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[Continued on next page]

(54) Title: ULTRASONIC SURGICAL BLADES

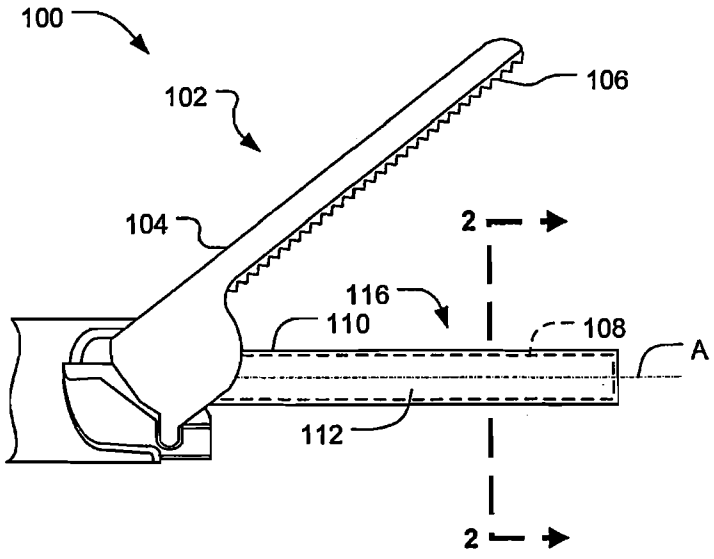


FIG. 1

(57) Abstract: An ultrasonic surgical blade (112) includes a body (108) having a proximal end, a distal end, and an outer surface. The distal end is movable relative to a longitudinal axis (A) in accordance with ultrasonic vibrations applied to the proximal end. At least a portion of the outer surface of the body comprises a lubricious coating (116) adhered thereto. The lubricious coating has a coefficient of friction that is less than the coefficient of friction of the outer surface of the body.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. A61B17/32 A61B18/04 A61L29/08

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 A61L

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 2006/100652 A1 (BEAUPRE JEAN [US]) 11 May 2006 (2006-05-11) page 1, paragraph 9 page 2, paragraphs 18,19 page 4, paragraph 45 - page 5, paragraph 57 figure 3	1-3, 13-15, 32-35
Y		4,5,12, 16,17

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[X] Further documents are listed in the continuation of Box C.

[X] 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

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"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

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"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	Date of mailing of the international search report
12 March 2009	22/06/2009

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Kakoullis, Marios

Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/084307

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 844 720 A (ETHICON ENDO SURGERY INC [US]) 17 October 2007 (2007-10-17) column 1, paragraph 3-7 column 4, paragraph 31 - column 7, paragraph 41 column 11, paragraph 60 - column 12, paragraph 64 claims 1,7,8 figures 1,2,10	1,6-11, 15,32, 38-43
X	US 5 505 693 A (MACKOOL RICHARD J [US]) 9 April 1996 (1996-04-09) column 1, line 55 - column 2, line 41 column 3, line 1 - column 4, line 18 claim 11	32,36, 37,40,41
Y		4,5
A		1,9,10
Y	US 2004/106942 A1 (TAYLOR SCOTT [US] ET AL TAYLOR SCOTT [US] ET AL) 3 June 2004 (2004-06-03) page 2, paragraphs 23,26 claims 4,5,8	12
A		1-5,8
Y	US 6 663 941 B2 (BROWN JAMES F [US] ET AL) 16 December 2003 (2003-12-16) cited in the application column 1, lines 20-26 column 9, line 51 - column 10, line 43	16,17
A		1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/084307

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 allsearchable 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 reportcovers 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: 1-18, 32-43

An ultrasonic surgical blade, comprising a body having a proximal end, a distal end, and an outer surface, the distal end is movable relative to a longitudinal axis in accordance with ultrasonic vibrations applied to the proximal end, and at least a portion of the outer surface of the body comprises a lubricious coating adhered thereto, wherein the lubricious coating has a coefficient of friction that is less than the coefficient of friction of the outer surface of the body, and wherein the lubricious coating comprises a dry film lubricant.

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2. claims: 19-28

An ultrasonic surgical blade, comprising a body having a proximal end, a distal end, and an outer surface, the distal end is movable relative to a longitudinal axis in accordance with ultrasonic vibrations applied to the proximal end, and at least a portion of the outer surface of the body comprises a lubricious coating adhered thereto, wherein the lubricious coating has a coefficient of friction that is less than the coefficient of friction of the outer surface of the body, and wherein the lubricious coating comprises a second layer adhered to at least a portion of a first layer.

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3. claims: 29-31

An ultrasonic surgical blade, comprising a body having a proximal end, a distal end, and an outer surface, the distal end is movable relative to a longitudinal axis by ultrasonic vibrations applied to the proximal end, and at least a portion of the body comprises a predetermined surface treatment having a predetermined surface roughness formed thereon.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2008/084307

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