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Declarations under Rule 4.17:

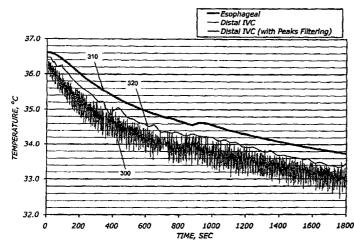
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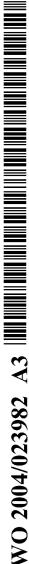
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SYSTEM AND METHOD FOR DETERMINING AND CONTROLLING CORE BODY TEMPERATURE



a patient to a desired target temperature.

(57) Abstract: Systems and methods for accurate temperature modification of a patient, or selected regions thereof, including inducing hypothermia. The temperature modification is accomplished using an in-dwelling heat exchange catheter (52) within which a fluid heat exchange medium circulates. A heat exchange cassette (96) attached to the circulatory flow lines of the catheter, the heat exchange cassette being sized to engage a cavity within a control unit (50). A temperature measurement scheme for obtaining body core temperature is provided, including methods of obtaining and analyzing temperature data to provide feedback to the control unit for use in controlling the heating and cooling of the heat exchange medium so as to heat or cool



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A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : A61F 7/00 US CL : 607/104-106				
According to International Patent Classification (IPC) or to both national classification and IPC				
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Minimum documentation searched (classification system followed by classification symbols) U.S.: 607/104-106				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched NONE				
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C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category *	Citation of document, with indication, where ap	· · · · · · · · · · · · · · · · · · ·	Relevant to claim No.	
X	US2002/0004675 A1 (LASHERAS) 10 January 2002	2 (10.01.2002), See entire document	1-3,7,31	
Y			8,32-35,38-41	
х	US 2001/0047196 A1 (GINSBURG et al) 29 Novem	ber 2001 (29,11,2001). See entire	31-35	
	document			
Y			38-39	
X	US 6,146,411 A (NODA et al) 14 November 2000 (14.11.2000), See entire document		31-35	
 Y			38-41	
A	US 6,261,312 B1 (DOBAK, III et al) 17 July 2001 (17.07.2001), See entire document		1-41	
Further documents are listed in the continuation of Box C. See patent family annex.				
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