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United States Patent [19]

Clay et al.

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[54] **FLASH SOLID STATE DRIVE THAT EMULATES A DISK DRIVE AND STORES VARIABLE LENGTH AND FIXED LENTH DATA BLOCKS**

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[21] Appl. No.: **19,860**

[22] Filed: **Feb. 19, 1993**

[51] **Int. Cl.**[6] **G06F 12/06**; G06F 12/04

[52] **U.S. Cl.** **395/497.02**; 371/37.1; 364/260.6; 364/260.7; 364/245.1; 364/DIG. 1; 395/442; 395/500

[58] **Field of Search** ..... 395/425; 364/260.6, 364/260.7, 200 MS, 900 MS, 245.1; 371/37.1

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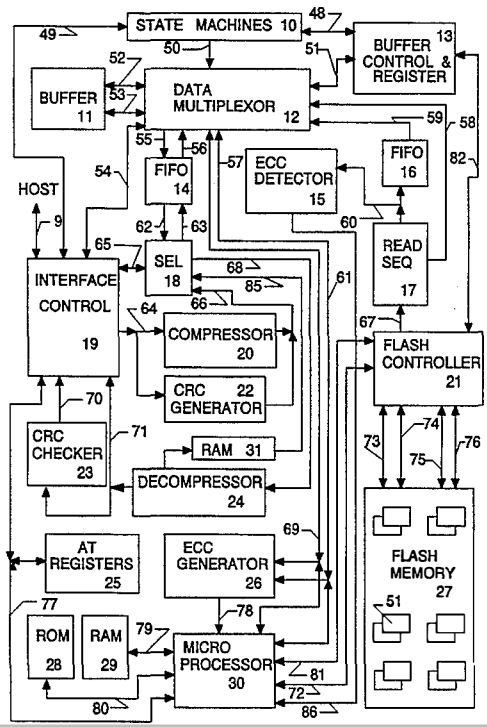
[57] **ABSTRACT**

A flash solid state drive, having a flash solid state memory compatible with ATA/IDE Interface standards to be connected to a host for storing or retrieving sectors of data, where each sector contains 512 bytes of data, each sector is addressed by a cylinder, head and sector number CHS. The host provides, for a read or write operation, the number of sectors to be stored or retrieved, the CHS for each sector to be stored or retrieved and the data for the sectors to be stored. The solid state memory has stored therein a header for each CHS address that can be issued by the host, the header having indicia identifying the data block and indicating where the data for the data block is stored in the solid state memory. The flash solid state device comprises a translator means for translating the CHS address into a logic sector number LSN for identifying sectors in the flash solid state drive and a controller for converting sectors received from the host into variable length sectors to be stored in the flash solid state memory.

