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**Ewing et al.**

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(54) **VERTICAL-MOUNT ELECTRICAL POWER DISTRIBUTION PLUGSTRIP**

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**Related U.S. Application Data**

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**G06F 15/173** (2006.01)

(52) **U.S. Cl.** ..... **709/223**; 361/601; 361/622; 361/624; 361/626; 361/627; 361/641; 713/340; 439/652; 337/186; 307/11; 307/18; 307/31; 307/32; 307/36; 307/37; 307/43; 307/149; 307/150

(58) **Field of Classification Search** ..... 361/601, 361/622, 624, 626, 627, 641; 713/340; 439/652; 337/186; 307/11, 18, 31, 32, 36, 37, 43, 307/149, 150

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,051,326 A	9/1977	Badagnani et al.
4,101,878 A	7/1978	Shimizu et al.
4,206,444 A	6/1980	Ferlan
4,356,545 A	10/1982	West
4,442,319 A	4/1984	Treidl
4,495,568 A	1/1985	Gilbert et al.
4,611,289 A	9/1986	Coppola
4,647,721 A	3/1987	Busam et al.
4,701,946 A	10/1987	Oliva et al.
4,709,318 A	11/1987	Gephart et al.
4,780,714 A	10/1988	Moustakas et al.

(Continued)

FOREIGN PATENT DOCUMENTS

WO PCT/US91/08543 5/1993

(Continued)

OTHER PUBLICATIONS

American Power Conversion, "Call-UPS™", 1991, #996-0070, APC, West Kingston, RI 02892USA.

American Power Conversion, "Measure-UPS™", Mar. 1993, #996-0127, APC, West Kingston, RI 02892USA.

American Power Conversion, "Introducing the UPS to build your business on . . .", Oct. 1993, #996-0207-A, APC, West Kingston, RI 02892USA.

(Continued)

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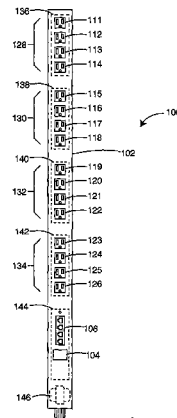
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(57) **ABSTRACT**

A vertical-mount electrical power distribution plugstrip comprises a long, thin plugstrip body with several power outlet plugs distributed along the length of one face. A power input cord is provided at one end, and this supplies operating power to each of the power outlet plugs through individual relay control.

**23 Claims, 8 Drawing Sheets**



U.S. PATENT DOCUMENTS

4,937,561	A	6/1990	Sasaki et al.	
5,198,806	A	3/1993	Lord	
5,319,571	A	6/1994	Langer et al.	
5,374,922	A	12/1994	Ebersohl	
5,410,713	A	4/1995	White et al.	
5,412,645	A	5/1995	Younkin et al.	
5,424,903	A *	6/1995	Schreiber	361/166
5,481,730	A	1/1996	Brown et al.	
5,485,576	A	1/1996	Fee et al.	
5,495,607	A	2/1996	Pisello et al.	
5,506,573	A	4/1996	Ewing et al.	
5,506,790	A *	4/1996	Nguyen	700/286
5,537,462	A *	7/1996	Utter et al.	379/102.04
5,557,557	A *	9/1996	Frantz et al.	703/22
5,561,769	A	10/1996	Kumar et al.	
5,585,678	A	12/1996	Dijk et al.	
5,596,628	A	1/1997	Klein	
5,619,722	A *	4/1997	Lovrenich	710/2
5,652,893	A	7/1997	Ben-Meir et al.	
5,717,934	A	2/1998	Pitt et al.	
5,721,934	A *	2/1998	Scheurich	713/320
5,761,084	A	6/1998	Edwards	
5,781,434	A	7/1998	Tobita et al.	
5,862,391	A	1/1999	Salas et al.	
5,938,771	A	8/1999	Williams et al.	
5,949,974	A	9/1999	Ewing et al.	
5,982,652	A	11/1999	Simonelli et al.	
6,029,092	A	2/2000	Stein	
6,408,395	B1	6/2002	Sugahara et al.	
6,476,729	B1 *	11/2002	Liu	340/870.11
6,496,103	B1	12/2002	Weiss et al.	
6,507,273	B1	1/2003	Chang et al.	
6,519,509	B1	2/2003	Nierlich et al.	
6,715,088	B1	3/2004	Togawa	

