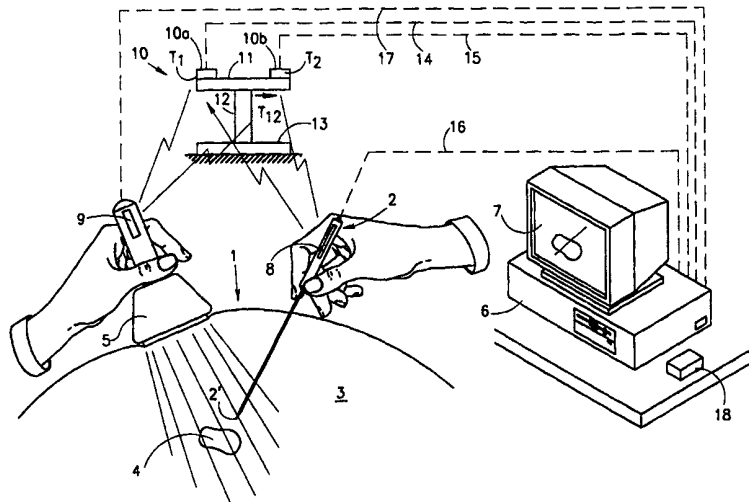




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/IL98/00578</p> <p>(22) International Filing Date: 26 November 1998 (26.11.98)</p> <p>(30) Priority Data: 122336 27 November 1997 (27.11.97) IL</p> <p>(71) Applicant (for all designated States except US): ULTRA-GUIDE LTD. [IL/IL]; Etgar Street 1, 39032 Tirat Hacarmel Industrial Park (IL).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): PALTIELI, Yoav [IL/IL]; Einstein Street 75, 34602 Haifa (IL). SEGALESCU, Victor, A. [IL/IL]; Gut Levin Street 12, 32922 Haifa (IL). NAGAR, Ron [IL/IL]; Harotem Street 5, 35847 Haifa (IL). HAREVEN, Michael [IL/IL]; Freud Street 22, 34753 Haifa (IL).</p> <p>(74) Agent: EITAN, PEARL, LATZER & COHEN-ZEDEK; Gav Yam Center 2, Shenkar Street 7, 46725 Herzlia (IL).</p>	<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, 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), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 22 July 1999 (22.07.99)</p>	

(54) Title: SYSTEM AND METHOD FOR GUIDING THE MOVEMENTS OF A DEVICE TO A TARGET PARTICULARLY FOR MEDICAL APPLICATIONS



(57) Abstract

A system and method for guiding the movements of a device (2) to a target (4) particularly for medical applications is provided. In one aspect of the invention, the system guides the movements of a device (2) toward a target (4), which is viewable from an image. The system includes at least one scanning apparatus (5) for creating the image including the target (4), at least one transmitter 10 at a first reference location for transmitting radiant energy from the reference location, several position sensors (8, 9) and a data processor (6). The position sensors (8, 9) include at least one position sensor (8) on the device (2) for receiving the radiant energy, at least one position sensor (9) on the scanning apparatus (5) for receiving the radiant energy and at least one position sensor (8, 9) for receiving the radiant energy on either the device (2) or the scanning apparatus (5). The data processor (6) is in operative communication with the transmitter (10) and each of the position sensors (8, 9), for monitoring the accuracy of the calculated position of the device (2) with respect to the scanning apparatus (5).

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL98/00578

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G05B 19/18; A61B 17/38, 19/00

US CL : 364/167.05, 167.11, 167.12; 606/1, 96, 130

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. : 364/167.05, 167.11, 167.12; 606/1, 96, 130

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

None

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

APS

search terms: transmitter, target, vector, ultrasound, guid?, scan?

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,127,409 A (DAIGLE) 07 July 1992, col. 3, line 47 to col. 4, line 59 and col. 5, lines 23-68.	1, 2, 12, 13, 25-28, 40-42, 63-65, 66.
A	US 5,655,535 A (FRIEMEL et al.) 12 August 1997, see col. 1, line 13 to col. 4, line 63.	1, 2, 12, 14, 25, 28, 40, 50, 57-59, 63-66, 74, 75.
A, P	US 5,769,790 A (WATKINS et al.) 23 June 1998, see figure 3 and related specification discussion.	1-3, 12, 13, 25-27, 40, 42-44, 57-59, 61, 63, 64, 74, 80-82.



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Date of the actual completion of the international search

11 MAY 1999

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