

- 1 ,
- 2 ,
- 3 ,
- 4 ,
- 5 ,
- 6 ,
- 7 (θ_{lc}),
- 8 θ_{lc} ,
- 9 ,
- 10 ,
- 11 ,
- 12 가 .

*

*

- 1, 2 : 3 :
- 4 : 5 :
- 6a, 6b : 7, 8 :
- 9, 10 : 11 :
- 12 : 13 :
- 14 : 15 :
- 16 : 17 :
- 18 : TFT 19 : CF
- 51 : 52 :
- 53, 54 : 55 :

56 : 57 :

58, 59 : 60 :

61 :

62 :

가 . , 가 ,
가 .
(TN) 가
/
가
TN 가 / 2743293
9 , 가
9 , (51), (51) 가
(53, 54), (52), (60) 가
(53, 54) 가 (51) (52) (51) (52)
(60) 10a , (51) (52)
(55) 가 , (60) (53, 54)
 θ_{lc} .
11 11
11 , 2 ,
(51), 가 (53, 54) (1), (52), (60)
(7)가 . 11 53 1 , 54 2 , 51 ,
52 , 59 1 , 58 2 11
(N) 1 (59) 1 (59)
, 2 (58) 1 (59) 1 (59) 2 (58)
(52) () 1 (59) 2 (58)
11a (, 1 (53) 2 (54) 가
) , (60) ,
, (52) P가 2 (58) ,
(52) 2 (58) (暗) 가 .

11b (, 1 (53) 2 (54) 가)
 , (51) (52) , (
 ,). , Q
 2 (58) . , 2 θ
 54) 가 , θ 가 (V) . , 1 (53) 2 (
 / .

1
 (1)

$$I = I_0 \cdot \sin^2 (\pi R / \lambda) \cdot \sin^2 (2 \theta)$$

, I_0 1 (59) , λ , R (常) (異常)
 $(\Delta n) \cdot d$. , Δn n_o 가 n_e (| n_e -
 n_o |) . 1 $\theta = \pi/4$

12 , 1 (53) 2 (54) 가
 . 가 , 가 . 1 θ

, TN 가 , 가 (normally)
 . , 가 ,

, , 가
 . 9 10
 가 , 1 $\theta = 0$, .
 (53, 54) (61) (62) (55)

(62) , 가가 . ,
 , 가 가 . 가 .

, , 가 , 가 n
 m , , 가 , 가 ,
 , , .

가 ,

2

(1, 2) (5) (3), (4) (6a, 6b) (5) (7, 8) 가 , $\theta_{lc} \pm 2$ (5) (1, 2) θ_{lc} , θ_i (8) θ_i 가 S_i 가 S , θ_i 가

(2)

$$\theta_{lc} = \sum (\theta_i \times S_i) / S \quad (i=1, 2, 3 \dots)$$

i θ_i 가 가 , 2 ((cross Nicols)) , 가 가

7 0 1 가, 7

7a , θ_{lc} , 7b , θ_{lc} , 7c , θ_{lc} 가

(rubbing) 3 L 50mm

(3)

$$L = N \times I_d (1 + 2 \pi r n / (60V))$$

N [mm/s], I_d [mm], r [mm], n [r/min], V [mm/s].

6, (73) (72) R (rayon) n
(71) (74) S V
(74) (74) (73)가 I
(73)가 (73)가 (74) (71)
(73)가 (74) 가 (71)

가, 가 L 50mm 가 가 . ,
 . , L , L 300mm
 .
 ,
 0 3 . 가
 , ,
 , , 가 85 95
 . , 88 92 .

$$\theta_{p1} \geq \theta_{lc} + 3^\circ \quad (1)$$

θ_{p1} , $\theta_{lc} \text{ (bk)}$
 가 0 3
 $\theta_{lc} \pm 2$

()

(11), (12), (13) (11) 1 (2)
 (3), (4), ()
 TFT, TFT (1), (3) (4)
 가 TFT
 (5) 가 2 (3) (4)

가 3a A 3b 가 (15) (16) (14) (12) (14) (15) (17) (13) ()

(1)

1 1 가 0.7mm 2 (2) (3) (4) TFT (1) R, G, B (CF :) CF

(3) (4) $5\mu\text{m}$, $10\mu\text{m}$ 가 100nm Cr (3) (4) $1.1\mu\text{m}$ 가

TFT CF , 가 AL1054(J SR) , 180 1 , 70nm

0.4mm, TFT CF 1.85mm 130mm 400r/min, 15mm/s 3 L 73mm 4 4b , TFT CF 4a B - B TFT 4c , TFT (18) CF (19) φ_{TFT} , φ_{CF} , TFT (18) CF 10 가 (19) CF (19) () 가 (4 TFT (18) CF (19))

$\Delta \varepsilon = 7.8$, $\Delta n = 0.079$ (TFT (18) CF (19)) $4.2\mu\text{m}$

θ_{lc} , θ_i CCD , θ_{lc} θ
 S_i , 2 0.5 10 , (3) (4)
 I_c 2.0 , 2 , 2
 0.3V가 , 2
 θ_{p1} 0.5 가 (3) (4)
 0.3V , $\theta_{lc} (bk)$ 0.5 .
 TFT (18) 10 , CF (19) 98 , 99
 , 100 , 101 , 102 5 .
 , (3) (4) 가
 , 6V, 0.3V가 10 : 1
 ,
 1 () . CF
 100 (TFT) 195 : 1
 , TFT (가)
 θ_{lc} , CF 90 ± 2 100: 1
 , 1 160 가

[1]

	러빙 강도 L (mm)	CF러빙 각도 ϕ_{CF}	TFT 러빙각도 ϕ_{TFT}	편광판		θ_{lc} (°)	$\delta \theta_{lc}$ (°)	콘트라스트비 [-]	시야각		표시 영역
				CF축 축(°)	TFT축 축(°)				상하	좌우	
실시예1	73	10	10	98 99 100 101 102	10	10	≤ 2	100 155 195 160 105	>160 >160 >160 >160 >160	>160 >160 >160 >160 >160	있음 ↑ ↑ ↑ ↑
실시예2	TFT기관 120	10	10	98 99 100 101 102	10	10	≤ 1.5	108 158 205 170 112	>160 >160 >160 >160 >160	>160 >160 >160 >160 >160	있음 ↑ ↑ ↑ ↑
	CF기관 60			102				112	>160	>160	↑
실시예3	60	10	10	98 99 100 101 102	10	10	≤ 2	76 117 157 152 108	>160 >160 >160 >160 >160	>160 >160 >160 >160 >160	있음 ↑ ↑ ↑ ↑
비교예1	40	10	10	98 99 100 101 102	10	10	≤ 3.5	60 90 122 132 107	>160 >160 >160 >160 >160	>160 >160 >160 >160 150	있음 ↑ ↑ ↑ ↑

가, 2.0 θ_{lc} 가

블랙표시전압 : 0. 3 V, 화이트표시전압 : 6 V

θ_{lc} CF, TFT 10, TFT CF

(2)

0.35mm, 1 가 TFT L 120m
m 500r/min, 20mm/s 2 L 60mm
CF TFT 1

2 10 θ_{lc}
1.5 TFT 10 θ_{lc}
98, 99, 100, 101, 102 5, CF

[2]

	러빙 강도 L (mm)	CF러빙 각도 ϕ_{CF}	TFT 러빙 각도 ϕ_{TFT}	편광판		θ_{lc} (°)	$\delta \theta_{lc}$ (°)	콘트라 스트비 [-]	시야각		표시 영역
				CF축출수 축 (°)	TFT축출수 축 (°)				상하	좌우	
실시예4	68	15	15	103 104 105 106 107	15	15	≤ 2	101 156 190 165 105	>160 >160 >160 >160 >160	>160 >160 >160 >160 >160	없음 ↑ ↑ ↑ ↑
실시예5	119	14	16	103 104 105 106 107	15	15	≤ 2	100 152 189 160 103	>160 >160 >160 >160 >160	>160 >160 >160 >160 >160	없음 ↑ ↑ ↑ ↑
실시예6	286	15	15	103 104 105 106 107	15	15	≤ 1.5	101 157 200 165 110	>160 >160 >160 >160 >160	>160 >160 >160 >160 >160	없음 ↑ ↑ ↑ ↑
비교예2	327	15	15	103 104 105 106 107	15	15	≤ 1.5	103 160 203 166 111	>160 >160 >160 >160 >160	>160 >160 >160 >160 >160	있음 ↑ ↑ ↑ ↑

블랙표시전압: 0. 3 V, 화이트표시전압: 6. 5 V

FT 90 ± 2 160 100 : 1 가 , θ_{lc} , CF 1 . T

(3)

