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(51) Int. Cl.⁷
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10-2004-0076219
 2004 08 31

(21) 10-2004-0012147
 (22) 2004 02 24

(30) JP-P-2003-00046515 2003 02 24 (JP)

(71) 가 가
 1 1 1

가 1385

(72) 1-1-1가 가

3-3361-51

1-3

5-221-646

(74)

:

(54)

(1) (1) (1) , (1) (1) FPC(6), FPC(6), FPC(6),
 (1) (1) FPC(6) (9)가 (9)가 (10)

2	1		
3	1	2	A-A
4	1	2	B-B
5a	5c	1	
6a	6c	1	
7a	7b	1	
8	1		가
9	2		
10	가		
11	가	, A	(fillet)
B			,
12	3		
13			
14			
15			

1 :

2 :

2a :

2b :

2c :

3 :

4 :

5 :

12 : FPC

2003 2 24

2003-46515

가

(201) (201c), (203) (205)가 . , (201) (203) (201b)
(203) (207) (backing material)(209)가

FPC(211) 15 , (201) 90 ,
 (基端部)가 (209) () .

(205) , FPC(211)
 (201) 가 (205) (201) ,
 (205) (201) , FPC(211) , (201)

, FPC(211)가 (201) 90
 (large deflection theory) , FPC(211) 100 N/mm²
 , FPC(211) FPC(211) (201) 가 가
 . , 가 , FPC(211) (201) 가 가
 가 가 .

, FPC 가 , FPC 가

, 가 가 , (crack) 가 . 가

(角部)

, (1) FPC(6) (10) 가 90 , (10) 가
 (9) , (1) FPC(6) (1) FPC(6)
 , 가 (1) FPC(6) 가 , 가 (12) 가
 , (12) 가
 , (8b) (8c) FPC(6)
 , FPC(6) (1) 가 ,
 , (1) FPC(6) (11) 가
 , (1) FPC(6) (10) (9) (11) (9)
 , (10) (9) (13)
 , (9) 가 , (1) FPC(6)
 , 9 2
 9 2
 1 가
 9 , (32b) , FPC(31b, 31c) (32b) (1) y (32c) FPC(31b, 31c)
 (32c) (2) (7)
 FPC(31b, 31c) (1) (33) 가 , (1) 5 90 (1) FPC(31b, 31c)
 , 10 90 가
 (2c) (1) FPC(31b, 31c) (32c), (2b) (33) (9) 가 (9)
 , (1) , (1) FPC(31b, 31c) (1) y
 , FPC(31b, 31c) 가 , (1) FPC(31b, 31c) (1) FPC(31b, 31c)
 가
 , (33) 5 , (9)
 , 1 , (1) FPC(31b, 31c) 가
 , 가
 , (1) FPC(6) 가
 10 , 10 P , P
 ,
 10
 가
 (1) FPC FPC (12)

: 2 mm,

: 10 ,

: 5 .

10 , 0.44 N
1.74 N
4

, 가 , FPC
FPC 가 ,

, 10 가 ,

11a 11b 가

가 , 6 0.01 mm , FPC
FPC 가 ,

(blade) : 30000 rpm,

: 0.05 mm,

: 0.15 mm ~ 0.10 mm,

: 0.1 mm ~ 0.05 mm.

11a 11b , 0.05 mm 0.07 mm 가
, 가 가 FPC FPC , 가
, 10 가 ,

Cu/ , FPC /
FPC

()

FPC (R) : 5 mm,

: 90 ,

Cu (t) : 0.025 mm,

Cu (Young's modulus)(E) : 130000 N/mm².

1

$$\sigma = (\Delta L/L) \times E$$

$$= \frac{1/4 \times 2\pi \times (R + t/2) - (1/4 \times 2\pi \times R)}{1/4 \times 2\pi \times R} \times E$$

$$= \frac{tE}{2R}$$

$$= 325 [N/mm^2]$$

1 325 N/mm ²	FPC	,					
, 1	FPC	,					0
, 2 가		, FPC			가 90		
12 (101)		(101)				12 (101)	, 12
8 ~ 256	(102)	(102a), (102c)	(102c)(1) (102a)	(102c)(1), (103)	(102b)(2) (103)		
(102b) 2c							(10
(2b)	(102a), (2c),	(102b) (3)	(102c), 가	(103)			(2a),
12 (104)가 (105)가			(101) (101) (105)	(102c) (102b)		(103) (114)	(
0 가 90	(101)		FPC(106)(1) FPC(107)(2)	가 가			가 9
FPC(106)	(101) (4) (107a)		FPC(107)	(106a) (101) (4)		(106a) (102) (107a)	
.		
.	(101) (102c)	FPC(107)	1 (110a)	(110a) (109)	() (107a)	(109a) (102c)	
2b)	(101)	FPC(106) 2 (110b)		(110b) (109b)		(109b) (102b)	(10
	(109a, 109b)		(101)	FPC(106, 107)			

