

(19)  
(12)(KR)  
(A)(51) 。 Int. Cl. <sup>7</sup>  
A61B 8/00(11)  
(43)2001 - 0100924  
2001 11 14(21) 10 - 2001 - 0023193  
(22) 2001 04 28

(30) 2000 - 133084 2000 05 02 (JP)

(71) 가 가  
가  
가 가 가 210

(72) 가 가 가 798 가 가

(74)

:

(54)

가 ,

2 .

가 ,

.

1

1 1 ;

2	1		;
3	1		;
4A~4D	1		;
5	2		;
6	3		;
7	4		;
8	5		;
9	5		;
10A~10D	5		;
11	6		;
12	11		;
13	11		.

\*\*

\*\*

(11):

(12):

(15):

(16):

(30):

(40):

(50):

(70):

(90):

(113):

$$\begin{aligned}
& \text{PZT}(\text{sensor array}) \text{가} \text{PVDF} \\
& \text{(time lag)} \text{ (echo)} \\
& \text{PZT} \text{ PVDF} \text{ SN} \\
& \text{(40),}
\end{aligned}$$

가

1, 1, 1, (40) (sensor) (50) (120)

(40) PZT (40) PVDF (30) (50) (50)

(11), (12), (15), (16) (16) (62)

(60) (61) A/D (62)

A/D (62) 1 (80)가 (80) 1 (80)

(90)가 2 (100) 3 (90) 2

(110) 가 (70) (30) (61)

(16)

1, 2, 2, (PZT) (19) (17, 18) (40) (13)

14) (13) (50) (13) (13)

a, 13b ) 2

(19) , PZT ( ) PVDF ( )

( )가 (19) (17, 18) 가 ,

(17, 18) 가

(14) (14a, 14b ) (11) (12)

(Fabry - Perot) (FPR ) (13) FPR ( )

(14) 가 (19) , (15)

12) (12) (PD) (16)

CCD

(21) , (13) (19) (17, 18) (40), (14) , (50)가 .

(22) (14) (19) (21) , (22) (21) , (gum) (23) , (24) (24) , (13) 가 (25) .

(14)가 (13) , ( 19) 4 가 .

(1) 1 4A (13a, 13b ) , 1 (19) .

(2) 4B (13a, 13b ) , (19a, 19b ) 가 2 , 2 가 가 .

(3) 1 1 4C (13a, 13b ) , 1 1 (20) 1 , 1 가 가 .

(4) 1 4D (13a, 13b ) , 1 (20a, 20b ) , 2 가 가 .

2 , 2 , 5 . 5 1 , 2 1 (13) , (122) (13a, 13b ) (122)가 (122a, 122b ) .

2 ( ) ,  
 A , n<sub>2</sub> B가 ( ) d , n<sub>1</sub>  
 (1) , m

$$2d \cdot \sin \theta = m \quad (1)$$

( , , = /2 (2) .)

$$2d = m \quad (2)$$

가 (d)가  
 ( ) , 가  
 ( ) 가 ( )

가 가 ,  
 , 20kHz 가  
 ( )가  
 ( ) = ( ) / ( )

3/4 가 , 가  
 가 가

3/4 ,  
 가 3.5MHz,  
 5500m/s s

$$\lambda_s = 5500 / (3.5 \times 10^6)$$

$$= 1571.4 (\mu\text{m})$$

$$1571 \times (3/4) = 1178.5 (\mu\text{m})$$

$$1178.5 \mu\text{m}$$

, 3, 6, 6, (heterodyne)  
 (150) (40) , (130)  
 가 (70) (30)  
 (153) (16) (151) (152)

(30) , PZT (40)  
 가 (40) 가 (131)  
 (133) (130) (131) (131)  
 (132) 2  
 가 (140)  
 (141) (142) (141) (145) (16)  
 (L2) (142) (143) (144)  
 (142) (141) (145) (16) (13)  
 가

, 가 가 ,  
 가 (151) (152)  
 (153)  
 (154) (155)

, 4, 7, 7,  
 (170) 가

(171), (173), (174), (172),  
 (174) (177) PZT (175), (176)

(161) (162) (160)  
 175) 가 PD CCD (16)  
 (174) (173) 가  
 (16) (171) (evanescent field)

( ) = ( ) - ( )

(16)

(70) , (16) ( ) (16) (30)

(171) (16) (70) (182) (181)

5 , 8 (125) 1 (122a, 1

22b )가 (121a, 121b )가 , 2

(11) (12) 가 (121a, 121b ) (12) (121a, 121b ) (16a, 16b ) (16a, 16b ) , 2

3/4 가 ,

9 가 2 9 (121a, 121b ) (50) , (40)가 (122a, 122b )가 (50) , (43)

(12) , (19) (40) , (19) (24) (19) (42)

(17, 18)

(122) (121) (19) (21) , (23)가 1

(22), (23),

(121a, 121b )가 1 (1 ( ) (50)

(19) 10 4 가

(1) 1

10A 1 2 , 1 (19)

(2)

10B 1 , (19)  
 . , 2 , 2 가 가 .

(3) 1 1

10C 1 , 1 1 (20) 1 . , 1 가 가 .

(4) 1 1

10D 1 (50) , 1 1 가 가 (20) . , 2

가 , 6 , 11~ 13 . 5  
 (123a, 123b ) ,  
 11  
 , 12 11 (50) , 13 1 (112) .

11 , (111), (12),  
 (50), (50) (112),  
 (16a, 16b ) ( ) (126, 127, 128, 129a, 129b )  
 , ( ) (broad band)  
 , (12) .

11 , (111) (127) (113) , (126)  
 (50) .

12 , (50) (125) 가 L  
 (123a, 123b ) (123a, 123b )  
 , (123a, 123b ) (122a, 122b ) .

(2) , (122a) (d)  
 (2) 1 , (122b)  
 (d) (2) 2 ( 1 ) (122  
 c, 122d ) (122a, 122b ) 가 가 .  
 (122a, 122b ) (d)가 ,  
 , (122a, 122b ) 가  
 . ,  
 3/4 .

