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Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

— with international search report  
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: MEDICAL DEVICE AND METHOD FOR USE IN TISSUE CHARACTERIZATION AND TREATMENT

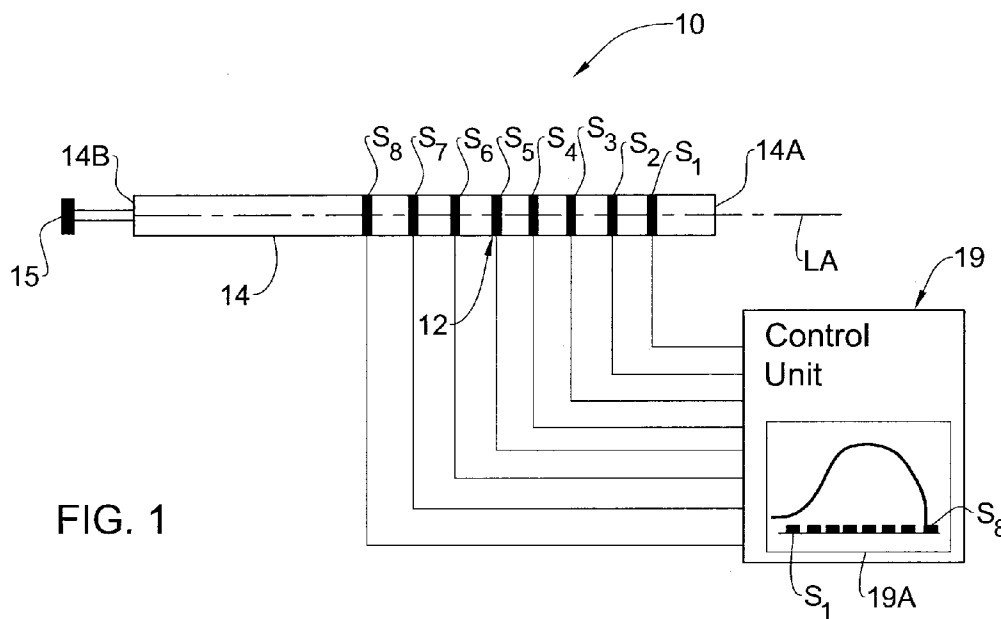


FIG. 1

(57) Abstract: A medical device is presented for use in tissue characterization and treatment. The device comprises: a tissue characterization probe comprising an elongated carrier carrying an array of tissue characterization sensors arranged in a spaced-apart relationship at least along an axis of said carrier, such that progression of the probe through a tissue mass provides for locating and determining a dimension of an abnormal tissue specimen inside said tissue mass based on characterization signals from the sensors in the array, thereby enabling consequent treatment of the abnormal tissue specimen by a treatment tool.

WO 2009/010960 A3



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**INTERNATIONAL SEARCH REPORT**

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**A. CLASSIFICATION OF SUBJECT MATTER**

INV. A61B10/02  
ADD. A61B17/00      A61B5/00      A61B19/00

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)  
A61B

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	US 6 689 145 B2 (LEE ROBERTA [US] ET AL) 10 February 2004 (2004-02-10) cited in the application figures 1A-3C, 18-20 column 6, lines 34-51 column 15, line 63 - column 16, line 36 column 23, line 40 - column 24, line 55 -----	1-11, 23-27
X	US 6 006 755 A (EDWARDS STUART D [US]) 28 December 1999 (1999-12-28) figures 4B, 9A-B, 10, 18A-D column 6, lines 6-18 column 7, line 66 - column 8, line 2 column 9, lines 4-18 column 11, lines 45-59 ----- -/--	1-12, 23-27

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 document 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 another 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.
- \*8\* 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  
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/255739 A1 (CLIFFORD MARK J [US] ET AL) 23 December 2004 (2004-12-23) cited in the application figures 1A-B, 3-5, 24-27 paragraphs [0070], [0071], [0105], [0106]	1-12, 23-27
A	WO 92/17108 A (CEDARS SINAI MEDICAL CENTER [US]) 15 October 1992 (1992-10-15) abstract; figure 1A	1-12, 23-27

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IL2008/000965

## 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.: 21-22  
because they relate to subject matter not required to be searched by this Authority, namely:  
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery  
Rule 39.1(iv) PCT - Diagnostic method practised on the human or animal body
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:

see additional sheet

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 fees, this Authority did not invite payment of additional fees.
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.:

see annex

### 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.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

## 1. claims: 1-12, 23-27

a medical device for use in tissue characterization and treatment comprising a elongated carrier carrying a treatment tool, said treatment tool comprising a body and an excision element projectable from said body, said excision element having its first and second ends attached to first and second locations on the treatment tool body and movable along the axis of the carrier, wherein the treatment tool body further has first and second members spaced apart from one another along the carrier, the first and second ends of the excision elements being respectively attached to said first and second members, so that the relative movement of first and second members results in a change in the dimension of the projecting portion of the excision element, and thus, a desired volume of tissue mass located laterally from the carrier can be excised in a controlled manner.

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## 2. claims: 13-14

a medical device for use in tissue characterization and treatment comprising a elongated carrier carrying a treatment tool, said treatment tool comprising a body and an excision element projectable from said body, said excision element having its first and second ends attached to first and second locations on the treatment tool body and movable along the axis of the carrier, wherein the treatment tool body comprises an elongated member extending along at least a part of the carrier, being rotatable about the axis of the carrier, and on which the excision element is attached by its opposite edge, so that the excision element can be rotated about the axis of the carrier for excising a controlled angular portion of tissue mass without rotating the carrier as a whole.

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## 3. claims: 15-16

a medical device for use in tissue characterization and treatment comprising a elongated carrier carrying a treatment tool, said treatment tool comprising a body and an excision element projectable from said body, wherein the treatment tool is configured and operable to selectively project a portion of its excision element through a distal end of the carrier, so that a tissue mass of the desired and controlled volume located at the distal end of the carrier can be selectively treated.

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FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

## 4. claims: 17-20

a medical device for use in tissue characterization and treatment comprising a elongated carrier carrying a treatment tool, said treatment tool comprising a body and an excision element projectable from said body, wherein the carrier is formed with groups of slots located along the carrier axis and interspaced between tissue characterization sensors, each group comprising at least two peripheral slots, wherein the treatment tool carries at its distal end a corresponding number of pre-bent excision elements which can be projected through the slots of at least one of said groups, so that the location along the carrier from which the excision elements are projected outwardly can be arbitrarily selected.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IL2008/000965

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