, , , (109a, 109b) ()
 ,
 (101) FPC(106) (102b) (102c)
 (111)()가 (111) (101)
 01) FPC(106, 107) 가
 FPC(106, 107) (105) () ()

, (101) FPC(107, 106) (101) FPC(106, 107) (109a, 109b),
 , (102b) (106a), (110a, 110b) (102c) (107a)
 , (101) FPC(106, 107) 가 , (101) FPC(106, 107) (101)
 FPC(106, 107) 가

13 12 , 12 가

, 13 0.22 N/mm , 12 300 N/mm² 1.62 N/mm
 가 , FPC 가 , 12
 0 N/mm²

가

가

가

(57)

1.

가

2.

1

3.

2

4.

1 , ,

, , 1

,

, , 2

5.

1 , , 가

6.

1 , ,

, . .

7.

1 , ,

, . .

8.

1 , , (fillet)

, . .

9.

, , 1 , ,

2 , ,

, , , , , , , ,

1

2 , , 1 , ,

1

, ,

1

, 2 (正面)

, , 1

2

10.

9 , ,

, ,

11.

9 , ,

, ,

12.

9 , ,

, ,

13.

9 , , (fillet)

, ,

14.

, , , ,

가

가

15.

14

가

가

16.

14

가

가

17.

14

.

18.

14

.

19.

14

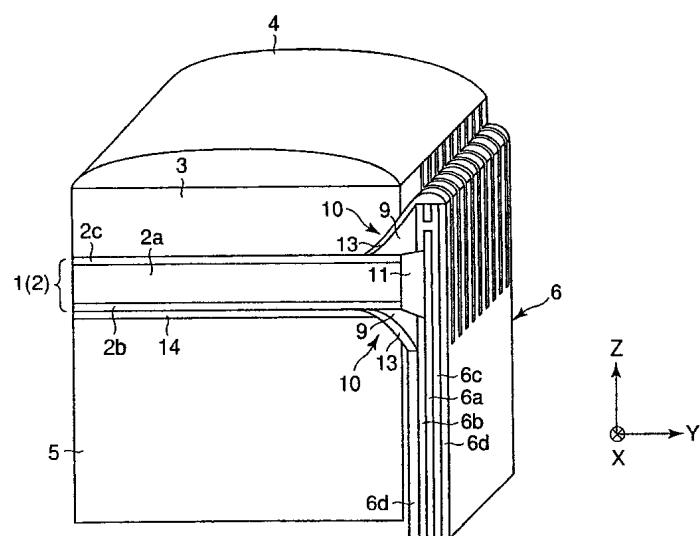
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20.

