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McClure

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[54] **DIFFERENCE COMPARISON BETWEEN TWO ASYNCHRONOUS POINTERS AND A PROGRAMMABLE VALUE**

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[*] Notice: The term of this patent shall not extend beyond the expiration date of Pat. No. 5,121,346.

[21] Appl. No.: **221,986**

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Related U.S. Application Data

[63] Continuation of Ser. No. 101,281, Aug. 2, 1993, abandoned, which is a continuation of Ser. No. 870,878, Apr. 20, 1992, abandoned, which is a continuation of Ser. No. 454,408, Dec. 21, 1989, Pat. No. 5,121,346, which is a continuation-in-part of Ser. No. 332,289, Mar. 31, 1989, abandoned.

[51] Int. Cl.⁶ **G06F 19/00**
[52] U.S. Cl. **364/550; 365/189.01**
[58] Field of Search **364/550; 365/189.01**

[56] References Cited

U.S. PATENT DOCUMENTS

4,864,543 9/1989 Ward et al. 365/221

[57] ABSTRACT

A first-in first-out (FIFO) memory includes flag generation circuitry indicating the relative fullness of the memory. A write and a read counter count the number of read and write clock signals used to read to and write from the memory. A subtractor circuit receives the values in the counters as inputs, and generates a difference signal as an output. This difference signal is then compared to a program value, and a flag generated indicating the relative magnitudes of the difference value and the program value. Several different program values can be utilized to generate several different flags for the memory.

23 Claims, 10 Drawing Sheets

