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# United States Patent [19]

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Amoni et al.

[45] Date of Patent: **Mar. 16, 1999**

[54] **SYSTEM AND METHOD FOR VOLTAGE SWITCHING TO SUPPLY VARIOUS VOLTAGES AND POWER LEVELS TO A PERIPHERAL DEVICE**

5,560,022 9/1996 Dunstan et al. .... 395/750.01  
5,652,895 7/1997 Poisner ..... 395/750.04  
5,742,514 4/1998 Bonola ..... 379/258

### OTHER PUBLICATIONS

[75] Inventors: **Sergio Amoni**, Raleigh; **Paul Daniel Kangas**, Cary; **John David Landers, Jr.**, Raleigh, all of N.C.

Halfhill, T. R., "The New PC," *BYTE*, Oct. 1995, pp. 52-64.  
Klein, R. H., "Bus Pass for Serial Killers," *New Electronics*, 9 Jan. 1996, pp. 18-19.

[73] Assignee: **International Business Machines Corporation**, Armonk, N.Y.

*Universal Serial Bus Specification*, 1.0 Final Draft Revision, Nov. 13, 1995, Copyright ©1995, Compaq Computer Corporation, et al.

[21] Appl. No.: **842,695**

Wright, M., Ed., "USB and IEEE 1394: Pretenders, Contenders, or Locks for Ubiquitous Desktop Deployment?" *EDN*, Apr. 25, 1996, pp. 79-91.

[22] Filed: **Apr. 15, 1997**

[51] Int. Cl.<sup>6</sup> ..... **G06F 1/26**

*Primary Examiner*—Gopal C. Ray

[52] U.S. Cl. .... **395/750.01**; 395/750.02;  
364/492

*Attorney, Agent, or Firm*—John D. Flynn; Winstead, Sechrest & Minick, PC

[58] **Field of Search** ..... 395/750.01, 750.03,  
395/750.07, 750.06; 364/707, 492

