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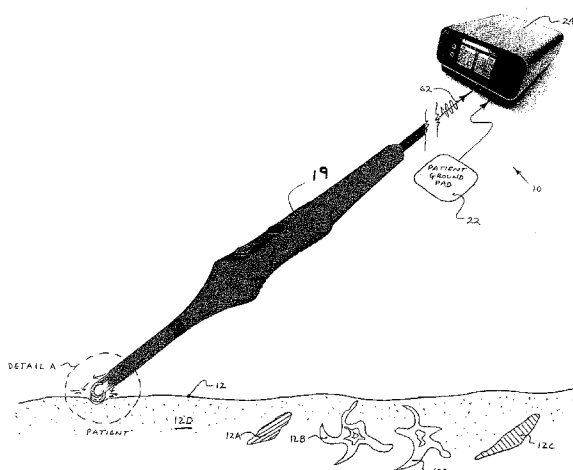
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(54) Title: ELECTRIC PLASMA-MEDIATED CUTTING AND COAGULATION OF TISSUE AND SURGICAL APPARATUS



(57) Abstract: Electrosurgery method and apparatus. In the method, tissue is cut or coagulated, with an electrically low conductive liquid providing cooling. In another method, skin is cut by electrosurgery in a dry field using a low duty cycle signal energizing the cutting electrode, minimizing tissue charring. A combination coagulation and cutting electrode performs both functions. The cutting is performed by a blade edge generating a local plasma adapted for cutting. Superimposed on the blade edge is an electrode of greater surface area electrically insulated from the cutting electrode, for coagulation. In another version, a single component cutting/coagulation blade (electrode) has a cutting and a flat partially insulated portion defining through holes in the insulation for coagulation. Also provided is an electrical circuit whereby each electrode is isolated by a filter from cross talk and feedback of the RF signal from the other electrode, minimizing arcing.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2007/023130

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61B18/14 (2008.04)

USPC - 606/45

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)

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USPC - 606/34, 41, 45

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)

USPTO EAST System (US, USPG-PUB, EPO, DERWENT), MicroPatent, IP.com, DialogPro

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,165,175 A (WAMPLER et al) 26 December 2000 (26.12.2000) entire document	1, 2, 7, 8
Y		3-6, 9-23
Y	US 6,780,178 B2 (PALANKER et al) 24 August 2004 (24.08.2004) entire document	3-5
Y	US 6,059,782 A (NOVAK et al) 09 May 2000 (09.05.2000) entire document	6
Y	EP 1205155 A1 (TAYLOR et al) 15 May 2002 (15.05.2002) entire document	9-13
Y	EP 1034747 A1 (GOBLE et al) 13 September 2000 (13.09.2000) entire document	10, 11
Y	US 2006/0155270 A1 (HANCOCK et al) 13 July 2006 (13.07.2006) entire document	10
Y	US 5,647,871 A (LEVINE et al) 15 July 1997 (15.07.1997) entire document	14-18
Y	US 6,135,998 A (PALANKER) 24 October 2000 (24.10.2000) entire document	17, 19-22
Y	US 2004/0162554 A1 (LEE et al) 19 August 2004 (19.08.2004) entire document	23

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