1
0.35mm, 1000r/min, 40mm/s 1 TFT CF
L 60mm 1
 θ_{lc}
1 10 , θ_{lc}
2 TFT 10 , CF
98 , 99 , 100 , 101 , 102 5

FT가 89, 92, 100 : 160 가 , θ_{lc} , CF , 1 , θ_{lc} 2 가 , 가

(1)

0.35mm, 250r/min, 15mm/s, L

40mm

1

θ_{lc}

1 10

3.5 TFT 10

98, 99, 100, 101, 102 5

θ_{lc} , CF

1
()
가 100 : 1 가, 2
1 3 2
150 1 3
90 92
92

(4)

1
0.40mm, 500r/min, 20mm/s
68mm L
5 5b, TFT CF 5a C
-C TFT CF 5b 5c
K, L M D TFT φ_{TFT} , CF φ_{CF} 1
5 5 (), 1
 θ_{lc} 2
15 TFT 15 θ_{lc} 2
103, 104, 105, 106, 107 5
1
6.5V, 0.3V 2
TFT θ_{lc} , CF
88 92 100 : 1 2
160
 θ_{lc} 2
가 , 가

(5)

1
0.35mm, 1000r/min, 20mm/s
L 119mm
TFT φ_{TFT} 16, CF φ_{CF} 14 5
() 1
 θ_{lc} 2
15 TFT 15 θ_{lc} 2
, 104, 105, 106, 107 5 103
1
() 2
CF 100 : 1 2
160 가 ,

, TFT CF
 θ_{lc} 2
 , 가 , 가 .

(6)

, 1
 0.35mm, 1200r/min, 10mm/s , L
 286mm .

TFT φ_{TFT} CF φ_{CF} 15 , 5
 () . 1 .

θ_{lc} ,
 2 15 , θ_{lc}
 2 . TFT 15 , CF
 103 , 104 , 105 , 106 , 107 5 .

, 1
 () . 2 . C
 F 100 : 1 . 2
 160 ,
 .

,
 , θ_{lc} 2
 , 가 , 가 .

(2)

, 1
 0.40mm, 1200r/min, 10mm/s , L
 327mm .

6 θ_{lc}
 2 15 ,
 θ_{lc} 1.5 . TFT 15
 , CF 103 , 104 , 105 , 106 , 107 5 .

, 6
 () . 2 ,
 CF 100 : 1 . 2
 160 가 . ,
 , .

가 , L 300mm , 가

(7)

(3) , 5

(4) 1V가 , 1 가 ,

$\theta_{lc} (bk)$, θ_{pi} 가 17.5 가 가

1V $\theta_{lc} (bk)$ 17.

5

θ_{p1} , θ_{p2} , 16 106 , 17 107 , 18

108 , 19 109 . 1

(3)

(4) 가 , 6.5V, 1V가 ,

10 : 1

3 , 100 : 1

3 , 160

$\theta_{lc} (bk)$ θ_{lc} 2

가 , -

(3)

7 θ_{p1} , θ_{p2}

15 105 , 20 110 , 7 가

()

3 , 100 : 1

160

$\theta_{lc} (bk)$ θ_{lc} 2

2 가 가

[3]

리빙 강도 L (mm)	CF리빙 강도 ϕ_{CF}	TFT 리빙 강도 ϕ_{TFT}	편광판		θ_{lc} ($^{\circ}$)	$\delta \theta_{lc}$ ($^{\circ}$)	$\delta \theta_{lc}(bk)$ ($^{\circ}$)	콘트라 스트레 [-]	시야각		표시 영역
			CF측흡수 축($^{\circ}$)	TFT측흡수 축($^{\circ}$)					상하	좌우	
실시예7	119	15	106	16	15	≤ 2	17.5	119	>160	>160	영역 없음
			107	17				197	>160	>160	↑
			108	18				239	>160	>160	↑
			109	19				167	>160	>160	↑
비교예3	119	15	105	15	15	≤ 2	17.5	70	>160	>160	영역 없음
			110	20				97	>160	>160	↑

블래포시전압: 0.3V, 화이트포시전압: 6.5V

(57)

1.

가

가 ,

가 가 , $\theta_{lc} \pm 2$

2.

1

3.

2

N [], l_d [mm], r [mm], n [r/min], V [mm/s]
 $L = N \times l_d (1 + 2 \pi r n / (60V))$ 가, 50mm

4.

1

5.

1

6.

5

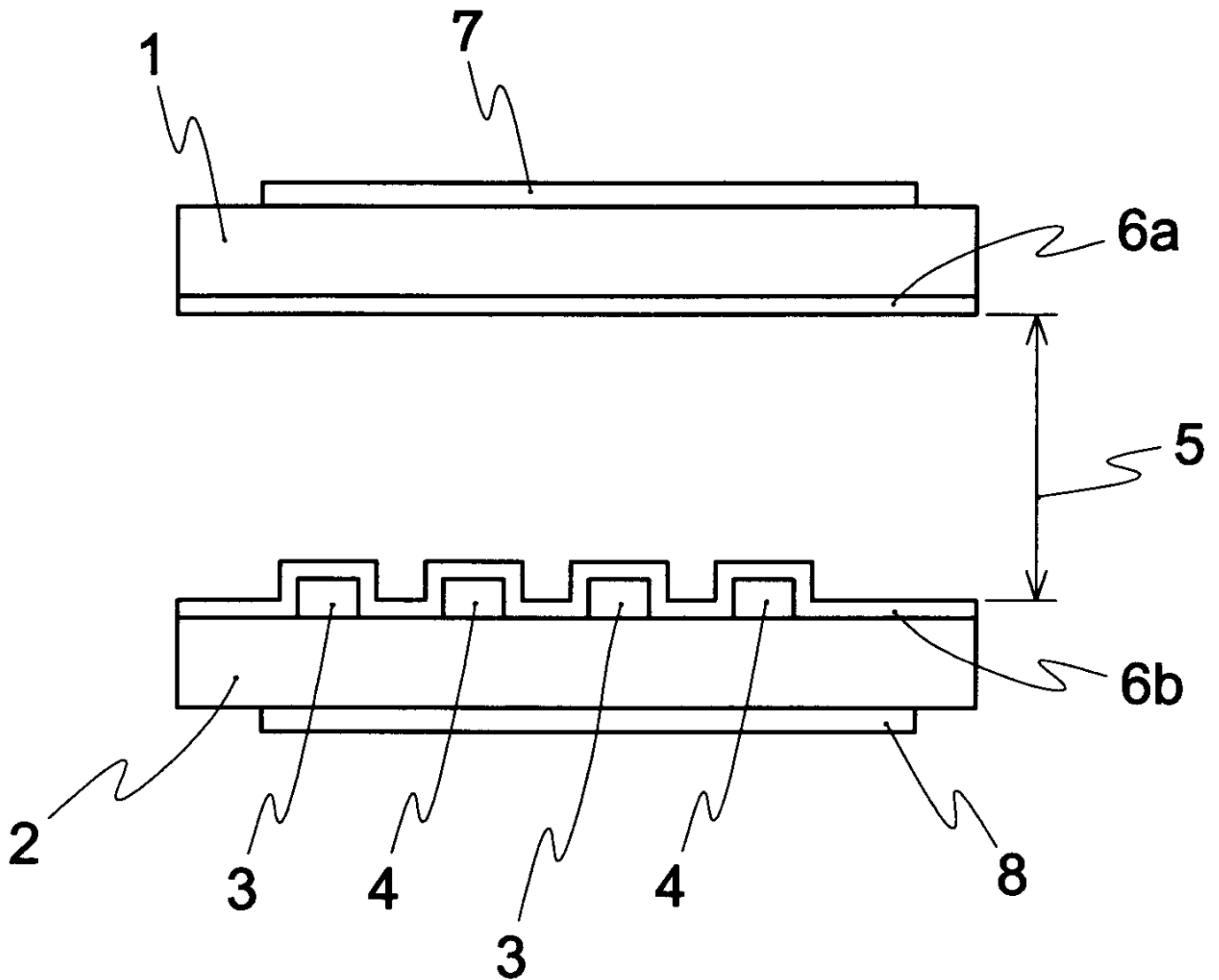
$$\begin{aligned} & \text{가 } |\theta_{lc}| - 2^\circ \leq |\theta_{p1}| \leq |\theta_{lc}| + 3^\circ, \\ & \text{가 } |\theta_{lc}| - 2^\circ \leq |\theta_{p2}| \leq |\theta_{lc}| + 3^\circ \end{aligned}$$

7.