FOREIGN PATENT DOCUMENTS

WO WO 93/10615 5/1993

OTHER PUBLICATIONS

American Power Conversion, "Application Note #A2", Oct. 1993, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "Application Note #A6", Oct. 1993, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "Internetworking Power Protection", Jan. 1994, #996-0295, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "PowerNet™ SNMP Adapter", Jan. 1994, #996-0126, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "Solutions '94", Feb. 1994, #996-0131, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "APC NetShelter", 1995, #996-0643-A, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "PowerNet", Sep. 1995, #996-0325-b, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "APC Smart-UPS RM", 1996, #996-0618-B, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "APC Smart-UPS XL", 1996, #996-0630-B, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "Smart-UPS", 1996, #996-0386-E, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "PowerChute plus", 1996, #996-0041-C, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "Internetworking Power Protection", Jan. 1994, #996-0295, APC, West Kingston, RI 02892 USA.

American Power Conversion, "UPS Accessories", 1996, #996-0411-C, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "Application Notes", Oct. 1996, #996-0495-C, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "PowerNet®", 1998, #996-0325D, APC, West Kingston, RI 02892USA.  
 B. Ewing and J. Mallory, "Power-ON/OFF-Product Information", 1990, Server Technology, Inc., Reno, Nevada.  
 Raphael Needleman, "Power-ON/OFF Lets You Turn on Remote PCs by Phone", Feb. 1991, Info World Impressions, V. 13, Issue 5.  
 Server Technology, Inc., "Any-To-Any Matrix Communications Switch", 1996, Server Technology, Inc., Reno, Nevada.  
 Server Technology, Inc., "Sentry Ambassador", 1996, Server Technology, Inc., Reno, Nevada.  
 Server Technology, Inc., "LAN, WAN, Enterprise, Internet Access Equipment", 1996, Server Technology, Inc., Reno, Nevada.  
 Server Technology, Inc., "SENTRYRACK", 1996, Server Technology, Inc., Reno, Nevada.  
 Server Technology, Inc., "SENTRYINTERNATIONAL", 1996, Server Technology, Inc., Reno, Nevada.  
 Server Technology, Inc., "SENTRY Communications and User Interface", 1996, Server Technology, Inc., Reno, Nevada.  
 Server Technology, Inc., "SENTRY SHELF", 1996, Server Technology, Inc., Reno, Nevada.  
 Server Technology, Inc., "SENTRY Power Modules", 1996, Server Technology, Inc., Reno, Nevada.  
 Server Technology, Inc., "SENTRY ShutDown Remote Power Manager", 1997, Server Technology, Inc., Reno, Nevada.  
 Server Technology, Inc., "SENTRY Administrator R-450 Remote Power Manager", 1999, Server Technology, Inc., Reno, Nevada.  
 Server Technology, Inc., "How Do You ReBoot Remote Equipment?", 1999, Server Technology, Inc., Reno, Nevada.  
 Server Technology, Inc., "SENTRY R-2000 Remote Power Manager", 1999, Server Technology, Inc., Reno, Nevada.  
 Server Technology, Inc., "MasterSwitch™", 1996, Server Technology, Inc., Reno, Nevada.  
 Server Technology, Inc., "Sentry Power Tower", 2000, Server Technology, Inc., Reno, Nevada.  
 American Power Conversion, "MasterSwitch™ plus", Dec. 6, 2000, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "Built-in Serial UPS Support In Windows 2000 Developed by APC", Dec. 6, 2000, APC, West Kingston, RI 02892USA.  
 American Power Conversion, "Call-UPS™", 1991, #996-0070, APC, West Kingston, RI 02892 USA.  
 American Power Conversion, "Measure-UPS™", Mar. 1993, #996-0127, APC, West Kingston, RI 02892 USA.  
 American Power Conversion, "Introducing the UPS to build your business on . . .", Oct. 1993, #996-0207-A, APC, West Kingston, RI 02892 USA.  
 American Power Conversion, "Application Note #A2", Oct. 1993, APC, West Kingston, RI 02892 USA.  
 American Power Conversion, "Application Note #A6", Oct. 1993, APC, West Kingston, RI 02892 USA.  
 American Power Conversion, "Internetworking Power Protection", Jan. 1994, #996-0295, APC, West Kingston, RI 02892 USA.