9 Claims, 9 Drawing Sheets



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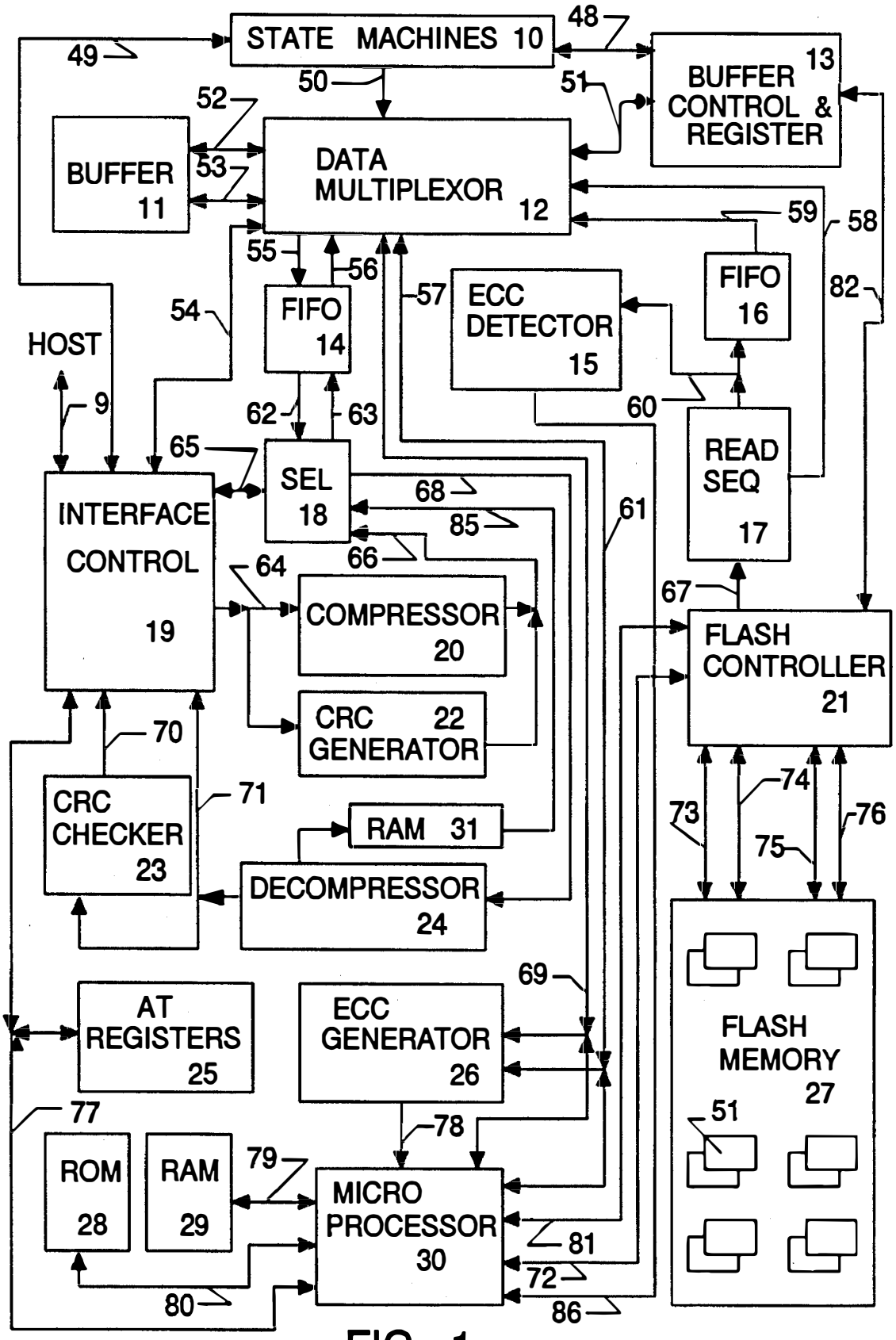

FIG. 1

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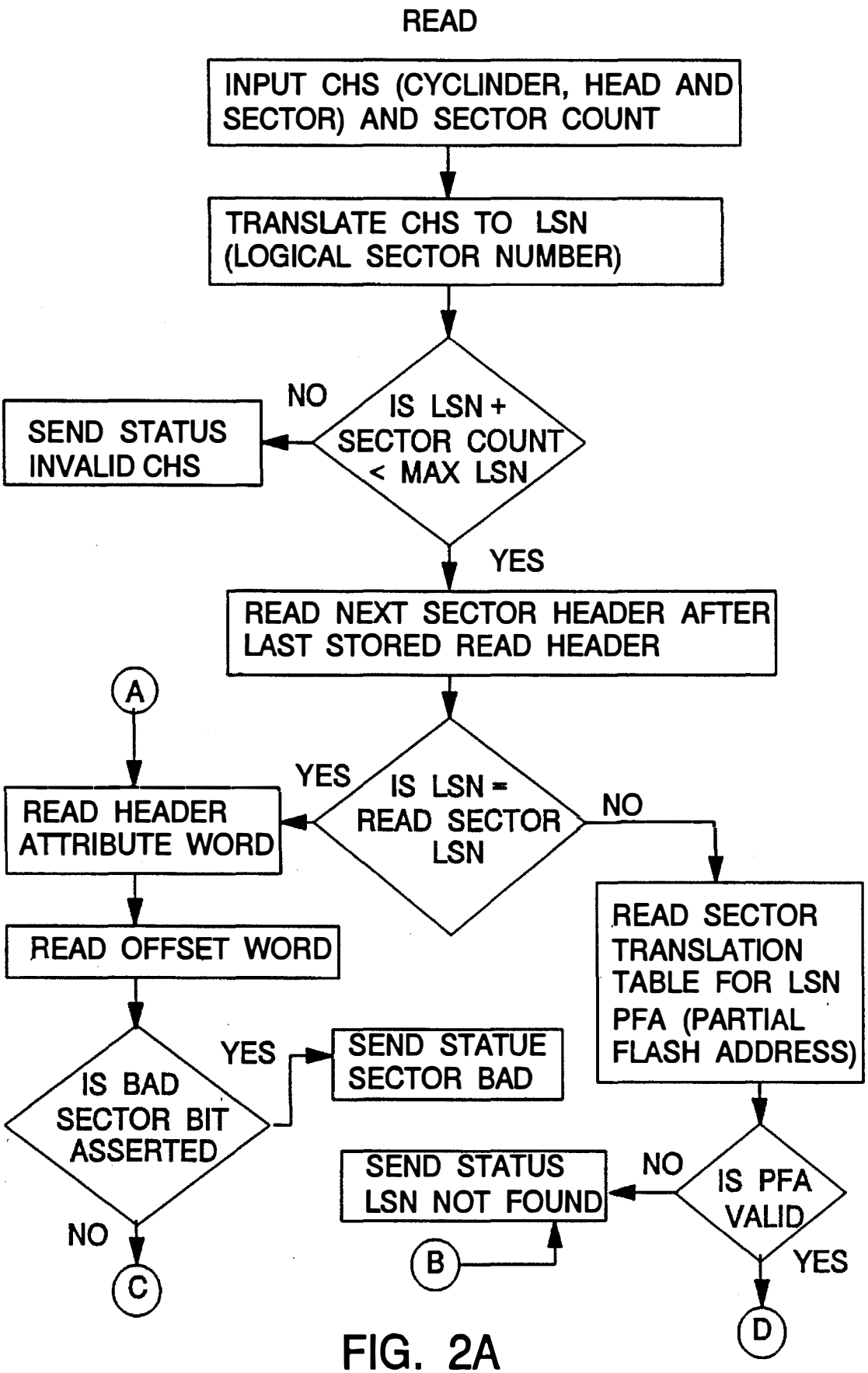