### [57] ABSTRACT

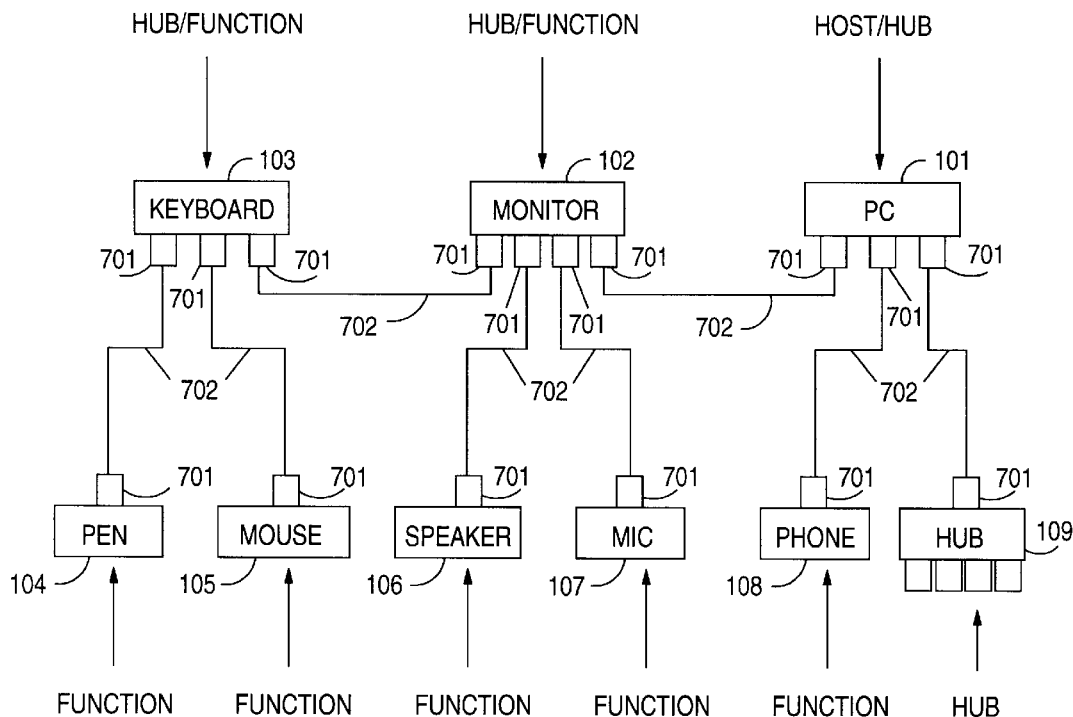
### [56] References Cited

#### U.S. PATENT DOCUMENTS

4,782,355	11/1988	Sakai et al. ....	396/72
4,884,287	11/1989	Jones et al. ....	375/377
4,901,217	2/1990	Wilson .....	363/126
5,121,500	6/1992	Arlington et al. ....	395/750.07
5,179,710	1/1993	Coschieri .....	395/750.01
5,313,642	5/1994	Seigel .....	395/750.05
5,408,669	4/1995	Stewart et al. ....	395/750.01
5,483,656	1/1996	Oprescu et al. ....	395/750.03
5,493,684	2/1996	Gephardt et al. ....	395/750.04
5,514,859	5/1996	Seigel .....	235/462

Within a data processing system, such as a personal computer, non-standard, or auxiliary, voltage and current may be supplied to an attached peripheral device along with standard Universal Standard Bus (USB) power and signaling. A communication protocol is enabled between the host system and the peripheral device to permit the peripheral device to communicate its power requirements to the host device so that the host device can switch the proper voltage and current through the USB cable to the peripheral device. This allows the peripheral device to obtain power without having to connect to an AC power supply.