(123a) (126) (123a) (123b)  
 (gap)(124a) (124a) 가  
 (123b) (123c) (124b)  
 (123c, 123d) 가 (123a, 123b)  
 (PLC: Planar Lightwave Circuit)가

(50) (124a, 124b) (123a)  
 (123a) (122a) (123b) (L  
 (122a) 가 (L<sub>1</sub>') (122b) (123b) (122b)  
 (L<sub>2</sub>') (L<sub>MUL</sub>') (L<sub>3</sub>') (L<sub>4</sub>')  
 (122a, 122b) (L<sub>1</sub>', L<sub>2</sub>') (124  
 a, 124b) (126)

(113) (128) (L<sub>MUL</sub>') (16a, 16b)가  
 (112) (112) (112) (16a, 16b)가 (129a, 1  
 (129a, 129b) (L<sub>1</sub>', L<sub>2</sub>') (50) (122  
 29b) a, 122b) 가

(112) (AWG : Arrayed - Wavelength Grating) 1 (71)가  
 (72) (73a, 73b)가 (74)  
 (75a, 75b)

(72) (71) (74) (75a, 75b)  
 (73a, 73b) (72) (74) (74)가  
 (72) (74) (74)가  
 (1, 2, ..., N) (L'<sub>MUL</sub>') (71)  
 (75a, 75b) 가  
 (74) (74) (73a, 73b)

13

가 , 가  
 2 3  
 2 3

(57)

1.

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,

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2.

1

,

가

3.

1

,

4.

3

,

가

5.

3

,

가

6.

3

,

7.

3

,

8.

7

,

 $\frac{3}{4}$ 

가

9.

3

,

,

10.

3 , 가 ,

11.

;  
가 ;  
;  
;  
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;  
;  
;  
;  
;

12.

11 , 가

13.

11 ,

14.

13 , 가

15.

13 , 가

16.

13 ,

17.

13 ,  
.

18.

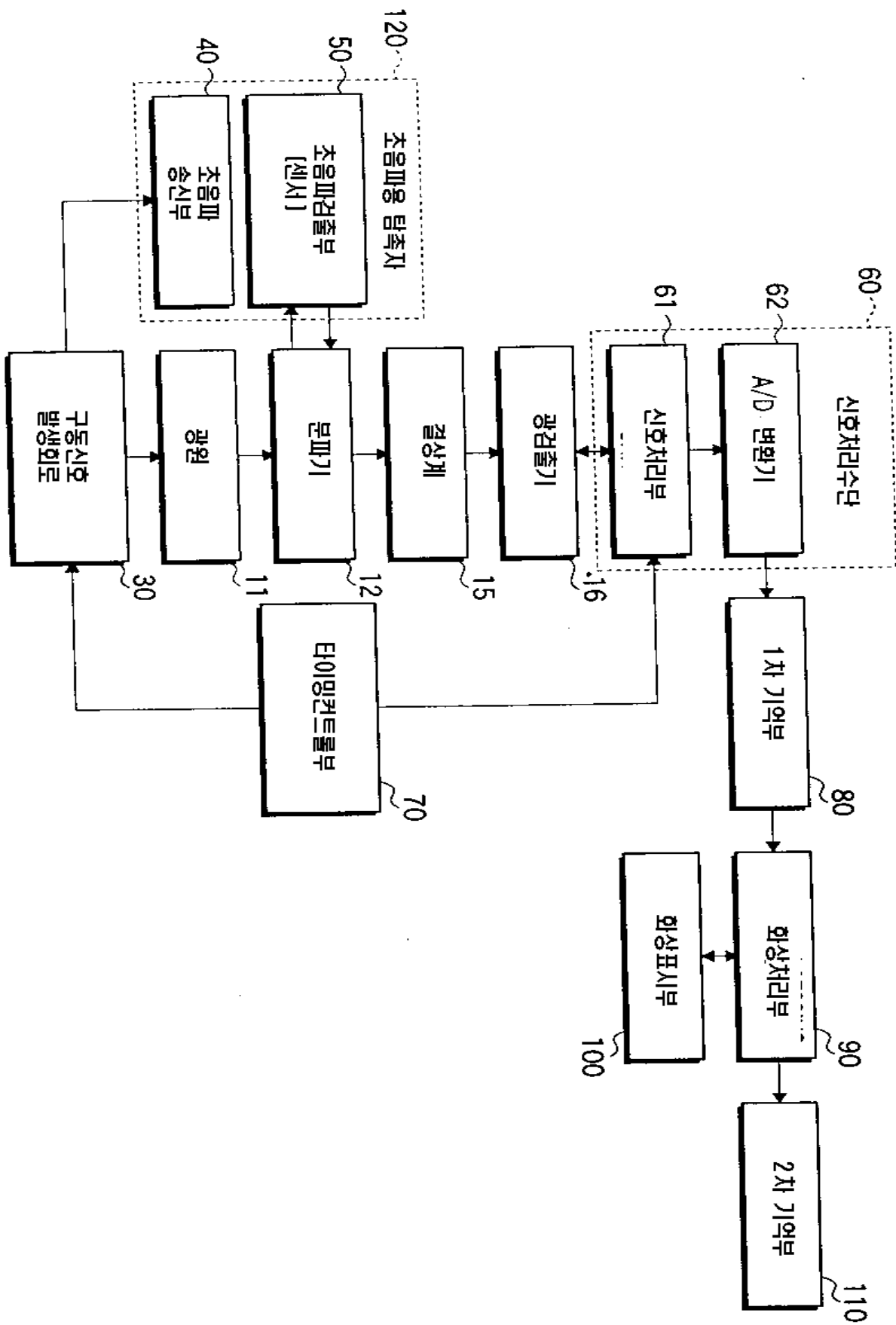
17 , 가  
3/4 .

