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(US).
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Declarations under Rule 4.17:

- as to the identity of the inventor (Rule 4.17(i))
- as to applicant's entitlement to apply for and be granted a
patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the
earlier application (Rule 4.17(iii))

Published:

- with international search report (Art. 21(3))

[Continued on next page]

(54) Title: SURGICAL CUTTING AND SEALING INSTRUMENT WITH CONTROLLED ENERGY DELIVERY

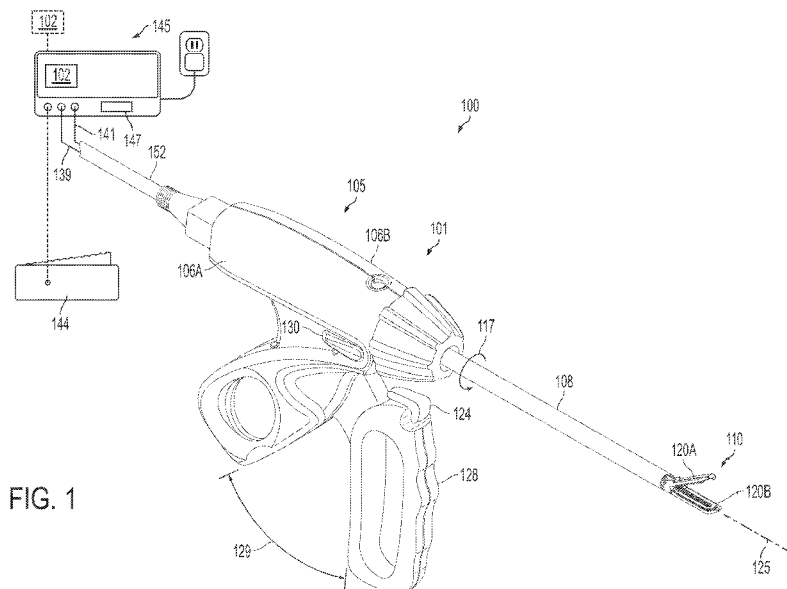


FIG. 1

(57) Abstract: A surgical instrument for supplying energy to tissue can comprise a jaw member comprising an electrode, wherein the electrode is configured to supply energy from a power source to captured tissue. A control unit is configured to regulate the amount of energy delivered to the tissue through the monitoring of the current flowing through the tissue and the rate of change of the current flowing through the tissue. Through the monitoring of the current, the impedance of the tissue and the rate of change of impedance of the tissue may be determined to monitor the state of the captured tissue and reduce excess tissue heating.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:
5 July 2012

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2011/044799

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61B18/12
ADD.
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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2001/039417 A1 (HARANO KENJI [JP] ET AL) 8 November 2001 (2001-11-08)	1,2,5,6
Y	figures 1,2 paragraph [0045] - paragraph [0052] paragraph [0064] - paragraph [0075] -----	3,4
Y	WO 2006/036706 A1 (UNIV LELAND STANFORD JUNIOR [US]; PALANKER DANIEL V [US]; VANKOV ALEXA) 6 April 2006 (2006-04-06) paragraph [0007] - paragraph [0012] paragraph [0036] - paragraph [0040] -----	3,4
X	US 2003/139741 A1 (GOBLE COLIN CHARLES OWEN [GB] ET AL) 24 July 2003 (2003-07-24) figures 14, 15 paragraph [0096] - paragraph [0101] paragraph [0118] - paragraph [0120] ----- -/--	1,2,7,8

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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.</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 27 April 2012	Date of mailing of the international search report 07/05/2012
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Ließmann, Frank
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/044799

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.:
because they relate to subject matter not required to be searched by this Authority, namely:

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.:

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

International application No
PCT/US2011/044799

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2009/039179 A1 (SURGRX INC [US]; BAKER JAMES [US]) 26 March 2009 (2009-03-26) figure 1 paragraph [0040] - paragraph [0053] -----	9-12,14
X	EP 1 878 399 A1 (COVIDIEN AG [CH]) 16 January 2008 (2008-01-16) figures 1,2 paragraph [0015] - paragraph [0026] paragraph [0038] - paragraph [0043] paragraph [0052] -----	15-20
X	US 2005/096651 A1 (TRUCKAI CSABA [US] ET AL) 5 May 2005 (2005-05-05) figures 2-4, 5A, 9 paragraph [0003] paragraph [0032] - paragraph [0055] -----	9-12,14

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2011/044799

Patent document cited in search report	Publication date	Publication date	Patent family member(s)	Publication date
US 2001039417	A1	08-11-2001	NONE	

WO 2006036706	A1	06-04-2006	AU 2005289828 A1	06-04-2006
			CA 2581432 A1	06-04-2006
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			US 2007129728 A1	07-06-2007
			US 2008188851 A1	07-08-2008

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-6

An electrosurgical apparatus comprising a control unit that is configured to deliver pulses of energy to the circuit and vary the level of energy by varying a duty cycle of the pulses of energy.

2. claims: 7, 9-14

An electrosurgical apparatus comprising a forceps.

3. claim: 8

An electrosurgical apparatus comprising a positive temperature coefficient (PTC) element.

4. claims: 15-20

An electrosurgical apparatus comprising a controller configured to receive a signal from the current sensing circuit and vary an output level of the energy based on a level of an impedance of the tissue and a rate of change of the impedance of the tissue.
