

(19)
(12)

(KR)
(A)

(51) 。 Int. Cl. 7
G02F 1/1343

(11)
(43)

2003 - 0019085
2003 03 06

(21) 10 - 2002 - 0034334
(22) 2002 06 19

(30) JP - P - 2001 - 00261510 2001 08 30 (JP)
 JP - P - 2001 - 00298550 2001 09 27 (JP)
 JP - P - 2001 - 00352822 2001 11 19 (JP)
 JP - P - 2001 - 00358717 2001 11 26 (JP)
 JP - P - 2001 - 00361553 2001 11 27 (JP)
 JP - P - 2001 - 00378905 2001 12 12 (JP)

(71) 6

(72) 999 - 3
 999 - 3
 999 - 3

(74)

:

(54) ,

(10) (7) (8)
 (6) (7) (8)
 (6) (7) (5) (5)
 (7) (3) (Q1) (4) (Q1)
 , 가 (5) (4) .

1a

1a (S1) ;

1b ;

1c ;

2 1a e - e ;

3a (S2) ;

3b ;

3c ;

4 3a f - f ;

5a (S3) ;

5b ;

5c ;

6a (S4) ;

6b ;

6c ;

7a (S5) ;

7b ;

7c ;

8 (S6) ;

9a (S6) , (5) AI ;

9b (S6) , (5) AI ;

10a (S7) ;

10b ;

- 11 10a j - j ;
- 12 , (light - shielding film) 가 (S8) ;
- 13a (S9) ;
- 13b ;
- 14 13a a - a ;
- 15 13a b - b ;
- 16 (S9) ;
- 17a (S10) ;
- 17b ;
- 18 17a d - d ;
- 19 17a e - e ;
- 20a (S11) ;
- 20b ;
- 21 20a f - f ;
- 22 20a g - g ;
- 23 22 A ;
- 24a (S12) ;
- 24b ;
- 25 24a h - h ;
- 26 25 B ;
- 27 (S13) ;
- 28 (S13 - 2) ;
- 29 (window frame)(33) (S1 S13) 가 ;
- 30a (S14) ;
- 30b ;

- 31 30a a - a ;
- 32 (S14)가 ;
- 33a (S14 - 2) ;
- 33b ;
- 34a (S14 - 3) ;
- 34b ;
- 35 (18) ;
- 36 (18) ;
- 37a (S15) ;
- 37b ;
- 38 37a g ;
- 39 38 h - h ;
- 40a (S15 - 2) ;
- 40b ;
- 41a (pixel) (segment electrode)(10)
;
- 41b (10) ;
- 42a (10) ;
- 42b (10) ;
- 43a (10) ;
- 43b (10) ;
- 44 (S) ;
- 45 (S) ;
- 46 (S)가 ;
- 47a (P1) ;
- 47b ;

- 47c ;
- 48 47a a - a ;
- 49a (P2) ;
- 49b ;
- 49c ;
- 50 49a B ;
- 51 50 c - c ;
- 52 50 d - d .

17 , 2001 - 361553 , 2001 - 261510 , 2001 - 298550 , 2001 - 352822 , 2001 - 3587 , 2001 - 378905 , .

47 52 STN (P1, P2) . 47a (P1)
 . 47b , 47c (P1)
 (glass substrate) IC()(
 (segment electrode) , (common electrode)
 IC (1) IC
 , TCP(Tape Carrier Package) COF(Chip on Film)가 . (H08 - 179
 348)

(2) , (transparent common electrode)(4) (group) (4)
 (trapezoidal shape) 가 (wiring pattern)(5) . ()
 1) , (10) , (10) 가
 (9) . (4) (10) (3)

(1) (edge) , (5) (common - side terminal)(6)
 , (9) (segment - side terminal)(8) . TCP CO
 F (anisotropic conductive film) (thermal pressure)
 (6) (8)

(7) (3) (1, 2) (7)
 , (injection inlet)(13) (12)
 , (UV curable resin)(11) .