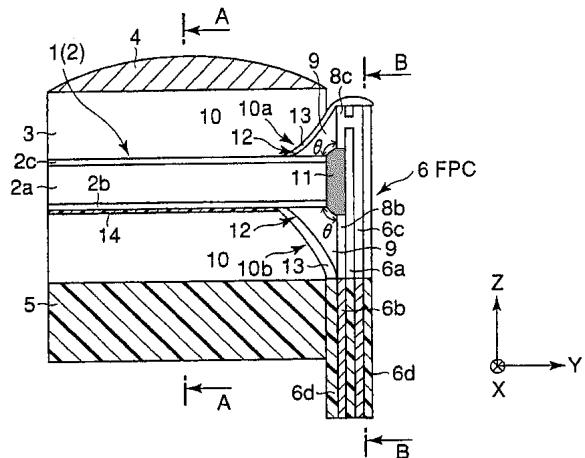
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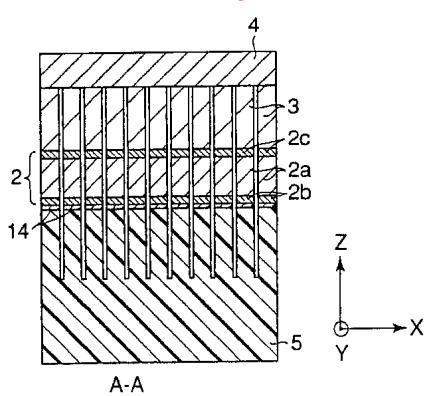
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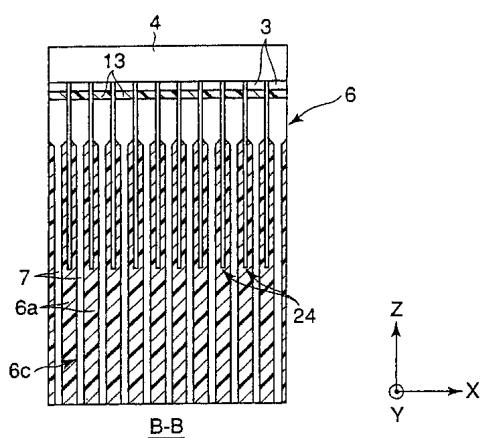
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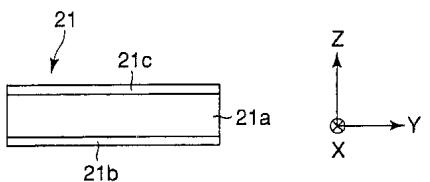
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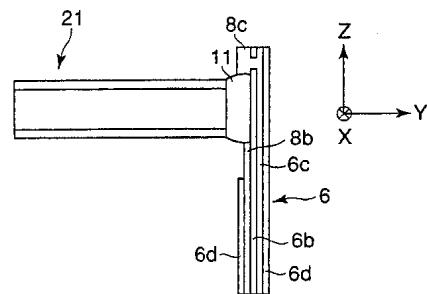
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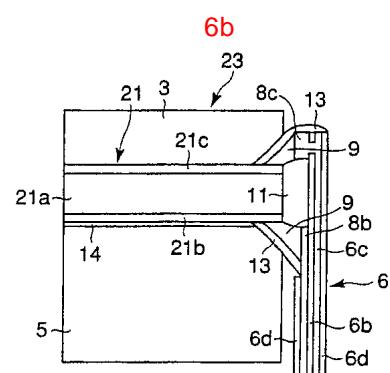
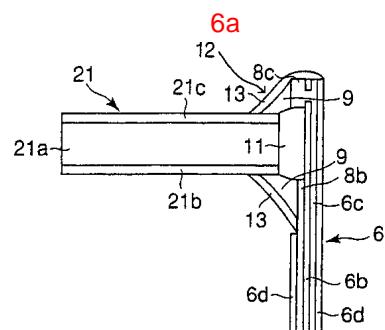
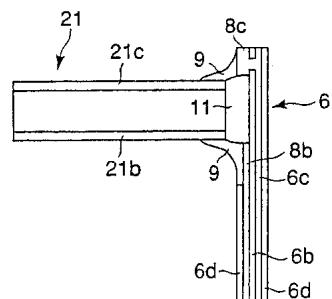
5a

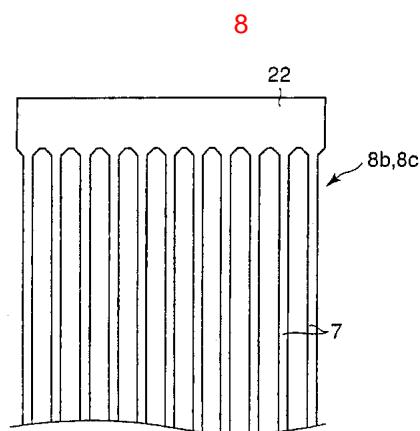
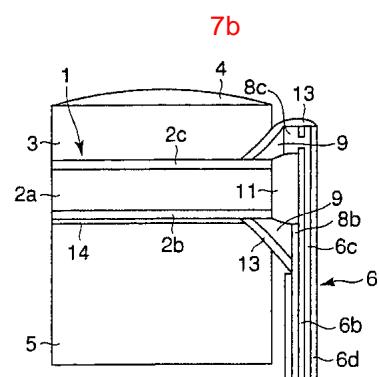
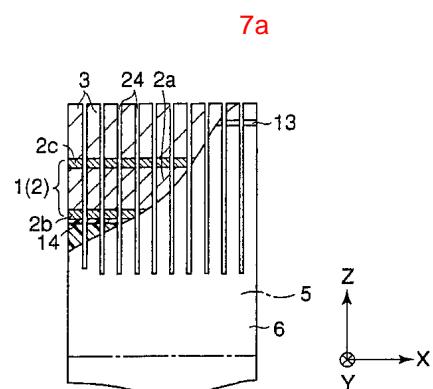
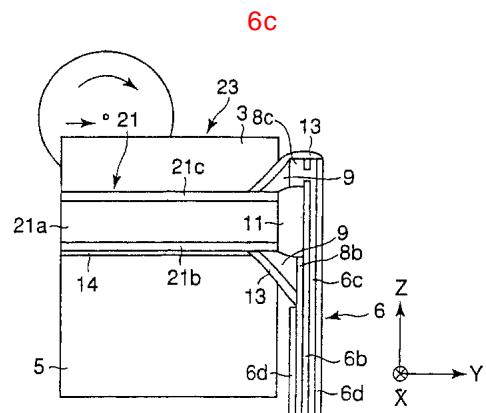


