

[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**

5,247,650	9/1993	Judd et al.	395/500
5,426,737	6/1995	Jacobs	395/847
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5,649,230	7/1997	Lentz	395/872
5,710,712	1/1998	Labun	364/528.21
5,732,283	3/1998	Rose et al.	395/836
5,765,022	6/1998	Kaiser et al.	395/842

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[21] **Appl. No.:** **08/778,938**

[57] **ABSTRACT**

[22] **Filed:** **Jan. 3, 1997**

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.

[51] **Int. Cl.⁶** **G06F 13/00**

[52] **U.S. Cl.** **395/829; 395/826; 395/836; 395/856; 711/146**

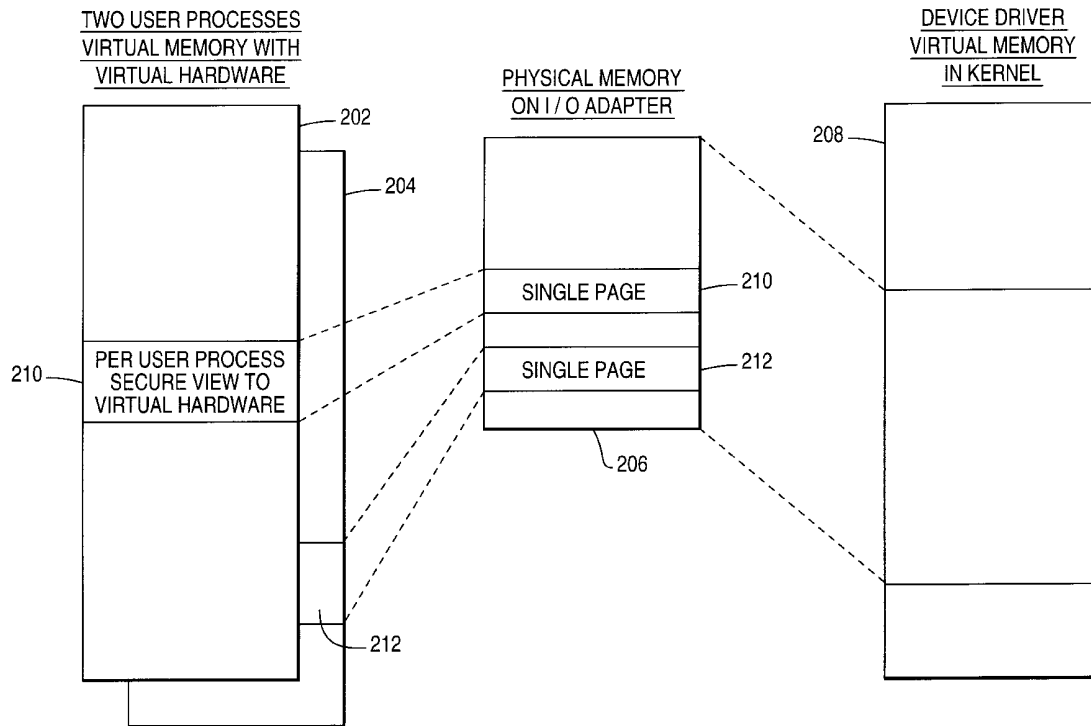
[58] **Field of Search** **370/218; 395/520, 395/872, 828, 847, 836, 842, 829, 473; 707/201; 364/578, 528.21**

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,725,971	2/1988	Doshi et al.	364/578
4,807,224	2/1989	Naron et al.	370/218
5,170,470	12/1992	Pindar et al.	395/828

