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# United States Patent [19]

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Stearns et al.

[45] Date of Patent: **\*Jun. 30, 1998**

[54] **METHOD AND APPARATUS FOR DECOMPRESSION OF MPEG COMPRESSED DATA IN A COMPUTER SYSTEM**

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**Stephanie W. Ti**, Milpitas, both of Calif.
- [73] Assignee: **S3, Incorporated**, Santa Clara, Calif.
- [\*] Notice: The term of this patent shall not extend beyond the expiration date of Pat. No. 5,774,676.

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[21] Appl. No.: **538,887**

*Primary Examiner*—Ellis B. Ramirez  
*Attorney, Agent, or Firm*—Skjerven, Morrill, MacPherson, Franklin & Friel LLP; Norman R. Klivans

[22] Filed: **Oct. 3, 1995**

[51] Int. Cl.<sup>6</sup> ..... **G06F 17/00**

[57] **ABSTRACT**

[52] U.S. Cl. .... **395/200.77**

[58] Field of Search ..... 364/514 R, 514 A, 364/715.02; 395/200.77, 412, 439; 382/233, 246, 234

MPEG compressed data is decompressed in a computer system by sharing computational decompression tasks between the computer system host microprocessor, the graphics accelerator, and a dedicated MPEG processor in order to make best use of resources in the computer system. Thus the dedicated MPEG processor is of minimum capability and hence advantageously minimum cost. The host microprocessor is used to decompress the MPEG upper data layers. The more powerful the host microprocessor, the more upper data layers it decompresses. The remainder of the decompression (lower data layers) is performed by the MPEG dedicated processor and/or the graphics accelerator.

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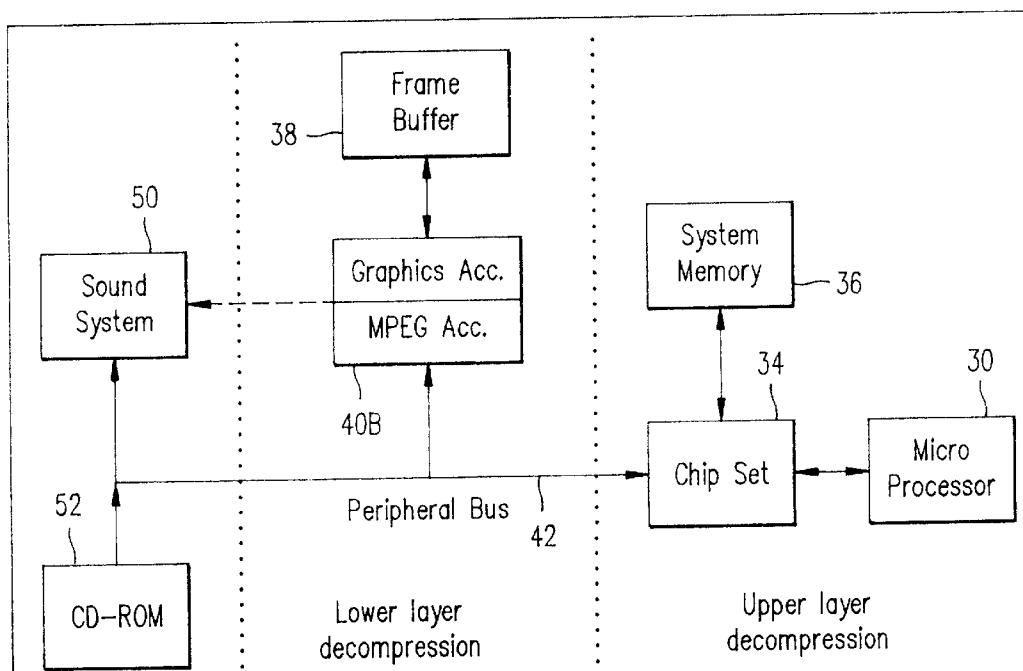
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**26 Claims, 14 Drawing Sheets**

Microfiche Appendix Included  
(1 Microfiche, 51 Pages)