가 m × n (colorized) (P) , , R(re
 d,), G(green,) B(blue,) (10) 3m (4) (5)
 (9) (8) 3m (6) 가

48 47a a - a

(7) (conductive particle)(14) (6) (5)
 (14) " (conductio
 n portion between substrates)" (4) (alignment f
 ilm)(23) (24) (10) (23, 24)
 (S) (spacer)(45)

(P1) IC
 IC

IC IC IC

IC (P2)

49a (P2) 49b 49c 50 49a
 B 51 50 c - c 52 50 d - d
 (P1)

49a (3) (4) (4)
 (5A, 5B) (5A, 5B) (Q21, Q22) (2)

(Q21, Q22) (2) (5A, 5B) (1) (20)
 (14) (7)가 51

(20) ITO(Indium Tin Oxide,)
 (20) (8) (6) (Q21, Q22)
 (14) (5, 20) (D) 가
 (14) (S) (52)
 (specific distance)

(S) (Q21, Q22) (wiring pitch)(P) (P= (D) +
 (6) (60μm)
 (6) (sector) (20) (routing)
 (49a L)

가
LCD(Liquid Crystal Display,)

가 (5, 9) 가 (5, 9) (visibility)

가

가 가

1

1

가

2

가

가

1

2

가

(dummy pattern)

1

가

가

가

1

2

가

가

가

가

IC

가

(display frame) (display window frame) (coloration) (array)

가 (texture)가 가 가 가 가

가

가

가

< 1 (conduction) >

가 R(), G(), B() STN () (Super - Twisted Nematic passive matrix type)

1a (S1) 1b (P1, P2) 1c

2 1 e - e (S1) (1) (2) 가

(2) , ITO (4) (12)

(23) (1) (10)

(24) (23, 24) (45)

(45)

m x n (10) , R(), G() B() 가

3m 가

(monochrome) 가 , R, G, B (10)

m

1 (S1) 3m (10) , n (4) . n (4) , 1 n , . 3m (10) , 3m , .

(4) (10) (3) .

(3) , (14) (7)가 (3) (13)

(1, 2) (7) , (11) .

(12) .

1a , ITO (6) (8) (1)

(7) (juxtaposed) . (6)

(8) TCP COF . 15 TCP

COF

(8) (6) 가 , (8)

(conductive rubber)가 (6) 가 (6)

가 . , 가 (21) (6)

(8)

(8) ITO (8) 1 (9) (10)

, 3m .

(6) 1a (5) (1) , ITO (7) (5)

(5) (Q1) . (Q1)

(1) (2) , 2

(14) (7)가 .

가 (Q1) , (2) (4)

(14) (1) (5)

, (2) (6) (6) . (6)

, 1 , . ,

n .

, (S1) , 49 (20) 가 .

< 2 () >

3a (S2) . 3b , 3c . 4 3a f -

f (S1) .

(S1) (Q1) (14) (7) ,
 (S2) 가 (silver paste) () (30) (Q2)
 (7) (3) (7)
 (S1)
 , (S2) , 49 (20) 가
 < 3 () >
 5a (S3) . 5b , 5c . ,
 (S1)
 , (3) I II . I (4(1) 4(n'))
 (Q3, Q4) , II (4(n'+1) 4(n)) , , n'
 , 1 < n' < n 가 가 , n'
 n/2 .
 (Q3, Q4) (1) (2)
 , (14) (7) (S1) (2).
 (Q3, Q4) (1) (5A, 5B) (5A)
 (7) , (6(1) 6(n')) (5B)
 (7) , (6(n'+1) 6(n)) .
 32 (8(1) 8(3m)) (8(1) 8(3m)) (6(1) 6(n')) 33
 . (8(1) 8(3m)) (6(1) 6(n'))
 , (Q3, Q4) (5A, 5B) . ,
 .
 (S3) 49 (P2) . :
 (pixel pitch): 0.08mm × 3(R,G,B), 0.24mm
 : 120 × 160
 (8) : 0.06mm
 (6) : 0.06mm
 (P2) (1) 가 40mm × 48mm . , (S3)
 (1) 40mm × 45mm 46mm .
 < 4 () >
 6a (S4) . 6b , 6c . ,
 (S1)

3 (S3) , (3)
 (4(1) 4(n'), 4(n'+1) 4(n)) (1) (8)
 (6(1) 6(n'), 6(n'+1) 6(n)) (S4)

(4) , , III, IV, V, VI (III, IV)
 (S3) , (V, VI) (S3)

6a , V (6(n/2+1) 6(3n/4))
 (4(n/2+1) 4(3n/4)) , VI
 6(3n/4+1) 6(n) (4(3n/4+1) 4(n))

III (6(1) 6(n/4)) (4(1) 4(n/4))
 IV , (6(n/4+1) 6(n/2)) (4(n/4+1) 4
 (n/2))

