



- (51) International Patent Classification:  
A47C 27/15 (2006.01) A47C 31/10 (2006.01)
- (21) International Application Number:  
PCT/US2012/041306
- (22) International Filing Date:  
7 June 2012 (07.06.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
61/494,089 7 June 2011 (07.06.2011) US
- (71) Applicant (for all designated States except US): **SKYDEX TECHNOLOGIES, INC.** [US/US]; 12508 E. Briarwood Avenue, Suite 1-F, Centennial, Colorado 80112 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **WYMAN, Ethan Thomas** [US/US]; 12029 W. Center Drive, Lakewood, Colorado 80228 (US). **FEIGHERY, Daniel Antonio** [US/US]; 3318 Franklin Street, Denver, Colorado 80205 (US). **SUGANO, Eric** [US/US]; 6300 E. Hampden Avenue, Apt. 3336, Denver, Colorado 80222 (US). **FOLEY, Peter** [US/US]; 7046 Forest Ridge Circle, Castle Rock, Colorado 80108 (US). **MANNEY, Thomas** [US/US]; 39453 East Arizona Avenue, Bennett, Colorado 80102 (US). **METZER, Collin** [US/US]; 9001 Bermuda Run Circle, Highlands Ranch, Colorado 80130 (US).

**BUCHEN, Gerald** [US/US]; 7435 White Ash Place, Parker, Colorado 80134 (US). **DANIS, John Marcell** [US/US]; Skydex Technologies, Inc., 12508 E. Briarwood Avenue, Suite 1-F, Centennial, Colorado 80112 (US).

(74) Agent: **DRENNAN, Eric Ray**; HolzerIPLaw, PC, 216 16th Street, Denver, Colorado 80264 (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, CL, 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, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: WASHABLE LAYERED CUSHION

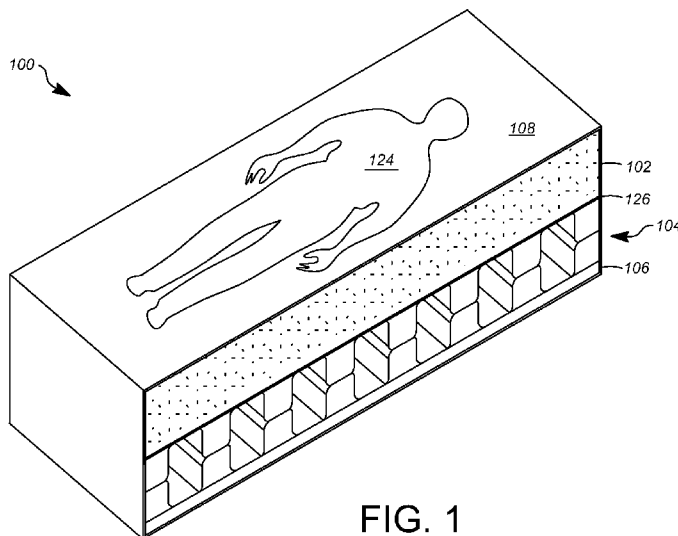


FIG. 1

(57) Abstract: A layered cushion (300) that may be fully disassembled for easy cleaning is disclosed herein. The sleep system is durable and fire retardant. The layered cushion (300) may include a foam layer (302), a layer of void cells (304), and a cover (308). The foam (302) permits fluids to move freely there through and contours to a users body to maximize comfort and reduce interface pressure. The reticulated foam layer (302) resists compression set and thermosetting. The layer of void cells (304) also permits fluids to move freely there through and provide additional support to the users body. The individual void cells of the void cell layer (304) are perforated to allow the transmission of fluids there through. The cover (308) couples the other layers together to form the layered cushion (300) and prevents the layers from deteriorating. The cover (308) is removable to permit cleaning each of the layers independently.





