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Poznanovic et al.

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(54) **SYSTEM AND METHOD OF ENHANCING EFFICIENCY AND UTILIZATION OF MEMORY BANDWIDTH IN RECONFIGURABLE HARDWARE**

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(51) **Int. Cl.**
*G06F 12/00* (2006.01)
(52) **U.S. Cl.** ....................................... **711/170**; 711/154
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See application file for complete search history.

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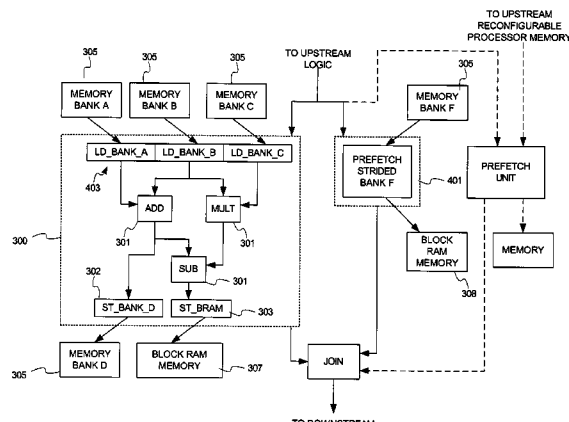*Primary Examiner*—Gary Portka
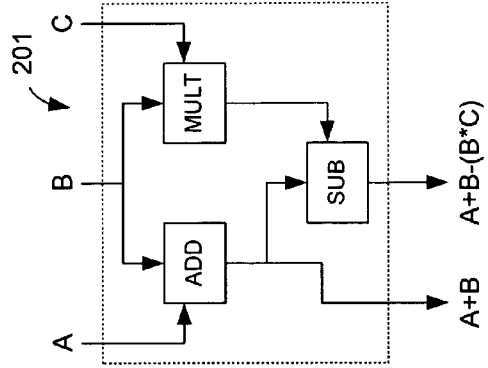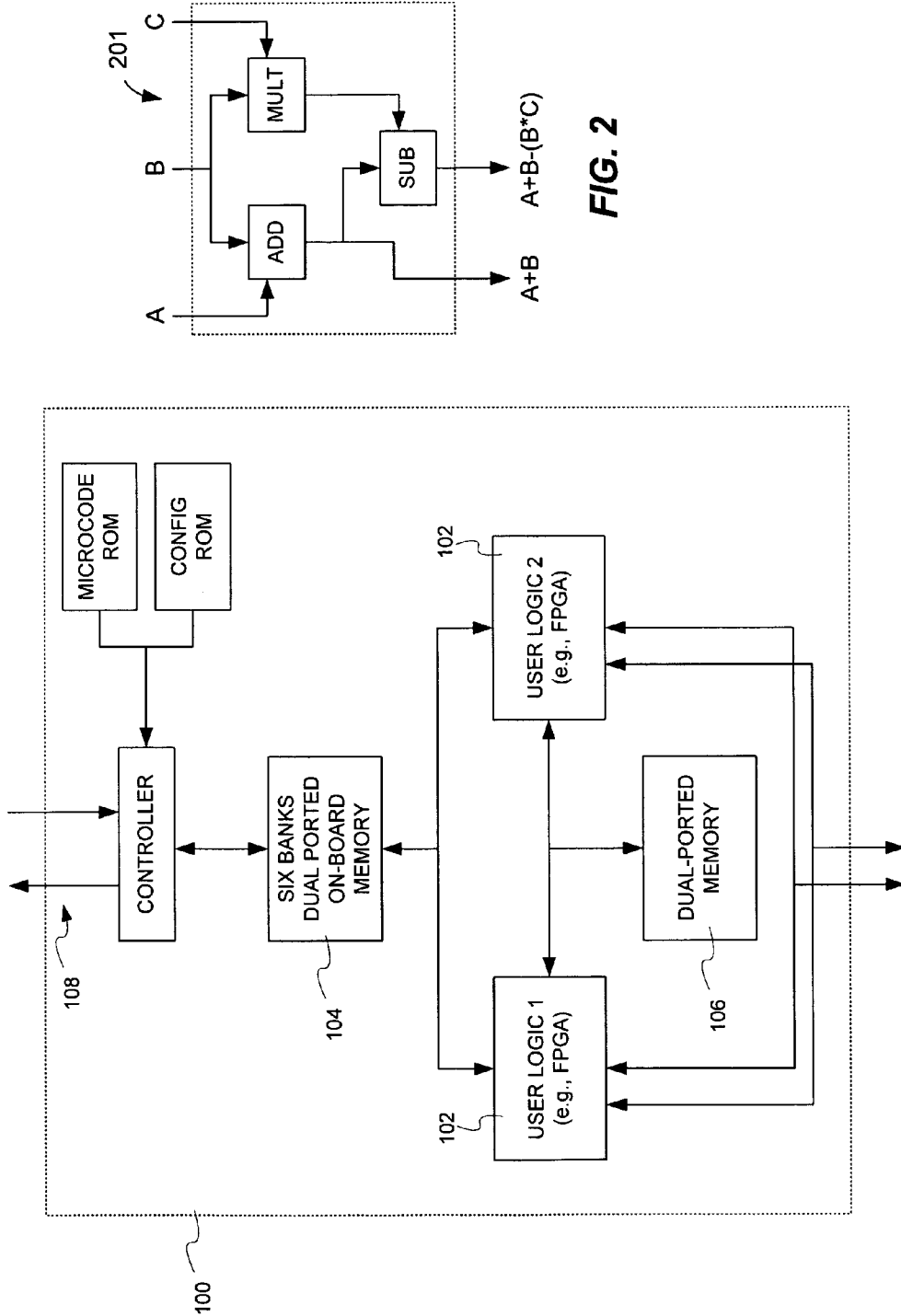*Assistant Examiner*—Shane M. Thomas
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(57) **ABSTRACT**

