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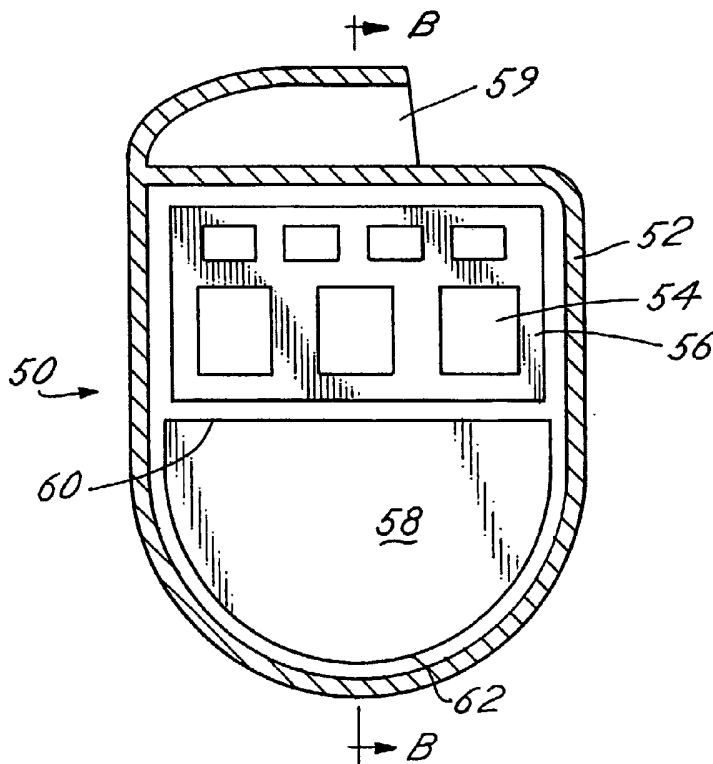
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(54) Title: IMPLANTABLE MEDICAL DEVICE WITH RECHARGEABLE THIN-FILM MICROBATTERY POWER SOURCE



(57) Abstract: The present invention is an implantable medical device comprising an outer housing, electronics within the outer housing, the electronics located in on a substrate circuit board, and a rechargeable thin-film microbattery within the outer housing. The rechargeable thin-film microbattery of the present invention is a solid-state battery that is devoid of liquids or other volatile materials from which the electronics must be protected. In one embodiment, the rechargeable thin-film microbattery has a straight first side that is adjacent to the substrate circuit board, and a curved second side that is adjacent to the outer housing. In one embodiment, the rechargeable thin-film microbattery lies in a plane that is parallel to the substrate circuit board containing the electronics. In one embodiment, the electronics are on a first face of the substrate circuit board, and the rechargeable thin-film microbattery is positioned adjacent a second face of the substrate circuit board, the second face being on the side of the substrate circuit board opposite to the first face. In one embodiment, the rechargeable

thin-film microbattery is deposited on the bottom face of the substrate circuit board. In one embodiment, there may be two or more microbatteries that are stacked in series or in parallel.



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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)
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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)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BATES J B ET AL: "THIN FILM RECHARGEABLE LITHIUM BATTERIES FOR IMPLANTABLE DEVICES" ASAIO JOURNAL, J.B.LIPPINCOTT CO., HAGERSTOWN, MD, US, vol. 43, no. 5, 1 September 1997 (1997-09-01), pages 644-647, XP000728796 ISSN: 1058-2916 the whole document	1
Y	---	2-10
X	US 5 411 537 A (MUNSHI MOHAMMED Z ET AL) 2 May 1995 (1995-05-02) column 7, line 29 - line 48 --- -/--	1

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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Y	DE 35 07 092 A (SIEMENS AG) 28 August 1986 (1986-08-28) page 3, line 9 - line 17 page 4, line 11 - page 6, line 12; figures 1-5 ----	2-5
Y	US 4 096 866 A (FISCHELL ROBERT E) 27 June 1978 (1978-06-27) column 1, line 40 - line 56 ----	6-8
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P,X	US 6 273 904 B1 (MCQUADE CHARLES M ET AL) 14 August 2001 (2001-08-14) column 1, line 13 - line 43 column 5, line 1 - line 28 ----	1
E	EP 1 181 952 A (COCHLEAR LTD) 27 February 2002 (2002-02-27) paragraph '0026! - paragraph '0027! -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

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