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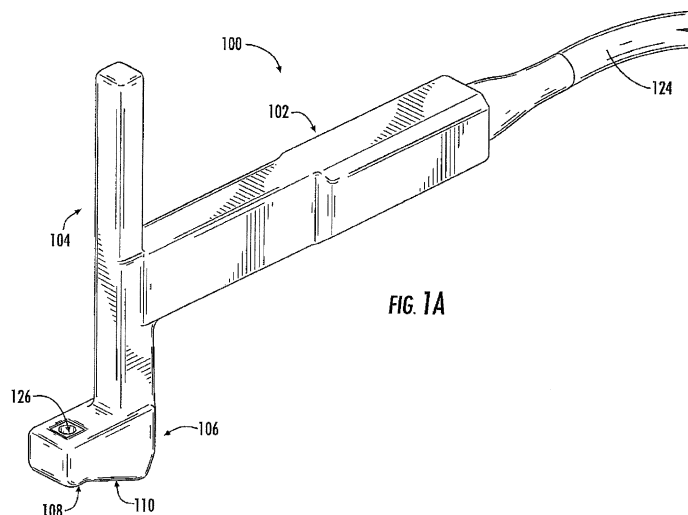
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(54) **Ultrasound device for probe guidance and sterilizable shield for same**

(57) Disclosed are medical probe devices and methods for use guiding of percutaneous probes during medical procedures. The probe devices include an ultrasound transducer housing having a passage therethrough configured to accommodate a probe. The devices can be utilized to guide a probe through the probe guide to a percutaneous target with real time visualization of the probe during the procedure. In addition, the devices can include a sterilizable shield including a sterile probe guide

such that the transducer housing itself can be separated from a subject by a sterile barrier. The sterilizable shield can be a single-use shield that can prevent contamination and re-use of the shield. The devices can define a beneficial geometry conducive to use by a single operator that can be utilized for percutaneous targets near the skin surface and can enable excellent contact between the device and the skin surface of a subject.



**FIG. 1A**



## EUROPEAN SEARCH REPORT

 Application Number  
 EP 13 15 2351

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2007/038113 A1 (OONUKI YUTAKA [JP] ET AL) 15 February 2007 (2007-02-15) * figures 2,4,5 *	1	INV. A61B8/08 A61B17/34
Y	US 2005/101868 A1 (RIDLEY STEPHEN F [US] ET AL) 12 May 2005 (2005-05-12)  * figure 9 * * paragraphs [0053], [0071] - [0073] *	1-6, 8-10, 12-15	
X	JP 2003 334191 A (ALOKA CO LTD) 25 November 2003 (2003-11-25) * figures 3-5,8 *	1	
Y	WO 00/40155 A1 (DYMAX CORP [US]) 13 July 2000 (2000-07-13) * figures 1-5 *	2-4	
Y	WO 2005/009509 A2 (GEORGIA TECH RES INST [US]; ROGERS PETER H [US]; TRIVETT DAVID H [US];) 3 February 2005 (2005-02-03) * figures 1,4-6 * * paragraph [0035] *	5,6	TECHNICAL FIELDS SEARCHED (IPC) A61B
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Y	WO 2007/027511 A2 (ULTRASOUND VENTURES LLC [US]; PARK ROBERT S [US]; KELEMEN COLIN [US];) 8 March 2007 (2007-03-08) * figures 2A,3A,6,7 * * page 20, paragraph 3 *	8-10	
<del>The present search report has been drawn up for all claims</del>			
Place of search Munich		Date of completion of the search 22 May 2014	Examiner Schießl, Werner
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			



Application Number

EP 13 15 2351

**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:

1-6, 8-15

☐ 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 13 15 2351

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: 1-6, 15

A medical probe device wherein the skin contacting surface comprises a first and second portion removably attachable to one another (claim 2), the housing defines a base and a probe guide opening passing through the base (claim 5), or wherein the housing includes a handle, a post and a base, with the motion detector being located in the post (claim 15). These constructional details of the transducer housing improve the handling of the medical probe device.

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## 2. claim: 7

A medical probe device comprising at least one raised ridge on the skin contacting surface (see claim 7) in order to better hold ultrasonic gel between the device and skin surface, preventing formation of an air gap and improving coupling between the skin and the device.

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## 3. claims: 8-14

A medical probe device further comprising a single use sterilizable shield (see claim 8) to provide a sterile barrier between a patient and the non-sterile medical probe device during a medical procedure.

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

EP 13 15 2351

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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22-05-2014

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EPO FORM P0459

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

专利名称(译)	用于探针引导的超声装置和用于其的可消毒屏蔽		
公开(公告)号	<a href="#">EP2586376A3</a>	公开(公告)日	2014-07-02
申请号	EP2013152351	申请日	2010-08-26
[标]申请(专利权)人(译)	SOMA ACCESS SYST		
申请(专利权)人(译)	SOMA接入系统, LLC		
当前申请(专利权)人(译)	SOMA研究有限责任公司		
[标]发明人	RIDLEY STEPHEN F HAGY M DEXTER		
发明人	RIDLEY, STEPHEN F. HAGY, M. DEXTER		
IPC分类号	A61B8/08 A61B17/34		
CPC分类号	A61B8/4422 A61B1/00142 A61B8/0833 A61B8/0841 A61B8/4209 A61B8/4254 A61B8/4281 A61B8/461 A61B17/3403 A61B46/10 A61B2017/00296 A61B2017/00858 A61B2017/3405 A61B2017/3413		
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#### 摘要(译)

公开了医疗探针装置和在医疗程序期间用于引导经皮探针的方法。探针装置包括超声换能器壳体, 其具有穿过其中的通道, 该通道构造容纳探针。该装置可用于将探针通过探针引导件引导至经皮靶, 并在手术期间实时可视化探针。另外, 所述装置可包括可消毒的护罩, 所述护罩包括无菌探针引导件, 使得换能器壳体本身可通过无菌屏障与受试者分离。可消毒护罩可以是一次性护罩, 可以防止护罩的污染和重复使用。所述装置可以限定有益于几个操作者使用的有益几何形状, 其可以用于皮肤表面附近的经皮目标并且可以使装置与受试者的皮肤表面之间实现极好的接触。