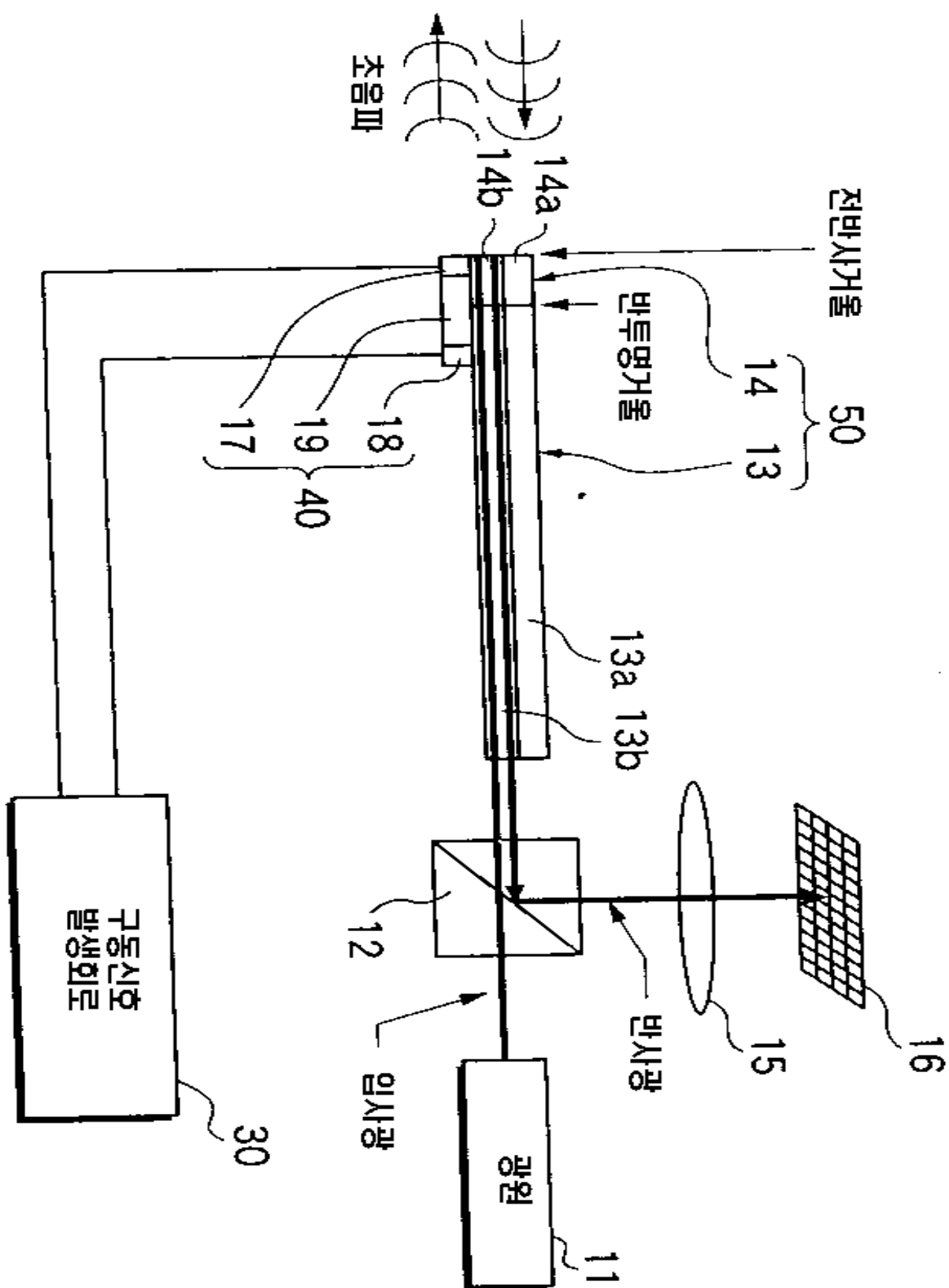
19.

13 , ,  
.

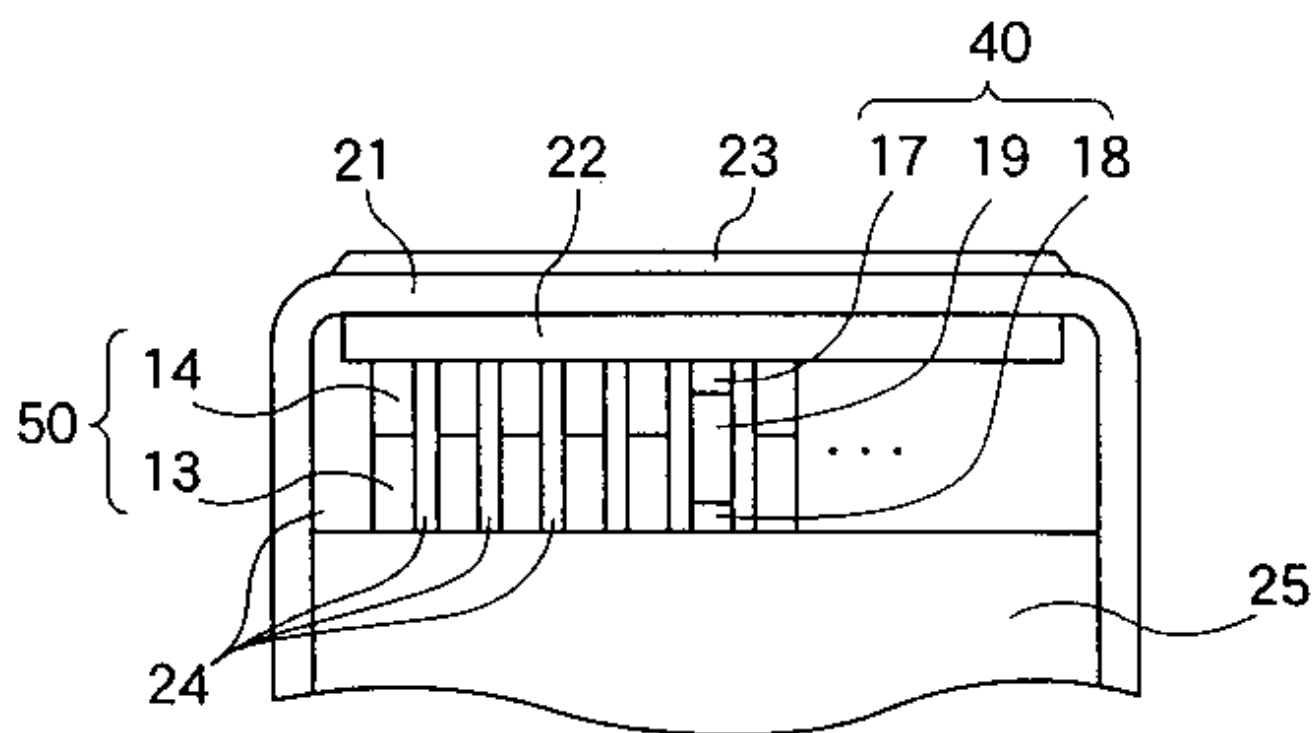
20.

13 , 가 ,  
.

