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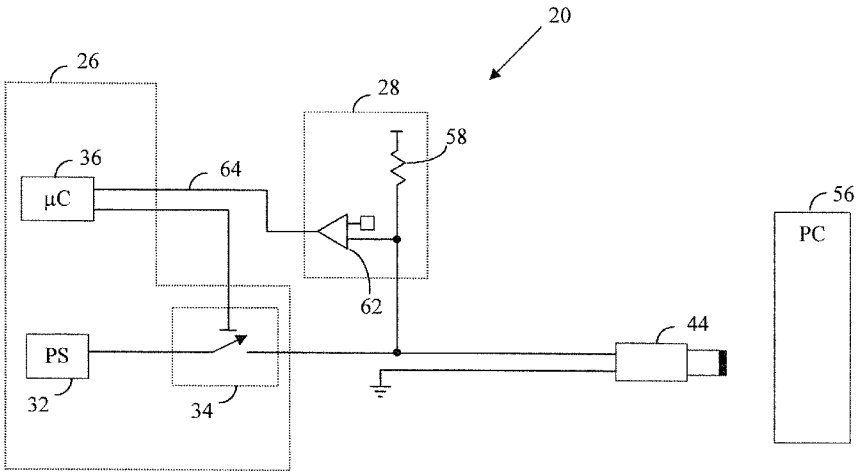
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[Continued on next page]

(54) Title: DEVICE FOR CONVERTING AC POWER TO MULTIPLE DC OUTPUTS WITH RETRACTABLE CORDS AND MULTIPLE ADAPTER TIPS



(57) Abstract: An electrical adapter is disclosed that includes a power supply circuit, a sensing circuit and one or more universal DC output connectors. The electrical adapter is configured to convert AC input power at a nominal 120 volts AC to one or more DC output voltages which has ability to provide different nominal DC voltages to each universal DC output connector depending on the portable DC device connected thereto. The electrical adapter includes a device sensing circuit that automatically senses when a portable DC device is connected to or disconnected from any of the universal DC output connectors.

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A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.: ***H02M 7/00*** (2006.01) ***H02J 1/10*** (2006.01)

US Cl.: 363/13, 307/18

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
DWPI (& IPC H01R) with key words: adjustable, power supply, universal, switch, microcontrol, function, sense, rate, feedback, and similar terms.
ESPACENET, IEEE, Google, and Google Scholar with key words as above.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6459175 B1 (POTEGA) 01 October 2002 See the whole document, in particular the abstract, figures 1-6, 10, column 11 lines 54-67, column 14 lines 1-23, column 15 lines 35-58, column 16 lines 9-25, column 22 lines 58-65, column 38 line 37 to column 39 line 15, column 44 lines 32-46, column 48 lines 1-9, column 49 lines 8-11, column 50 lines 53-65, column 54 lines 7-13, and column 59 lines 40-60.	1-5
A	US 5625275 A (TANIKAWA et al.) 29 April 1997 See the whole document.	
A	US 5986437 A (LEE) 16 November 1999 See the whole document.	

[X] Further documents are listed in the continuation of Box C [X] See patent family annex

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
30 August 2007	17 MAR 2008
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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International application No.
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006/0046576 A1 (GANNON) 02 March 2006 See the whole document.	

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. These particulars are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member					
US	6459175	AU	16994/99	AU	23977/00	AU	57823/99
		AU	83746/98	CA	2317560	CA	2355909
		CA	2383202	EP	1023580	EP	1032964
		EP	1105948	EP	1147591	US	6152597
		US	6634896	US	6866527	US	6945803
		US	6981895	US	7002265	US	7039821
		US	7058484	US	7059769	US	7127623
		US	2003085621	US	2003186592	US	2003207603
		US	2004009702	US	2006005055	WO	0011763
		WO	0039907	WO	9900004	WO	9926330
US	5625275	AU	55753/96	CA	2221000	WO	9637941
US	5986437	NONE					
US	2006046576	US	6994592				

END OF ANNEX