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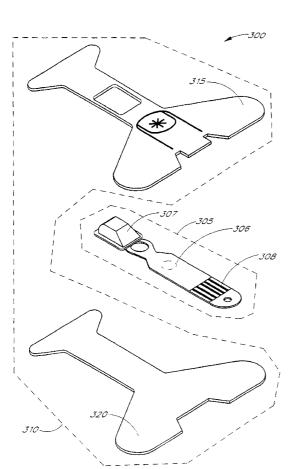
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: RESPOSABLE PULSE OXIMETRY SENSOR



(57) Abstract: A pulse oximeter sensor has both a reusable (305) and a disposable (210) portion. The reusable portion of the sensor preserves the relatively long-lived and costly emitter (306), detector (307) and connector (308) components. The disposable portion of the sensor is the relatively inexpensive adhesive tape (320) component that is used to secure the sensor to a measurement site. typically a patient's finger or toe. The disposable portion of the sensor is removably attached to the reusable portion in a manner that allows the disposable portion to be readily replaced when the adhesive is expended or the tape becomes soiled or excessively worn. The disposable portion may also contain an information element (405) useful for sensor identification or for security purposes to insure patient safety. A conductive element that allows a pulse oximeter monitor to read the information element is located on the disposable portion in such a way that continuity is broken when the adhesive tape become torn, such as upon removal from the measurement site.

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#### INTERNATIONAL SEARCH REPORT

ational Application No PCT/US 00/42637

# a. classification of subject matter IPC 7 A61B5/00

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#### B. FIELDS SEARCHED

 $\begin{tabular}{ll} \begin{tabular}{ll} Minimum documentation searched (classification system followed by classification symbols) \\ IPC 7 & A61B \end{tabular}$ 

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, PAJ

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y X	US 5 999 834 A (WANG HUISUN ET AL) 7 December 1999 (1999-12-07)	1-4,8, 16,20 5,6,13,
A	column 2, line 27 - line 34	19 9,10,12, 15
	column 2, line 65 -column 4, line 19 column 5, line 63 -column 6, line 55; tables 1,6	
Υ	US 5 995 855 A (KIANI MASSI E ET AL) 30 November 1999 (1999-11-30)	1-4,8, 16,20
А	column 2, line 8 - line 25 column 5, line 12 - line 15 column 7, line 34 -column 8, line 15; tables 1,4	7,14,18
	-/	

X Further documents are listed in the continuation of box C.	Patent family members are listed in annex.		
Special categories of cited documents:      A* document defining the general state of the art which is not considered to be of particular relevance	*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		
<ul> <li>*E' earlier document but published on or after the international filing date</li> <li>*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)</li> <li>*O' document referring to an oral disclosure, use, exhibition or other means</li> <li>*P' document published prior to the international filing date but later than the priority date claimed</li> </ul>	<ul> <li>'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</li> <li>'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.</li> <li>'&amp;' document member of the same patent family</li> </ul>		
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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, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Weins, J		

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### INTERNATIONAL SEARCH REPORT

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	ation) DOCUMENTS CONSIDERED TO BE RELEVANT  Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
ategory °	Citation of document, with indication, where appropriate, of the relevant passages	Treievant to Claim No.
,	US 5 158 323 A (YAMAMOTO ISAO ET AL)	1,8,16
	27 October 1992 (1992-10-27)	
A	abstract	14
4	EP 0 313 238 A (CRITIKON INC)	6,13,19
	26 April 1989 (1989-04-26) column 4, line 19 - line 58; tables 1,2	
A	US 5 170 786 A (D ALO HERBERT F ET AL)	6,13,19
	15 December 1992 (1992-12-15) column 3, line 33 -column 6, line 10;	
	tables 1-8	

1

### INTERNATIONAL SEARCH REPORT

Information on patent family members

Ir ational Application No
PCT/US 00/42637

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5999834	Α	07-12-1999	NONE	
US 5995855	Α	30-11-1999	NONE	
US 5158323	Α	27-10-1992	DE 4129314 A	12-03-1992
EP 0313238	A	26-04-1989	US 4825879 A AT 111705 T AU 2357488 A BR 8805229 A CA 1326265 A DE 3851603 D DE 3851603 T ES 2059531 T GR 1000789 B JP 1135329 A JP 2682662 B KR 9610973 B NZ 226501 A PH 26006 A PT 88705 A SG 178194 G ZA 8807555 A	02-05-1989 15-10-1994 13-04-1989 23-05-1989 18-01-1994 27-10-1994 23-03-1995 16-11-1994 30-12-1992 29-05-1989 26-11-1997 14-08-1996 26-06-1990 29-01-1992 ,B 31-07-1989 12-05-1995
US 5170786	 А	15-12-1992	NONE	