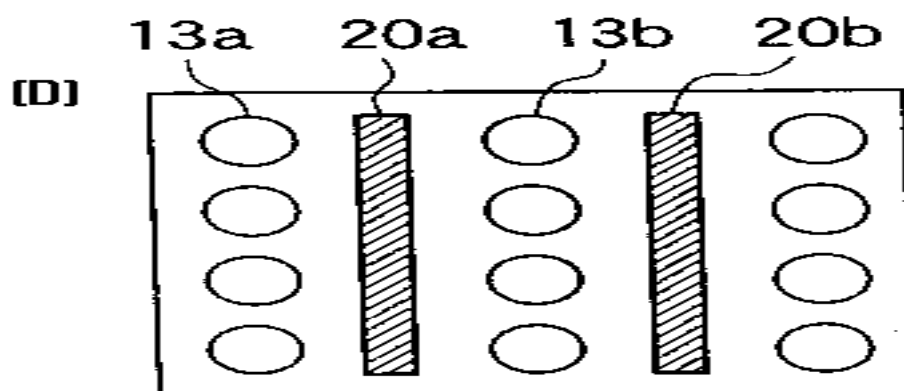
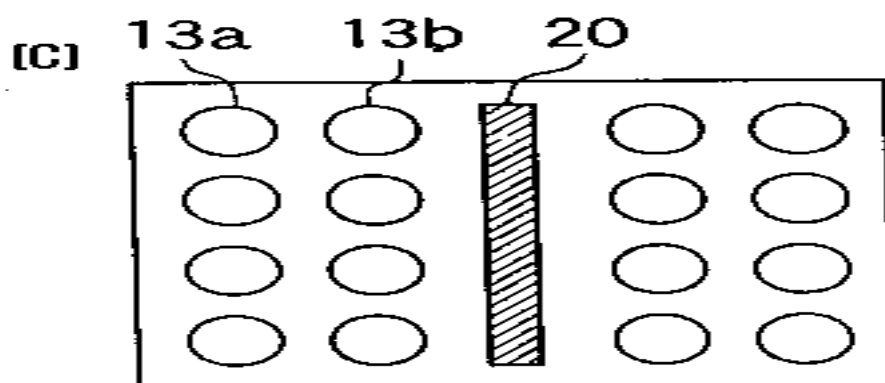
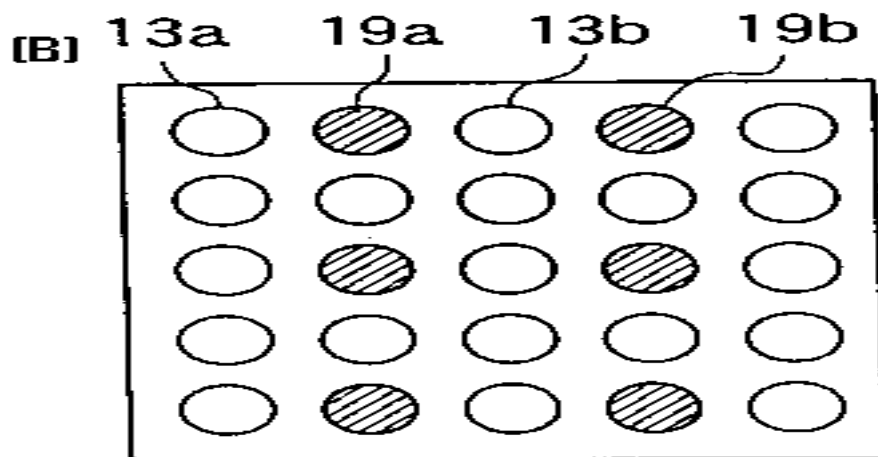
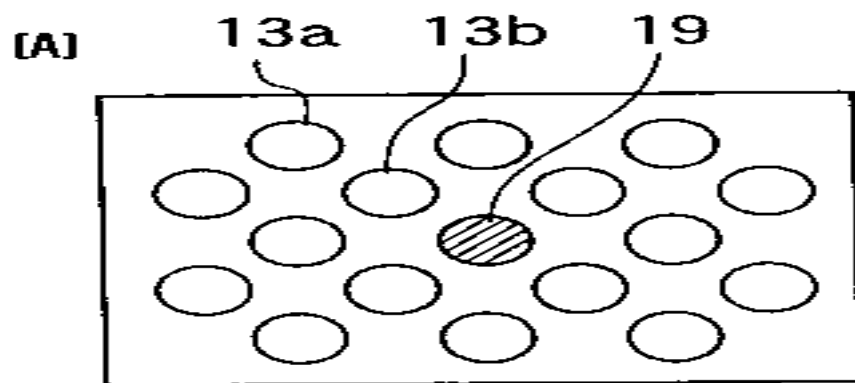