A reconfigurable processor that includes a computational unit and a data prefetch unit coupled to the computational unit, where the data prefetch unit retrieves data from a memory and supplies the data to the computational unit through memory and a data access unit, and where the data prefetch unit, memory, and data access unit is configured by a program. Also, a reconfigurable hardware system that includes a common memory; and one or more reconfigurable processors coupled to the common memory, where at least one of the reconfigurable processors includes a data prefetch unit to read and write data between the unit and the common memory, and where the data prefetch unit is configured by a program executed on the system. In addition, a method of transferring data that includes transferring data between a memory and a data prefetch unit in a reconfigurable processor; and transferring the data between a computational unit and the data prefetch unit.
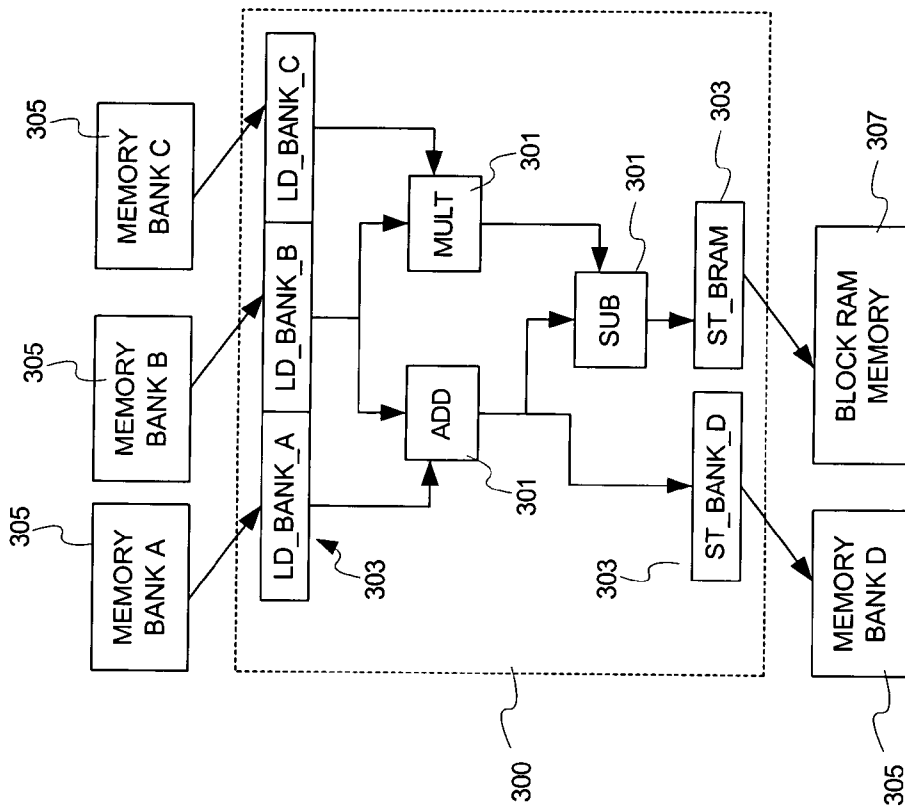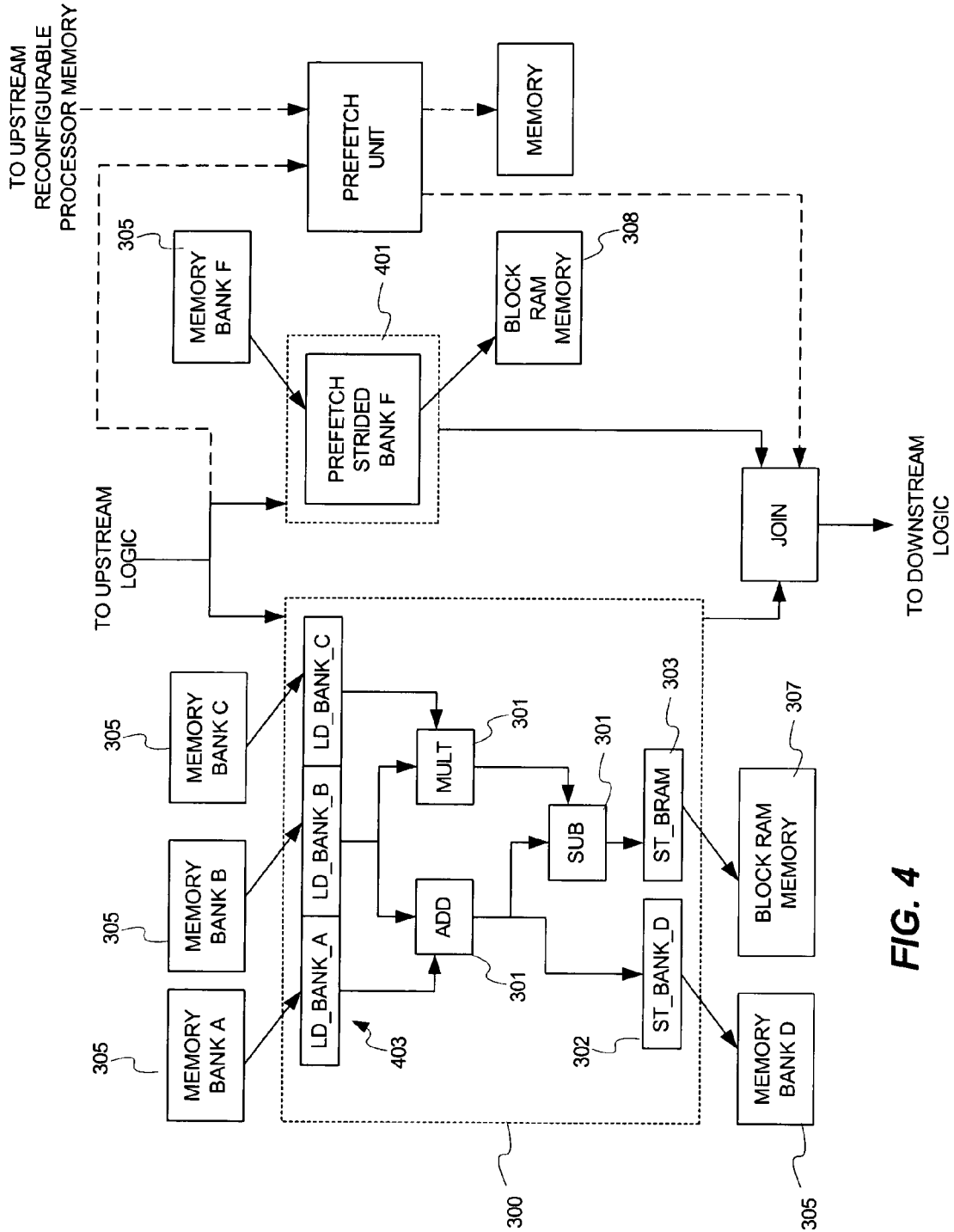
**19 Claims, 12 Drawing Sheets**

