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(54) **Ultrasonically guided puncturing needle**

(57) An ultrasonically guided puncturing needle stabbed in a subject (P) being irradiated with an ultrasonic wave, the needle (30A) includes a cylindrical needle-like member (31A) having concaves (32A) and convexes

(32D) formed on a peripheral surface of the needle-like member (31A) to reflect the ultrasonic wave, and a film (33A) formed on the peripheral surface on which the concaves (32A) and convexes (32D) are formed.

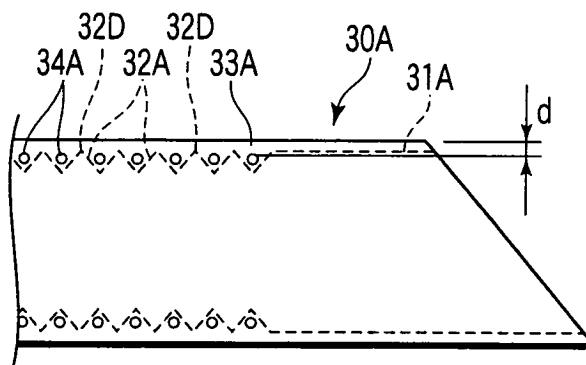


FIG. 4A



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 06 00 5638

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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Y	* page 3, line 28 - page 4, line 6; claim 1; figure 1 *	2-8	
Y	US 6 053 870 A (FULTON, III ET AL) 25 April 2000 (2000-04-25) * column 3, lines 16-55; claim 1; figures 1,2 *	2-8	
Y	US 4 583 061 A (O'SHEA ET AL) 15 April 1986 (1986-04-15) * column 3, line 46 - line 66; figures 5,6 *	1,9	
Y	US 2003/135117 A1 (WARD TIM E ET AL) 17 July 2003 (2003-07-17) * paragraphs [0023] - [0028] *	1,9	
Y	US 4 401 124 A (GUESS ET AL) 30 August 1983 (1983-08-30) * column 2, line 50 - column 4, line 20; claims 1,4,7; figures 1-4 *	1,9	
Y	EP 1 426 011 A (OLYMPUS CORPORATION) 9 June 2004 (2004-06-09) * claim 1; figure 1 *	1,9	A61B
A	US 5 967 988 A (BRISCOE ET AL) 19 October 1999 (1999-10-19) * column 4, line 47 - column 5, line 15; claim 1; figures 3-9 *	1-9	
A	US 5 048 530 A (HURWITZ ET AL) 17 September 1991 (1991-09-17) * the whole document *	1-9	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 18 May 2006	Examiner Chopinaud, Marjorie
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p>			

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EPO FORM 1503 03.02 (P04C01)

**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims 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 the first ten claims.

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:

1-9



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**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
EP 06 00 5638

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: 1-9

Needle comprising a cylindrical needle-like member having concaves/convexes on its peripheral surface to reflect the ultrasonic wave and a film formed on the peripheral surface on which the concaves and convexes are formed.

2. claims: 10-11

Needle comprising a cylindrical needle-like member and at least two films stacked on a peripheral surface of the needle-like member, wherein a space which is either a vacuum layer or a gas layer is formed between the two films.

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

EP 06 00 5638

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

18-05-2006

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专利名称(译)	超声引导穿刺针		
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[标]申请(专利权)人(译)	株式会社东芝 东芝医疗系统株式会社		
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IPC分类号	A61B17/34 A61B8/08 A61B10/00 A61B8/00		
CPC分类号	A61B17/3403 A61B8/0833 A61B8/0841 A61B17/3401 A61B2017/3413 A61B2090/3925		
代理机构(译)	KRAMER - HARSH - 施密特陈		
优先权	2005099445 2005-03-30 JP		
其他公开文献	EP1707134B9 EP1707134B1 EP1707134A2		
外部链接	Espacenet		

摘要(译)

超声引导的穿刺针刺入被超声波照射的对象(P)中,针(30A)包括具有凹陷(32A)的圆柱形针状构件(31A)和形成在周边表面上的凸起(32D)。用于反射超声波的针状构件(31A)和形成在其上形成有凹部(32A)和凸部(32D)的外周表面上的膜(33A)。

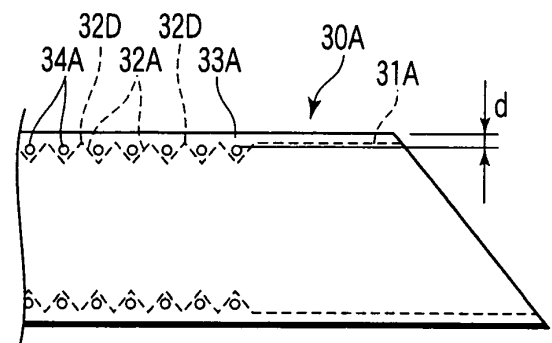


FIG. 4A