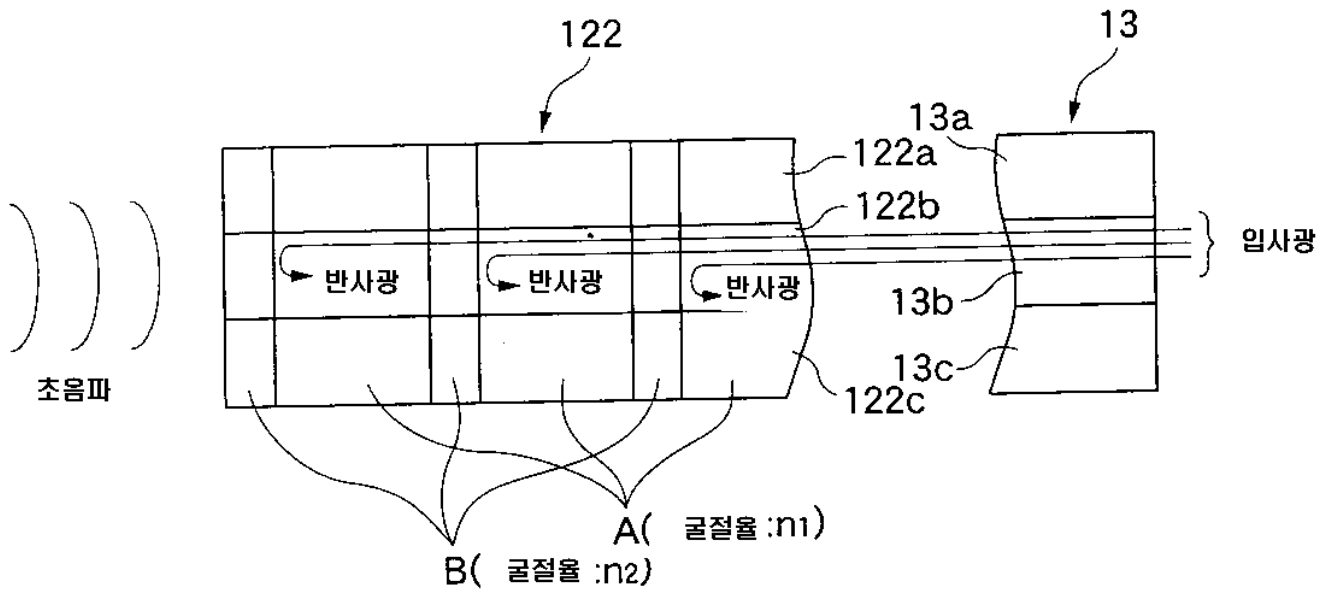
3



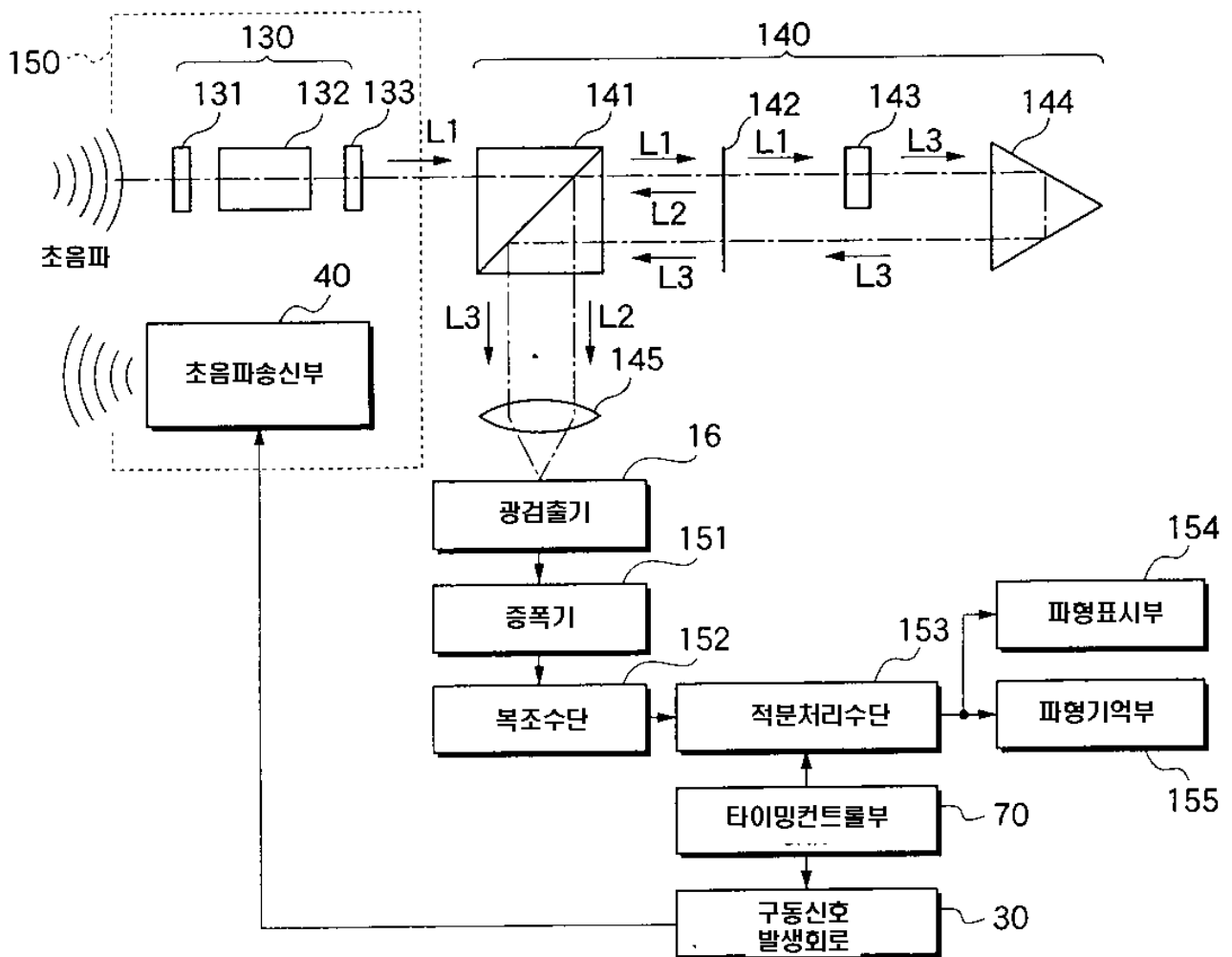
4



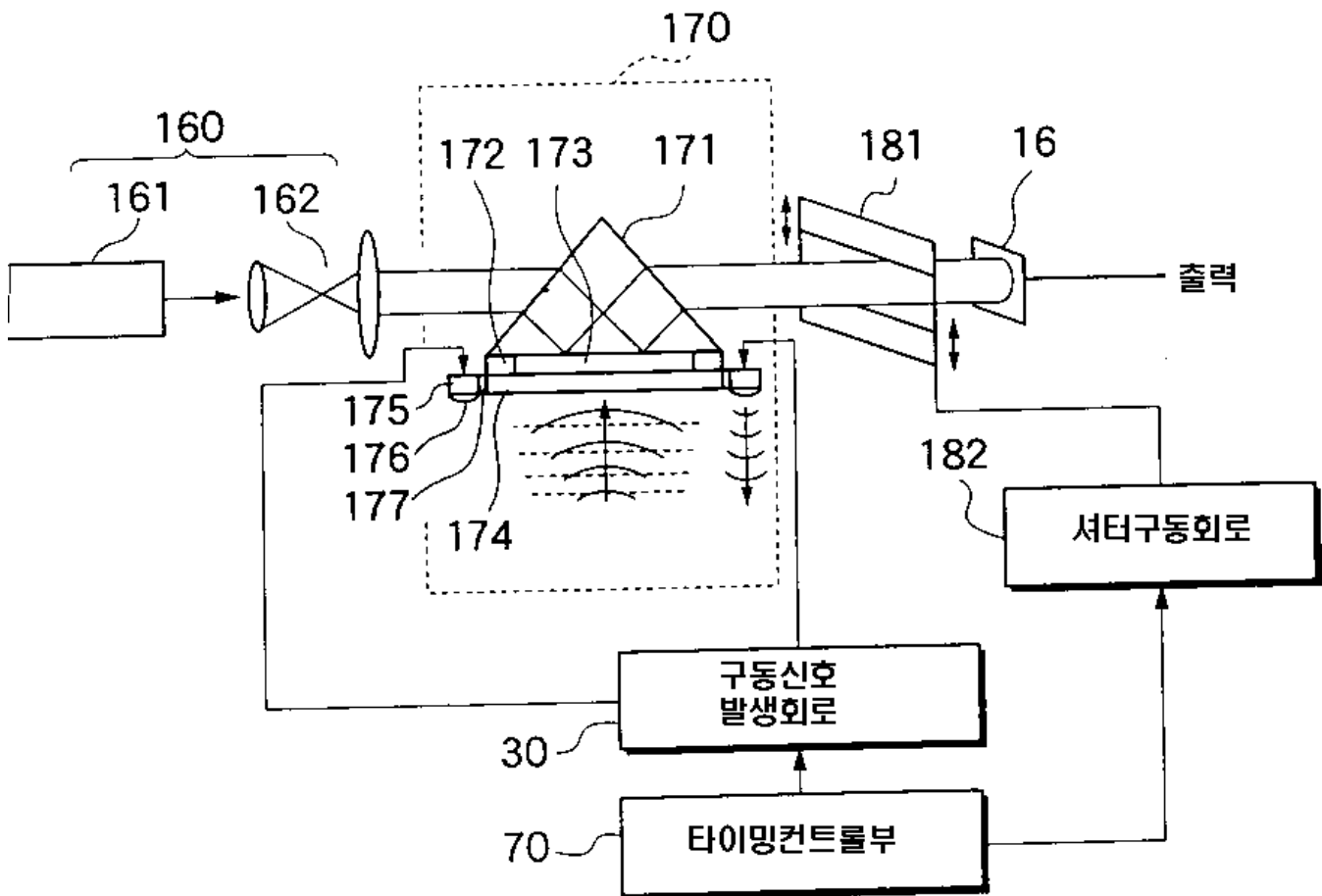
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