**21 Claims, 9 Drawing Sheets**



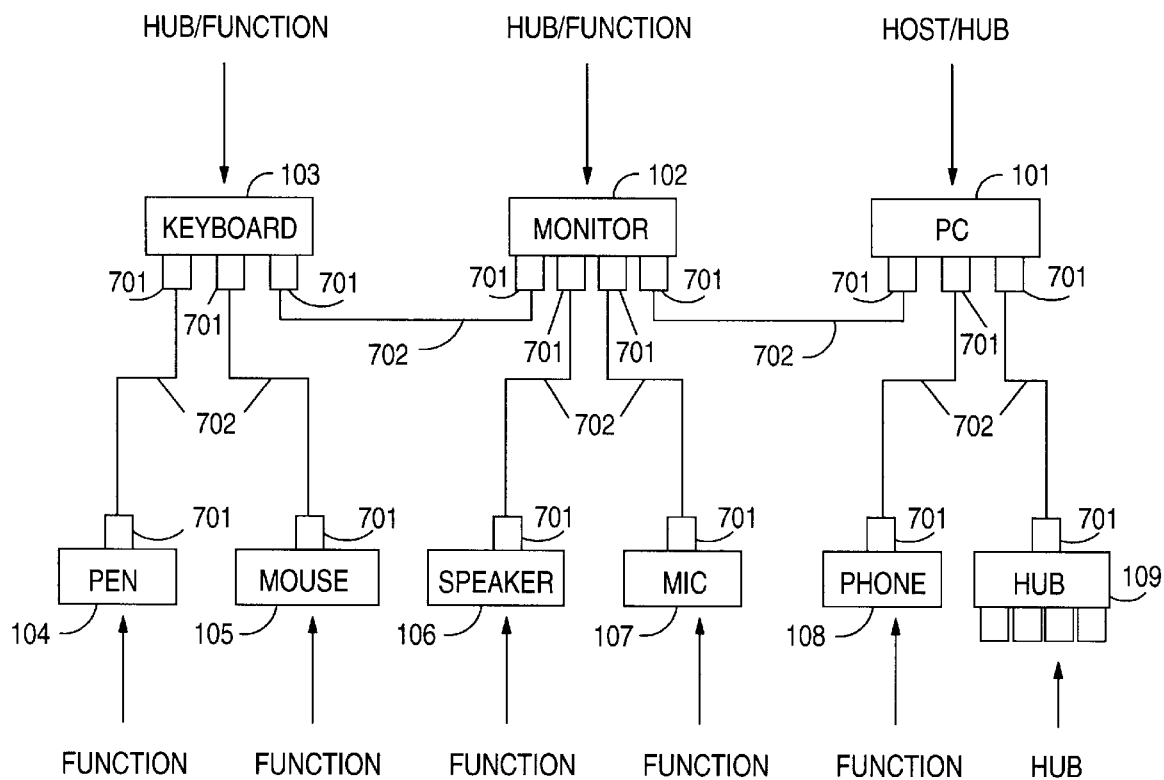


FIG. 1

