

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
15 January 2009 (15.01.2009)

PCT

(10) International Publication Number  
WO 2009/009176 A3

- (51) International Patent Classification:  
H02J 5/00 (2006.01)
- (21) International Application Number:  
PCT/US2008/059191
- (22) International Filing Date: 2 April 2008 (02.04.2008)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/909,873 3 April 2007 (03.04.2007) US  
60/951,669 24 July 2007 (24.07.2007) US
- (71) Applicant (for all designated States except US): **LOCKHEED MARTIN CORPORATION** [US/US]; M/S PT-09, 1701 West Marshall Drive, Grand Prairie, TX 75051 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **THOMAS, Toby, D.** [US/US]; 4140 Hilltop Drive, Southlake, TX 76092 (US). **COPP, James, C.** [US/US]; 4106 Chipwood Court, Arlington, TX 76017 (US). **HOELSCHER, David, L.** [US/US]; 1500 Sanibel Lane, Arlington, TX 76018 (US). **FERRIS, Lloyd, K.** [US/US]; P.O. Box 541571, Grand Prairie, TX 75054 (US).

- (74) Agents: **DAVIS, Daren, C.** et al.; Law Office Of James E. Walton, P.L.L.C., 1169 N. Burleson Blvd., Suite 107-328, Burleson, TX 76028 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:  
— of inventorship (Rule 4.17(iv))

[Continued on next page]

(54) Title: TRANSPORTABLE ELECTRICAL ENERGY STORAGE SYSTEM

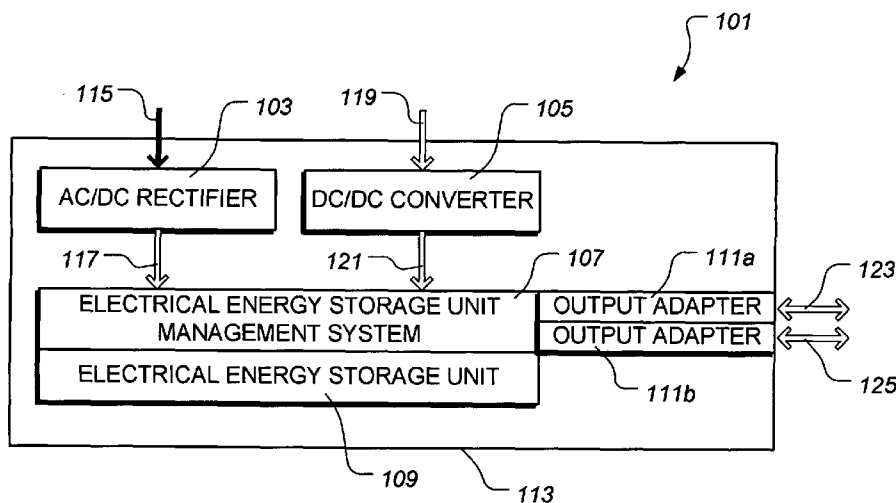


FIG. 1

(57) Abstract: A transportable electrical energy storage system includes an electrical energy storage unit, an electrical energy storage unit management system operably associated with the electrical energy storage unit, an AC/DC rectifier operably associated with the electrical energy storage unit management system, and a DC/DC converter operably associated with the electrical energy storage unit management system. The system further includes at least one bi-directional adapter operatively associated with the electrical energy storage unit and a case for protecting the electrical energy storage unit, the electrical energy storage unit management system, the AC/DC rectifier, the DC/DC converter, and the at least one bi-directional adapter.

WO 2009/009176 A3



---

**Published:**

— *with international search report*


**(88) Date of publication of the international search report:**

19 March 2009

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/59191

<p>A. CLASSIFICATION OF SUBJECT MATTER                  IPC(8) - H02J 7/00 (2008.04)                  USPC - 320/103                  According to International Patent Classification (IPC) or to both national classification and IPC</p>		
<p>B. FIELDS SEARCHED</p>		
<p>Minimum documentation searched (classification system followed by classification symbols)                  IPC(8): H02J 7/00 (2008.04)                  USPC: 320/103</p>		
<p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched                  USPC: 320/104,105,107,137,138,140; 323/318; 361/1,139,23,24</p>		
<p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)                  USPTO WEST (USPT, PGPUB, EPAB, JPAB); INSPEC; Google Scholar: rechargeable battery, secondary battery, storage battery, ac/dc, dc/dc, bi-directional, two-way, UPS, transportable, portable</p>		
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,793,185 A (Prelec et al.) 11 August 1998 (11.08.1998), Abstract; col 2, ln 58-67; col 3, ln 1-12, ln 30-44; col 4, ln 33-40; Fig 1, 4	1, 6, 7, 11-18 ----- 2-5, 8-10, 25-28
X --- Y	US 2003/0054240 A1 (Aronsson) 20 March 2003 (20.03.2003), para [0042], [0049], [0054], [0065], [0070], [0071]; Fig 3A, 3B, 3C, 5B, 9	19-24 ----- 2-5, 25-28
Y	US 2002/0121877 A1 (Smith et al.) 05 September 2002 (05.09.2002), para [0057], [0059]; Fig 11	8
Y	US 2005/0233180 A1 (Desorbo) 20 October 2005 (20.10.2005), para [0045], [0050]; Fig 1, 2A, 2B	9, 10
<p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/></p>		
<p>* Special categories of cited documents:</p>		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"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
"O"	document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed	
<p>Date of the actual completion of the international search                  25 November 2008 (25.11.2008)</p>		<p>Date of mailing of the international search report  </p>
<p>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</p>		<p>Authorized officer:                  Lee W. Young                  PCT Helpdesk: 571-272-4300                  PCT OSP: 571-272-7774</p>