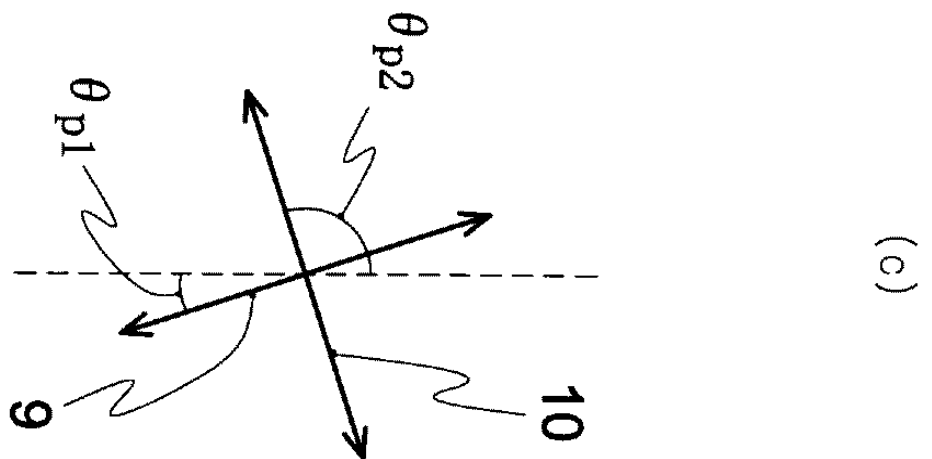
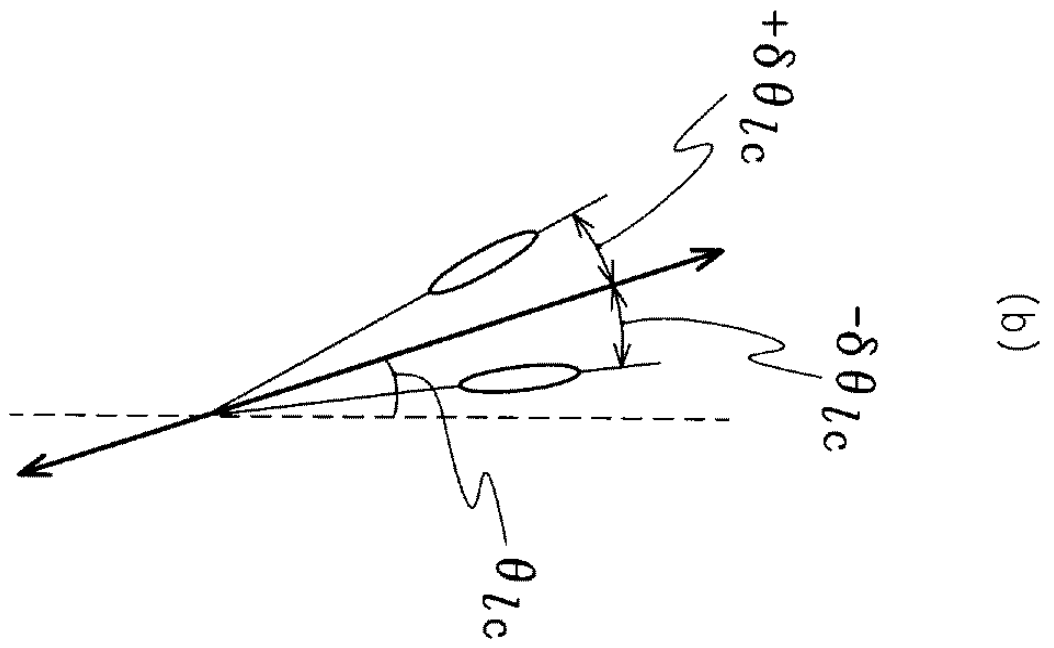
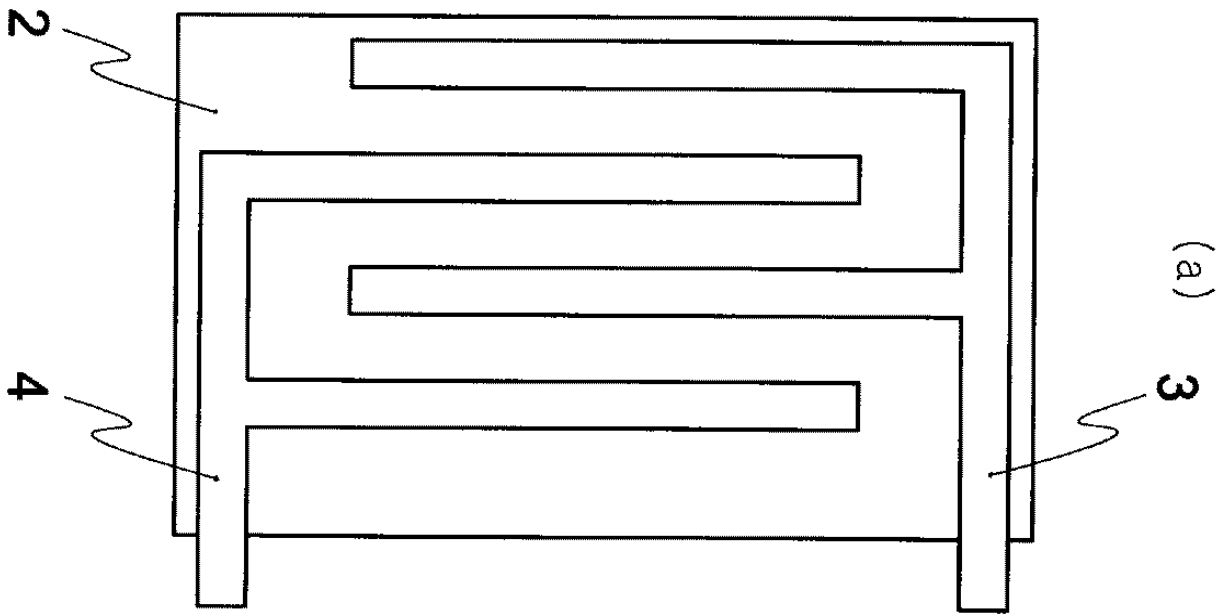
5

