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(54) Title: HEMOSTATIC TISSUE TUNNEL GENERATOR FOR INSERTING TREATMENT APPARATUS INTO TISSUE
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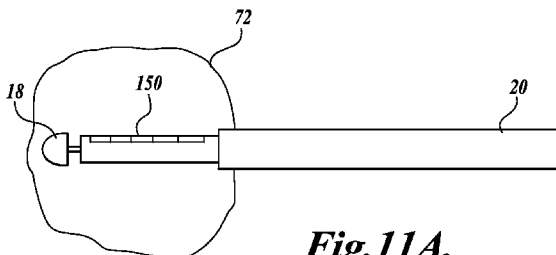


Fig.11A.

(57) Abstract: A catheter for insertion into and treatment of tissue in a patient comprises a radio frequency (RF) electrode having an elongated body that conducts electrical RF energy to a conductive tip. An insulating sleeve surrounds the elongated body. In a first mode of operation, the conductive tip is exposed outside the insulating sleeve and the RF electrode delivers RF energy that erodes the tissue of the patient and creates a tunnel through which the catheter can advance into the tissue of the patient. In a second mode of operation, the insulating sleeve and/or the RF electrode is retracted and a second treatment apparatus treats the tissue.



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A. CLASSIFICATION OF SUBJECT MATTER*A61B 18/12(2006.01)i, A61B 18/18(2006.01)i, A61N 7/00(2006.01)i*

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: A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO Internal) "tissue", "treatment", "radio", "frequency", "electrode", "sleeve", "ultrasound", "fluid", "retract", "catheter", "microwave", "energy", "hypothermic", "transducer"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	US 2006-0004351 A1 (STEVEN G. ARLESS et al.) 5 January 2006 See claims 33 and 38, abstract, figures 1-4	1 2-21, 37-45, 53-61
Y A	US 2006-0094930 A1 (KURT D. SPARKS et al.) 4 May 2006 See claims 3 and 4, paragraphs [0102], [0103], figures 4, 5 and 19	1 2-21, 37-45, 53-61
Y A	US 2004-0147917 A1 (RICHARD L. MUELLER JR. et al.) 29 July 2004 See claims 1-4, paragraph [0042], figures 1-6	1 2-21, 37-45, 53-61
Y A	US 6068653 A (DANIEL MARC LAFONTAINE) 30 May 2000 See claim 1, abstract, figures 1-3	1 2-21, 37-45, 53-61

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family


Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2009/042303**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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.: 22-36, 46-52, 62-68
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 22-36, 46-52 and 62-68 pertain to methods for treatment of human body by therapy and thus relate to a subject matter which this International Searching Authority is not required to search under Article 17(2)(a)(i) and Rule 39.1(iv) PCT.
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 No. III Observations where unity of invention is lacking (Continuation of item 3 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.:
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2009/042303

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