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(54) **Ultrasonic transducer, ultrasonic probe, diagnostic device, and electronic instrument**

(57) An ultrasonic transducer (1) includes "m" first ultrasonic elements (8a) including first diaphragms (51a), and "n" second ultrasonic elements (8b) including second diaphragms (51b). "m" represents a number of the first ultrasonic elements (8a) and is an integer of 1 or more. Each of the first diaphragms (51a) has a first area. "n" second ultrasonic elements (8b) includes second diaphragms (51b). Each of the "n" second diaphragms (51b) has a second area being smaller than the first area. "n" represents a number of the second ultrasonic elements (8b) and is an integer larger than "m". The "m" first ultrasonic elements (8a) are electrically connected in series in a case where "m" is an integer of 2 or more. The "n" second ultrasonic elements (8b) are electrically connected in series. B/A is within a range of 0.9 to 1.1, when a total sum of the first areas is "A" and a total sum of the second areas is "B".

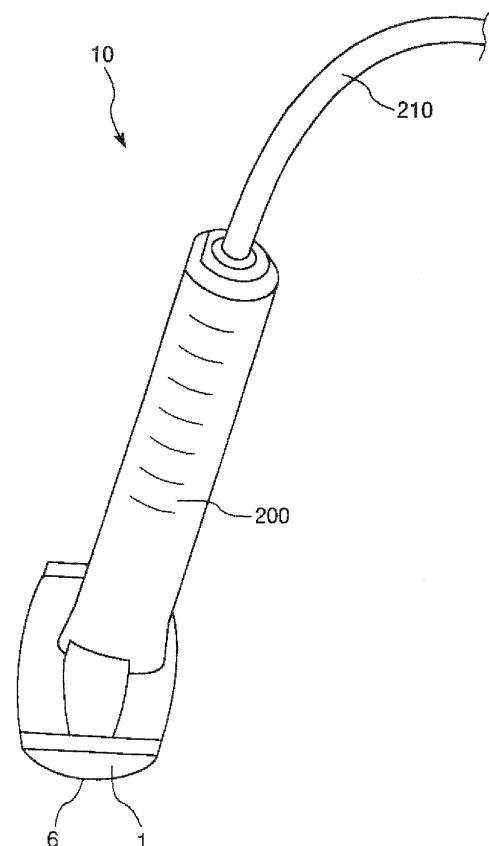


Fig. 1



EUROPEAN SEARCH REPORT

Application Number
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Y	* abstract; claims 1-3; figures 10,11 * * paragraphs [0057] - [0059] *	2-4,6-9	
Y,D	JP 2006 075425 A (TOSHIBA CORP; TOSHIBA MEDICAL SYS CORP; TOSHIBA MEDICAL SYS CO LTD) 23 March 2006 (2006-03-23) * abstract; figures 1-3,5 * * paragraphs [0011], [0016], [0021], [0050] *	2,9	
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Y	WO 2009/088307 A1 (ANGELSEN BJOERN A J [NO]; HANSEN RUNE [NO]; MAASOEY SVEIN-ERIK [NO]; J) 16 July 2009 (2009-07-16) * abstract; claim 1; figures 12,13b * * page 1, lines 5-12 * * page 44, lines 14-27 *	2,9	
			TECHNICAL FIELDS SEARCHED (IPC)
			B06B G10K A61B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 16 December 2016	Examiner Fernandes, Paulo
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 13 16 8240

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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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)	超声波换能器，超声波探头，诊断设备和电子仪器		
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[标]申请(专利权)人(译)	精工爱普生株式会社		
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审查员(译)	费尔南德斯, PAULO		
优先权	2012115321 2012-05-21 JP		
其他公开文献	EP2666547A2		
外部链接	Espacenet		

摘要(译)

超声换能器 (1) 包括“m”个包括第一隔膜 (51a) 的第一超声元件 (8a) 和包括第二隔膜 (51b) 的“n”个第二超声元件 (8b) 。“m”表示多个第一超声波元件 (8a) ，并且是1或更大的整数。每个第一隔膜 (51a) 具有第一区域。“n”个第二超声波元件 (8b) 包括第二隔膜 (51b) 。每个“n”个第二膜片 (51b) 具有小于第一区域的第二区域。“n”表示多个第二超声波元件 (8b) ，并且是大于“m”的整数。在“m”是2或更大的整数的情况下，“m”个第一超声波元件 (8a) 串联电连接。“n”个第二超声波元件 (8b) 串联电连接。当第一区域的总和是“A”并且第二区域的总和是“B”时， B/A 在0.9到1.1的范围内。

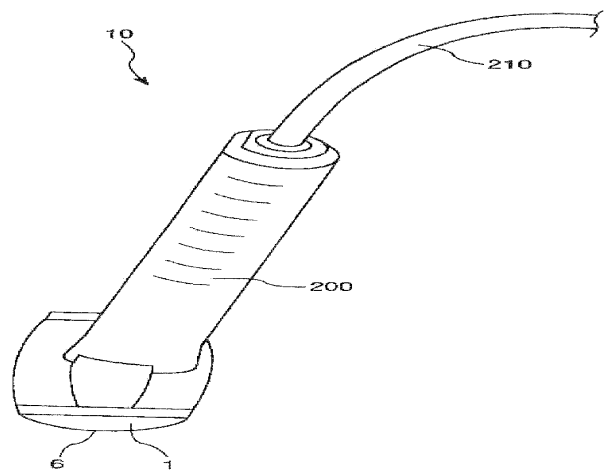


Fig. 1