$$\theta_{p2}, \text{가, } \theta_{p1}, \theta_{lc} (bk)$$

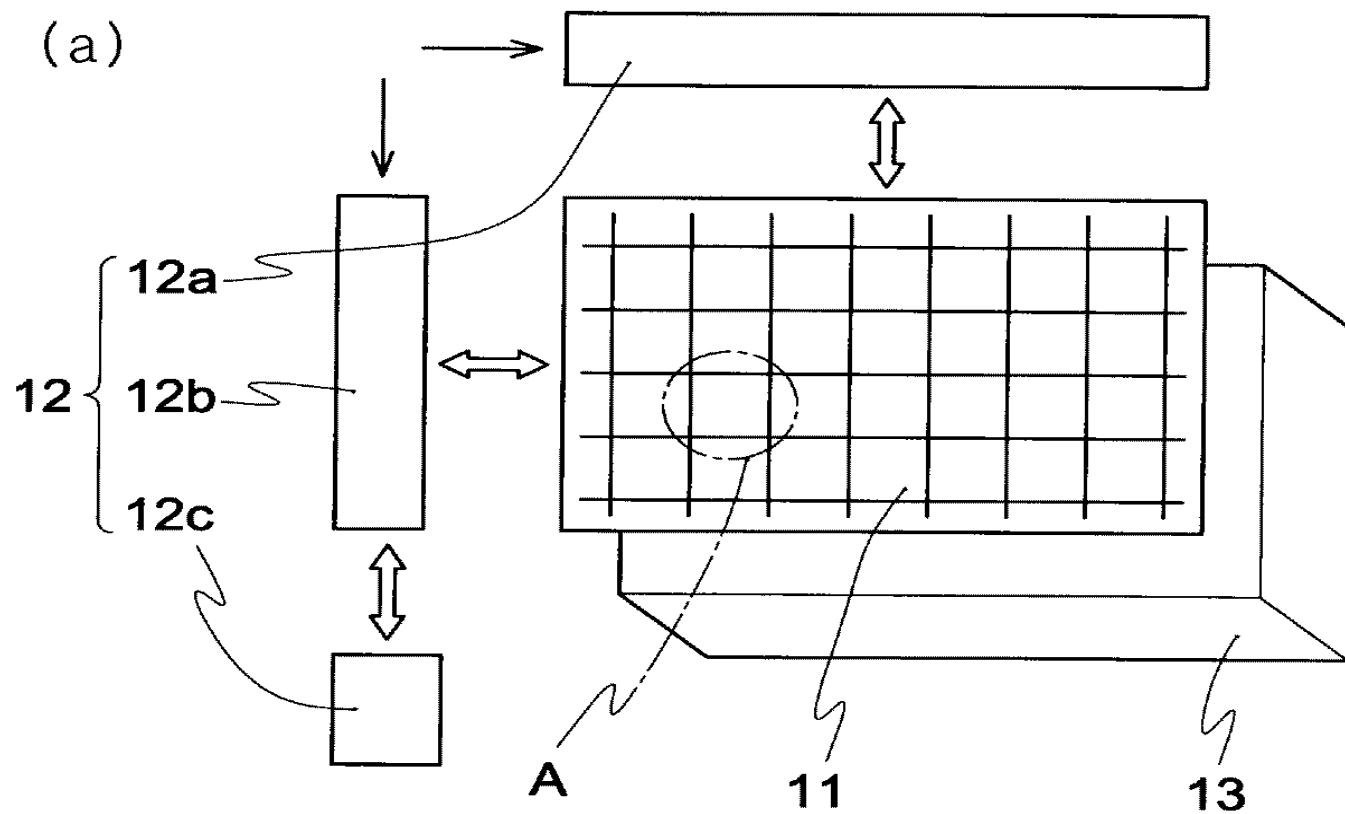
1



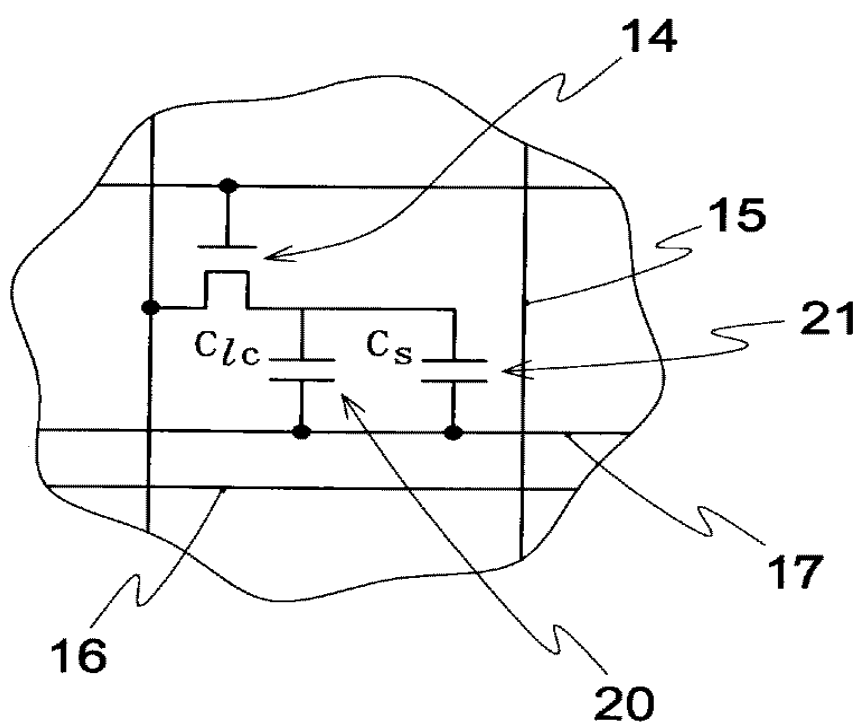
2



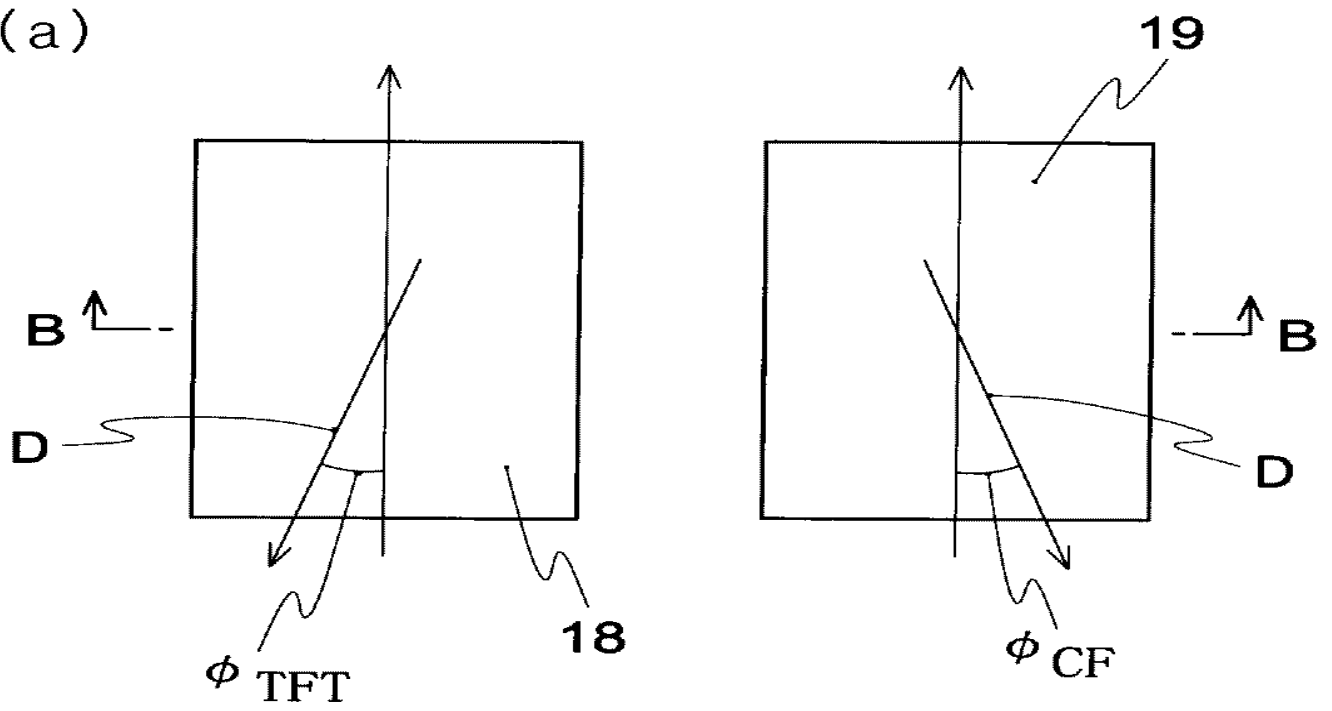
3



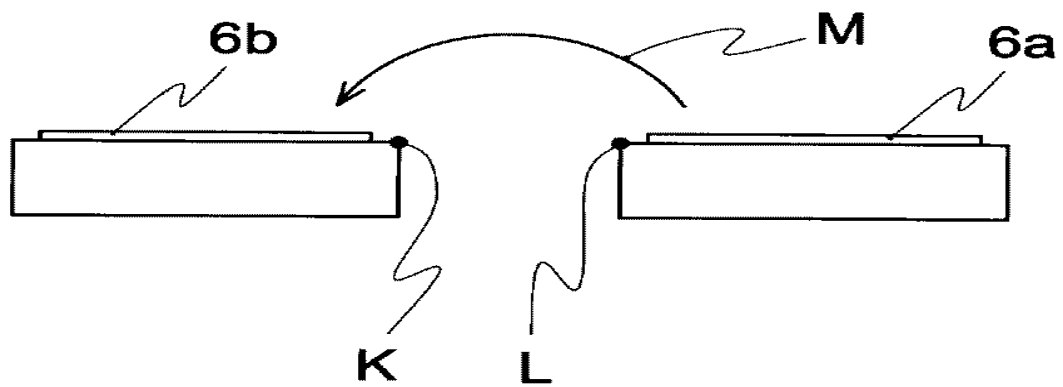
(b)



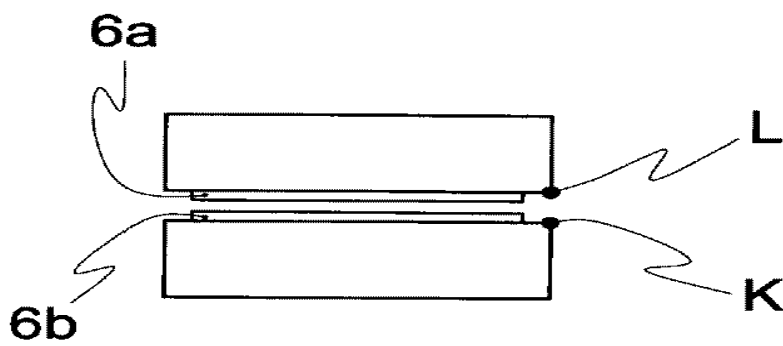
(a)



(b)