FIG. 2A

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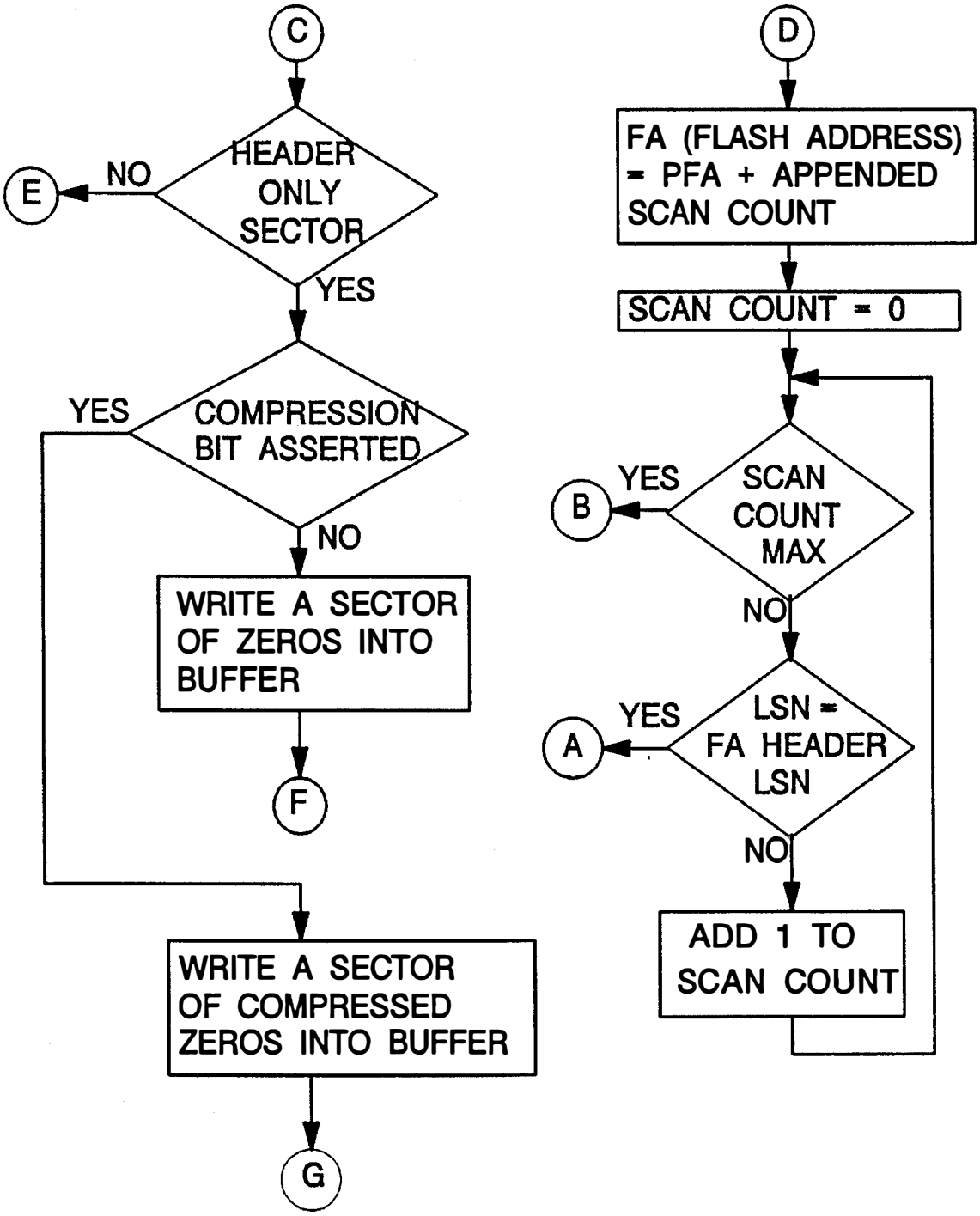