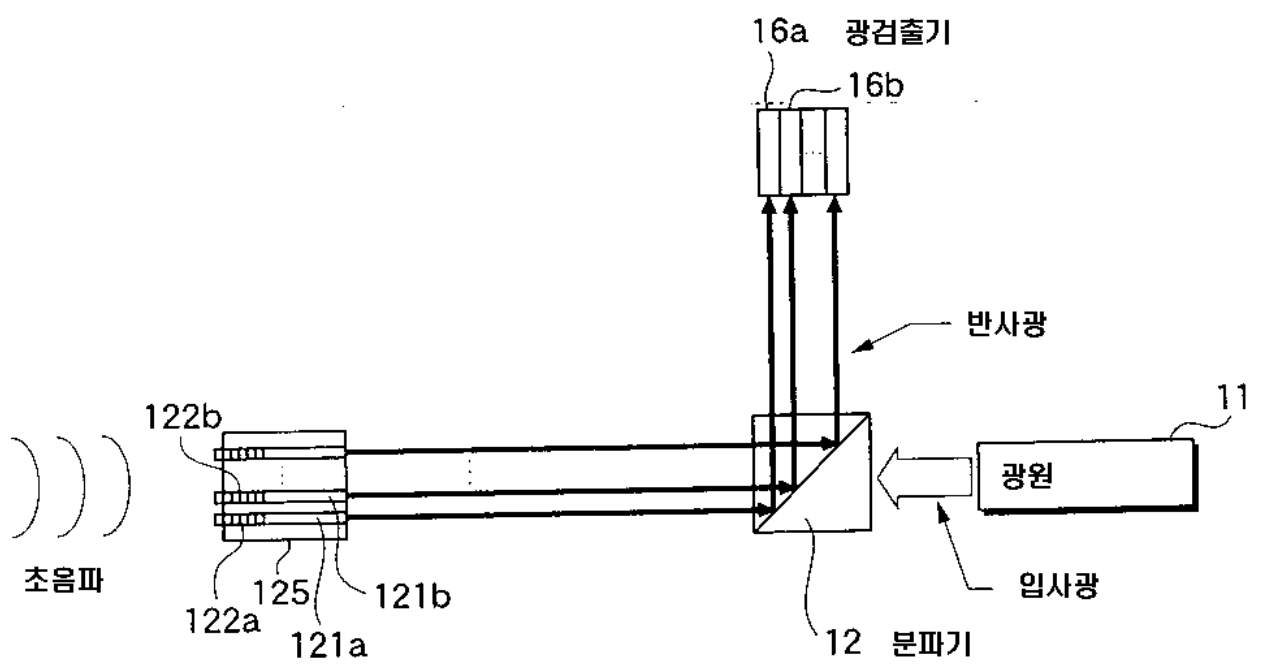
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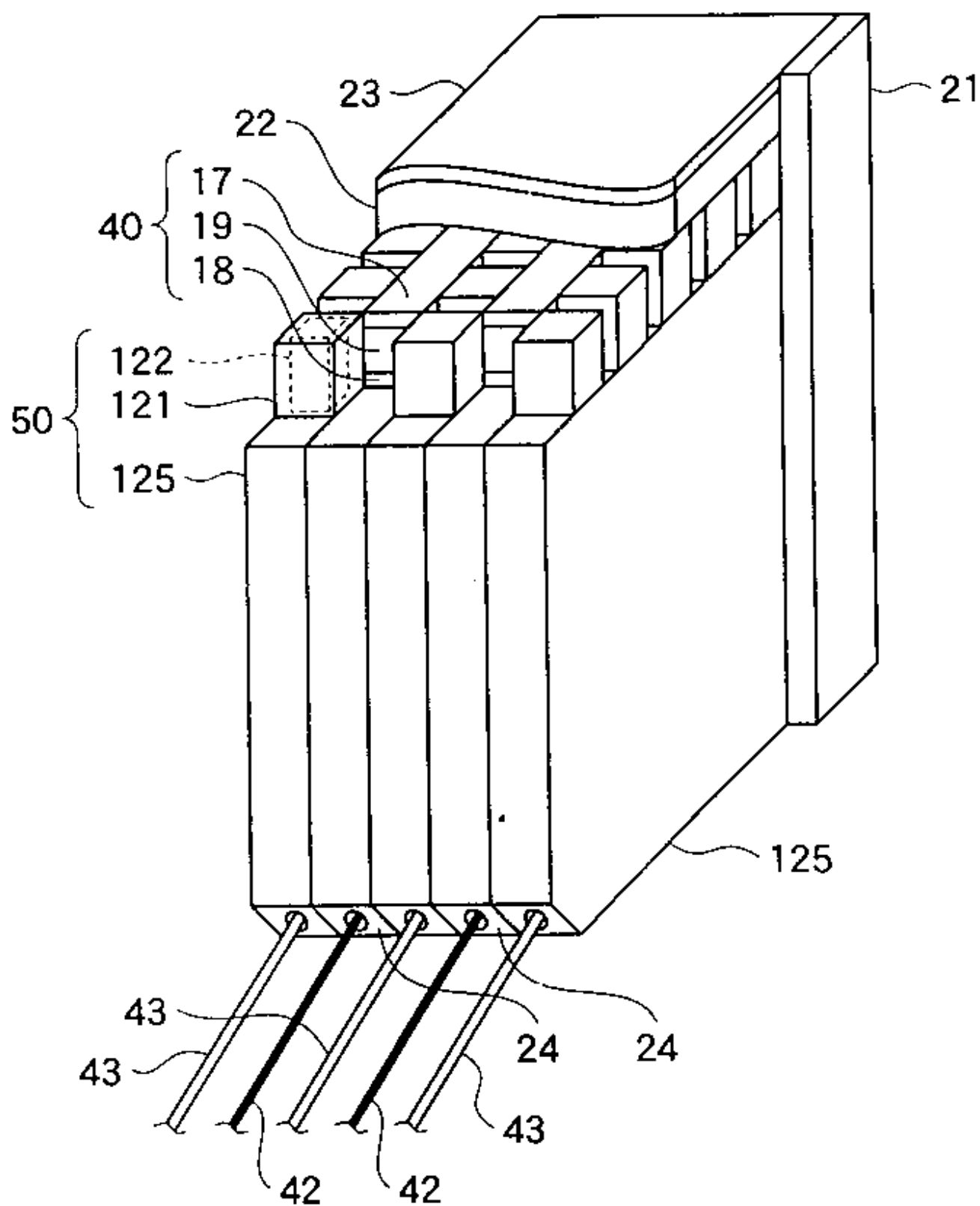