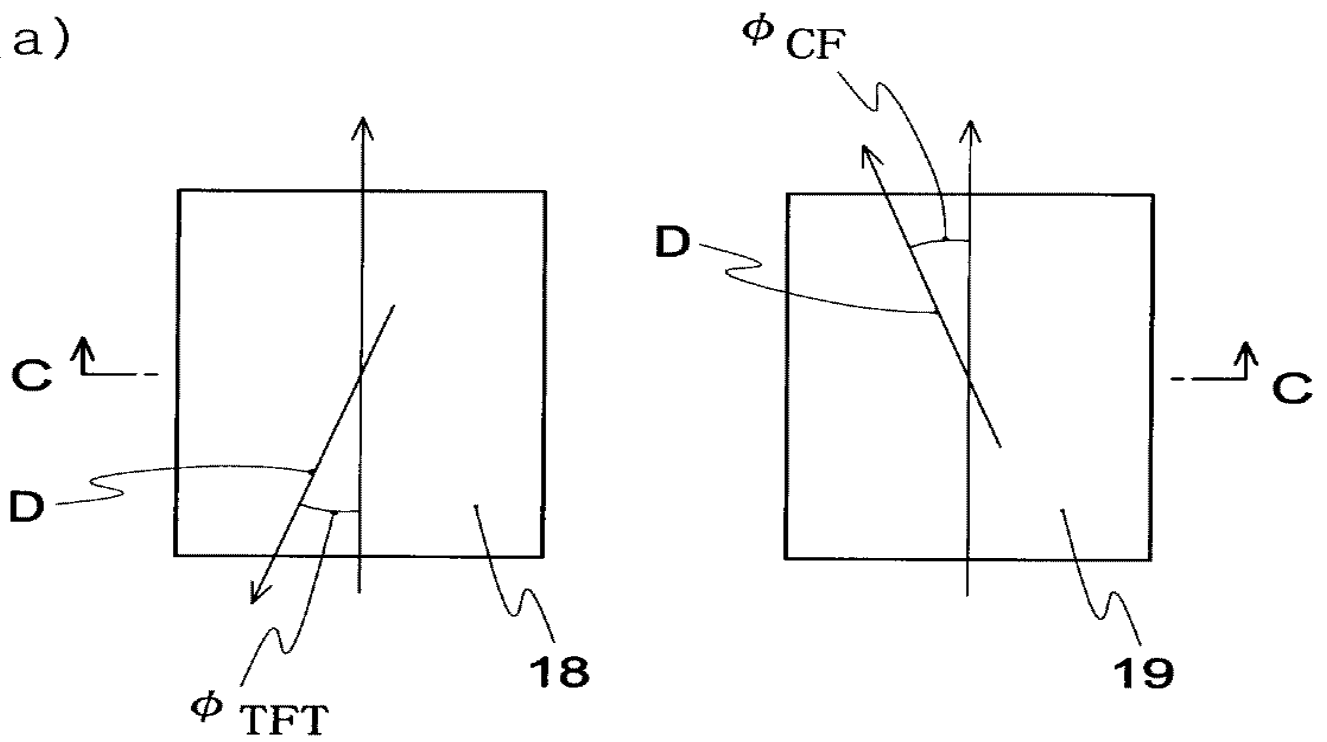


(c)

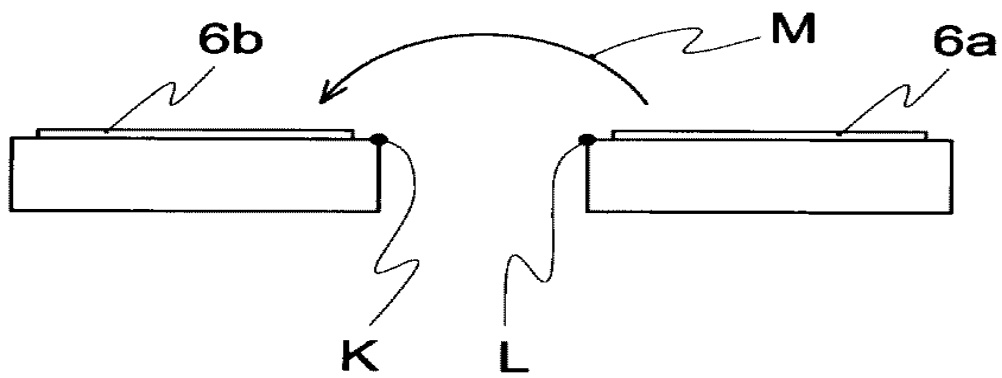


5

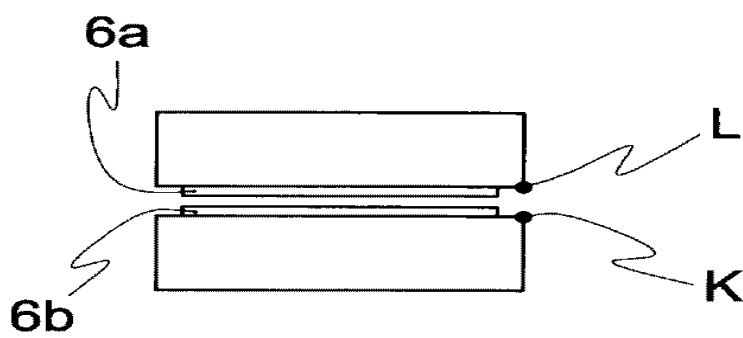
(a)

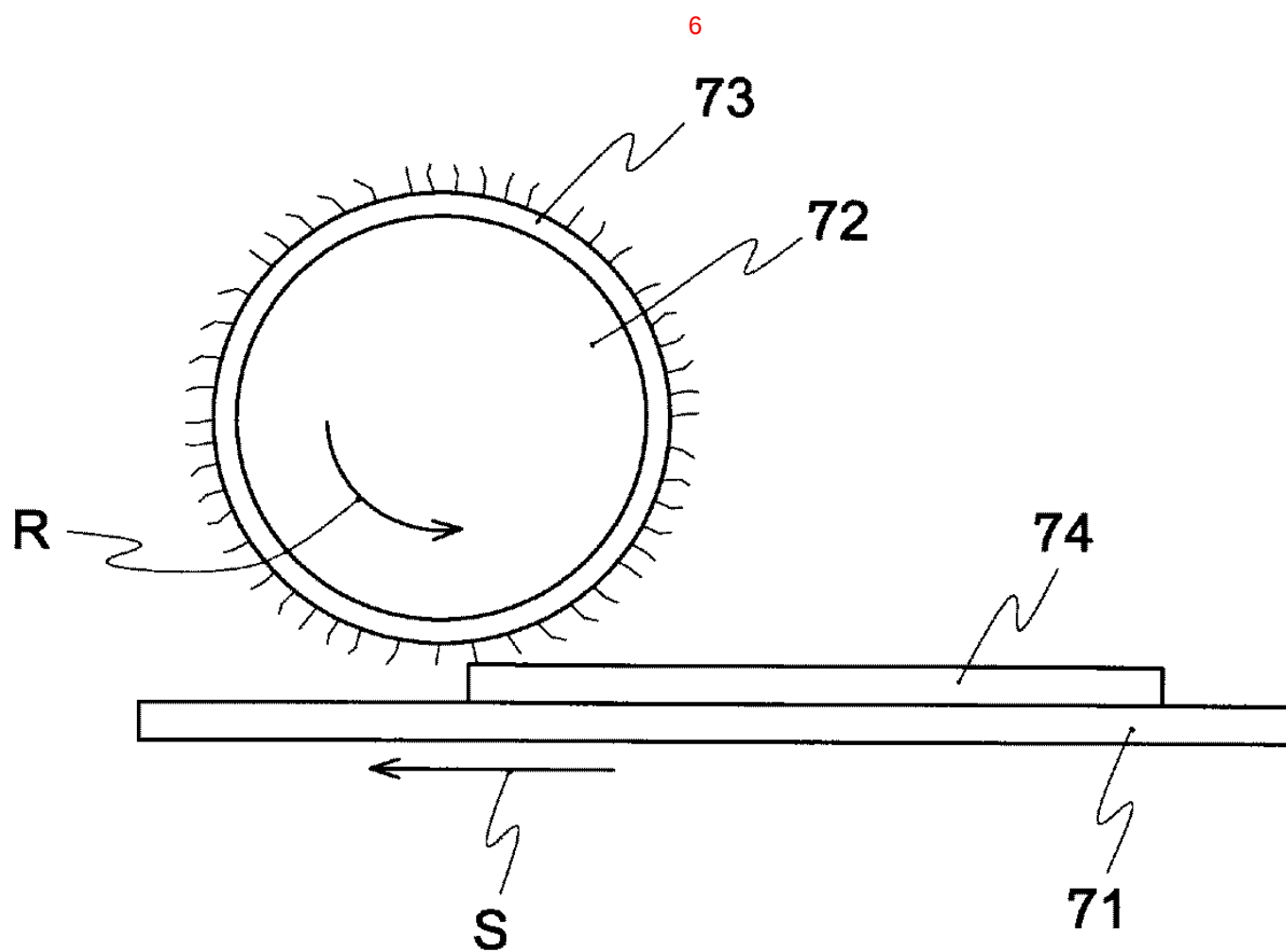


(b)

