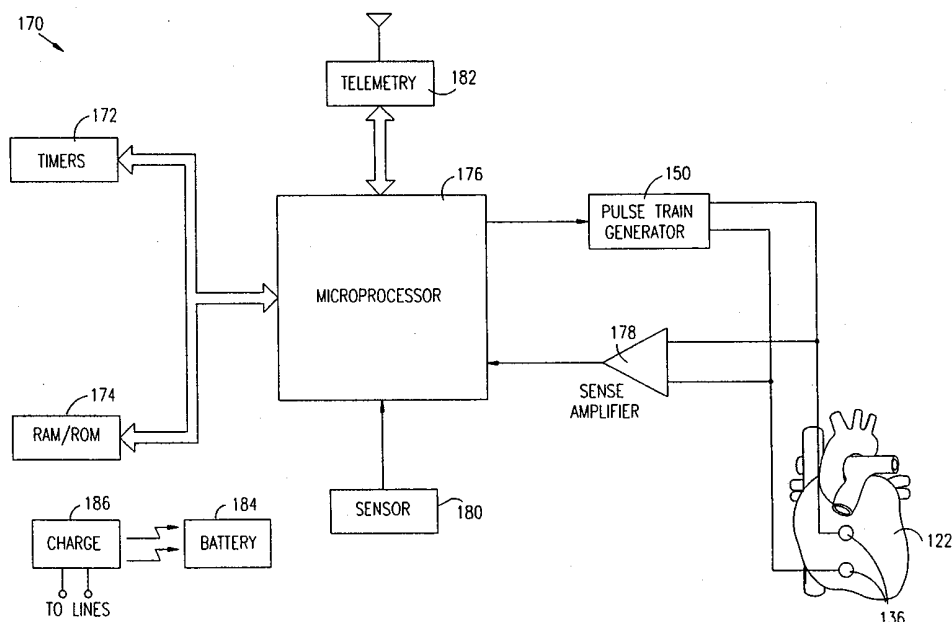




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(21) International Application Number: PCT/IL99/00392 (22) International Filing Date: 18 July 1999 (18.07.99) (30) Priority Data: 125424 20 July 1998 (20.07.98) IL (71) Applicant (for all designated States except US): IMPULSE DYNAMICS N.V. [NL/NL]; 3 L.B. Smithplein, P.O. Box 6, Netherlands Antilles (AN). (72) Inventors; and (75) Inventors/Applicants (for US only): DARVISH, Nissim [IL/IL]; Hantke Street 22A, Haifa (IL). FELSEN, Bella [IL/IL]; Hatzvi Street 26, 34355 Haifa (IL). SHEMER, Itzik [IL/IL]; Hayarkon Street 11, 34465 Haifa (IL). KORNFELD, Judith [IL/IL]; Ilanot Street 31A, 34324 Haifa (IL). (74) Agents: COLB, Sanford, T. et al.; Sanford T. Colb & Co., P.O. Box 2273, 76122 Rehovot (IL).			(81) Designated States: AE, AL, AM, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ (Utility model), DE (Utility model), DK (Utility model), EE (Utility model), ES, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, 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 (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, 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: 15 June 2000 (15.06.00)

(54) Title: PACING WITH HEMODYNAMIC ENHANCEMENT



(57) Abstract

Apparatus (170) for heart pacing with hemodynamic improvement, including one or more electrodes (36), which convey electrical signals to respective cardiac muscle segments. Signal generation circuitry (50) applies an extended pacing signal (60, 61), having an overall duration greater than three times a chronaxie time, to the one or more electrodes so as to pace the heart. The signal preferably includes a train of a plurality of biphasic pulses, and has an amplitude at least three times as great as a threshold for pacing the heart, but not sufficient for cardioversion.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL99/00392

A. CLASSIFICATION OF SUBJECT MATTER

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US CL : 607/09

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. : 607/09, 11

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.
A	US 4,979,507 A (HEINZE et al.) 25 December 1990, entire document.	1-99

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