5b

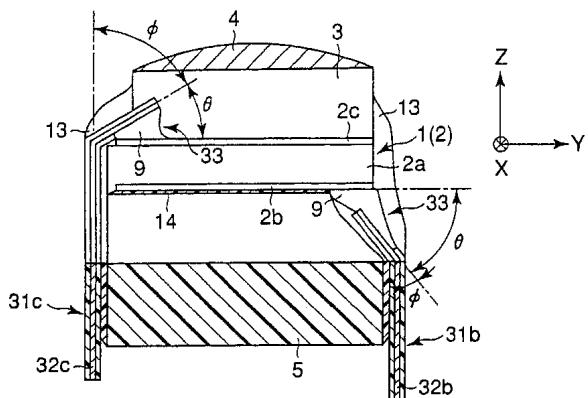


5c

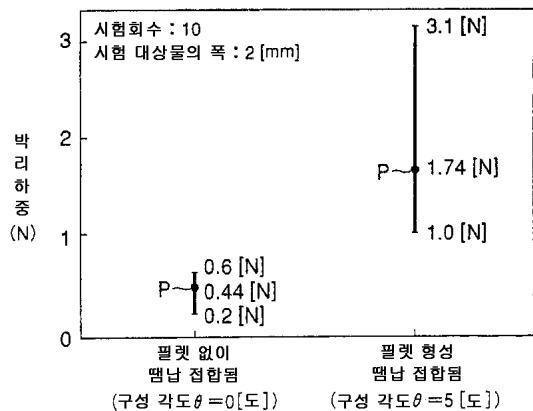




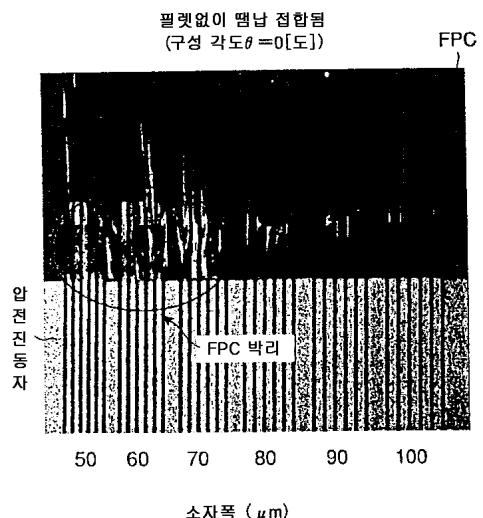
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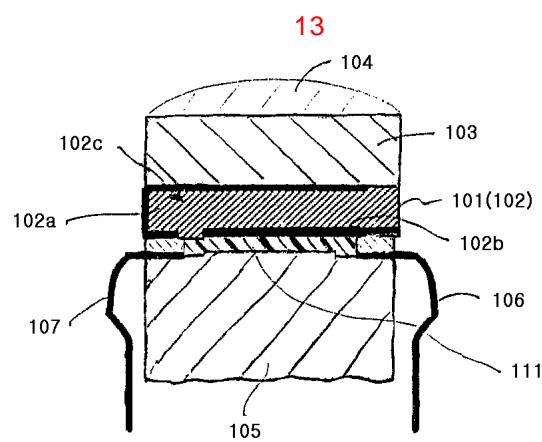
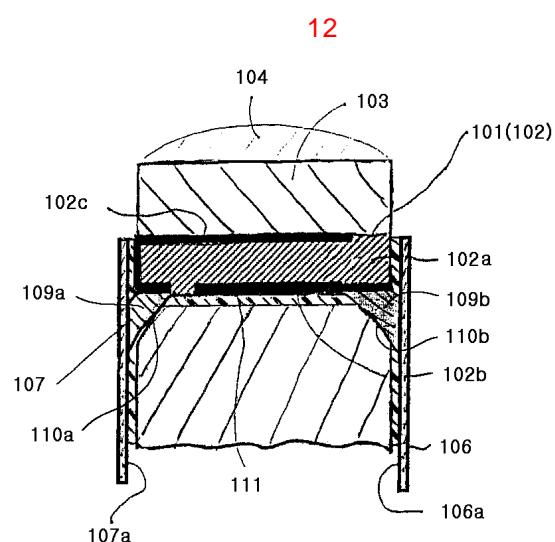
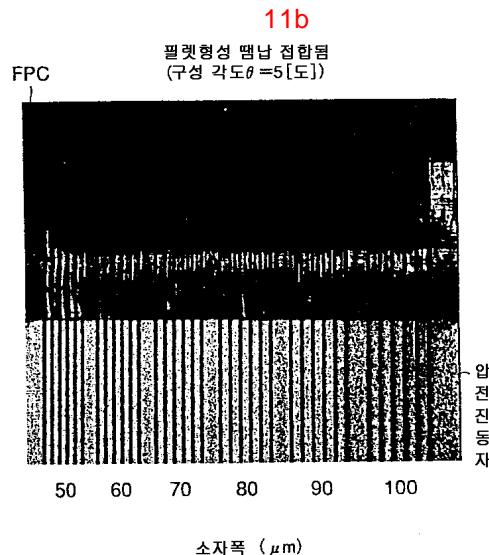