27 Claims, 8 Drawing Sheets



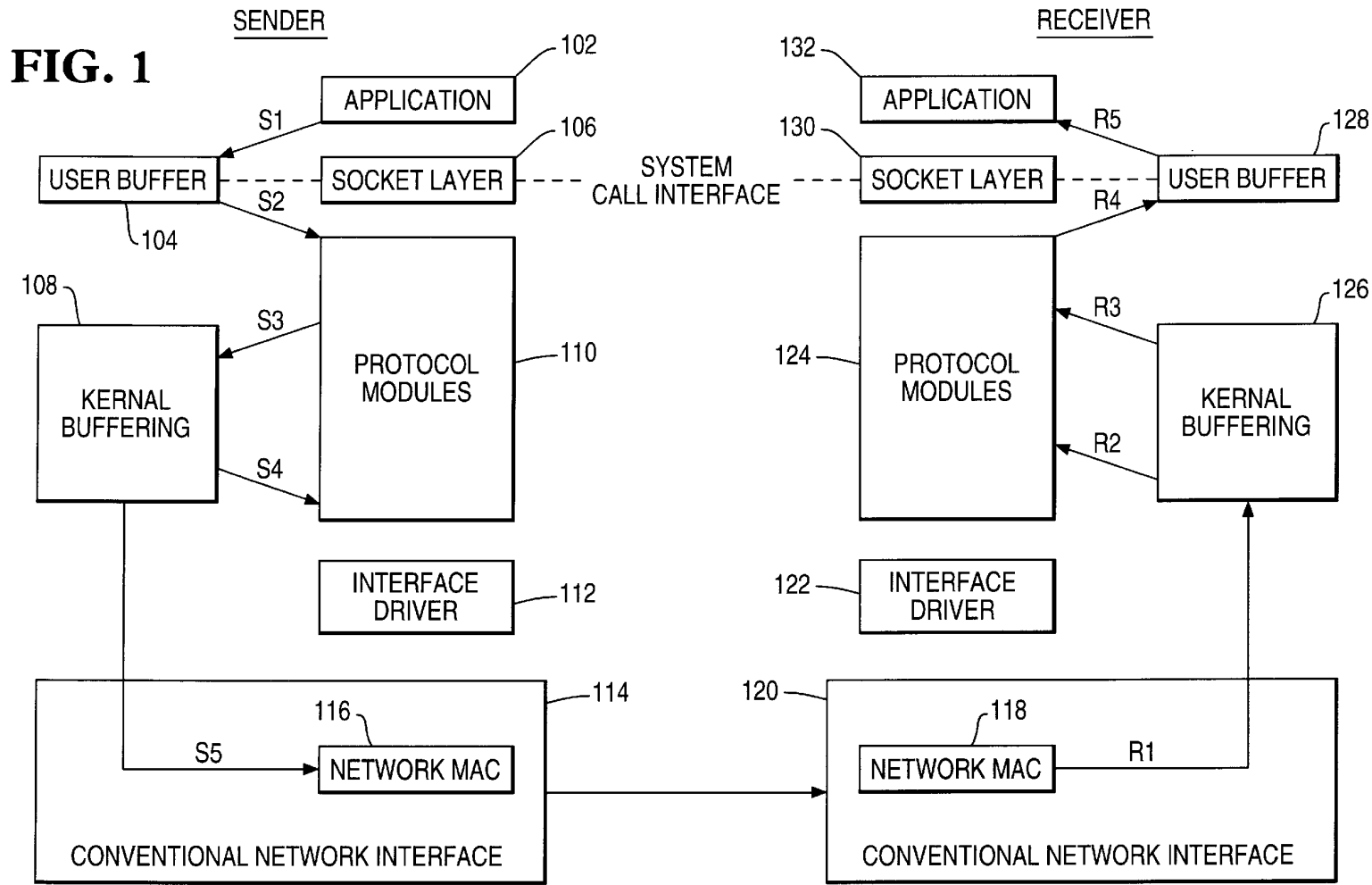


FIG. 2

