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- (71) Applicant (for all designated States except US): **ORIGIN MEDSYSTEMS, INC.** [US/US]; 3200 Lakeside Drive, Building B, 4th Floor, Santa Clara, CA 95054 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **CHIN, Albert, K.** [US/US]; 800 East Greenwich Place, Palo Alto, CA 94303 (US). **DAVIS, John** [US/US]; 572 South Eden Avenue, Sunnyvale, CA 94085 (US). **WESTLUND, Randy** [US/US]; 16 Golden Acres Road, River Falls, WI 54022 (US).
- (74) Agents: **SMITH, Albert, C.** et al.; Fenwick & West LLP, 801 California Street, Mountain View, CA 94041 (US).
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(54) Title: APPARATUS AND METHOD FOR ENDOSCOPIC CARDIAC MAPPING AND LEAD PLACEMENT

(57) Abstract: Apparatus and surgical methods establish temporary suction attachment to a target site on the surface of a beating heart for analyzing electrical signals or hemodynamic responses to applied signals at the target sites for enhancing the accuracy of placement of cardiac electrodes at selected sites and for enhancing accurate placement of a surgical instrument maintained in alignment with the suction attachment. A suction port on the distal end of a supporting cannula carries surface-contacting electrodes and provides suction attachment to facilitate temporary positioning of the electrodes in contact with tissue at the target site, and a clamping and release mechanism to facilitate anchoring a cardiac electrode on the moving surface of a beating heart at a selected site. Analyses of sensed signals or responses to applied signals at target sites promote epicardial mapping of a patient's heart for determining optimum sites at which to attach cardiac electrodes.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/34538

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61N 1/05

US CL : 607/119

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. : 607/17, 18, 119, 127, 129, 130

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.
Y	US 4,235,246 A (Weiss) 25 November 1980 (25.11.1980), col. 5, line 5-6; col. 7, line 59; figure 5b; col. 6, line 40	1-2, 5-11
Y	US 3,920,024 A (Bowers) 18 November 1975 (18.11.1975), Col. 17, line 54 - col. 18, line 6	1 and 7
Y	US 5,336,252 A (Cohen) 9 August 1994 (19.08.1994), col. 11, lines 22-29; col. 14, lines 25-32; figure 21; col. 5, lines 5-9; figure 24; figure 14; col. 12, line 2	2, 5, 6, 8-13, and 16-18
Y	US 6,096,064 A (Routh) 1 August 2000 (01.08.2000), col.2, line 42	9
Y	US 5,904,711 A (Flom et al.) 18 May 1999 (18.05.1999), Col. 15, lines 10-20; figure 9	12, 13, 16-18
Y	US 6,132,456 A (Sommer et al.) 17 October 2000 (17.10.2000), figures 7 and 8; Col. 11, line 65	17 and 18



Further documents are listed in the continuation of Box C.



See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

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Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Robert E. Pezzuto

Telephone No. 571-272-2975