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(21) International Application Number: PCT/US98/19695 (22) International Filing Date: 22 September 1998 (22.09.98) (30) Priority Data: 60/059,915 24 September 1997 (24.09.97) US 09/148,498 4 September 1998 (04.09.98) US (71) Applicant: SURGICAL NAVIGATION TECHNOLOGIES, INC. [US/US]; 530 Compton Street, Broomfield, CO 80020 (US). (72) Inventors: FOLEY, Kevin, T.; Suite 600, 220 South Claybrook, Memphis, TN 38104 (US). CLAYTON, John, B.; 720 E. Wiggins Street, Superior, CO 80027 (US). MELKENT, Anthony; 1800 Pyramid Place, Memphis, TN 38132 (US). SHERMAN, Michael, C.; 5854 Haymarker Road, Memphis, TN 38120 (US). (74) Agents: GARRETT, Arthur, S. et al.; Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., 1300 I Street, N.W., Washington, DC 20005-3315 (US).		(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, 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). 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> (88) Date of publication of the international search report: 17 June 1999 (17.06.99)	
(54) Title: PERCUTANEOUS REGISTRATION APPARATUS AND METHOD FOR USE IN COMPUTER-ASSISTED SURGICAL NAVIGATION			
(57) Abstract <p>An apparatus and procedures for percutaneous placement of surgical implants and instruments such as, for example, screws, rods, wires and plates into various body parts using image guided surgery. The invention includes an apparatus for use with a surgical navigation system, an attaching device rigidly connected to a body part, such as the spinous process of a vertebrae, with an identification superstructure rigidly but removably connected to the attaching device. This identification superstructure, for example, is a reference arc and fiducial array which accomplishes the function of identifying the location of the superstructure, and, therefore, the body part to which it is fixed, during imaging by CAT scan or MRI, and later during medical procedures.</p>			

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/19695

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61B17/56

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 6 A61B

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 practical, 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	WO 96 11624 A (ST. LOUIS UNIVERSITY AND SURGICAL NAVIGATION TECHNOLOGIES) 25 April 1996 cited in the application	1, 2, 6, 8, 9
A	see page 33, line 5 - page 34, line 35 see page 39, line 7 - line 20 see figures 12A-12F	18
A	EP 0 832 609 A (PICKER INTERNATIONAL) see column 6, line 36 - column 7, line 4 see column 7, line 35 - line 57 see column 8, line 38 - line 44 see figures 4, 10	1, 7
A	DE 297 04 393 U (AESCULAP) 17 July 1997 see page 9, line 11 - line 30 see page 14, line 8 - line 22 see figures 2, 4	1, 8
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

26 April 1999

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07/05/1999

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Nice, P

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 98/19695

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 10-17
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
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Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

information on patent family members

Inter. Application No

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