7

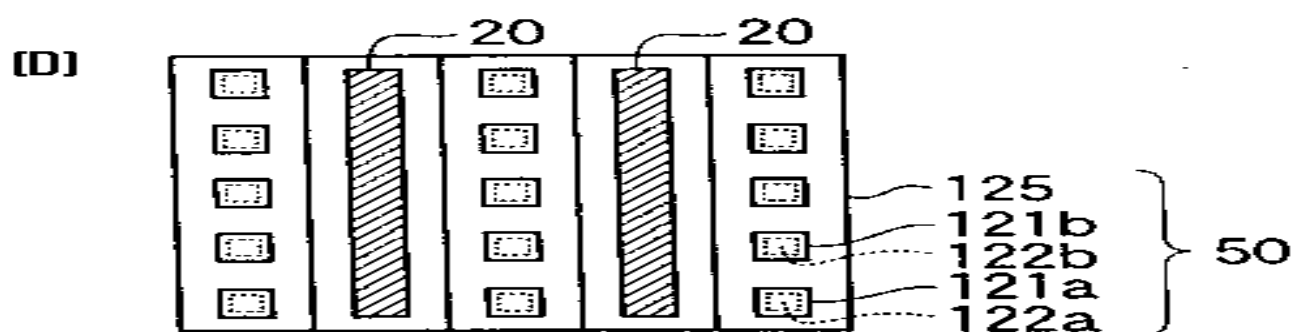
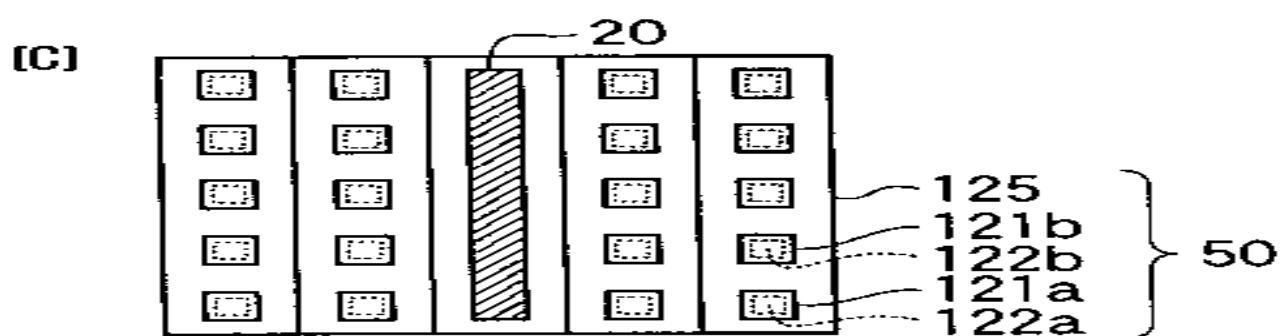
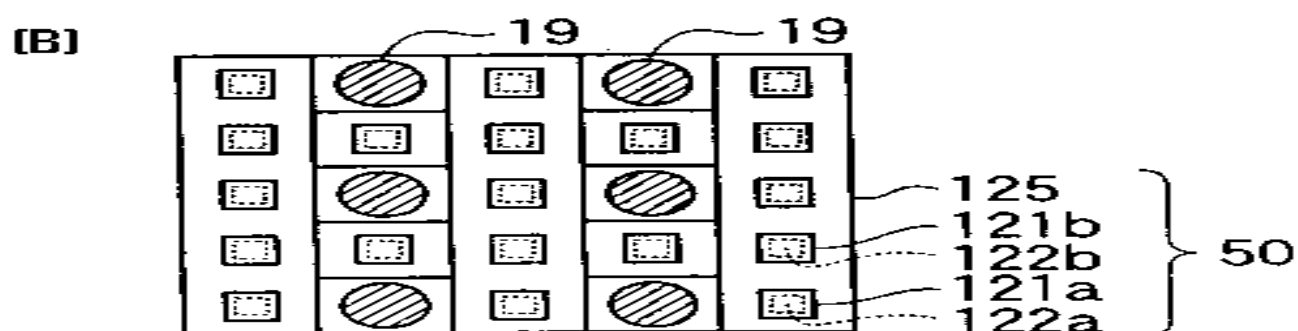
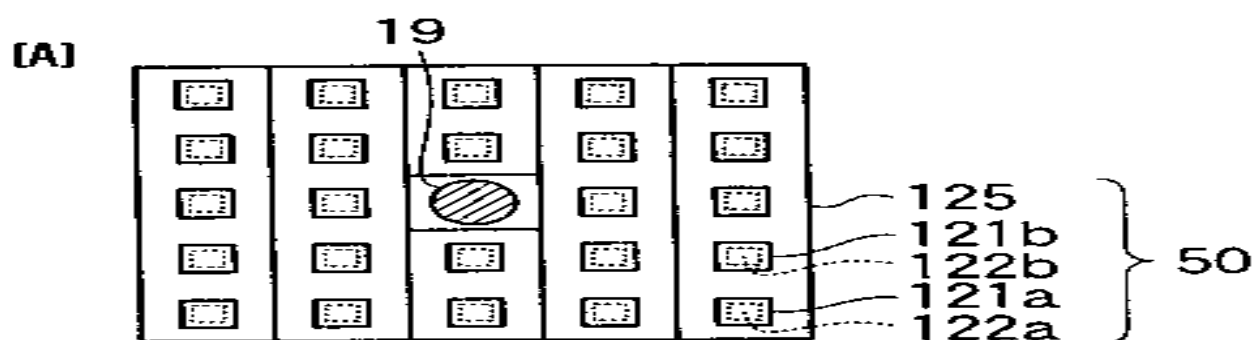