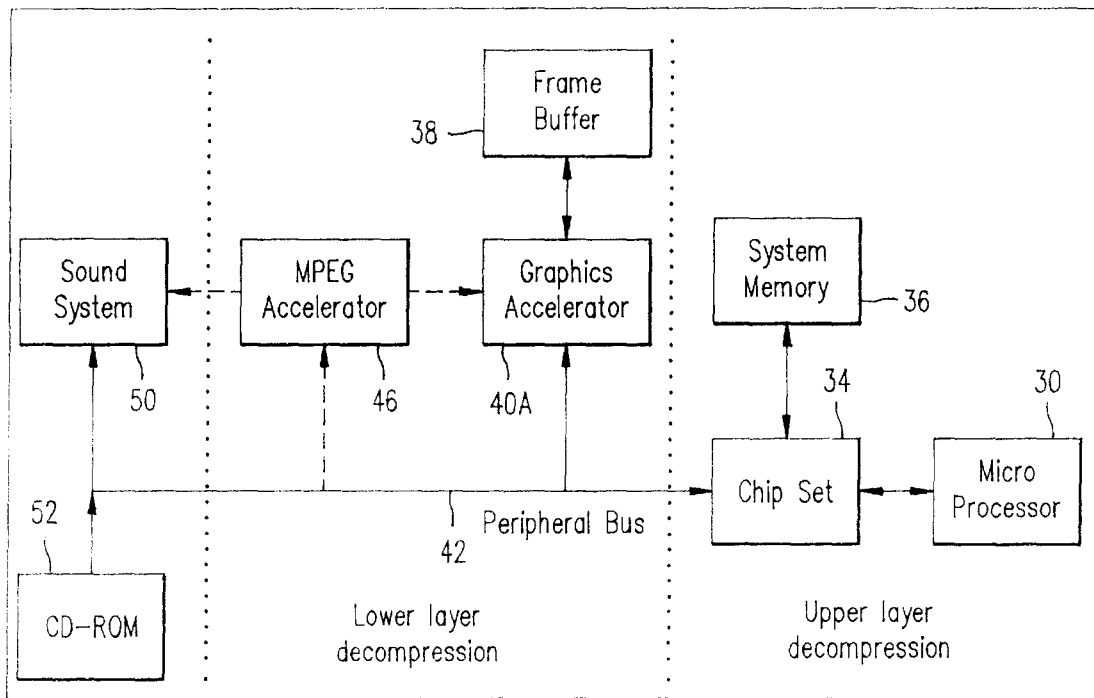


FIG. 3

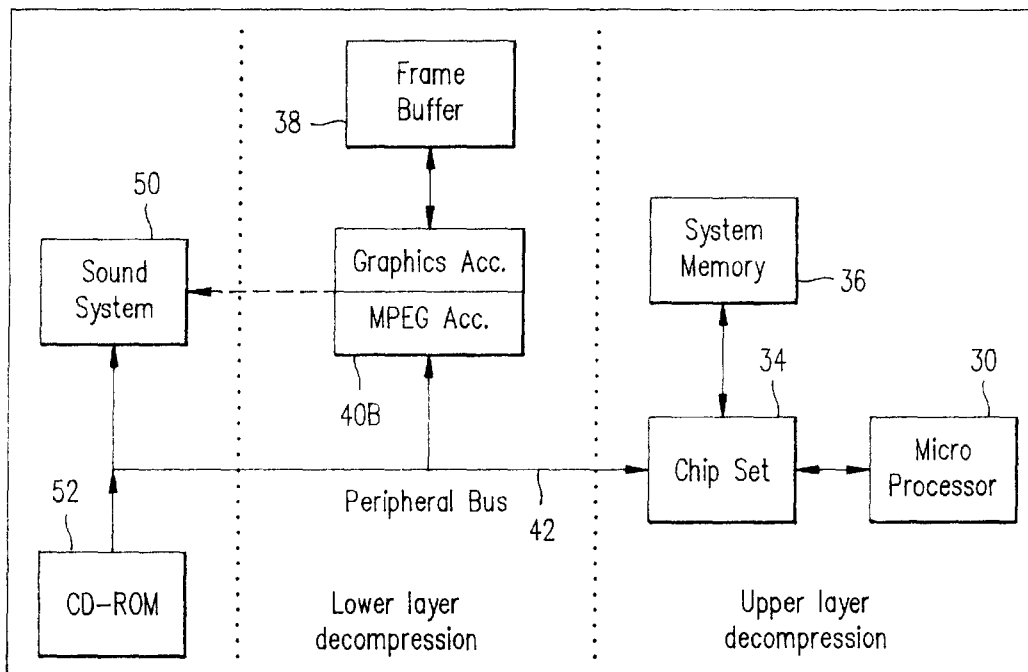


FIG. 4