(V, VI) (8(1) 8(3m)) ITO (9)
 (10(1) 10(3m)) (III, IV) (8(
 1) 8(3m)) ITO (47) (48(1) 48(3m))
 (10, 48) (3)

IV (6(n/4+1) 6(n/2)) 6a
 (1) (5c) (5c)
 (1) (7)

(1, 2) (Q8) (2) (IV)
 (4(n/4+1) 4(n/2)) (5c) (14)
 (7)

(S4) , 49 (20)
 가

< 5 () >

7a (S5) 7b 7c
 (S1)
 (S5) (8) (6) (1)

(3) , 7a (VII, VIII) . n
 (4) 1 n/2th (n/2+1) n
 (VII, VIII) (10(1) 10(3m)) (48(1) 48(3m))
 (10) (3) (48)

(6) (6) (VIII) (VII) (4(1) 4(n/2) , 56(Q9) 57(

Q10) (4(n/2+1) 4(n)) .

(S5) , (20) 49 , 가 .

(Q9, Q10) (3) ,

(Q9, Q10) 가 (3)

< 6 () >

(5, 9) ITO , (Al),

(Ag), , 가 .

IC 가 , (3) (4)

(10) ,

(S6) , ITO 가 (Al) (5,

9)

(S6) 가 5a , 5a g-g 8, 9a, 9b

9a Al 가 , 9b Al 가 .

(Q3) , Al (1) (5) ITO

(7) (5') .

(5') (7) (14) (2) (4)

(S6) , (5, 9) 가

(4) (10)

(5, 9)

(fine granular) (45) , (1, 2) , (p

olyimide) (45) , (1, 2)

(1) Al 가, (1) ITO

(2) ITO , (1, 2) 가

Al 가 가 9a .

(1) ITO (2) ITO 가 2000 , Al

가 10000 가 . Al (5) 9a (H) , (45)

가 .

가 9b , AI 가 (1) ITO (2) ITO
 , AI 가, (1) (2) ITO , 2000 가 ,
 (3) , , 가
 , (1, 2) 2000 가 ITO , AI
 (5, 9) , AI 1 ,
 가 .

[1]

AI ()	500	1000	2000	3000	4000
(ITO)	0.25	0.5	1	1.5	2

1 , AI ITO (AI /ITO) 가 .
 가 C .

가 > 가 가 ,

1 , AI 가 1000 3000 , ITO AI 0.5
 1.5 .

< 7 () >

IC 3m , IC n (10)
 (4)

가 , ,
 , (S7) , (6) (4) 가
 (5A, 5B) , ITO AI 가

ITO , 16 ((light reflective electrode)) , AI

10a (6(1) 6(n')) (7)
 (5A) () ,가 1 n'
 (5B) (6(n'+1) 6(n)) (7)
 (n'+1) n' ,가 (n'+1) ,

(5A, 5B) 가 가 , 1
 n , 1 n 가 , 1
 (patterning) , Al (5A, 5B) (lithography)
 , ITO Al
 ,가 .
 (5) 1 Al (5) n ITO (5) 2
 (5) (n-1) , Al ITO 가 .
 Al ITO가 , Al , ITO 가

10a (S7) . 10b .
 11 10a j-j , (S1)
 (1) 40mm() x 48mm() . (2) 40mm() x 45.5mm()
 120 x 160 .

160 (4) " 1 160 " , (6)
 (6) , 1 ,
 80 , (6) , 81 .
 , 160 .

360 (120 x 3) (10) " 1 360 " ,
 (8) (8) 1 .

(5A, 5B) (D) 30μm . (5A, 5B) ,가 1 .
 160 가 (5) 1 (1) Al , ()
 5) 160 ITO (5) 2 (2) , (5) 159 , A
 I ITO 가 .

11 .
 (1) , Al (5) ITO (10) ,
 (24) (10) .

(2) , (resist resin)(R, G, B) (color filter)(46)가
 (46) , (silica) (overcoat) ,
 (4) . (23) .
 (1, 2) (7) , (12)
 , (45) . Al ITO

2000 .

160 37가 : ITO
 (5); Al (5); , ITO Al (5).
 , 1 (RMAX.) 160 (RMIN.) . ,
 . 2 () .

(sheet resistance) ;

ITO: 10 ohm/sq.(2000)

Al: 0.4 ohm/sq.(2000).

[2]

	Al	ITO	Al ITO
1	1500	10000	1500
160	900	1400	1400
	600	8600	100

2 , .

