

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 September 2007 (27.09.2007)

PCT

(10) International Publication Number
WO 2007/109380 A3

(51) International Patent Classification:
B64G 1/22 (2006.01) **B64G 1/52** (2006.01)

(21) International Application Number:
PCT/US2007/060501

(22) International Filing Date: 12 January 2007 (12.01.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/385,586 21 March 2006 (21.03.2006) US

(71) Applicant (for all designated States except US): **LOCKHEED MARTIN CORPORATION** [US/US]; 6801 Rockledge Drive, Bethesda, Maryland 20817 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MCKINNON, Douglas V.** [US/US]; 111 Harvard Circle, Montgomery Township, New Jersey 08540 (US). **BROWN, David M.** [US/US]; 1171 Shannon Road, Upper Makefield, Pennsylvania 18940 (US). **HENTOSH, David J.** [US/US]; 859 Manor Gate, Yardley, Pennsylvania 19067 (US).

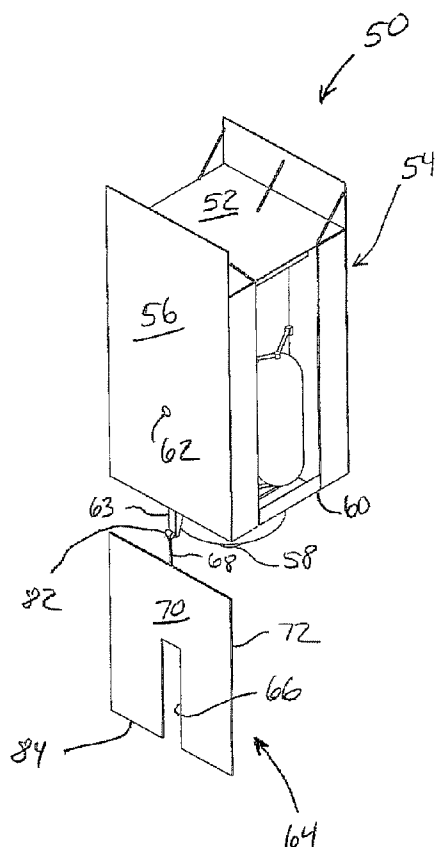
(74) Agent: **MARSH FISCHMANN & BREYFOGLE LLP**; JOHNSON, James L., 3151 South Vaughn Way, Suite 411, Aurora, Colorado 80014 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, 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, LV, LY, MA, MD, 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, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT,

[Continued on next page]

(54) Title: SATELLITE WITH DEPLOYABLE, ARTICULATABLE THERMAL RADIATORS



(57) Abstract: A satellite (50) is disclosed having at least one deployable thermal radiator (64). Once deployed, this thermal radiator (64) may be repositioned. In one embodiment, the deployed thermal radiator (64) may be moved about a first axis (74), about a second axis (76), or both to move the deployed thermal radiator (64) from one deployed position to another deployed position.



RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments*

Published:

— *with international search report*

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

2 October 2008

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/60501

A. CLASSIFICATION OF SUBJECT MATTER IPC: B64G 1/22(2006.01),1/52(2006.01) USPC: 244/171.8,172.6 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) U.S. : 244/171.7,171.8,172.6 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)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 003 817 (Basuthakur et al.) 21 December 1999 (21.12.99) Entire document	1-20
A	US 7 036 772 (Walker et al.) 2 May 2006 (02.05.06) Entire document	1-20

P		
A	US 6 394 395 (Poturalski et al.) 28 May 2002 (28.05.02) Entire document	1-20
A	US 6 669 147 (Bertheux et al.) 30 December 2003 (30.12.03) Entire document	1-20
☐ Further documents are listed in the continuation of Box C. ☐ 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	"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 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	
Date of the actual completion of the international search 20 May 2008 (20.05.2008)		Date of mailing of the international search report 25 JUN 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 Joseph W. Sanderson  Telephone No. (571)272-3600