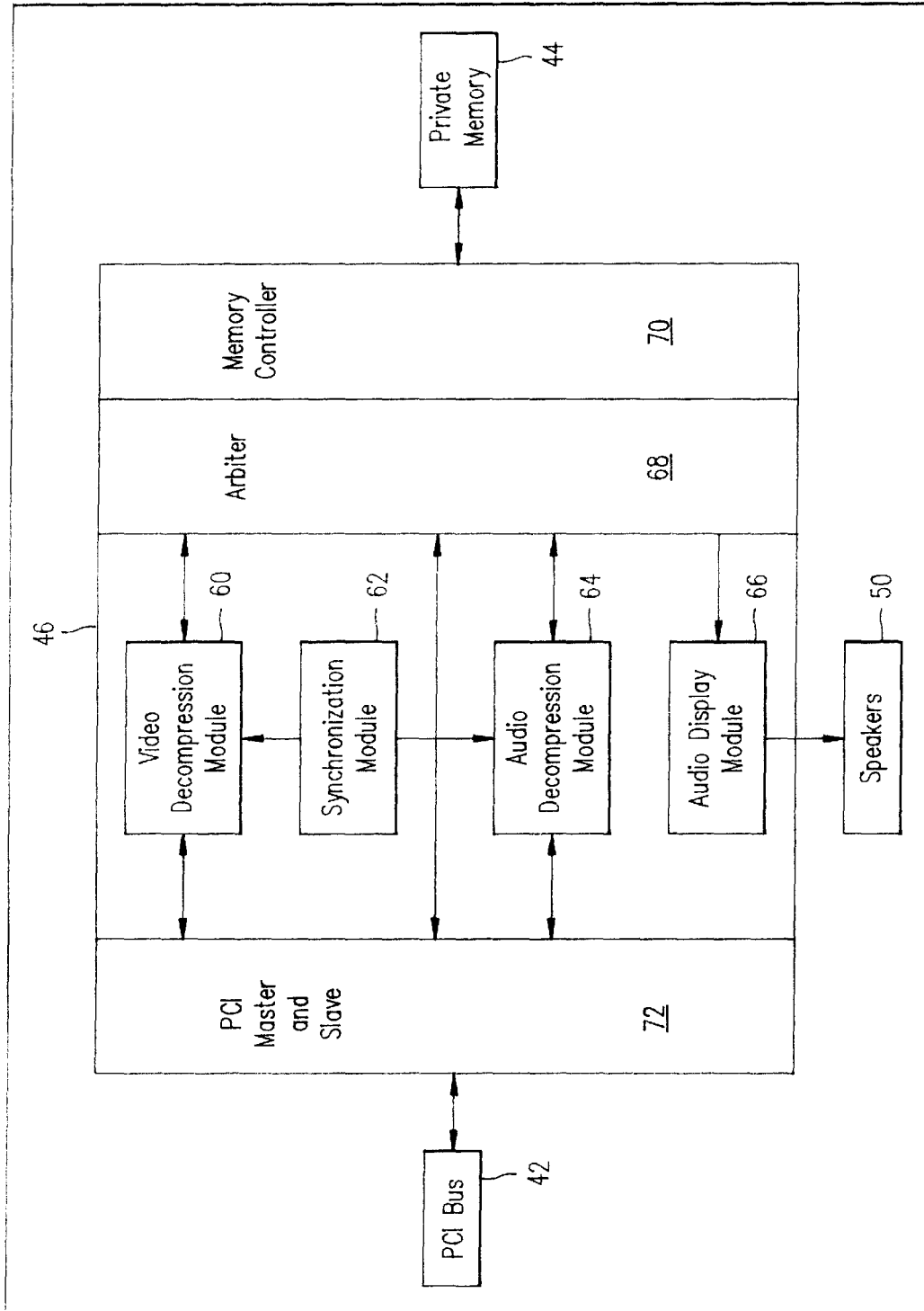


FIG. 5

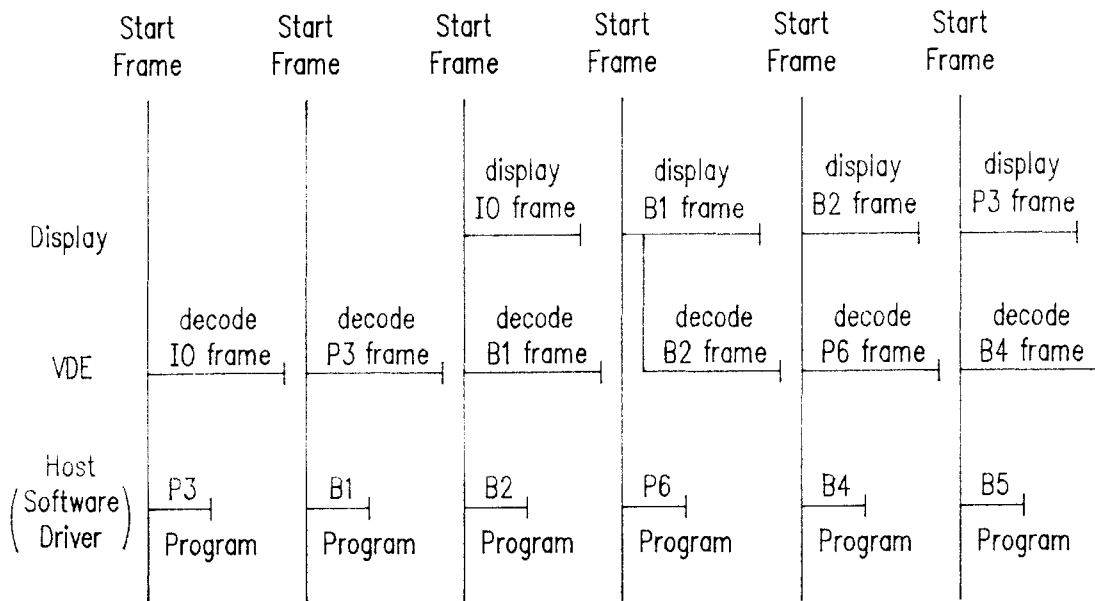


FIG. 6