*FIG. 2*
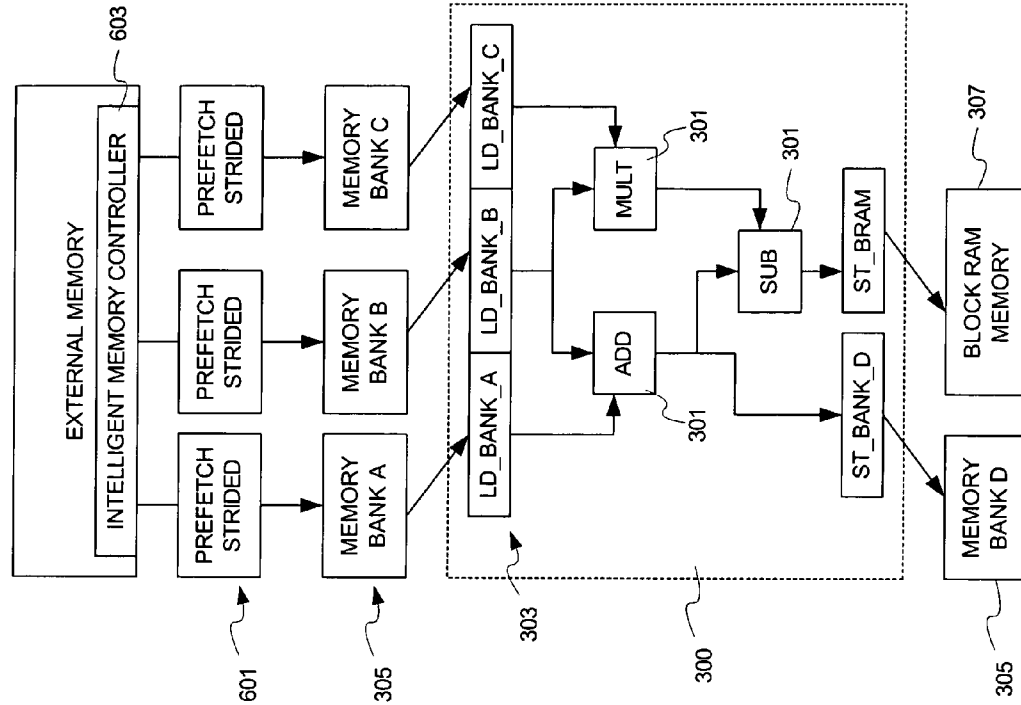


*FIG. 1*

**FIG. 3**

FIG. 4

FIG. 6



FIG. 5

# DOCKET ALARM
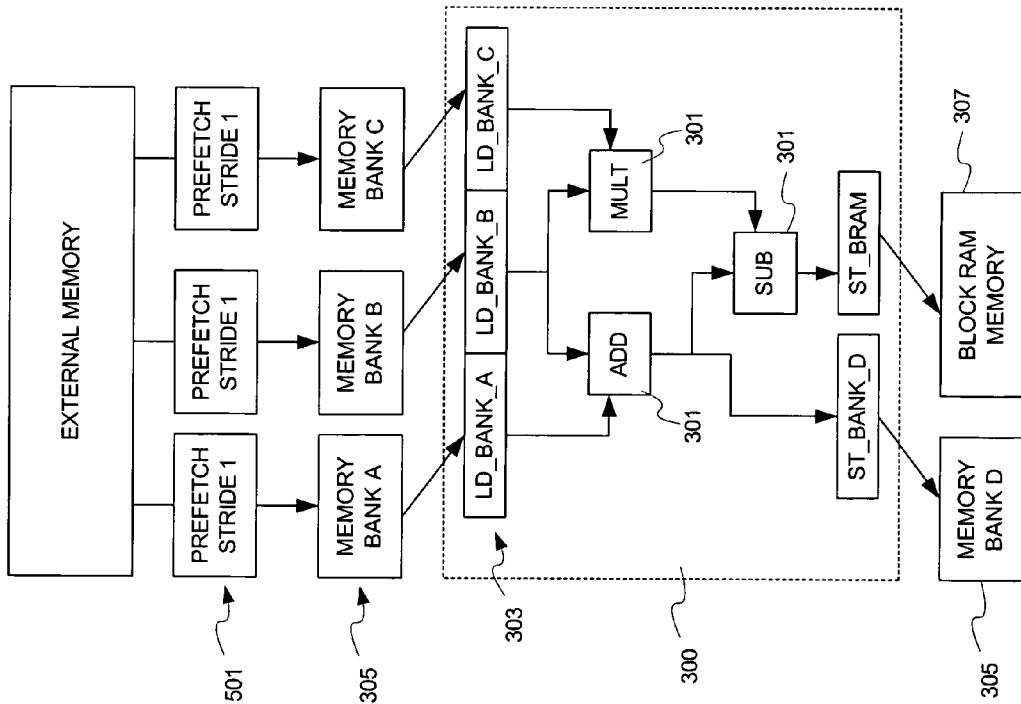
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