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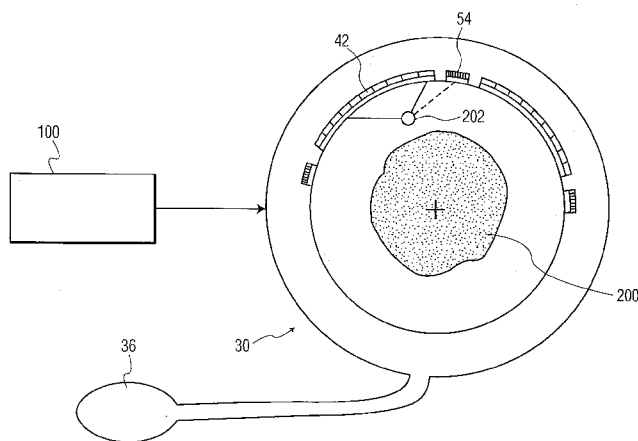
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**Declaration under Rule 4.17:**

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR GUIDANCE AND APPLICATION OF HIGH INTENSITY FOCUSED ULTRASOUND FOR CONTROL OF BLEEDING DUE TO SEVERED LIMBS



(57) Abstract: An ultrasonic diagnostic and therapy system is described for stopping the bleeding of severely damaged blood vessels or vessels severed in a limb amputation. A cuff is attached to the stump of the severed limb which contains a diagnostic transducer array and a HIFU transducer. The diagnostic transducer surveys the tissue of the severed limb, searching for a Doppler flow signal. When a Doppler flow signal is detected, the flow velocity and range and coordinates of the sample volume are determined. This information is supplied to a HIFU therapy transducer controller, which controls the HIFU transducer to transmit focused ultrasound to the sample volume of the flow locus. The focused ultrasound heats and coagulates blood in the severed vessel to stem the bleeding. Heat dissipation is reduced by tracking and continuously heating the same bolus of blood as it flows, or by heating a significant length of the blood vessel.

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**INTERNATIONAL SEARCH REPORT**

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**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC: **A61B 8/00( 2006.01),8/14( 2006.01)**  
  
 USPC: 600/439,459,467,468  
 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)  
 U.S. : 600/439,459,467,468

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)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002/0111568 A1 (BUKSHPAN) 15 August 2002 (15.08.2002), see entire document.	1-17
X,P	US 2007/0066897 A1 (SEKINS et al.) 22 March 2007 (22.03.2007), see entire document	1-17
A,P	US 2006/0184070 A1 (HANSMANN et al.) 17 August 2006 (17.08.2006), see entire document.	1-17
A	US 5,755,746 (LIFSHEY et al.) 26 May 1998 (26.05.1998), see entire document.	1-17
A	US 5,520,612 (WINDER et al.) 28 May 1996 (28.05.1996), see entire document.	1-17
A	US 5,556,372 (TALISH et al.) 17 September 1996 (17.09.1996), see entire document.	1-17
Y,P	US 2007/0088346 A1 (MIRIZZI et al.) 19 April 2007 (19.04.2007), see entire document.	1-17

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

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
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"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		

Date of the actual completion of the international search 19 October 2007 (19.10.2007)	Date of mailing of the international search report <b>13 NOV 2007</b>
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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.
Y,P	US 2006/0079868 A1 (MAKIN et al.) 13 April 2006 (13.04.2006), see entire document.	1-17