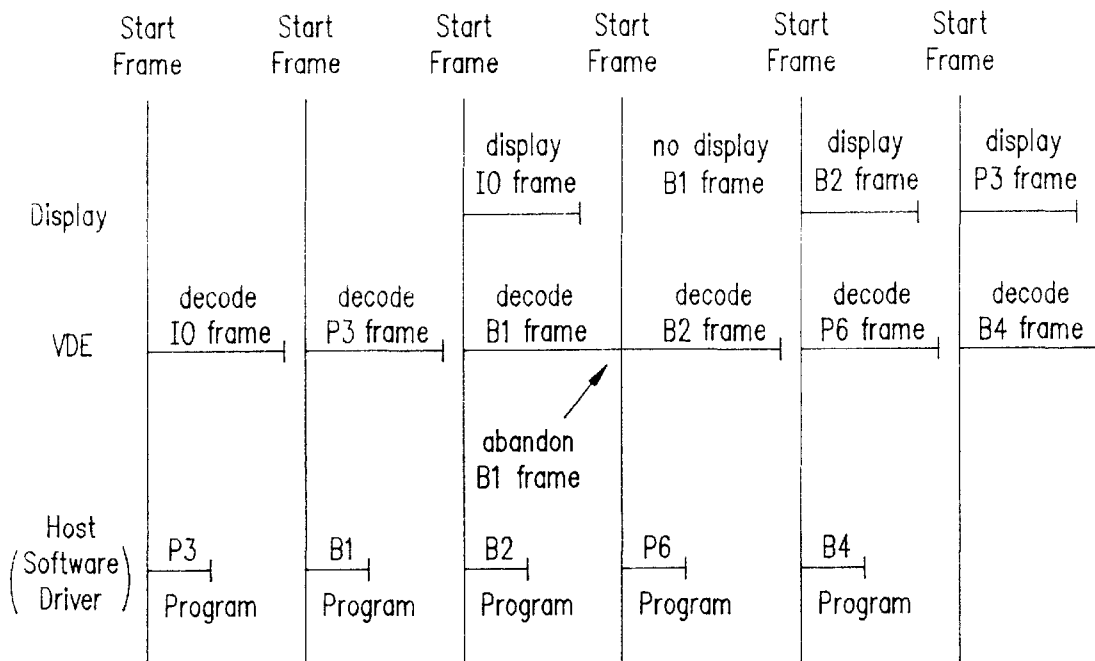


FIG. 7

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