- American Power Conversion, "Solutions '94", Feb. 1994, #996-0131, APC, West Kingston, RI 02892 USA.
- American Power Conversion, "APC NetShelter", 1995, #996-0643-A, APC, West Kingston, RI 02892 USA.
- American Power Conversion, "PowerNet", Sep. 1995, #996-0325-b, APC, West Kingston, RI 02892 USA.
- American Power Conversion, "APC Smart-UPS RM", 1996, #996-0618-B, APC, West Kingston, RI 02892 USA.
- American Power Conversion, "APC Smart-UPS XL", 1996, #996-0630-B, APC, West Kingston, RI 02892 USA.
- American Power Conversion, "Smart-UPS", 1996, #996-0386-E, APC, West Kingston, RI 02892 USA.
- American Power Conversion, "PowerChute plus", 1996, #996-0041-C, APC, West Kingston, RI 02892 USA.
- American Power Conversion, "Internetworking Power Protection", 1996, #996-0295-B, APC, West Kingston, RI 02892 USA.
- American Power Conversion, "UPS Accessories", 1996, #996-0411-C, APC, West Kingston, RI 02892 USA.
- American Power Conversion, "Application Notes", Oct. 1996, #996-0495-C, APC, West Kingston, RI 02892 USA.
- American Power Conversion, "PowerNet", 1998, #996-0325D, APC, West Kingston, RI 02892 USA.
- B. Ewing and J. Mallory, "Power-ON/OFF-Product Information", 1990, Server Technology, Inc., Reno, Nevada.
- Raphael Needleman, "Power-ON/OFF Lets You Turn on Remote PCs by Phone", Feb. 1991, Info World Impressions, V. 13, Issue 5.
- Server Technology, Inc., "Any-To-Any Matrix Communications Switch", 1996, Server Technology, Inc. Reno, Nevada.
- Server Technology, Inc., "Sentry Ambassador", 1996, Server Technology, Inc. Reno, Nevada.
- Server Technology, Inc., "LAN WAN, Enterprise, Internet Access Equipment", 1996, Server Technology, Inc., Reno, Nevada.
- Server Technology, Inc., "SENTRYRACK", 1996, Server Technology, Inc., Reno, Nevada.
- Server Technology, Inc., "SENTRYINTERNATIONAL", 1996, Server Technology, Inc., Reno, Nevada.
- Server Technology, Inc. "SENTRY Communications and User Interface", 1996, Server Technology, Inc., Reno, Nevada.
- Server Technology, Inc., "SENTRYSHELF", 1996, Server Technology, Inc., Reno, Nevada.
- Server Technology, Inc., "SENTRY Power Modules", 1996, Server Technology, Inc., Reno, Nevada.
- Server Technology, Inc., "SENTRY ShutDown Remote Power Manager", 1997, Server Technology, Inc., Reno, Nevada.
- Server Technology, Inc., "SENTRY Administrator R-450 Remote Power Manager", 1999, Server Technology, Inc., Reno, Nevada.
- Server Technology, Inc., "How Do You ReBoot Remote Equipment?", 1999, Server Technology, Inc., Reno, Nevada.
- Server Technology, Inc., "SENTRY R-2000 Remote Power Manager", 1999, Server Technology, Inc., Reno, Nevada.
- Server Technology, Inc., "MasterSwitch", 1996, Server Technology, Inc., Reno, Nevada.
- W. Richard Stevens. "TCP/IP Illustrated, vol. 1—The Protocols", pp. 359-361, 1994.
- Michael Slater. "Microprocessor-Based Design—A Comprehensive Guide to Hardware Design", pp. 19-24, 1989.
- Novak, T. "Remote Management of Individual Power Supplies", netman.cit.buffalo.edu/CDN-M, p. 1, May 10, 1995.
- Uninterruptable Power Source FAQ, v. 1.0, pp. 1-10, Feb. 10, 1994.
- Davison, M., et al. UPS Management Information Base, Internet Draft, IETF, pp. 1-28, May 13, 1992.
- Sentry Ambassador Remote Power Manager © 1996.
- Sentry R-2000 Remote Power Manager © 2001.
- Sentry 110/230 VAC Product Family © 2000.
- Sentry Power Manager—48 VDC Product Family © 2000.
- Distributed Power Module Product List, Sep. 23, 2002.
- Sentry Power Modules © 1999.
- Sentry Power Tower Products © 2001/2002.
- Sentry Expanded Function Power Tower (PTEF) © 2001/2002.
- Sentry Serial Power Tower (PTSS) © 2001/2002.
- Sentry Power Tower Power Distribution © 2001/2002.
- Sentry Commander R-400 Remote Power Mgr. © 2001/2002.
- Sentry Commander R-400 Remote Pwr. Mgr. Datasheet © 1999.
- Sentry Administrator R-450 © 2001/2002.
- Sentry Administrator R-450 Remote Pwr. Mgr. © 1998.
- Remote Power On/Off, Installation and Operations Manual, © 1991.
- Sentry Remote Power Manager brochure © 1991.
- Power-On product wrapper © 1991.
- Remote Power On/Off product wrapper © 1991.
- Intelligent Power Module © 1991.
- Local and Remote Power On/Off Alternatives © 1991.
- New Box Specification, dated Mar. 6, 1991.
- RPM-15 Power Module Specification, Mar. 18, 1991.
- Sentry Remote Power Manager, Operational Instructions, Sep. 24, 1992.
- "Keeping Up With . . .", Internet Telephony, Mar. 2000, pp. 84-87.
- "Rebooting Across the Net", PC Magazine, May 5, 1998.
- "Server Technology Sentry R-2000", PC Magazine, May 5, 1998.
- "APC MasterSwitch", PC Magazine, May 5, 1998.
- Server Technology, Inc., "VersaTimer Operations Manual, Thank you for purchasing the VersaTimer," 3 pages, marked © 1995.
- Server Technology, Inc., "VersaTimer, A 7-Day, Programmable Power Scheduler," 2 pages, marked © 1994.
- Western Telematic, Inc., "RMM Rack Mount Data/Fax Modem, WIT Part No. 12548 Rev. F, User's Guide," 15 pages, marked © 1998 and Sep. 1998.
- MIRAPATH, A Cyclades Premier Partner, "AlterPath PM User Guide." 49 pages, marked © 2003 and Jun. 2003.
- Western Telematic, Inc., "NPS Series Network Power Switch Models NPS-115 and NPS-230, WTI Part No. 12927 Rev. C, User's Guide," 19 pages, marked © 1999 and Jul. 1999.
- Geist Manufacturing, Inc., Your Power Connection, Geist Manufacturing's Base "TP161-180-1039TL," 3 pages, Sep. 27, 2003.
- Geist Manufacturing, Inc., Your Power Connection, Geist Manufacturing's Base "BRD120-1036TL," 2 pages, Sep. 27, 2003.
- REDCLOUD "Power Strips / Outlet Strips," 6 pages, Sep. 27, 2003.