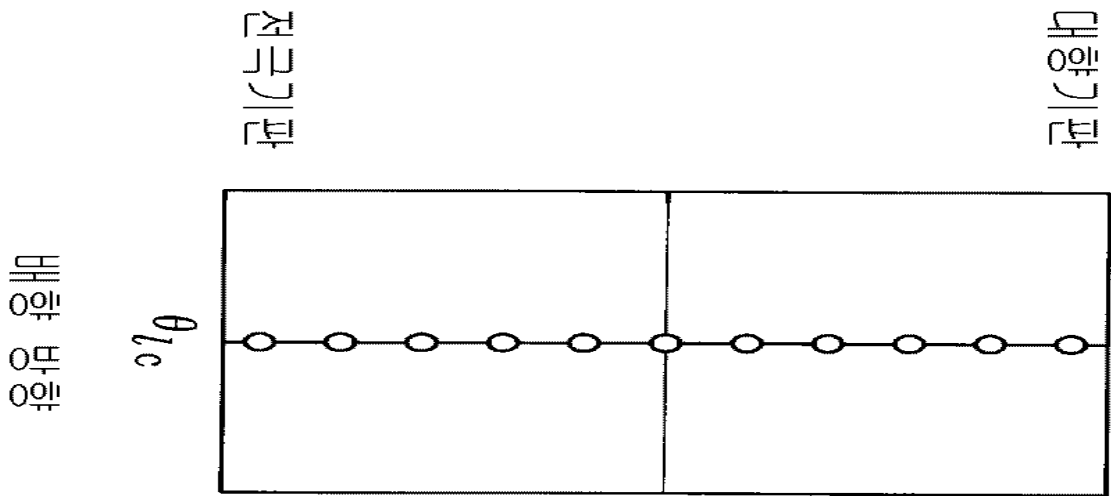


(c)

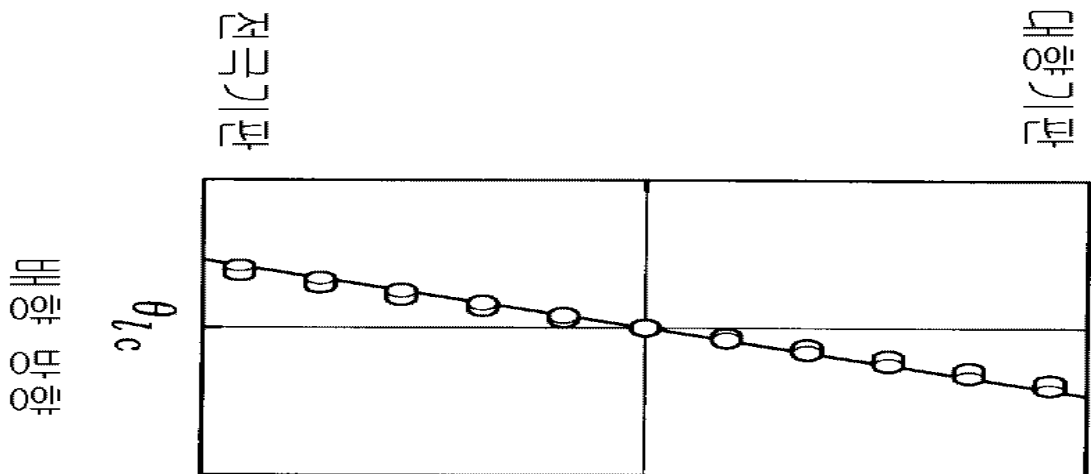




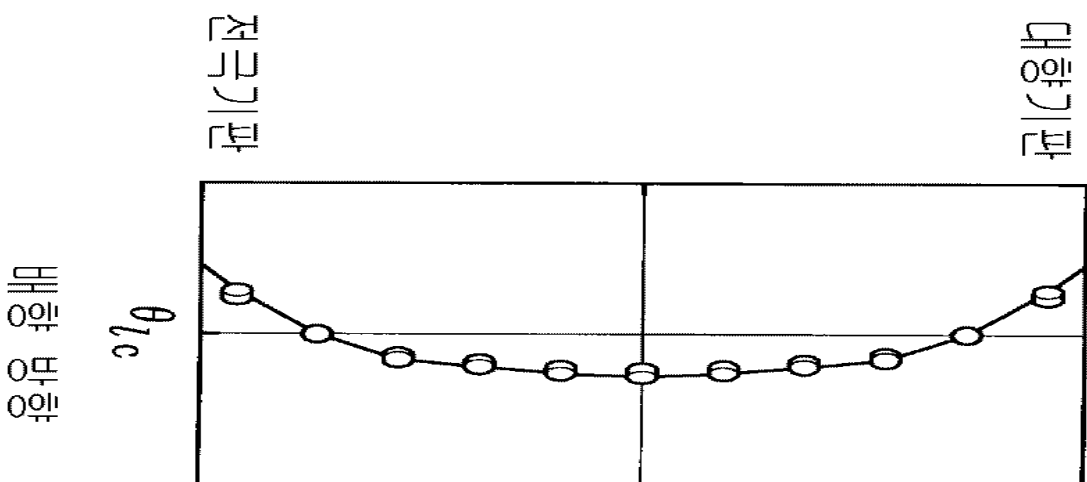
(a)

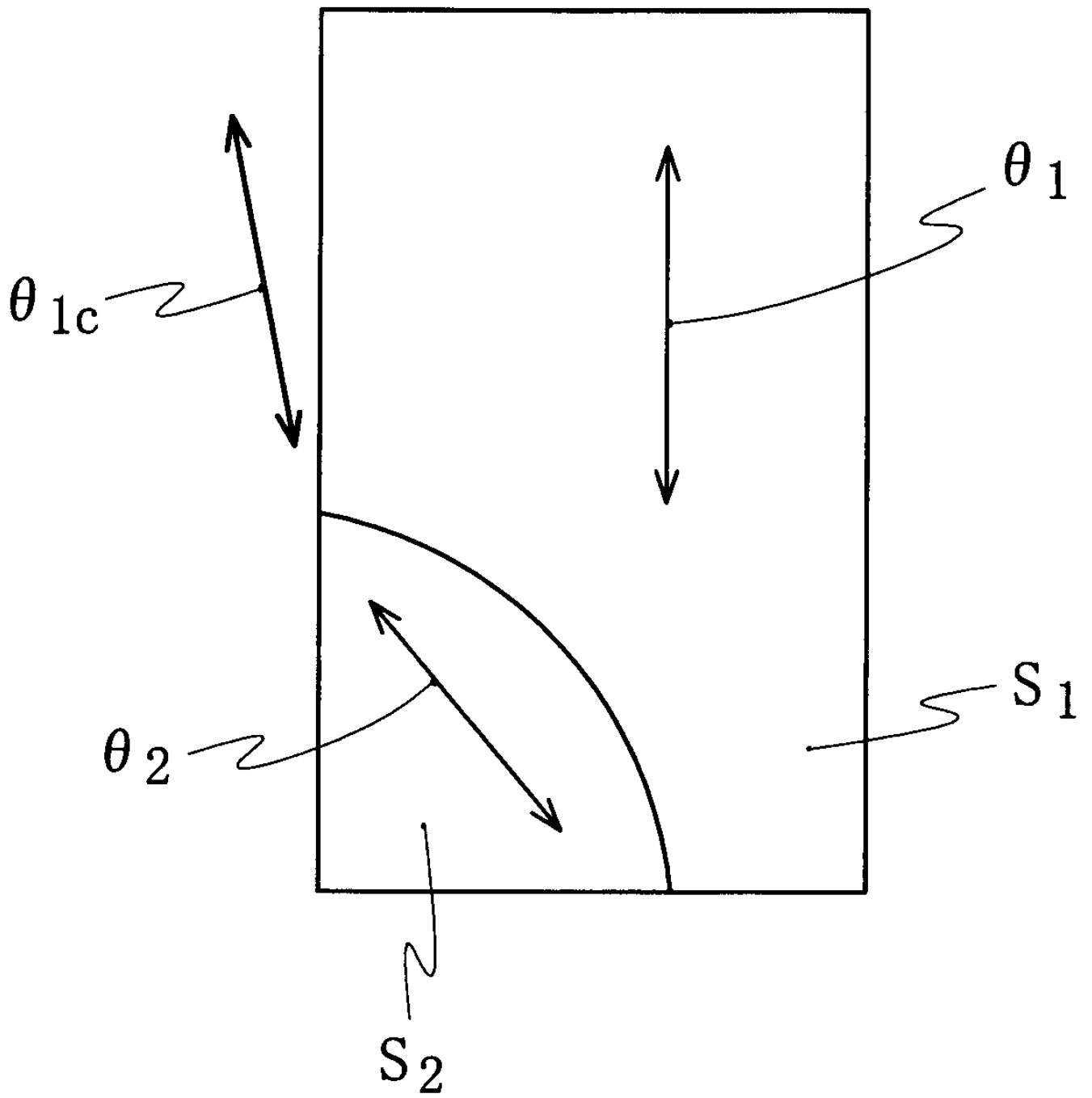


(b)

