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(71) Applicant (for all designated States except US): **KIMBERLY-CLARK WORLDWIDE, INC.** [US/US]; 401 N. Lake Street, Neenah, Wisconsin 54956 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **SLEVA, Michael** [US/US]; 850 Piedmont Avenue, N.E., #1605, Atlanta, Georgia 30308 (US).

(74) Agents: **ARNOLD, James, Jr.** et al.; Kimberly-Clark Worldwide, Inc., 401 N. Lake Street, Neenah, Wisconsin 54956 (US).

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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, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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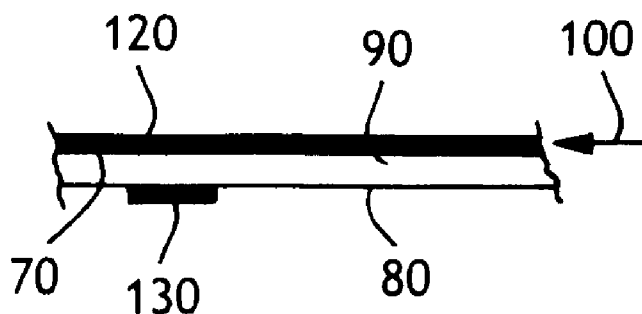


FIG. 1B

(57) Abstract: A medical device for insertion into a human body is provided. The medical device includes an inflation cuff composed of piezoelectric polymers. Upon inflation of the inflation cuff, the piezoelectric polymers of the inflation cuff exhibit an electrical potential. This electrical potential is measured and correlated to an inflation cuff pressure. The pressure of the inflation cuff is then adjusted, as necessary to prevent sustained underinflation or overinflation of the inflation cuff.



A. CLASSIFICATION OF SUBJECT MATTER*A61M 25/10(2006.01)i, A61M 37/00(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)

IPC A61M 16/00, A61B 5/103, A61B 5/02, A62B 9/06

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)

eKOMPASS (KIPO internal), USPTO, Delphion

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5785051 (Randolph B. Lipscher et. al.) 28 July 1998	1 - 14
Y	See abstract; figures 1-4; columns 5-9; and claims 1-27	15
Y	US 6315739 B1 (Pekka Merilainen et. al.) 13 November 2001 See abstract; figures 1-3; columns 2-5; and claims 1-30	15
A	US 4967759 (Leonides Y. Teves) 06 November 1990 See abstract; figures 1-7; columns 3-7; and claims 1-16	1 - 15
A	US 5379765 (Nagao Kajiware et. al.) 10 January 1995 See abstract; figures 1-7; columns 3-8; and claims 1-12	1 - 15
A	US 2006/81255 A1 (Michael Miller et. al.) 20 April 2006 See abstract; figures 1-13; pages 2-6; and claims 1-36	1 - 15



Further documents are listed in the continuation of Box C.



See patent family annex.

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Authorized officer

JUNG, Jin Wook

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5785051	28.07.1998	None	
US 06315739 B1	13.11.2001	AT 283086 T AU 7034600 A AU 2000-70346 A1 DE 60016166 D1 DE 60016166 T2 EP 1133328 B1 EP 1133328 A1 WO 2001-023025 A1	15.12.2004 30.04.2001 22.09.2000 30.12.2004 10.11.2005 24.11.2004 19.09.2001 05.04.2001
US 04967759 A	06.11.1990	US 05080107 A	14.01.1992
US 05379765 A	10.01.1995	None	
US 2006-081255 A1	20.04.2006	CA 2561641 A1 EP 1768730 A1 JP 2007-532152 T WO 2005-097246 A1	20.10.2005 04.04.2007 15.11.2007 20.10.2005