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Takeda et al.

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(54) **SYSTEMS AND METHODS FOR PROVIDING SECURITY IN A VIDEO GAME SYSTEM**

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Related U.S. Application Data

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(51) **Int. Cl.⁷** **G06F 1/00**

(52) **U.S. Cl.** **463/29; 463/36; 463/43**

(58) **Field of Search** **463/29, 36, 43, 463/44, 45, 46, 47**

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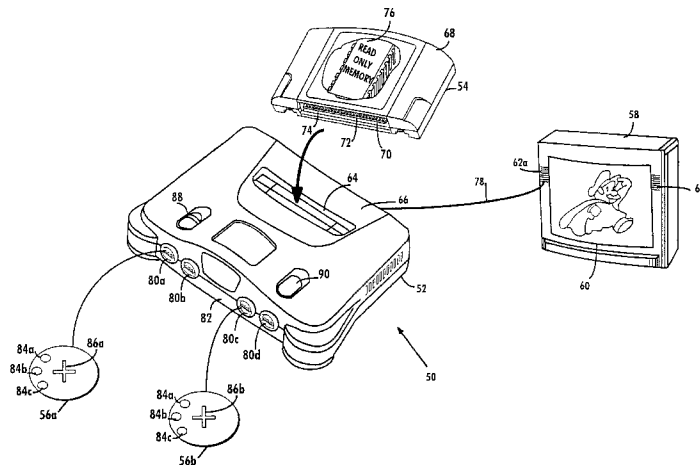
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(57) **ABSTRACT**

A video game system includes a game cartridge which is pluggably attached to a main console having a main processor, a 3D graphics generating coprocessor, expandable main memory and player controllers. A multifunctional peripheral processing subsystem external to the game microprocessor and coprocessor is described which executes commands for handling player controller input/output to thereby lessen the processing burden on the graphics processing subsystem. The player controller processing subsystem is used for both controlling player controller input/output processing and for performing game authenticating security checks continuously during game play. The peripheral interface includes a micro-processor for controlling various peripheral interface functions, a read/write random access memory, a boot ROM, a coprocessor command channel interface, a player controller channel interface, etc., which components interact to efficiently process player controller commands while also performing other important functions without requiring significant main processor processing time. A peripheral interface macro may be executed to start a read or write transaction with each peripheral device and thereafter transfer the transaction results stored in the random access memory to the game microprocessor main memory. The peripheral interface performs security in addition to input/output functions. The peripheral interface interacts with a security microprocessor chip within an external storage unit. The video game system authenticates the security microprocessor chip, and also authenticates the video game program stored on a storage medium within the external storage unit.

13 Claims, 34 Drawing Sheets



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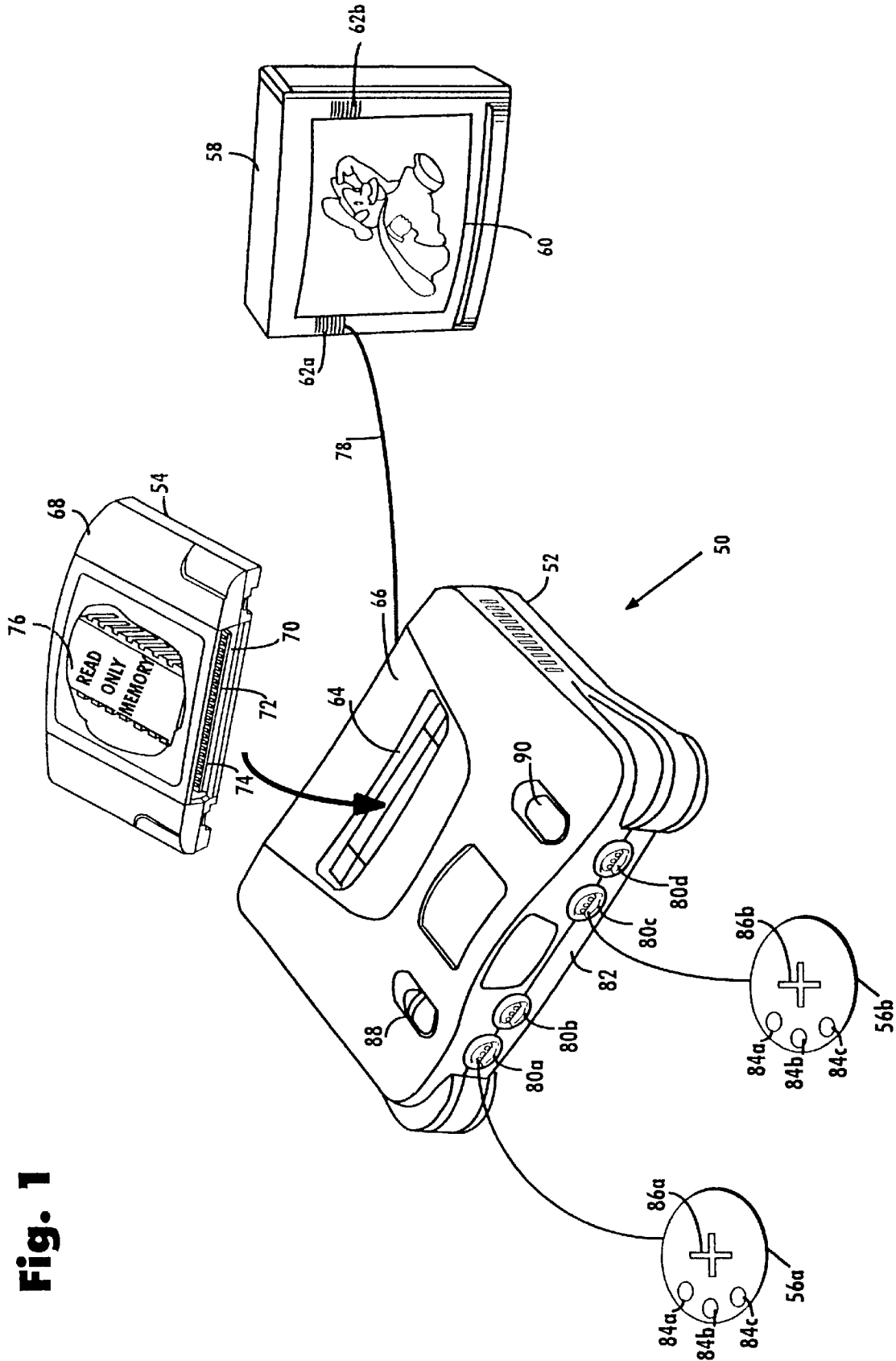


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