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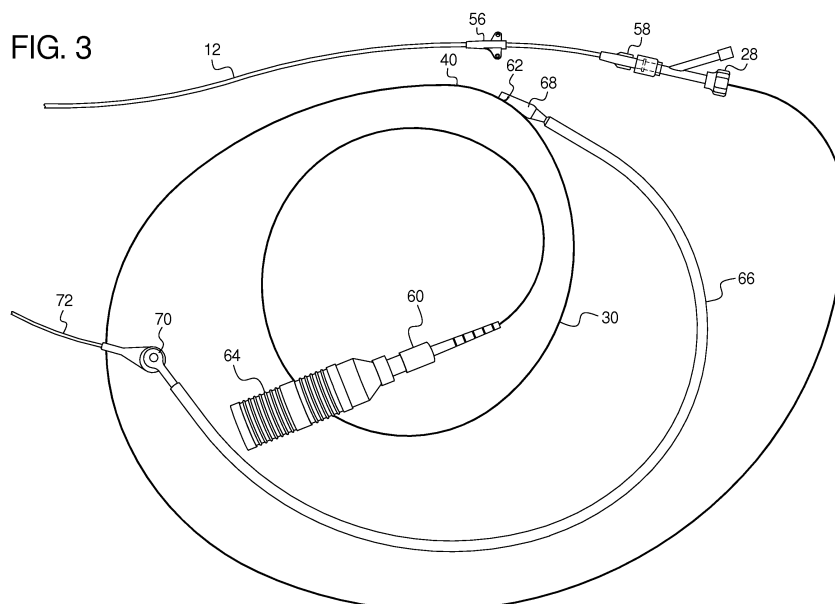
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(54) **Locating device**

(57) A device and method are described for navigating and positioning a central venous catheter into the venous system using two different modes of location. For example, a peripherally inserted central catheter ("PICC") may be navigated and positioned within the superior vena cava. A light emitting element is used in the first mode to navigate the PICC to the superior vena cava. To improve visibility during navigation, the light emitted from the light emitting element may include a narrow

range of wavelengths that generally matches the wavelengths of light that are transmissible through a light absorbing material defining the wall of the catheter. A conductive medium is used in the second mode to monitor an ECG signal in order to position the PICC in the superior vena cava. One advantage of this procedure is that X-ray visualization can be eliminated to reduce the danger associated with X-rays.





EUROPEAN SEARCH REPORT

 Application Number
 EP 14 17 8027

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	US 2008/039715 A1 (WILSON DAVID F [US] ET AL) 14 February 2008 (2008-02-14) * paragraphs [0003], [0047] - [0061], [0114] - [0116] *	1-14	INV. A61B5/00 A61B5/06 A61B5/042
Y	US 2009/156926 A1 (MESSERLY SHAYNE [US] ET AL) 18 June 2009 (2009-06-18) * paragraphs [0025] - [0029], [0050] - [0063] *	1-14	
A	US 2009/177090 A1 (GRUNWALD SORIN [US] ET AL) 9 July 2009 (2009-07-09) * paragraphs [0004], [0024], [0060], [0067] - [0069], [0089], [0090] *	1-14	
X	US 4 567 882 A (HELLER RICHARD M [US]) 4 February 1986 (1986-02-04) * column 1, lines 28-39 *	15	
A	* column 2, line 58 - column 4, line 5 * * column 4, line 62 - column 5, line 25 *	1-14	
X	US 5 993 382 A (PRUITT SR J CRAYTON [US]) 30 November 1999 (1999-11-30) * column 1, lines 7-9 *	15	TECHNICAL FIELDS SEARCHED (IPC)
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A	US 2010/016844 A1 (PATEL JR MANOJ B [US]) 21 January 2010 (2010-01-21) * paragraphs [0048] - [0052] *	15	
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The present search report has been drawn up for all claims			
Place of search Berlin		Date of completion of the search 28 April 2015	Examiner Trachterna, Morten
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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Application Number

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
EP 14 17 8027

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-14

A system for locating a central venous catheter according to claim 1.

2. claim: 15

A system for navigating a catheter through a body passageway of a patient according to claim 15.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 14 17 8027

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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28-04-2015

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	定位装置		
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[标]申请(专利权)人(译)	库克医学技术有限责任公司		
申请(专利权)人(译)	库克医疗技术有限责任公司		
当前申请(专利权)人(译)	库克医疗技术有限责任公司		
[标]发明人	PAMEIJER PRESTON R		
发明人	PAMEIJER, PRESTON R.		
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审查员(译)	TRACHTERNA , MORTEN		
优先权	61/857736 2013-07-24 US 61/927648 2014-01-15 US		
其他公开文献	EP2829222A2 EP2829222B1		
外部链接	Espacenet		

摘要(译)

描述了一种用于使用两种不同的定位模式将中心静脉导管导航和定位到静脉系统中的装置和方法。例如，外周插入的中心导管（“PICC”）可以被导航并定位在上腔静脉内。在第一模式中使用发光元件以将PICC导航到上腔静脉。为了改善导航期间的可见性，从发光元件发射的光可以包括窄范围的波长，其通常匹配可通过限定导管壁的光吸收材料传输的光的波长。在第二模式中使用导电介质来监测ECG信号，以便将PICC定位在上腔静脉中。该过程的一个优点是可以消除X射线可视化以减少与X射线相关的危险。

FIG. 3

