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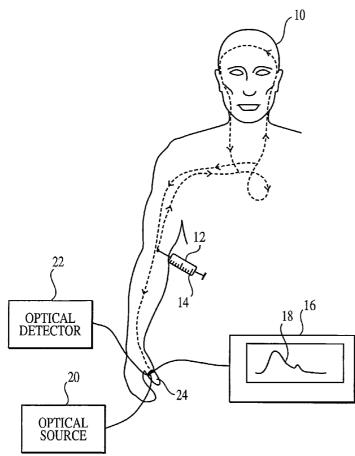
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(54) Title: IMAGING SYSTEM FOR OBTAINING QUANTATIVE PERFUSION INDICES



(57) Abstract: A sponge core barrel for use in performing sponge coring and methods of assembling the sponge core barrel, as well as methods of performing sponge coring. sponge corre barrel (10) includes an outer barrel assembly (100), a core bit (300) secured to a lower end thereof, and an inner barrel assembly (200) disposed therein. The inner barrel assembly may comprise multiple, sponge-lined inner tube sections. One or more sponge liners (240) comprising an annular sponge layer secured within a tubular sleeve (242) may be disposed within the inner barrel assembly. The present invention encompasses a number of embodiments of an improved sponge liner, as well as an inner barrel assembly comprised of one or more integrated sponge barrels.

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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A61B5/026 A61E A61B5/0275 A61K49/08 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 G01R A61K IPC 7 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, BIOSIS C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Citation of document, with indication, where appropriate, of the relevant passages Category ° US 6 123 921 A (FRASER SCOTT E ET AL) 1-3,10,Α 12 26 September 2000 (2000-09-26) column 1, line 17 -column 3, line 39 column 15, line 38 -column 16, line 14 US 5 900 228 A (FRASER SCOTT E ET AL) 1-3,10,Α 4 May 1999 (1999-05-04) 12 column 1, line 16 -column 3, line 17 2,3,14, US 5 579 767 A (PRINCE MARTIN R) Α 3 December 1996 (1996-12-03) abstract column 23, line 9 - line 40 column 26, line 26 -column 27, line 4 Patent family members are listed in annex. Further documents are listed in the continuation of box C. ° 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 "A" document defining the general state of the art which is not considered to be of particular relevance invention "E" earlier document but published on or after the international "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 filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another "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 docu-ments, such combination being obvious to a person skilled in the cet. citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means in the art. "P" document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of mailing of the international search report Date of the actual completion of the international search 09/09/2002 30 August 2002 Authorized officer Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016 Weihs, J

### INTERNATIONAL SEARCH REPORT

ormation on patent family members

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Patent document cited in search report	, e	Publication date		Patent family member(s)		Publication date
US 6123921	Α	26-09-2000	US	5900228	A	04-05-1999
US 5900228	Α	04-05-1999	US	6123921	A	26-09-2000
US 5579767	Α	03-12-1996	US		A	23-05-1995
			US	5553619	Α	10-09-1996
			US		B1	08-05-2001
			US	6240311	B1	29-05-2001
			US	5590654	Α	07-01-1997
			US	5799649	Α	01-09-1998
			US	5792056	Α	11-08-1998
			US	2001027265	A1	04-10-2001
			US	2001034483	A1	25-10-2001
			ΑT	187559	T	15-12-1999
			ΑU	6963194	Α	03-01-1995
			CA	2141839	A1	22-12-1994
			DΕ	69422005	D1	13-01-2000
			DE	69422005	T2	03-08-2000
			EP	0656762	A1	14-06-1995
			EP	0959363	A1	24-11-1999
			US	6278892	B1	21-08-2001
			US	6243600	B1	05-06-2001
			WO	9428781	A2	22-12-1994
			US	5746208	Α	05-05-1998
			ÜS	5762065		09-06-1998
			ÜS	2002010397		24-01-2002