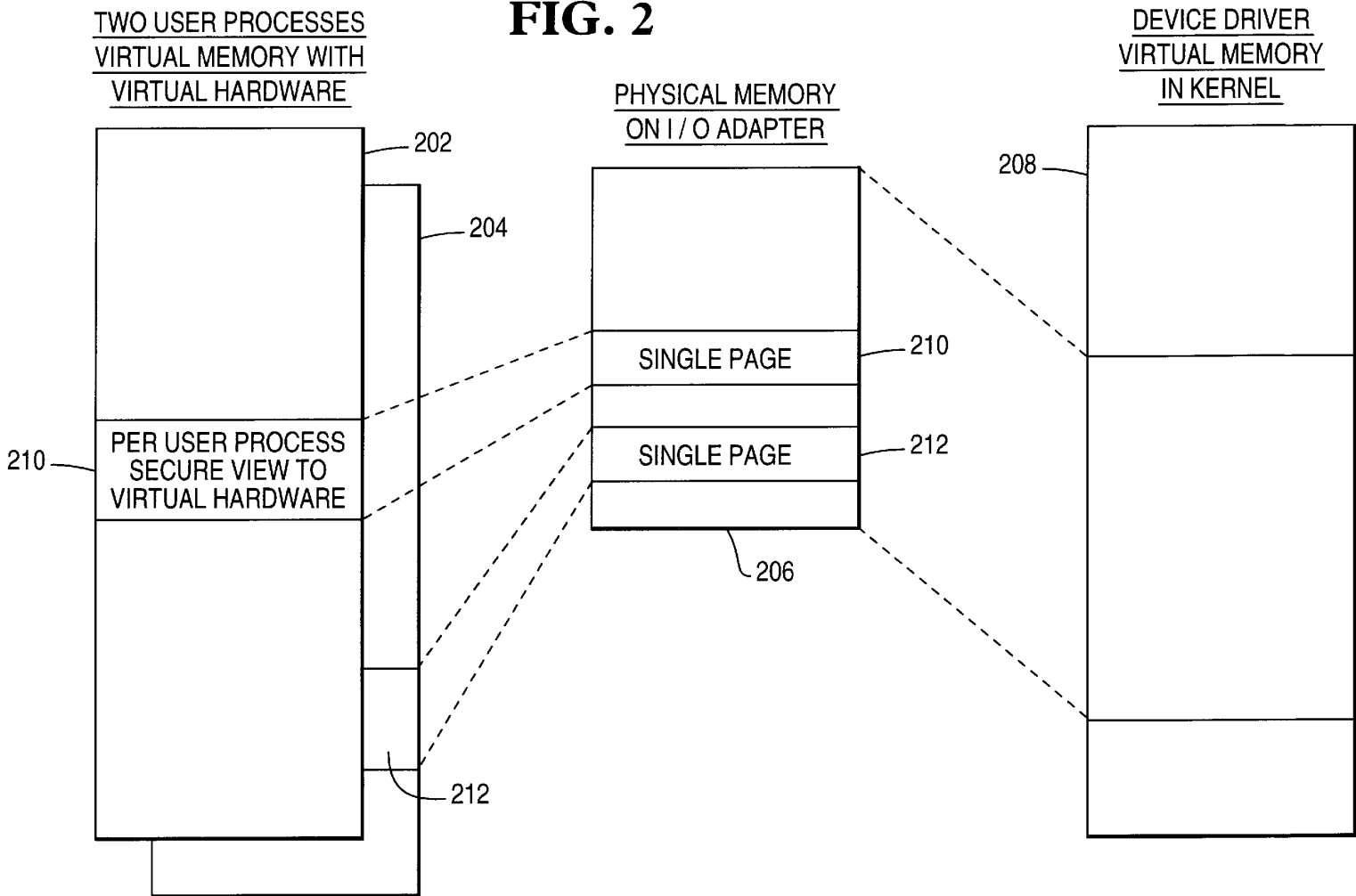


FIG. 3

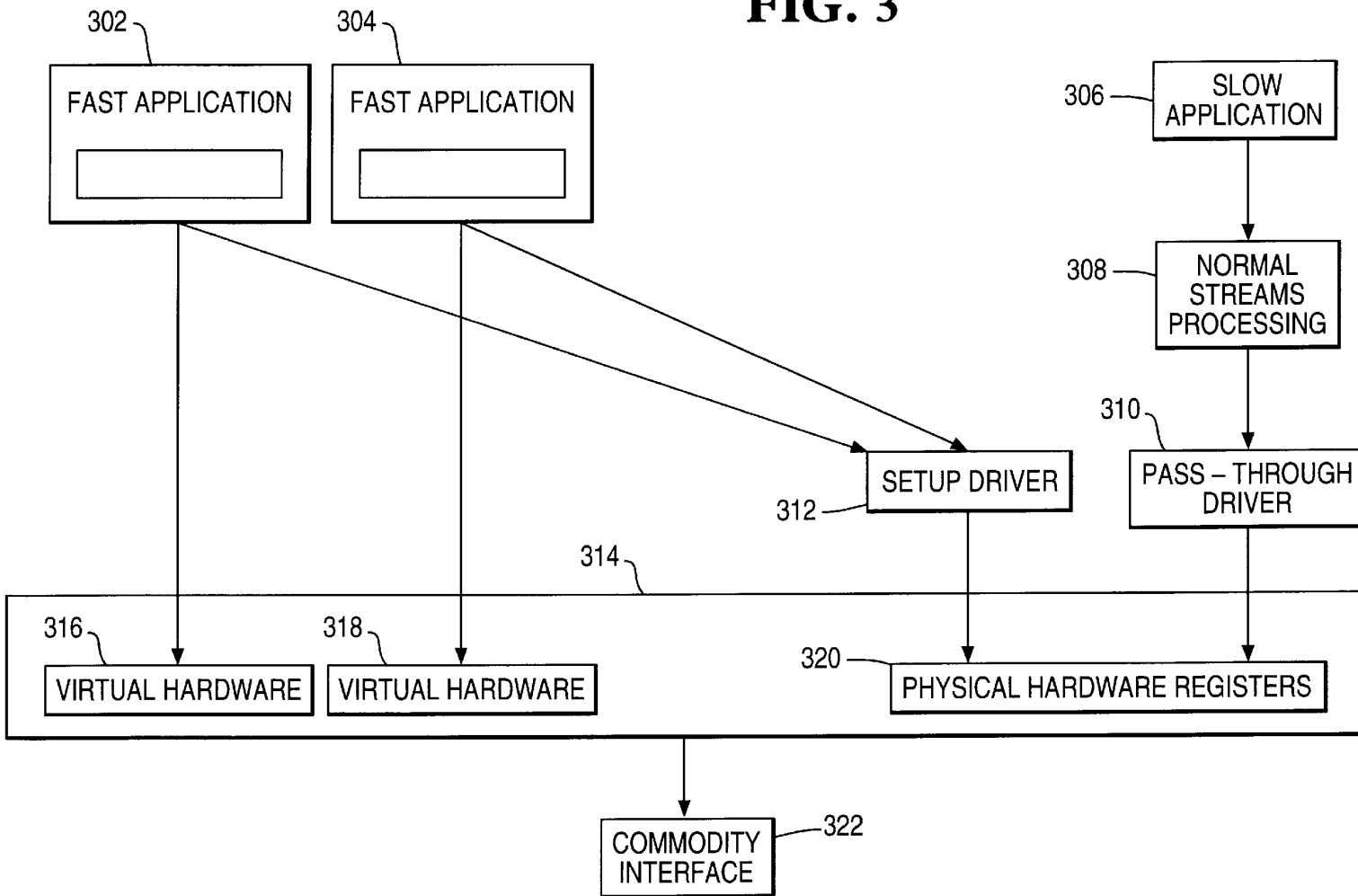
