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United States Patent [19]

Morris, III

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[45]	Date of Patent:	Jun. 22, 1999

[54]	METHOD AND APPARATUS FOR A FIRST DEVICE ACCESSING COMPUTER MEMORY AND A SECOND DEVICE DETECTING THE ACCESS AND RESPONDING BY PERFORMING SEQUENCE OF ACTIONS		
[75]	Inventor: George Lockhart Morris, III, Escondido, Calif.		
[73]	Assignee: NCR Corporation, Dayton, Ohio		
[21]	Appl. No.: 08/778,938		
[22]	Filed: Jan. 3, 1997		
[51]	Int. Cl. ⁶		
[52]	U.S. Cl. 395/829 ; 395/826; 395/836;		
	395/856; 711/146		
[58]	Field of Search 370/218; 395/520,		

	707/201; 364/578, 528.21
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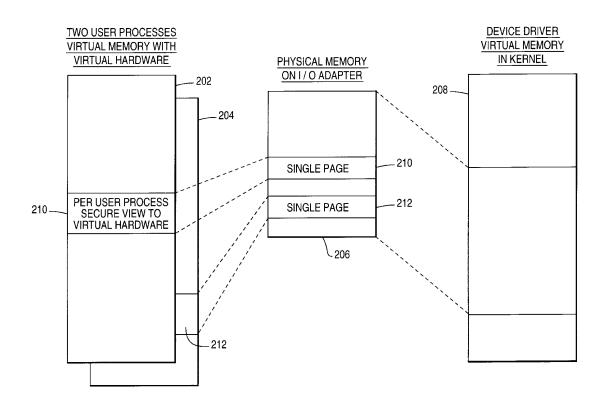
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Primary Examiner—Thomas C. Lee Assistant Examiner—Michael G. Smith Attorney, Agent, or Firm—Gates & Cooper

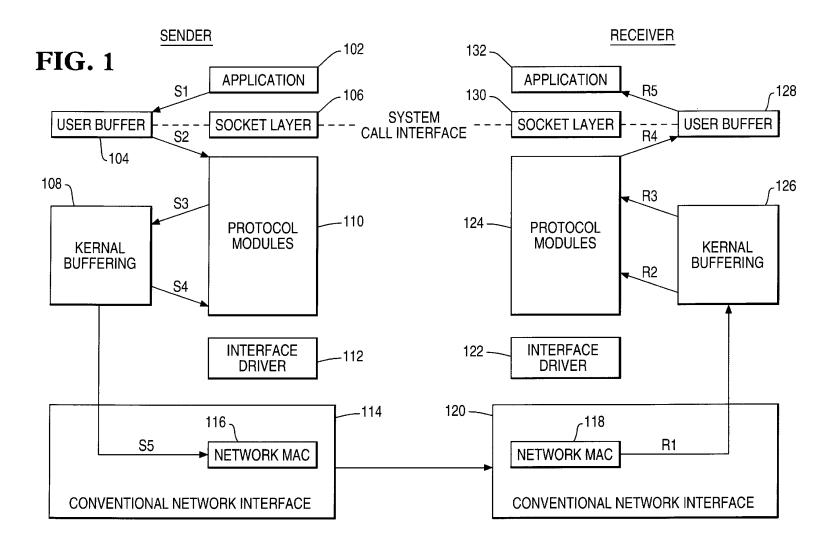
[57] ABSTRACT

A method of controlling an input/output (I/O) device connected to a computer to facilitate fast I/O data transfers. An address space for the I/O device is created in the virtual memory of the computer, wherein the address space comprises virtual registers that are used to directly control the I/O device. In essence, control registers and/or memory of the I/O devices are mapped into the virtual address space, and the virtual address space is backed by control registers and/or memory on the I/O device. Thereafter, the I/O device detects writes to the address space. As a result, a pre-defined sequence of actions can be triggered in the I/O device by programming specified values into the data written into the mapped virtual address space.

