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United States Patent [19]
Bowes et al.

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[45] **Date of Patent:** **Aug. 13, 1996**

- [54] **MEMORY BUS ARBITER FOR A COMPUTER SYSTEM HAVING A DSP CO-PROCESSOR**
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- [73] Assignee: **Apple Computer, Inc.**, Cupertino, Calif.
- [21] Appl. No.: **189,138**
- [22] Filed: **Jan. 28, 1994**
- [51] Int. Cl.⁶ **G06F 13/00**
- [52] U.S. Cl. **395/294; 395/293**
- [58] Field of Search 395/325, 425

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Assistant Examiner—David A. Wiley
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ABSTRACT

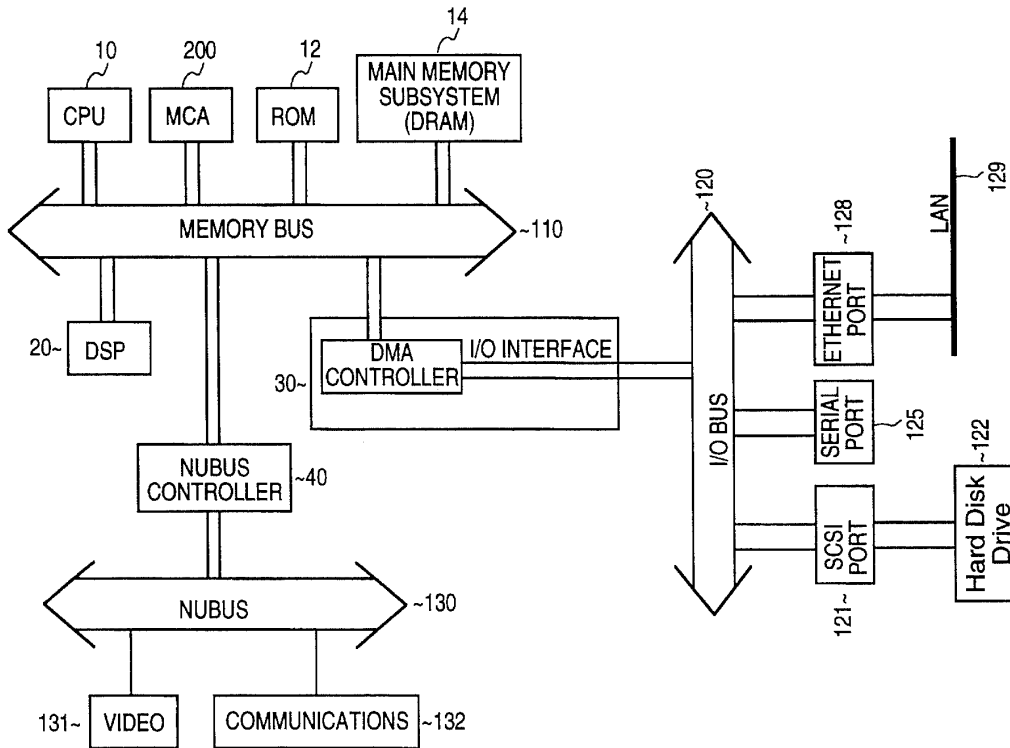
[57] An arbitration scheme for a computer system in which a digital signal processor resides on the computer system's memory bus without requiring a block of dedicated static random access memory. An arbitration cycle is divided into 10 slices of which 5 slices are provided in each arbitration loop to the digital signal processor. Two slices are provided each to the system's I/O interface and to the peripheral bus controller. A final slice is provided to the system's CPU. A default state when no memory bus resource is requesting the system memory bus parks the memory bus on the CPU. The arbitration scheme provides sufficient bandwidth for real-time signal processing by the digital signal processor operating from the system's dynamic random access memory while also providing sufficient bandwidth for a local area network interface through the system's I/O interface.

