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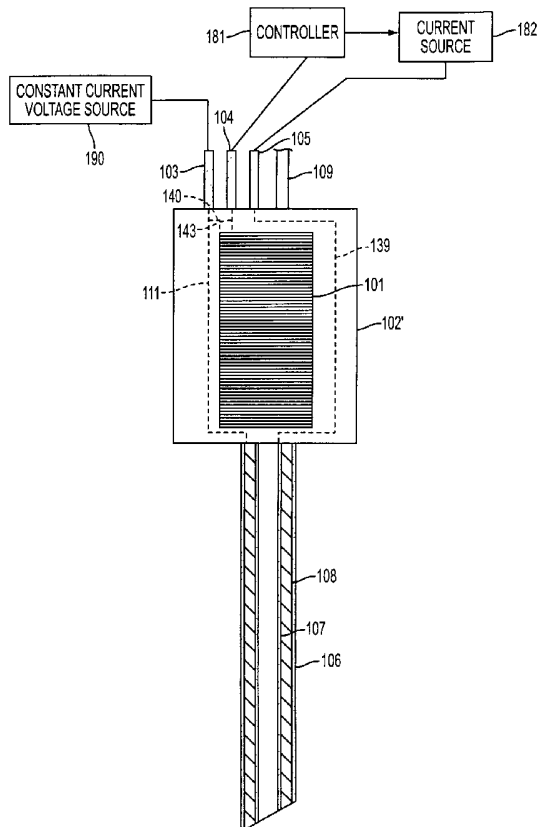
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[Continued on next page]

(54) Title: NERVE STIMULATOR OUTPUT CONTROL NEEDLE WITH DEPTH DETERMINATION CAPABILITY AND METHOD OF USE



(57) Abstract: An improved nerve stimulator needle (107) which allows for improved ease of use and efficacy in the performance of targeted drug delivery to nerve. A variable control mechanism (101) is contained in a housing (102) to which a needle (107) is attached and several electrical conductors are attached. The housing (102) contains an embedded fluid path (110) through which a syringe (132) is attached to the needle (107). The variable control mechanism (101) and the housing (102) allows for positioning the needle (107) and applying current to the needle (107) with the same hand. The needle (107) may also contain a linear resistive coating (106), which enables the determination of the depth of the needle (107) by determining the resistance of the length of the needle (107) above the skin surface (136) of a patient. Another embodiment of the needle (107) may include an optical variable control mechanism (114).



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# INTERNATIONAL SEARCH REPORT

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61B 5/00; A61N 1/30

US CL : 604/117, 21; 607/118

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. : 604/117, 21, 500, 501, 506; 607/118, 3, 115, 116; 606/44

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.
X --- Y	US 5,853,373 A (GRIFFITH et al) 29 December 1998 (29.12.1998), column 3, lines 11-36, column 6, lines 3-65.	1-3, 5-7, 16-19, 21-24, 36 ----- 4, 10, 20, 27
Y,P --- A,P	US 6,298,256 B1 (MEYER) 02 October 2001 (02.10.2001), column 3, lines 12-27, column 5, line 32 to column 6, line 48.	1-8, 10, 16-24, 27, 36 ----- 8-9, 12-15, 31-34, 25-26, 28-29, 37-40
Y --- A	US 5,725,514 A (GRINBLATT et al) 10 March 1998 (10.03.1998), column 2, lines 21-33.	11, 30 ----- 12-15, 31-34
A,E	US 6,391,005 B1 (LUM et al) 21 May 2002 (21.05.2002), Figure 2A, column 1, lines 49-53, column 3, line 28 to column 4, line 8.	1
A	US 4,299,230 A (KUBOTA) 10 November 1981 (10.11.1981), abstract, Figure 11.	1

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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