27 Claims, 8 Drawing Sheets

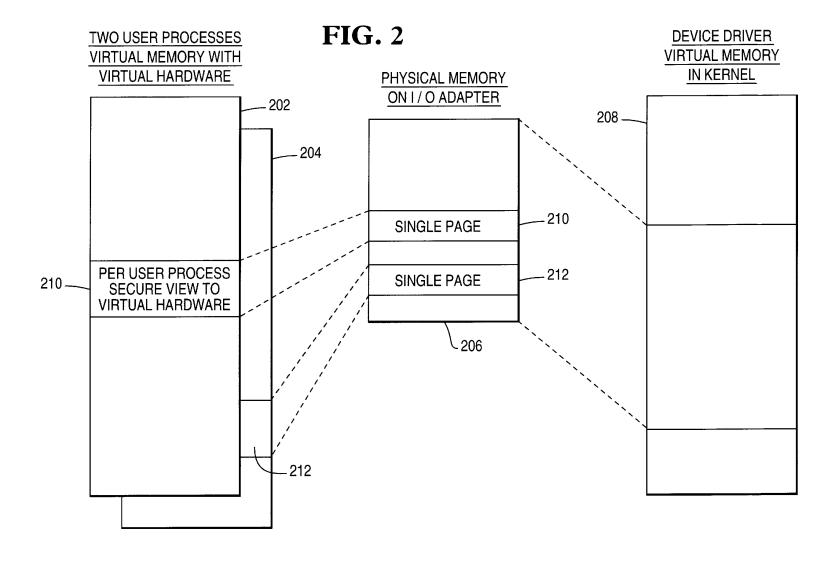






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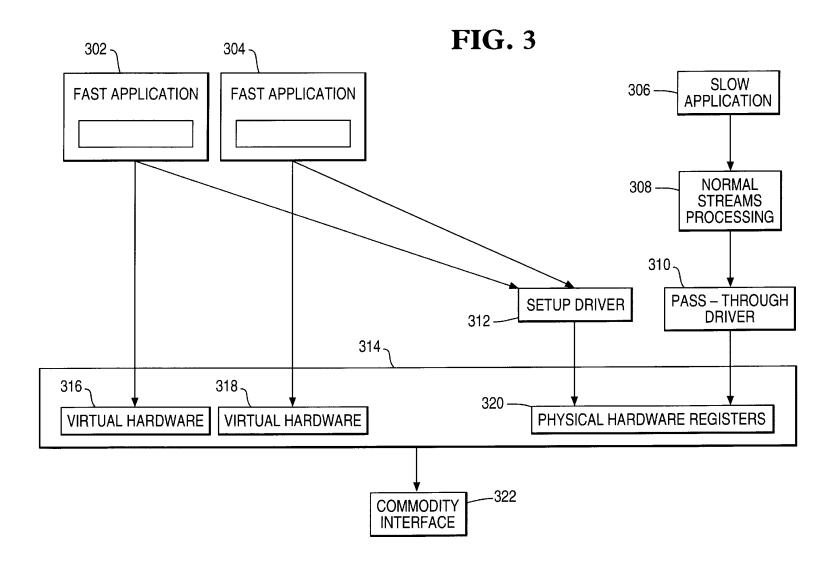
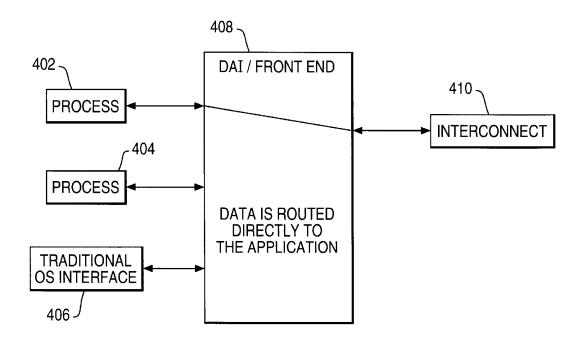


FIG. 4



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