**Published:**

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

28 February 2013

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

**A. CLASSIFICATION OF SUBJECT MATTER***A47C 27/15(2006.01)i, A47C 31/10(2006.01)i*

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)

A47C 27/15; A47C 31/00; B32B 3/30; A47C 27/22; A47C 7/02; A47C 27/08; B23B 3/12; A61L 9/22

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) &amp; Keywords:cushion, foam layer, void cell layer, separation layer, cover, washable mattress

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	US 2003-0205920 A1 (SPOUSE, ANTHONY ERIC et al.) 06 November 2003 See columns 5-6; figures 3 and 5.	1,3,8,10 7,9,11,13,17-20 2,4-6,12,14-16,21
Y A	US 05030501 A (COLVIN, DAVID P. et al.) 09 July 1991 See column 5; figure 7.	7,9,11,13,17-20 1-6,8,10,12,14-16 ,21
A	US 05617595 A (LANDI, CURTIS L. et al.) 08 April 1997 See column 14; figure 17.	1-21
A	JP 2008-284169 A (M M AIM CO.,LTD) 27 November 2008 See abstract; figure 4.	1-21
A	US 6269504 B1 (ROMANO, JAMES J. et al.) 07 August 2001 See columns 3-4; figures 2 and 4.	1-21

 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

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

"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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

24 DECEMBER 2012 (24.12.2012)

Date of mailing of the international search report

**27 DECEMBER 2012 (27.12.2012)**

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan  
City, 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Park Sun Ha

Telephone No. 82-42-481-3381



**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2012/041306**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003-0205920 A1	06.11.2003	AU 2003-225211 A1	11.11.2003
		AU 2003-225211 A8	11.11.2003
		CA 2484821 A1	20.11.2003
		CA 2484821 C	13.11.2007
		CA 2592512 A1	20.11.2003
		CA 2592512 C	20.07.2010
		EP 1551257 A2	13.07.2005
		EP 1551257 A4	14.06.2006
		US 6901617 B2	07.06.2005
		WO 0309-4666 A2	20.11.2003
		WO 0309-4666 A3	19.05.2005
US 05030501 A	09.07.1991	CA 2112688 C	19.09.2006
		EP 0595887 A1	14.05.1997
		EP 0595887 A4	24.04.1996
		EP 0595887 B1	02.12.1998
		US 05518802 A	21.05.1996
		WO 90-14942 A1	13.12.1990
		WO 93-00845 A1	21.01.1993
US 05617595 A	08.04.1997	CA 2166106 A1	05.01.1995
		CA 2166106 C	19.09.2000
		EP 0678071 A1	09.09.1998
		EP 0678071 B1	12.05.1999
		EP 0706337 A1	01.04.1998
		JP 02-657584 B2	06.06.1997
		JP 08-503430 A	16.04.1996
		US 05039567 A	13.08.1991
		US 05180619 A	19.01.1993
		US 05289878 A	01.03.1994
		US 05444881 A	29.08.1995
		US 05701621 A	30.12.1997
		US 05756182 A	26.05.1998
		US 05840400 A	24.11.1998
WO 94-15778 A1	21.07.1994		
WO 95-00052 A1	05.01.1995		
JP 2008-284169 A	27.11.2008	None	
US 6269504 B1	07.08.2001	AU 1999-39725 A1	23.11.1999
		AU 3972599 A	23.11.1999
		BR 9910257 A	02.10.2001
		CA 2332001 A1	11.11.1999
		DE 69918824 D1	26.08.2004
		DE 69918824 T2	25.11.2004
		EP 1076499 A1	21.02.2001
		EP 1076499 B1	21.07.2004
		EP 1457139 A1	15.09.2004
		EP 1610746 A1	04.01.2006

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2012/041306**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		JP 2002-512873 A	08.05.2002
		JP 2002-512873 T	08.05.2002
		US 2001-0054200 A1	27.12.2001
		US 2004-0168255 A1	02.09.2004
		US 2004-0237203 A1	02.12.2004
		US 2007-0163052 A1	19.07.2007
		US 2009-0133194 A1	28.05.2009
		US 2010-0095461 A1	22.04.2010
		US 2011-289685 A1	01.12.2011
		US 6701556 B2	09.03.2004
		US 7191480 B2	20.03.2007
		US 7191482 B2	20.03.2007
		US 7480953 B2	27.01.2009
		US 7617555 B2	17.11.2009
		US 7966680 B2	28.06.2011
		WO 2004-082551 A1	30.09.2004
		WO 99-56591 A1	11.11.1999