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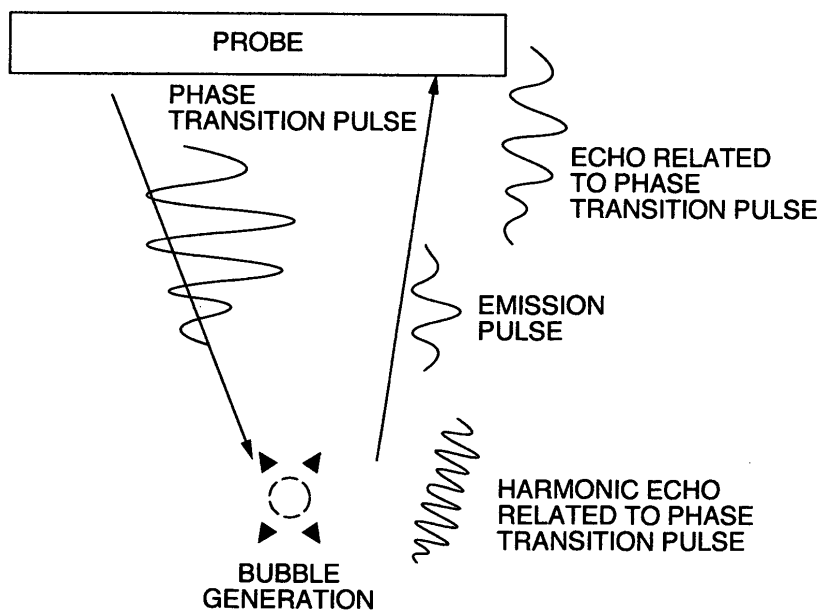
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(54) **Ultrasonic imaging apparatus**

(57) An ultrasonic imaging apparatus, detecting a signal peculiar to a contrast agent emitted when liquid formed in a fine particle vaporizes due to ultrasonic waves and imaging space distribution thereof. A narrow band

is used for transmission, a broad band is used for a received signal, and in a state of high space resolution of the received signal, a transmission signal and the received signal are discriminated.

**FIG.3B**



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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)
X	US 2005/273010 A1 (SHI WILLIAM T [US] ET AL) 8 December 2005 (2005-12-08) * paragraphs [0001], [0008], [0016] - [0018], [0021] * * claim 24 *	1-3	INV. G01S15/89 G01S7/52 A61B8/00
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A	----- STRIDE E ET AL: "MICROBUBBLE ULTRASOUND CONTRAST AGENTS: A REVIEW" PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS. JOURNAL OF ENGINEERING IN MEDICINE. PART H, MECHANICAL ENGINEERING PUBLICATIONS LTD, LONDON, GB, vol. 217, no. H6, 1 November 2003 (2003-11-01), pages 429-447, XP008078024 ISSN: 0954-4119 chapter "1 INTRODUCTION", chapter "6.1 New imaging techniques"	1-12	TECHNICAL FIELDS SEARCHED (IPC)  G01S A61B G01N
A	----- US 5 833 614 A (DODD STIRLING S [US] ET AL) 10 November 1998 (1998-11-10) * abstract * * column 2, lines 1-3,33-42 * * column 3, lines 14-43 * * column 6, line 53 - column 7, line 46 * * figures 1,3 * ----- -/--	7-12	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 2 September 2008	Examiner Willig, Hendrik
<b>CATEGORY OF CITED DOCUMENTS</b> 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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EPO FORM 1503 03.82 (P04C01)



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	WO 99/35967 A (QUADRANT HEALTHCARE UK LIMITED [GB]; FRINKING PETER J A [NL]; CESPEDES) 22 July 1999 (1999-07-22) * abstract * * figure 1 *	7-12	
A	EP 1 406 096 A (GE MED SYS GLOBAL TECH CO LLC [US]) 7 April 2004 (2004-04-07) * abstract * * figure 6 *	7-12	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
Place of search <b>Munich</b>		Date of completion of the search <b>2 September 2008</b>	Examiner <b>Willig, Hendrik</b>
<b>CATEGORY OF CITED DOCUMENTS</b> 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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EPO FORM 1503 03 82 (P04C01)

**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).



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

Ultrasound imaging apparatus using a frequency domain based contrast agent discrimination technique.

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2. claims: 7-12

Ultrasound imaging apparatus using a time domain based contrast agent discrimination technique.

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

EP 07 02 2428

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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02-09-2008

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		JP 2005342512 A	15-12-2005
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专利名称(译)	超声波成像设备		
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[标]申请(专利权)人(译)	株式会社日立制作所		
申请(专利权)人(译)	HITACHI, LTD.		
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IPC分类号	G01S15/89 G01S7/52 A61B8/00		
CPC分类号	A61B8/463 A61B8/481 G01S7/52022 G01S7/52038 G01S15/102 G01S15/895 G01S15/8977		
优先权	2007046390 2007-02-27 JP		
其他公开文献	EP1965224B1 EP1965224A2		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

一种超声波成像设备，其检测当由细颗粒形成的液体由于超声波和其成像空间分布而蒸发时发射的造影剂特有的信号。窄带用于传输，宽带用于接收信号，并且在接收信号的高空间分辨率状态下，识别传输信号和接收信号。