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8 Claims, 5 Drawing Sheets



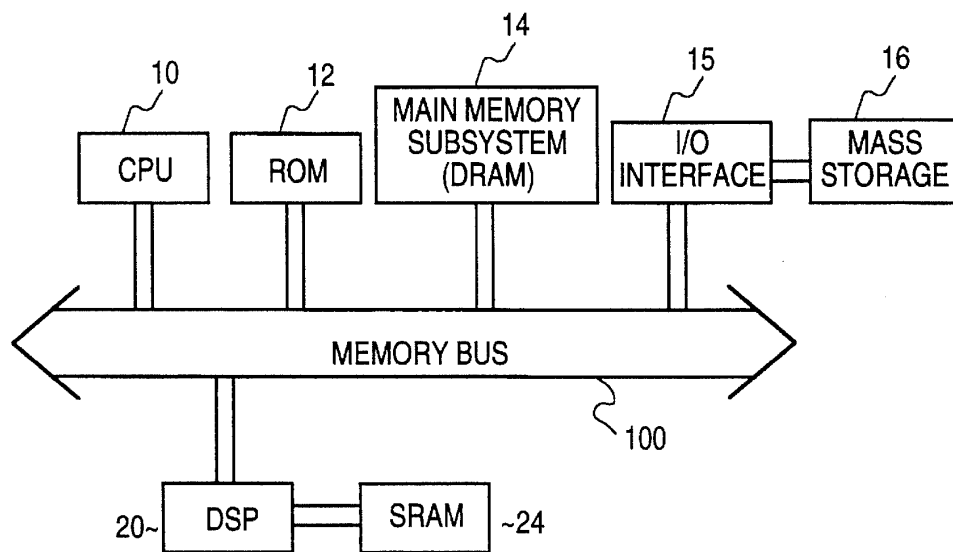


Figure 1 (Prior Art)