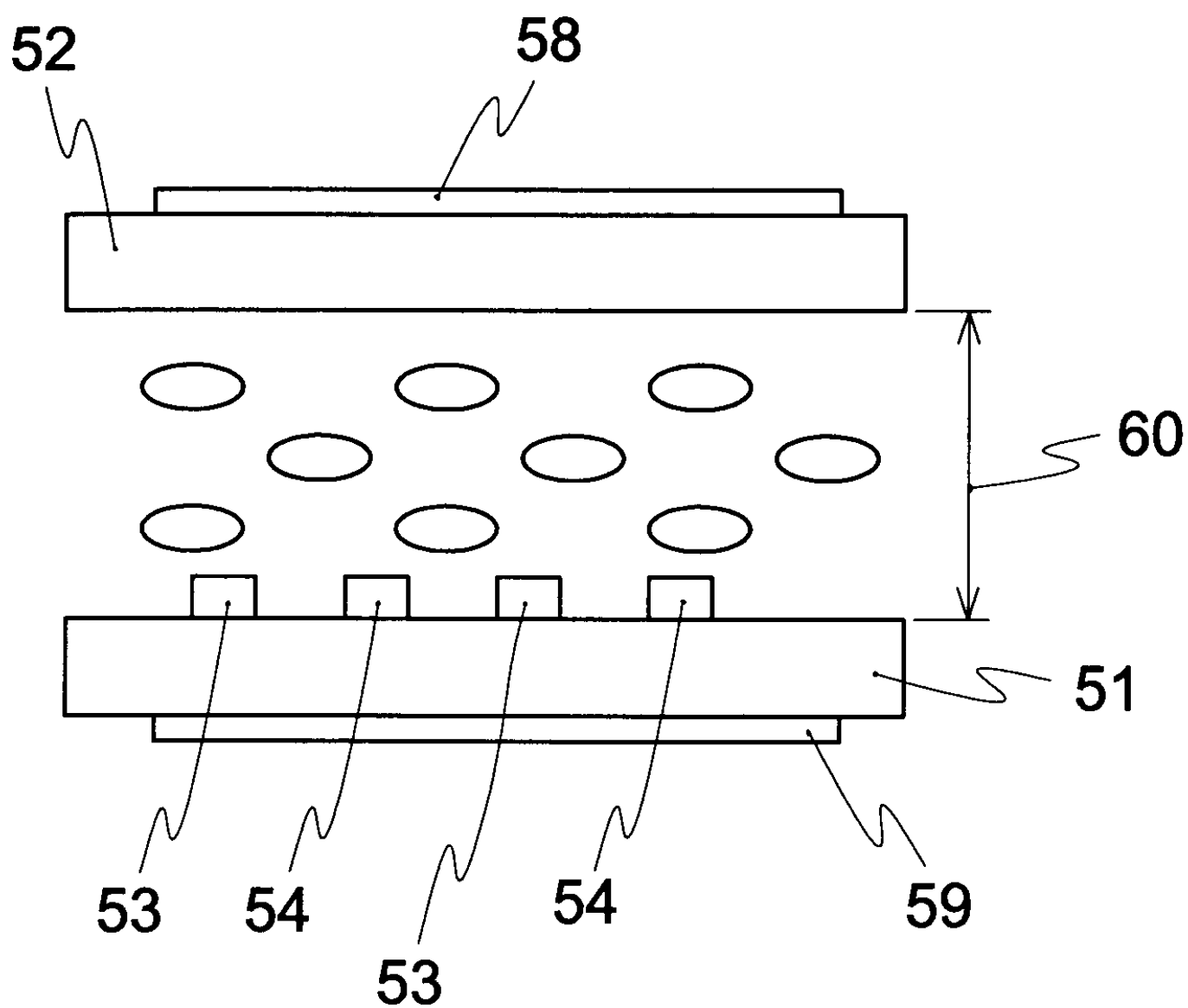


(c)