< 8 () >

(S8) , 12 (J) (1) (5)
 (2) . (J) , (3) 가 가 .
 (J) (5) . (5)
 (J)

(3) (J) (3) , .

(polycarbonate) (retardation film)() (iodine - based)
 (polarizing film) (2) , (reflective ty
 pe) (transflective type)

(1) , (backlight)가 (1) .

(10) (rubbed) (24) (1)
 . , SiO2 (10) (24)

(10) (5) (Al),
 (, -) , (Ag), 가 ,
 Al , 800 1500 , , 1000 1500 .
 , 800 1500 .
 , 50 900 .
 (10) (5) , ,
 , .
 (2) (46) () (46)
 (sputtering) (deposition) (photolithography) , ,
 , (carbone black) (black material)가
 , (light - impermeable) .
 (photoresist) , (J) (2)
 (J) , (J) 가
 (46) SiO₂ (overcoat layer)(55) , (4)
 (23) (4) (4)
 (10) , SiO₂ (4) (23)
 (10) (specular reflection) (diffuse reflection) .
 (10) ,
 (46) (pigment dispersion process), , (pigment)(, ,)
 , , .
 (12) (1, 2) , , 200 700 (chiral nematic)
 (7) , (1, 2) , (12)
 ()가 .
 (S8) , (46)
 , (10) ,
 e) (S8) , (transmissiv
 , , (1), (12), (2), ,
 , (10) (5) , .

가 , ITO (10)

< 9 () >

13a (S9) , 13b . 14 13a a-a , 15
 13a b-b .

(2) (S9) , (10) (1) (4)
 (7) (12) (13)
 (11)

(10) (4) , 가 (3)

(1) , (8) , (8)
 (6)

IC가 TCP(Tape Carrier Package) COF(Chip - on Film) (8, 6)

(8(1 3m)) (7) (9) ITO
 (10(1 3m))

(4) (6)

(4) 1 2

, 1 I III , 2 II IV

, 13a , I II (5A, 5B)
 , III IV (5C, 5D)

(4) N I 4(1) 4(n) , II
 4(n+1) 4(n') , III 4(n'+1) 4(n'')
 , IV 가 (7) , 가 (Q)
 I III (5A, 5C) (Q13, Q14) , (Q15, Q16) II IV
 (5B, 5D) (Q15, Q16)

, I II

13a , ITO (6) (1 n) (1) (Q13)
 (5A(1 n) (5A) , (Q13)
 (2) I (4(1) 4(n))

(7) (14)

(6) (6(n+1)) 6(n'') (Q15)
 (2) (5B(n+1) 5B(n'')) (2) (5B(n+1) 5B(n''))
 13a (2) (4) II((n+1) (n'))

III IV .

ITO (6) ((n' +1) (n")) (5C(n' +1) 5C(n"))
 , 13a (1) , (2) (4)
 III((n' +1) (n")) .

(2) (6) ((n" +1) (N)) (Q16) (4) IV((n" +1)
 (N)) (5D(n" +1) 5D(N)) .

14 (S9) , (1) (5A) (14)
 (7) (2) (4)
 (3) , (16, 17) (4) (10)
 . (45) (16, 17) .

(Q15) 15 , (1) (6) (
 14) (7) (2) (5B) .

, (S9) , (4) I II가
 (5A, 5B) , (1, 2) , (3) (7)
 가 , , .

, (4) III IV (5C, 5D)
 , (3) (7) , , .

V , (4) 1 2 , I III, II I
 , 1 2 , 1 2
 3 , 4 , .

, (7) (7) ,
 (7) (3) .

16 (S9) .

16 (S9) (3) (120 × RGB) × 160 (dot) ,
 0.08mm × 0.24mm .

(8) (1 360) (9) (10) (1 360)
 , (Q13) (6) 40 (1 40) (5A)
 (7) (2) (4) 1 40 .

(2) (6) (41 80) (Q15)
 (5B) , (4) 41 80

, (6) 40 (81 120) (5C)

(Q4) (2) (4) 81 120 (6)
 (7) (121 160) (Q16) (2)
 (5D) (4) 121 160

, 0.05m 40 (5)
 $0.5\text{mm} \times 40 = 2\text{mm}$ (7) 1.5mm , : 0.08mm $\times 360 = 28.8\text{mm}$

$2 \times 2\text{mm} + 2 \times 1.5\text{mm} + 28.8\text{mm} = 35.8\text{mm}$

5a (S3) (4) 160 (5A, 5 0.05mm)
 B) 80 ,
 $\times 80 = 4\text{mm}$

(1, 2) , 40 (5)