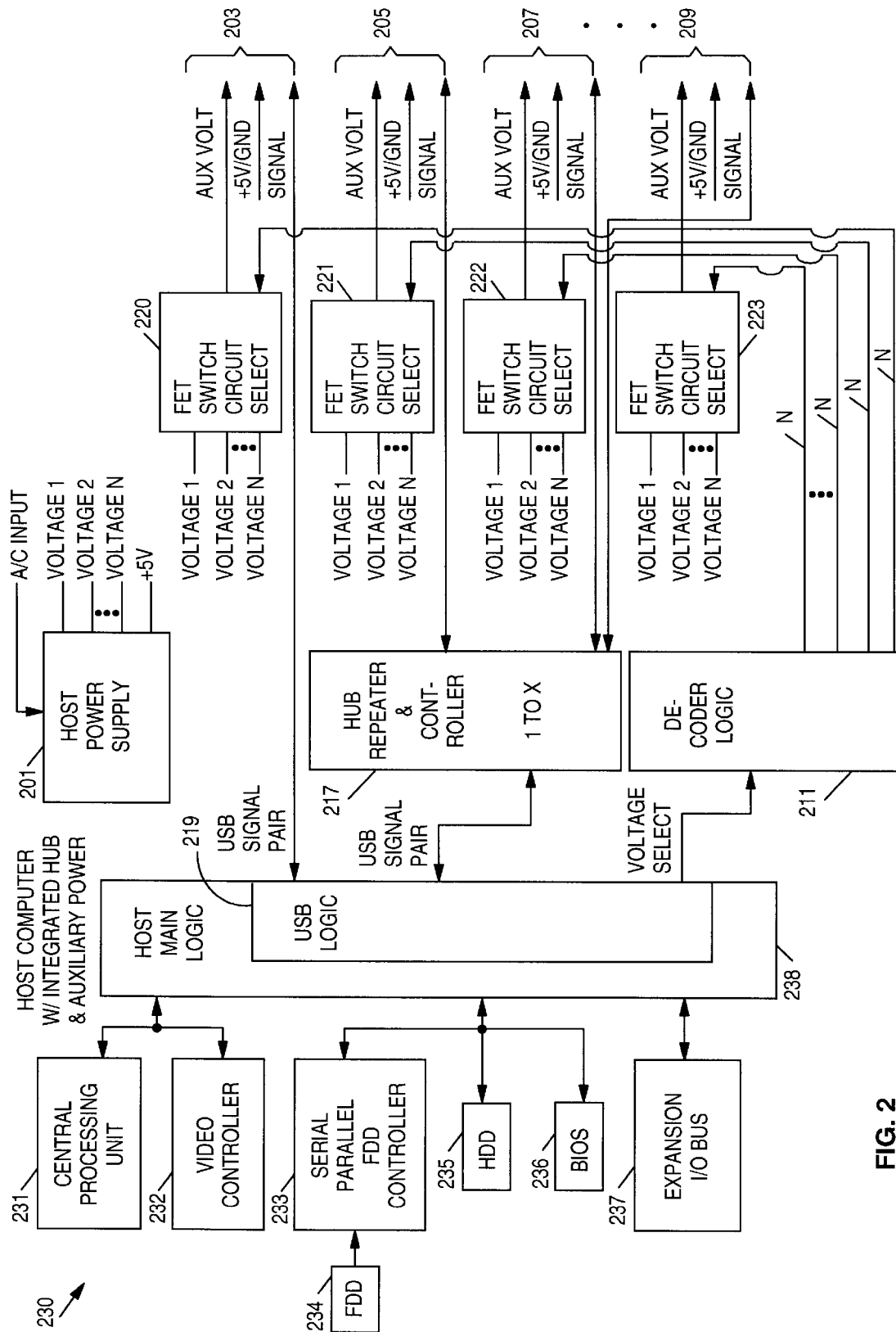


FIG. 2

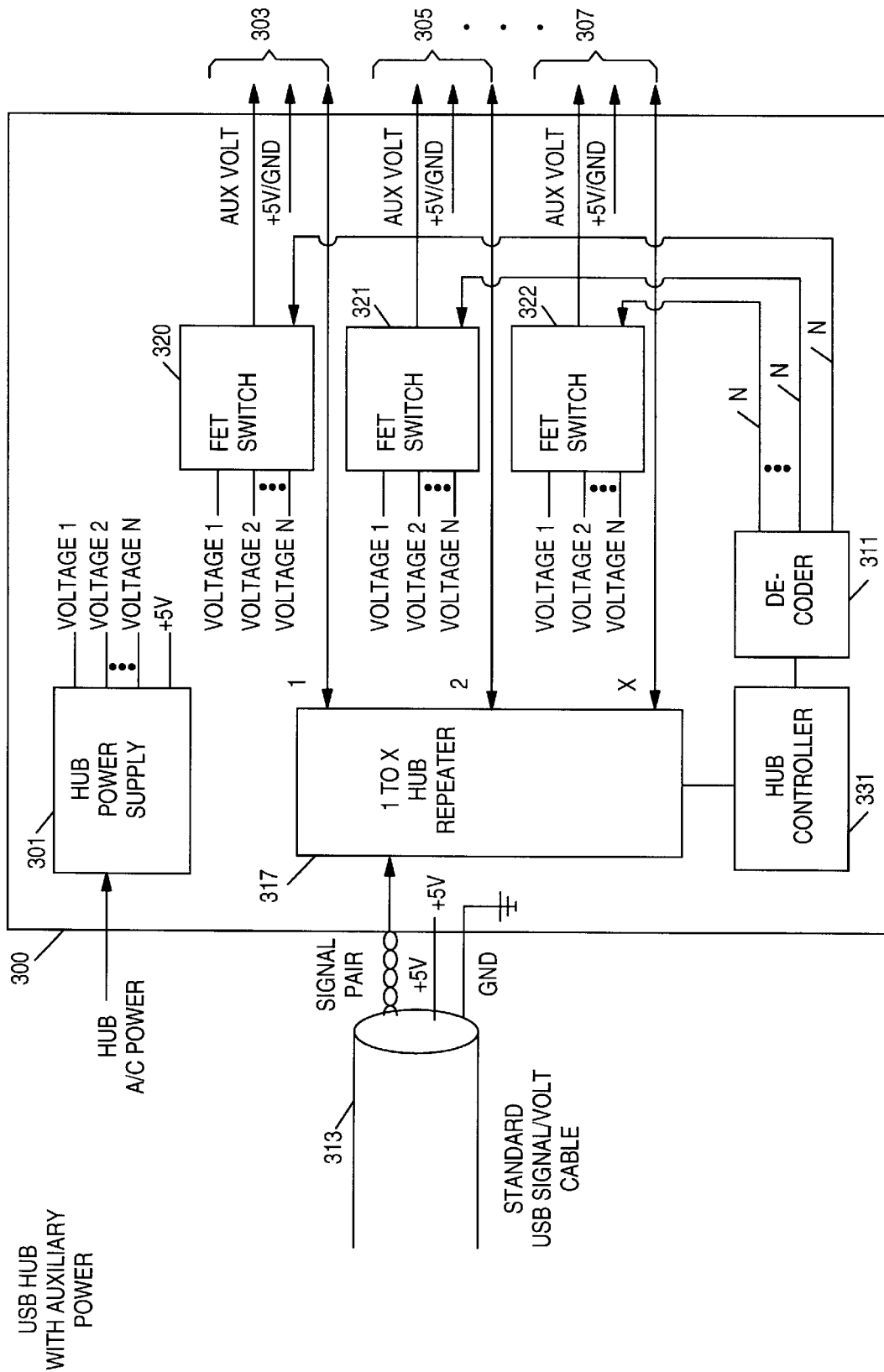


FIG. 3