10



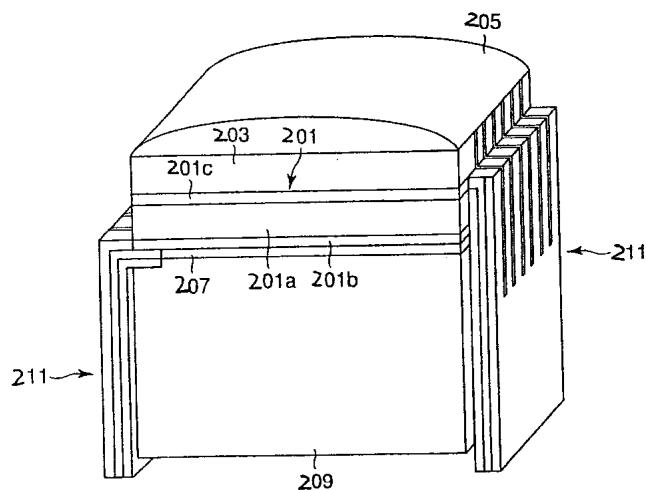
11a





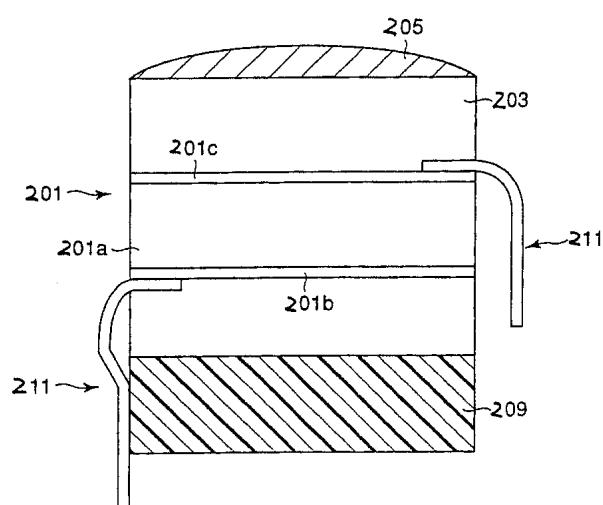
- 종래 기술 -

14



- 종래 기술 -

15



- 종래 기술 -

专利名称(译)	超声波探头及其制造方法		
公开(公告)号	KR1020040076219A	公开(公告)日	2004-08-31
申请号	KR1020040012147	申请日	2004-02-24
[标]申请(专利权)人(译)	株式会社东芝 东芝医疗系统株式会社		
申请(专利权)人(译)	Sikki东芝股份有限公司 东芝制药企业把鼻子炮操作系统		
当前申请(专利权)人(译)	Sikki东芝股份有限公司 东芝制药企业把鼻子炮操作系统		
[标]发明人	SUDO MASAAKI 수도마사아키 HIKI SUSUMU 히키수수무 SATO SHINICHI 사토신이치 SATO TAIHEI 사토다이헤이		
发明人	수도마사아키 히키수수무 사토신이치 사토다이헤이		
IPC分类号	B06B1/06 H04R17/00 G01N29/24 A61B8/00		
CPC分类号	A61B8/00 B06B1/0622		
代理人(译)	金泰HONG 金斗KYU		
优先权	2003046515 2003-02-24 JP		
其他公开文献	KR100666976B1		
外部链接	Espacenet		

摘要(译)

在包括压电振动器(1)发送和接收超声波的每个部分(10)中提供电连接这些压电振动器(1)和FPC(6)的焊接材料(9)和电气获得启发的FPC(6)在该压电振动器(1)中,FPC(6)面对压电振动器(1)侧,由压电振动器(1)和FPC(6)构成。