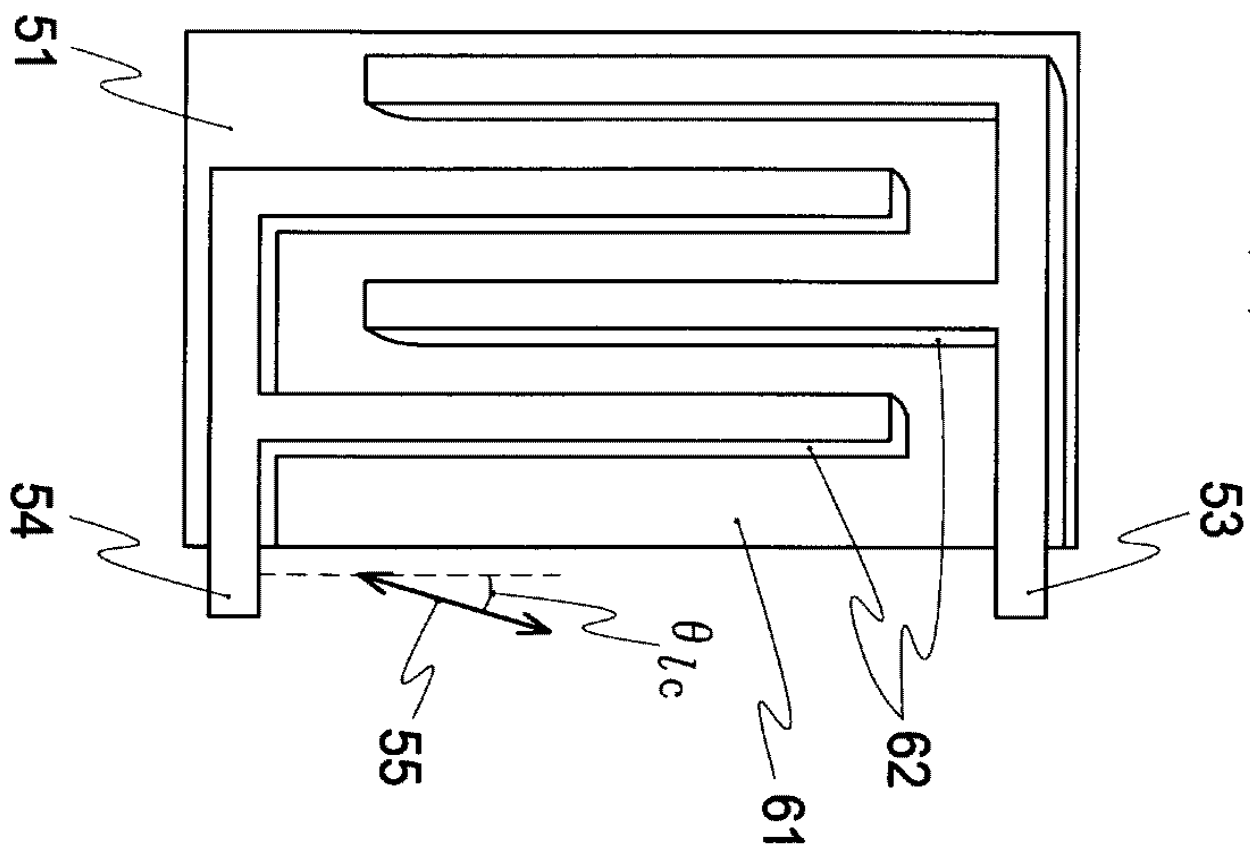


9

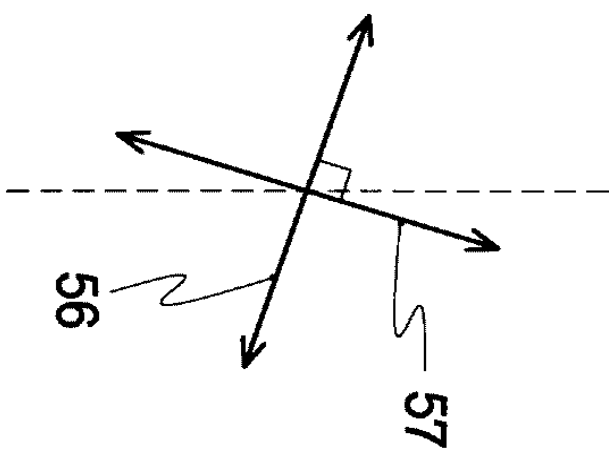


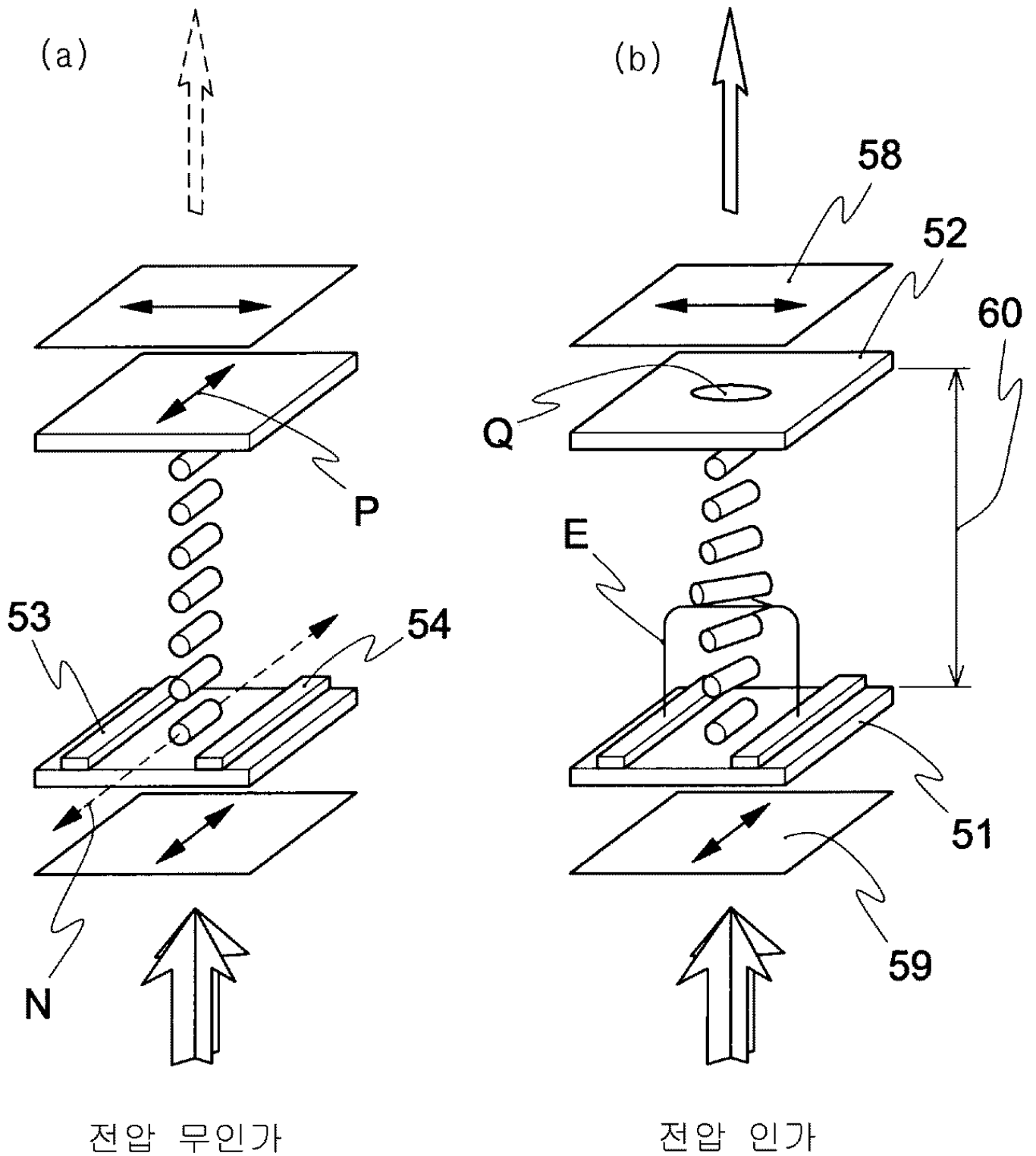
10

(a)

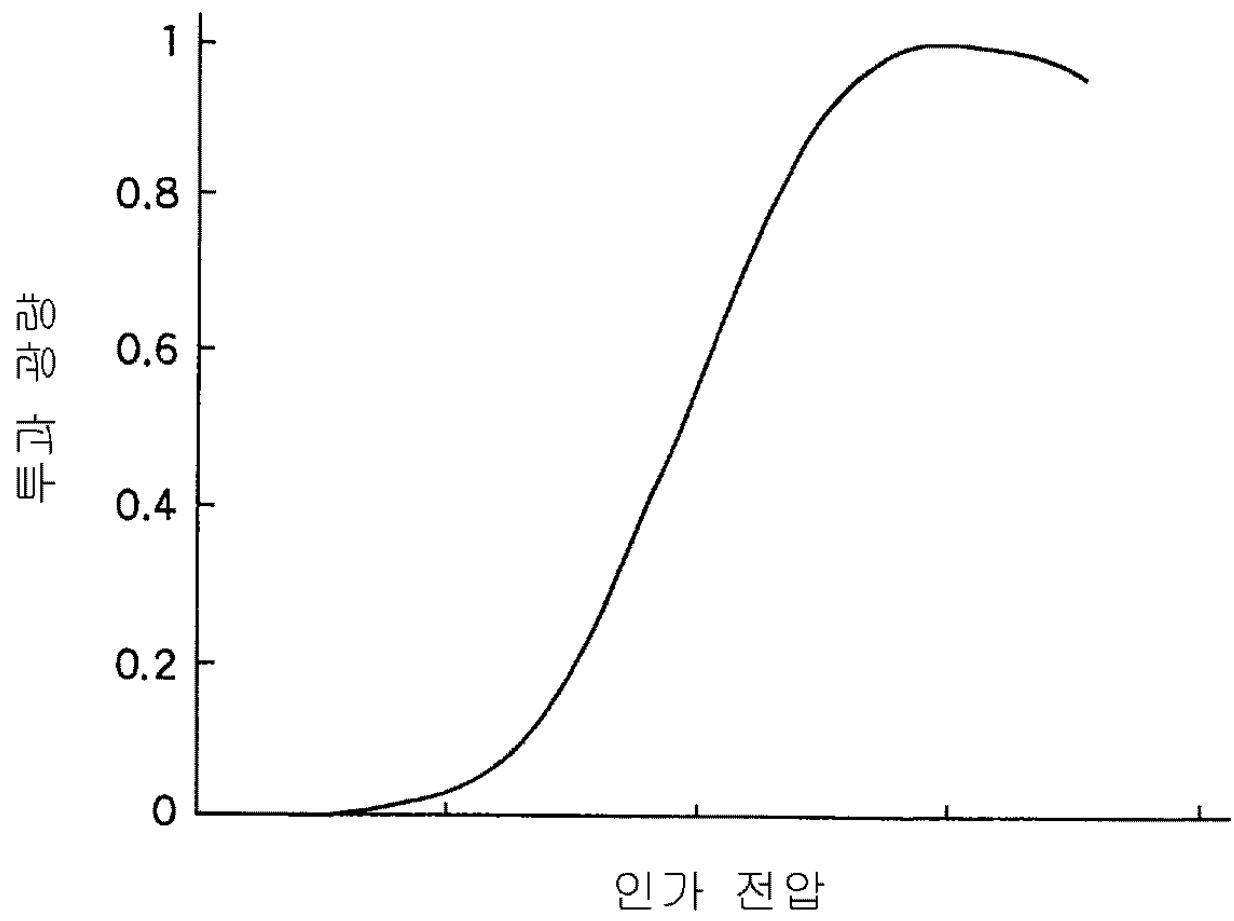


(b)





12



专利名称(译)	液晶显示器		
公开(公告)号	KR1020010095244A	公开(公告)日	2001-11-03
申请号	KR1020010017552	申请日	2001-04-03
申请(专利权)人(译)	可否让我有这一半的喷雾.		
当前申请(专利权)人(译)	可否让我有这一半的喷雾.		
[标]发明人	MIZUNUMA MASAYA 미즈누마마사야 TAMATANI AKIRA 타마타니아키라 NAKASHIMA KEN 나카시마켄		
发明人	미즈누마마사야 타마타니아키라 나카시마켄		
IPC分类号	G02F1/1335 G02F1/1368 G02F1/1343 G09F9/00 G02F1/1337 G09F9/35 G02F1/136		
CPC分类号	G02F1/133753 G02F1/134363		
代理人(译)	LEE HWA我 权泰BOK		
优先权	2000105311 2000-04-06 JP		
外部链接	Espacenet		

摘要(译)

本发明提供的显示质量优异的液晶显示装置对比度高，在平面切换模式下使用的视角宽。它形成在一对基板的一侧。它具有用于授权电场的电极组，该电场在液晶分子中的基板中大致平行。当电场组以 ± 2 施加电场时，每个像素内的液晶分子的组合方向约为其内的液晶层的平均组合方向 θ_{1c} 。液晶显示器，有源电路元件，电极组，液晶分子，光学装置，组合方向。