8



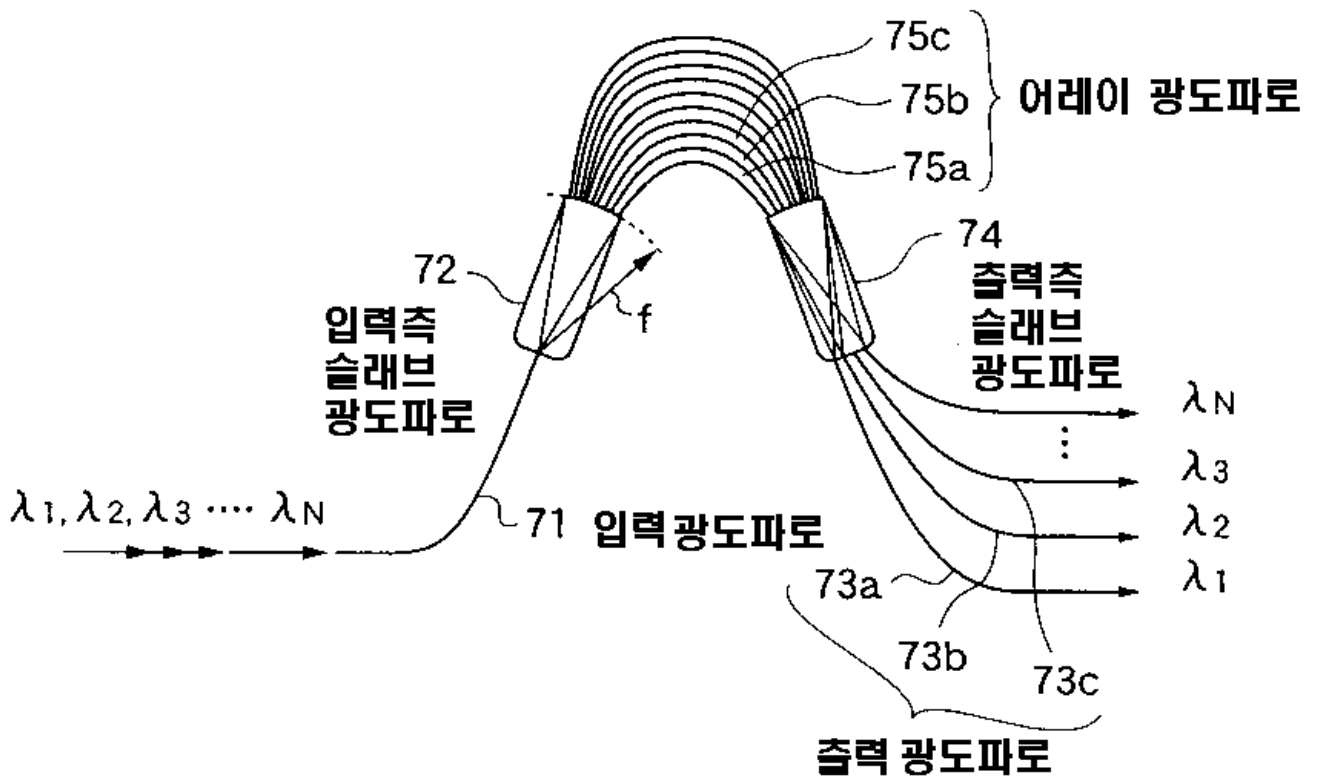


10





13



专利名称(译)	超声波探头和使用它的超声波诊断装置		
公开(公告)号	<a href="#">KR1020010100924A</a>	公开(公告)日	2001-11-14
申请号	KR1020010023193	申请日	2001-04-28
[标]申请(专利权)人(译)	富士胶片株式会社		
申请(专利权)人(译)	富士胶片有限公司		
当前申请(专利权)人(译)	富士胶片有限公司		
[标]发明人	OGAWA EIJI		
发明人	OGAWA,EIJI		
IPC分类号	A61B8/00 B06B1/06 G01H9/00 G01N29/24		
CPC分类号	A61B5/0097 A61B8/00 A61B8/4483 B06B1/06 G01H9/002 G01H9/004 G01N29/2418 G01N29/449 G01N2291/044 G01N2291/102		
代理人(译)	HA, 桑KU HA, 杨郁		
优先权	2000133084 2000-05-02 JP		
其他公开文献	KR100799964B1		
外部链接	<a href="#">Espacenet</a>		

### 摘要(译)

本发明的目的是不需要多个微量元素的电路。串扰或电阻抗不会增加。并且提供了用于超声波的二维探头，并且提供了超声波的呼叫功能。探头包括从光源产生的光，该光是基于通过包括光纤的光纤阵列输入的光的超声波调制的多个超声波检测装置，并且光纤分别形成在每根光纤的一个端部中。超声波发送装置由多个压电元件组成，是收益的。