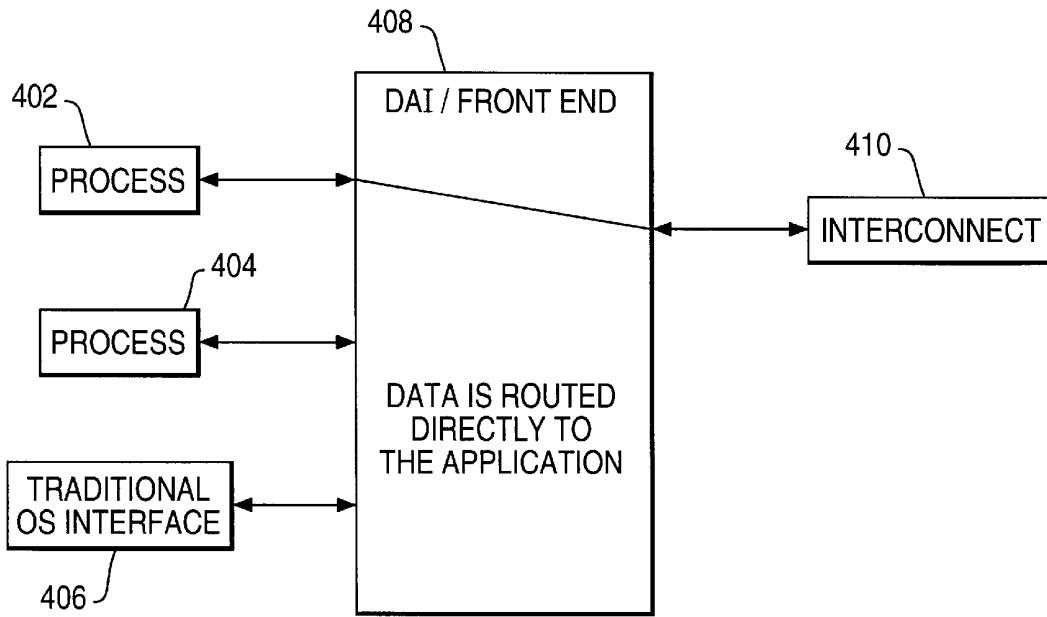


FIG. 4



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