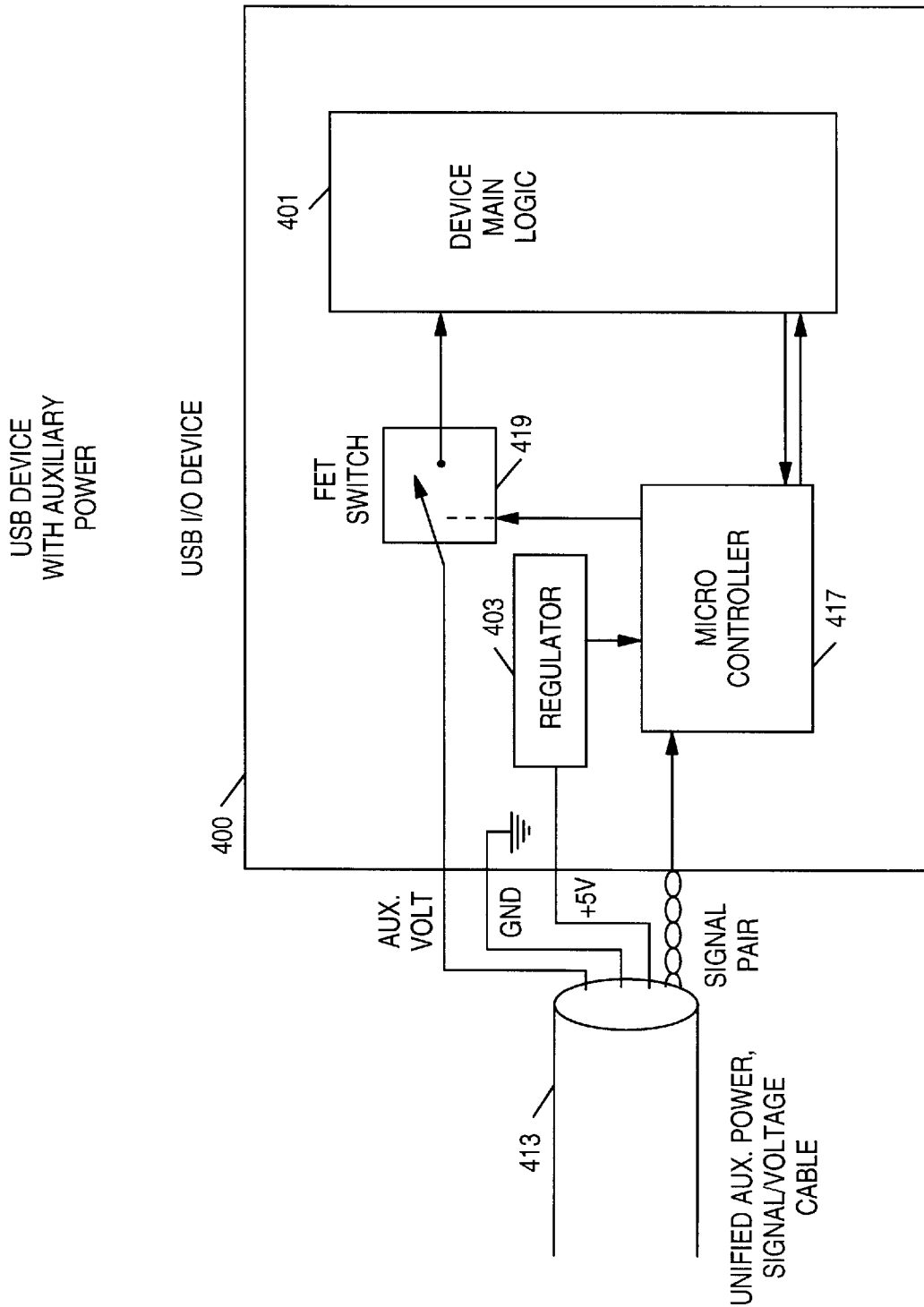


FIG. 4

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