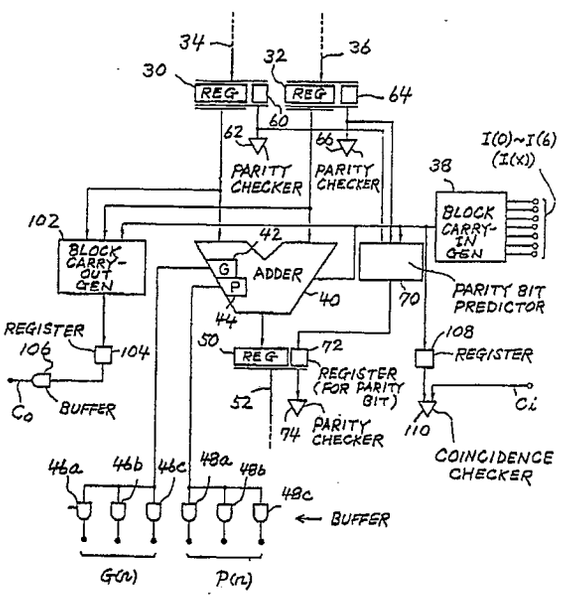
(72) Inventor: **Tanaka, Masayuki, C/o NEC Corporation**
7-1, Shiba 5-chome
Minato-ku, Tokyo(JP)

(74) Representative: **Vossius & Partner**
Siebertstrasse 4 P.O. Box 86 07 67
W-8000 München 86(DE)

(54) **Digital arrangement for error checking in binary adder including block carry look-ahead units.**

(57) A binary adder is comprised of a plurality of block carry look-ahead units. Each of the units includes a block carry-in generator (38), an adding section (40), a block carry-out generator (102) and a carry coincidence checker (110). The block carry-in generator (38) is arranged to receive a plurality of carry generate variables and a plurality of carry propagate variables from the other units, generating a carry-in using carry look-ahead scheme. The adding section (40) is coupled to receive the carry-in from said block carry-in generator (38) and further receives two operand data to be added and generates a resultant sum of the two operand data. The block carry-out generator (102) receives the two operand data and also receives the carry-in from the block carry-in generator (38). The block carry-out generator (102) produces a carry-out of the unit to be applied to a lower order block carry look-ahead unit. The carry coincidence checker (110) is arranged to receive the carry-in from the carry-in generator (38) and also receives a carry from another block carry look-ahead unit. The carry, which is applied from another unit, corresponds to the carry-out. The checker (110) performs a coincidence check between the carry-in and the carry applied from another unit.

FIG. 9



EP 0 401 783 A3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 90 11 0694

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-4 081 860 (MILLER) * the whole document *	1-12	G 06 F 7/50 G 06 F 11/00
A	US-A-4 084 253 (MILLER) * the whole document *	1-12	
A	US-A-3 925 647 (LOUIE) * the whole document *	1-12	
A	DE-A-1 524 141 (IBM) * the whole document *	1-12	
A	US-A-3 470 366 (GELLER) * column 13, line 64 - column 24, line 5; figures 164-183 *	1-12	
A	Proc. of the IEEE 1988 Custom Integrated Circuits Conference May 1988, Rochester, New York, USA pages 2451 - 2454; Keshlear et al.: "A high-speed 16-bit cascadable ALU using an aspect standard cell approach" * the whole document *	1-12	
A	PATENT ABSTRACTS OF JAPAN vol. 011, no. 084 (P-556) 13 March 1987, & JP-A-61 239331 (FUJITSU LTD) 24 October 1986, * the whole document *	1,4,6,7, 10,12	TECHNICAL FIELDS SEARCHED (Int. Cl.5) G 06 F

The present search report has been drawn up for all claims

Place of search	Date of completion of search	Examiner
Berlin	27 August 91	DURAND J.

CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone
Y: particularly relevant if combined with another document of the same catagory
A: technological background
O: non-written disclosure
P: intermediate document
T: theory or principle underlying the invention

E: earlier patent document, but published on, or after the filing date
D: document cited in the application
L: document cited for other reasons

&: member of the same patent family, corresponding document