(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 12 June 2003 (12.06.2003)

PCT

(10) International Publication Number WO 03/047450 A3

- (51) International Patent Classification⁷: A61B 19/00, 17/068, 17/115, 10/00
- (21) International Application Number: PCT/US02/38733
- (22) International Filing Date: 4 December 2002 (04.12.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/337,544 4 December 2001 (04.12.2001) US
- (71) Applicant: POWER MEDICAL INTERVENTIONS INC. [US/US]; 110 Union Square Drive, New Hope, PA 18938 (US).
- (72) Inventor: WHITMAN, Michael, P.; 16 Pheasant Run, New Hope, PA 18938 (US).
- (74) Agents: BIRDE, Patrick, J. et al.; Kenyon & Kenyon, One Broadway, New York, NY 100004 (US).

- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

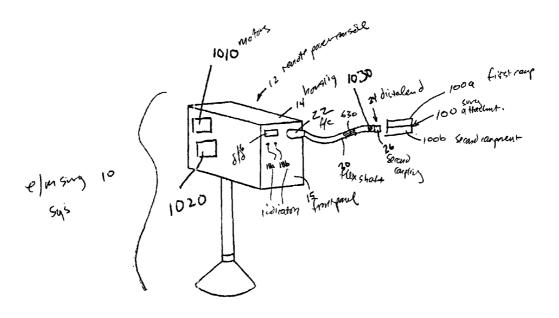
Published:

with international search report

(88) Date of publication of the international search report: 13 November 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SYSTEM AND METHOD FOR CALIBRATING A SURGICAL INSTRUMENT



(57) Abstract: A calibration system (10) for a surgical instrument. The calibration system includes an actuator, such as a motor system and a flexible shaft (20). The calibration system also includes a surgical instrument (100) actuatable by the actuator. The calibration system also include calibration data corresponding to the surgical instrument. A processor (1020) is configured to process the calibration data for determining a position of the surgical instrument. The calibration system may include a sensor (1030) configured to provide a signal corresponding to a movement of the actuator, the processor being further configured to process the signal for determining a position of the surgical instrument.



O 03/047450 A3

INTERNATIONAL SEARCH REPORT

Interconal Application No PCT/US 02/38733

IPC 7	A61B19/00 A61B17/068 A61B17	/115 A61B10/00					
According to	to International Patent Classification (IPC) or to both national class	sification and IPC					
	S SEARCHED	modifier and in C	<u> </u>				
Minimum do	ocumentation searched (classification system followed by classific $A61B$	cation symbols)					
Documenta	ation searched other than minimum documentation to the extent the	at such documents are included in the fields se	earched				
Electronic d	data base consulted during the international search (name of data	base and, where practical, search terms used	l)				
EPO-In	nternal, WPI Data						
	ENTS CONSIDERED TO BE RELEVANT		r				
Category °	Citation of document, with indication, where appropriate, of the	relevant passages	Relevant to claim No.				
Х	US 2001/031975 A1 (WHITMAN ET A 18 October 2001 (2001-10-18)	L)	1-12, 17-20, 24-29, 33,34,36				
	paragraphs '0020!,'0021! paragraphs '0060!-'0063! paragraphs '0065!,'0073!						
Х	US 6 022 325 A (ASSA MENACHEM 8 February 2000 (2000-02-08) column 16, line 45 -column 17, figure 1	1,17,18					
A	US 6 037 724 A (BUSS RICK A ET 14 March 2000 (2000-03-14) abstract	AL)	1				
Furti	ther documents are listed in the continuation of box C.	χ Patent family members are listed	ìn 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 document 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 another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means 		 "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 ort. 					
P docume later ti	ent published prior to the international filing date but han the priority date claimed	in the art. "&" document member of the same patent	*&* document member of the same patent family				
	actual completion of the international search	Date of mailing of the international sea	arch report				
3	3 June 2003	01/07/2003					
Name and r	mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Held, G					

INTERNATIONAL SEARCH REPORT

Intermonal Application No
PCT/US 02/38733

Patent document cited in search report	Publica date		Patent fan member(1	Publication date
US 2001031975	A1 18-1	0-2001 U	6315	184 E	31	13-11-2001
20 2002002270	,,,,	U				03-09-2002
		Ŭ:				24-07-2001
		Ü				11-02-2003
		W				03-01-2003
		U:				25-04-2002
		Al				11-06-2002
		W				06-06-2002
		U:				17-04-2003
						20-03-2003
		U:				
		A				18-12-2000
		Ei				24-04-2002
		W				07-12-2000
		Ü				04-07-2002
		A				18-12-2000
		E				03-04-2002
		J			-	07-01-2003
		W				07-12-2000
		Α				30-01-2001
		C				18-01-2001
		C				27-11-2002
		E				15-05-2002
		J		104 7	Γ	04-02-2003
		W				18-01-2001
		U.				29-11-2001
		A				03-09-2001
		E				20-11-2002
		W.	0162	163 <i>H</i>	41	30-08-2001
		A	J 3855	601 <i>F</i>	P	03-09-2001
		Ε				27-11-2002
		W-	0162	164 <i>l</i>	42	30-08-2001
US 6022325	A 08-0	2–2000 U				08-09-1998
		U		169 <i>F</i>	P	16-05-1995
		U	5 5240	011 /	P	31-08-1993
		U		142 <i>F</i>	P	07-01-1992
		U	S 5735	264 <i>l</i>	4	07-04-1998
		D	69231	338 [01	14-09-2000
		D	69231	338 7	Γ2	29-03-2001
		Ε		024 <i>F</i>	41	23-11-1994
•		W	9310	710 /	41	10-06-1993
US 6037724	A 14-0	3-2000 U	6000	940 /	<u> </u>	14-12-1999