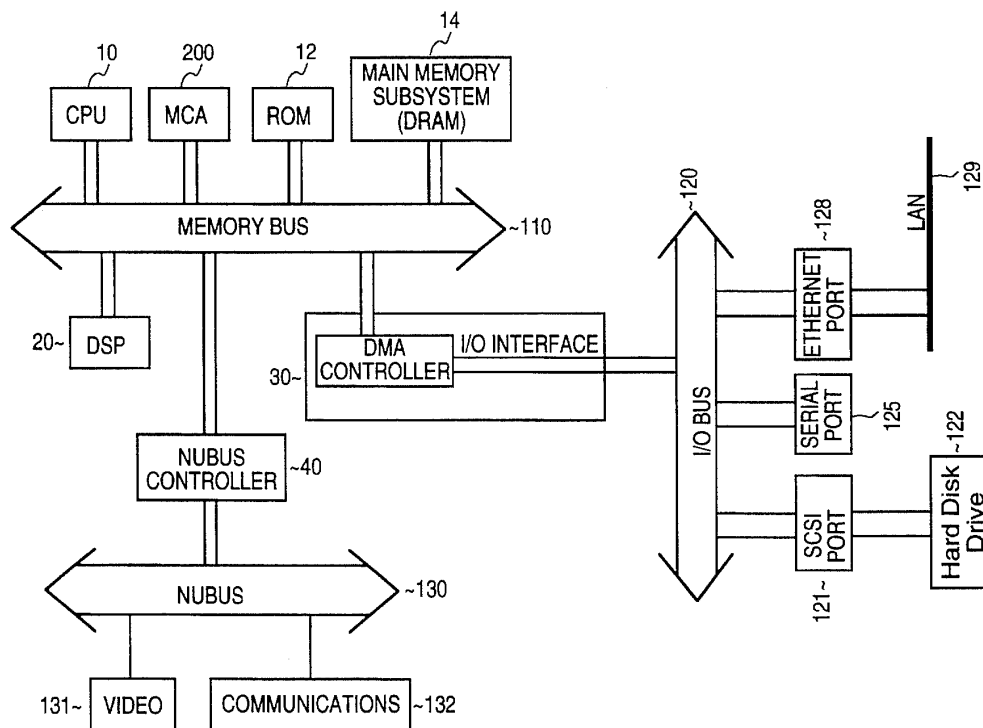


Figure 2

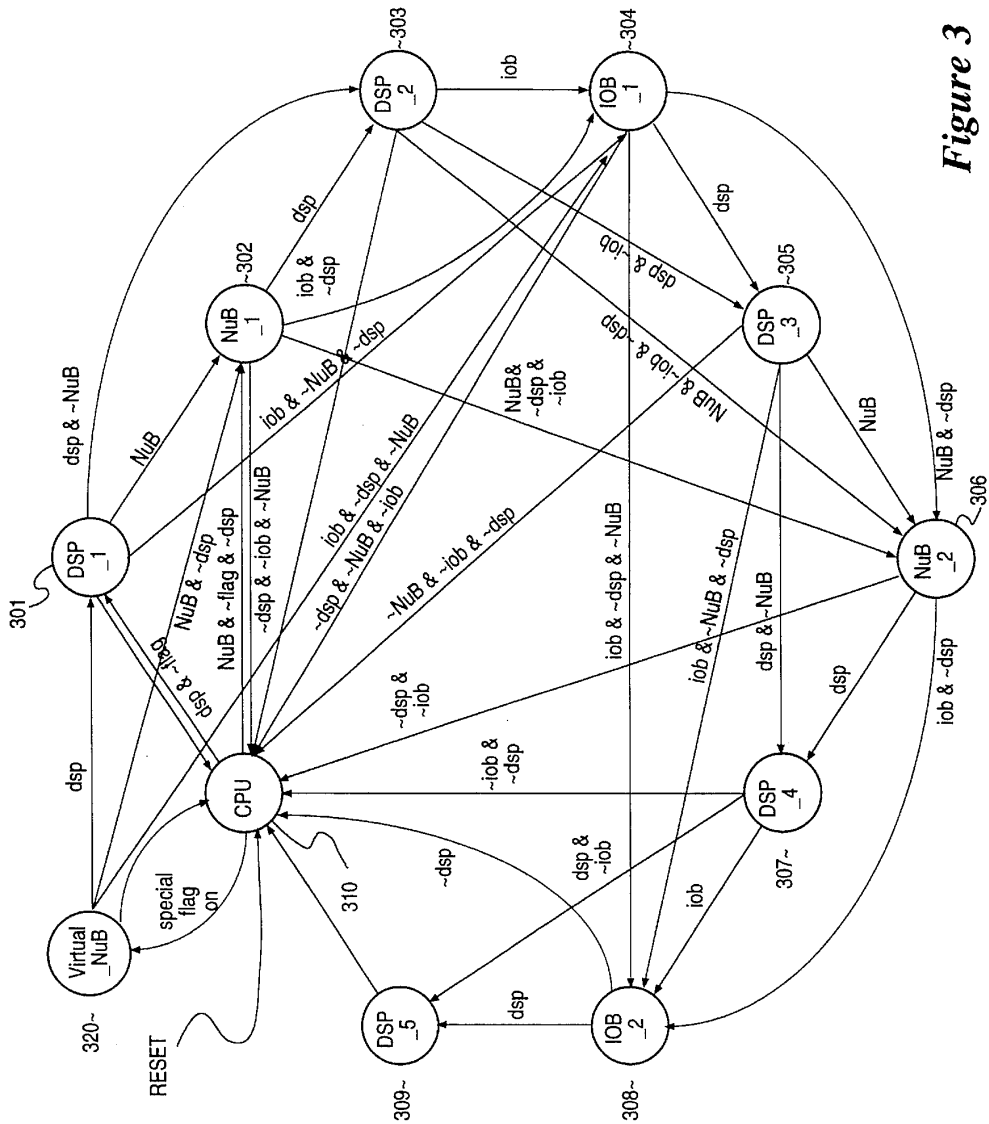


Figure 3

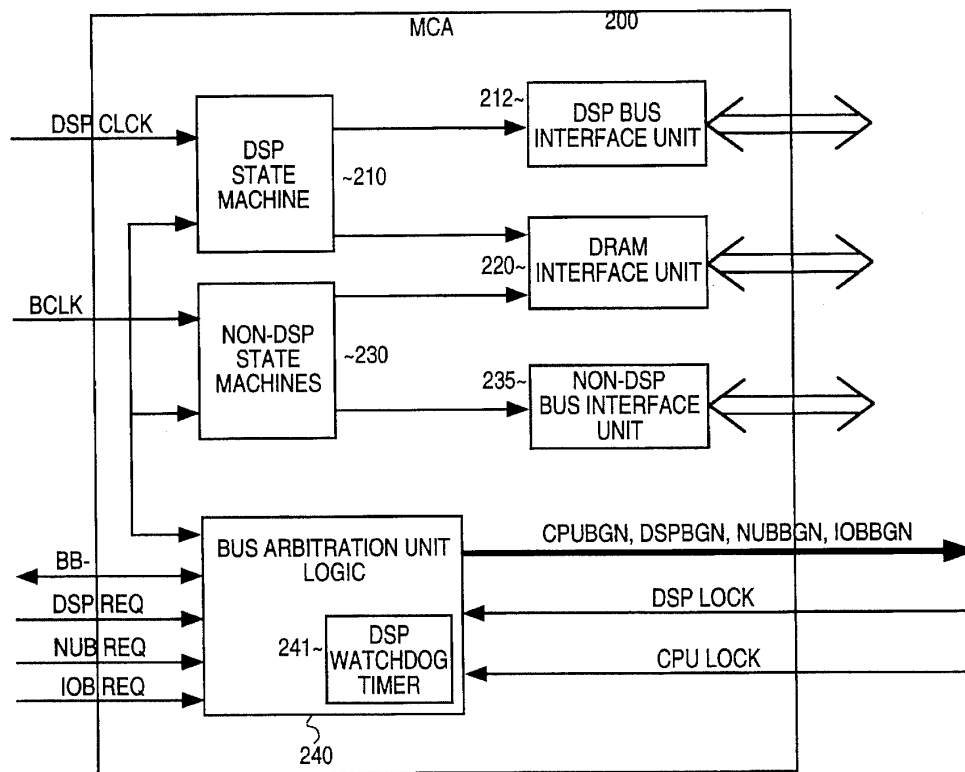


Figure 4

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