FIG. 2B

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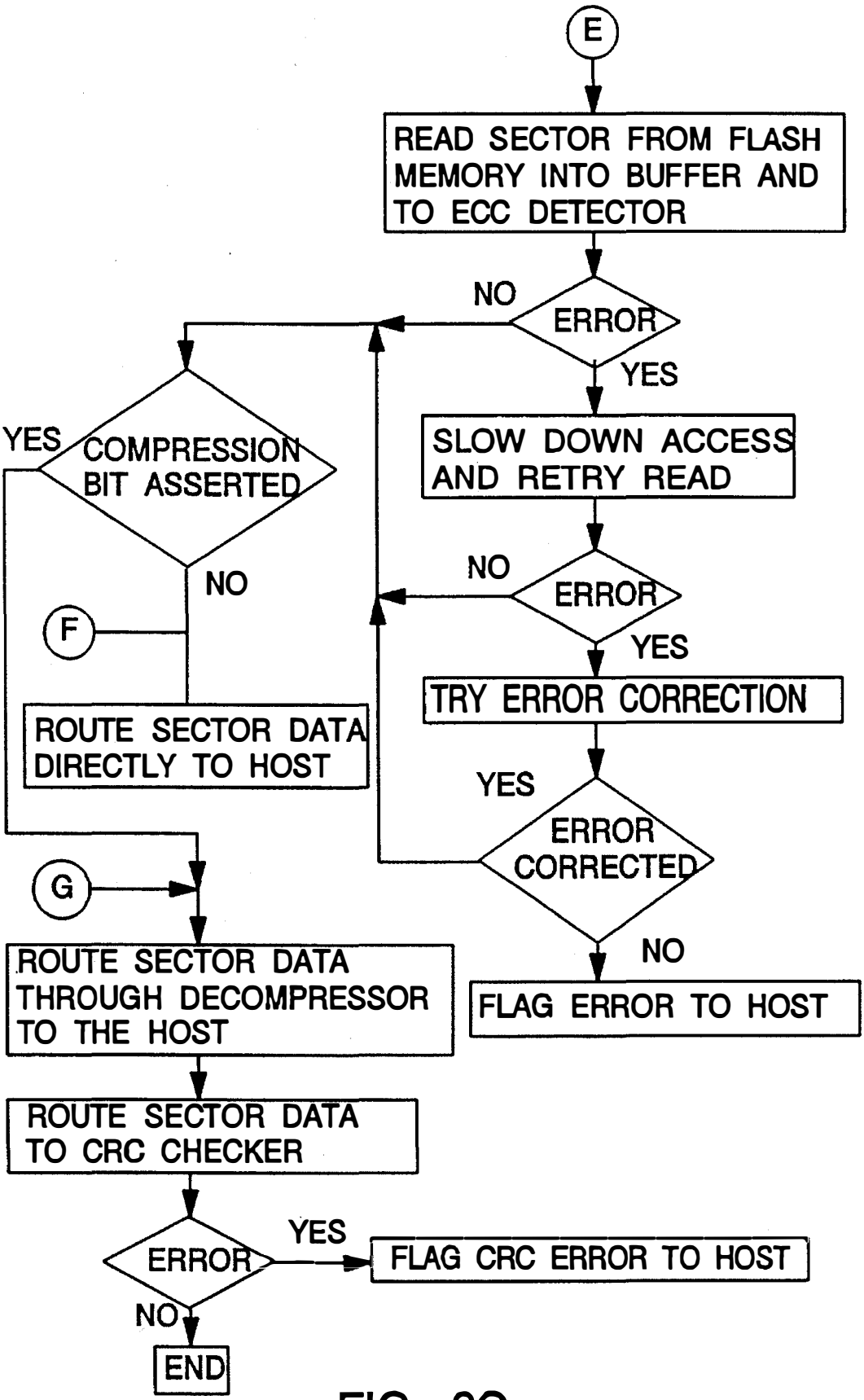

FIG. 2C

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