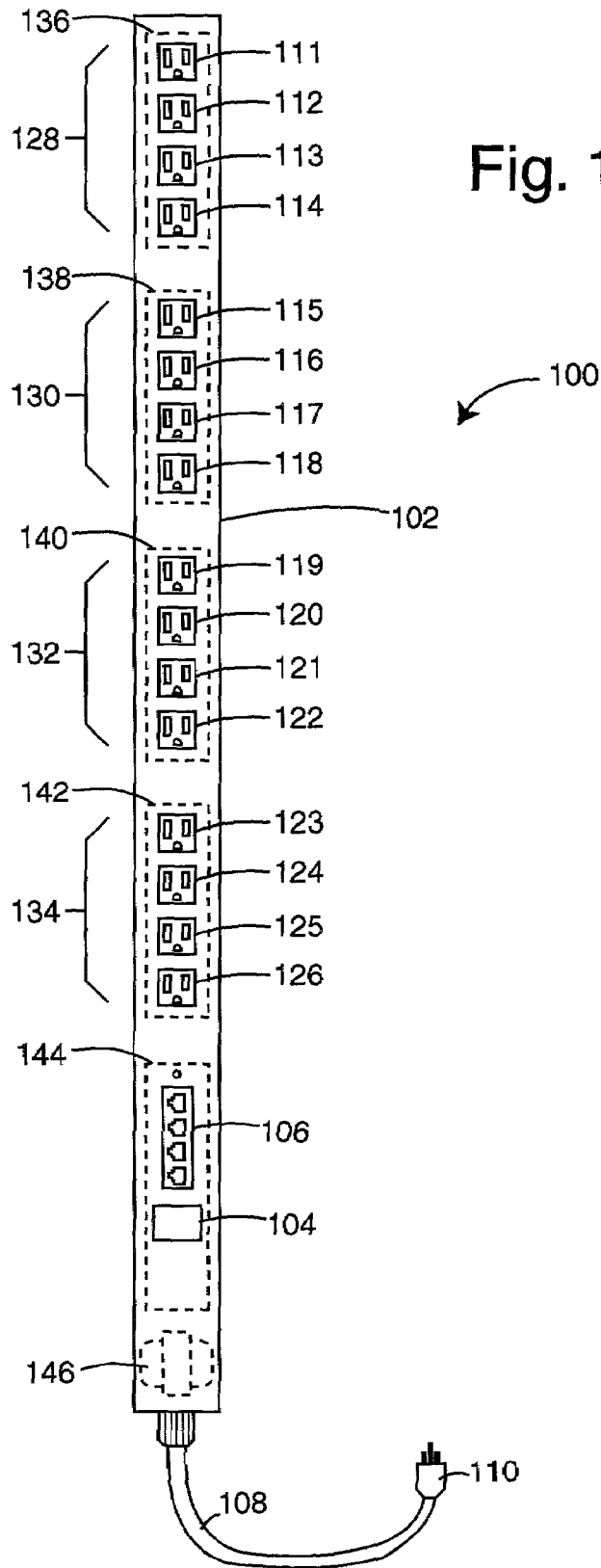
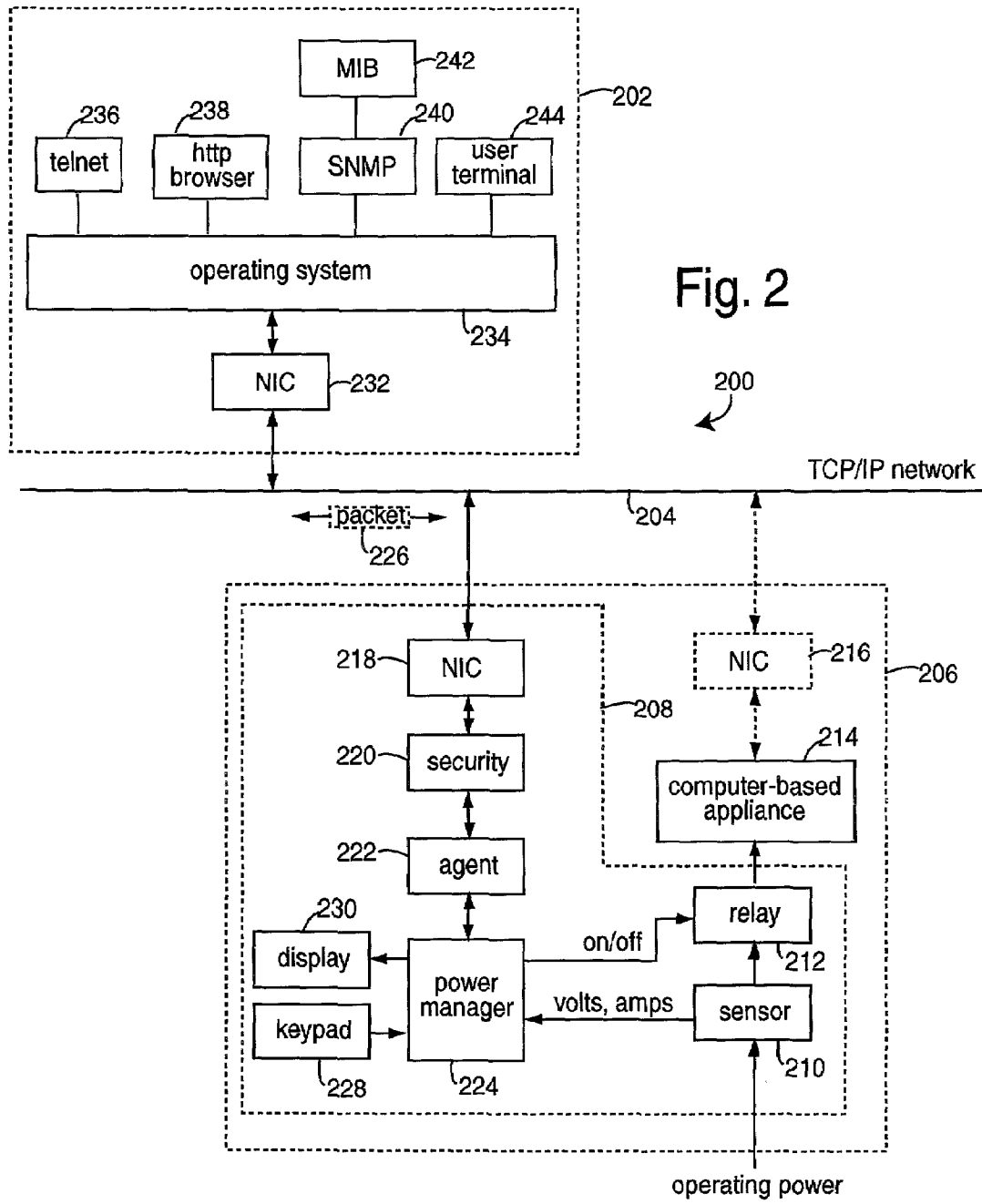


Fig. 1



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