

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



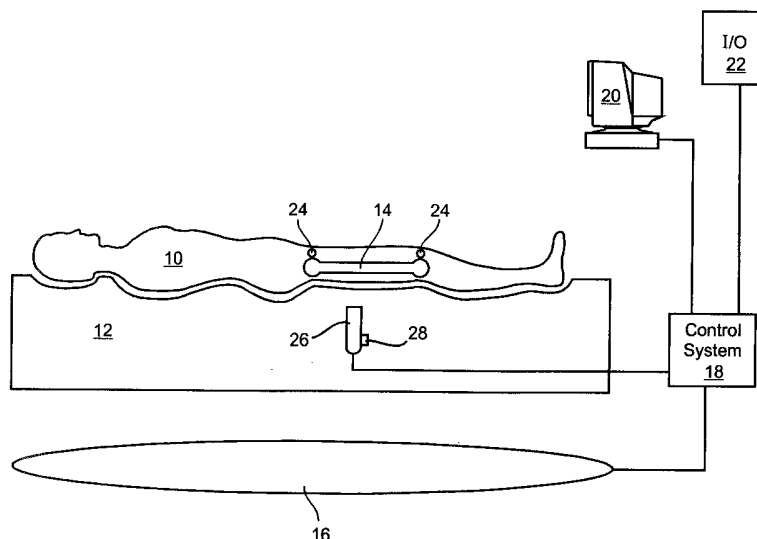
(43) International Publication Date  
3 January 2002 (03.01.2002)

PCT

(10) International Publication Number  
**WO 02/000093 A3**

- (51) International Patent Classification<sup>7</sup>: **A61B 5/055**
- (21) International Application Number: PCT/IL01/00582
- (22) International Filing Date: 26 June 2001 (26.06.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
09/604,414 27 June 2000 (27.06.2000) US
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- (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, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— with international search report
- (88) Date of publication of the international search report:  
30 October 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: REGISTRATION OF TARGET OBJECT IMAGES TO STORED IMAGE DATA



(57) Abstract: A system for supporting frameless stereotactic surgery in which a plurality of two-dimensional images are acquired of a rigid surgical target immediately before the target is exposed surgically. The two-dimensional images are registered with both a reference coordinate system and with a previously acquired three-dimensional image of the target to provide a coordinate transformation from the reference coordinate system to the target. Even after the target is exposed surgically, the acquisition and registration of further two-dimensional images is continued, to keep the coordinate transformation up to date. Registration of the two-dimensional images to the reference coordinate system is facilitated by a tracker that is rigidly attached to the probe that is used to acquire the two-dimensional images. Preferably, one or more similar trackers are attached rigidly to the surgical target to enhance the updating of the coordinate system.



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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL01/00582

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : A61B 5/055

US CL : 600/429

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. : 600/429, 427, 407, 439, 410, 411, 459; 606/130; 128/899

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 5,682,890 A (KORMOS et al) 04 November 1997, see entire document.	1, 2 and 4
Y		3
X,P	US 6,216,029 B1 (PALTIELI et al) 10 April 2001, see entire document	1, 5-15



Further documents are listed in the continuation of Box C.



See patent family annex.

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"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

23 October 2001 (23.10.2001)

Date of mailing of the international search report

27 MAR 2003

Name and mailing address of the ISA/US

Commissioner of Patents and Trademarks

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