0.05mm $\times 40$ 2mm (S9)

가
 3

[3]

			LCD
LCD S9	2mm	28.8mm	35.8mm
LCD S3	4mm	24.8mm	35.8mm

< 10 () >

17a (S10) , 17b 18 17a d - d , 1
 9 17a e - e

(2) , ITO n (4) (12)
 (23) . (1) , ITO (10)
 (24) . (45) (23, 24) ()
 10) n (8) 3m (4) (6)

(4) (10) (3)

(3) (14) (7) (3)
 (1, 2) (7) (13)
 (12) (11)

17a , ITO (6) (8) (1)

(3) I II (4) II (Q17, Q18) (Q17, Q18)

4) (1, 2) (7) 18 (14)

(Q17, Q18) (4) (1) (6)

(S10) (S10) 19

(7)가 (1) (10) 가 () (27)가

(9) (3) (7) (1) (9) (2) , (22)

(4) (5) (2) (33) (5, 9) (3) (7) (1, 2) (31, 32)

(27, 22, 33, 31, 32) , (12) 가

(S10) 5a (S3)

:

: 0.08mm × 3(R,G,B), 0.24mm

: 120 × 160

(8) : 0.06mm

(6) : 0.06mm

5a (S3) (1) 40mm × 48mm (S10) (1) 40mm × 45mm 46mm

, TCP COP (illumination)

< 11 (,) >

20a (S11) , 20b 21 20a f - f , 22 20a g - g 23 22 A

(S1 S10) (5, 9) ITO (Al), (Ag), 가 ITO

IC , (3) (4) (10)
 가 , , ITO 가

20a , (5, 9) (AI) 가 20a

22 , AI (9) (7) (1)
 (9) (2) , (22)

가 , AI (5) 20a (5)
 (2) , (33)

(S10) , (S11) ,
 (3) (12) 가

, (5, 9) 가 , 가 (4)
 (10) 가 , 가

< 12 (,) >

(S11)가 (S12)

24a (S12) , 24b 25 24a h-h 2
 6 25 B

(S11) , 22 (8)
 (10) , AI (9) (9) (

8) (10)

, (9) 가 . (9) 가 (22) 23
 (45)가 , 가

(S12) , 25 26 , 가 (49)
 (1) (9) (2)

가 , 가 (S2) (3)

(10) (9)
 (6) , (4) , AI (5) , (47)(
 23a) , (1) (5) (2)

(3) (12)

I II

, 3 , (6, 8)

< 13 () >

27 (S13) 1a 2
7 1a e-e

(S13) (4) (H) (5)가 (Q1)
(7)

(4) (5) (7) (2)
(4) (Q1) 가

6 μ m (4) 가 (5) (7)가 (1, 2) 4 μ m
(4) 가 (5) (1) IC가

(4) (H) (5)가 (7)
(4) (5) 가 가 (1, 2) IC가

28 (S13 - 2) (S13 - 2) 3a
28 3a f-f

(S13 - 2) (4) (H) (5) (7)
(4) (5) 가 가 가 (1, 2) IC가

13a, 16, 17a, 20a, 1a 3a 5a, 6a, 7a, 10a,
24a

< 14 () >

29 (3) , 가 ,
(33)

(S1 S13) (5) (3) (33)
(35) (vision)

가 (33)
(5) (35)

(3) (33) (S14)

30a (S14) , 30b 31 30a a - a .
 (S14)
 (1) (3) (7) (5)
 (18, 19, 20, 21, 22, 23) (33)
 (AI) (1)
 30a (21) (3) (5B) (22,
 23) (3)
 (18, 19, 20) (5, 9) (3)
 (S14) , Al (5, 9) 32
 (18, 19, 20, 21, 22, 23) (36) (3)
 (33) 가
 , 33a, 33b, 34a, 34b (S14 - 2, 14 - 3)
 33a (S14 - 2) , 33b 33a mm
 33b , 34 (1) (display surface)
 (1) (7) , (5, 9) , (18, 19, 20, 21, 22, 23)
 Al
 (5, 9) (S) (S)
 , 33a (5, 9) (S) 0.01mm ,
 (S) 0.01mm
 (S) 0.02mm ,
 가 (S) 0.03mm ,
 가
 (5, 9) (S) 가 (S) ,
 , (S) 0.02mm , , 0.015mm , 0.01mm
 34a 34b (S14 - 3)
 (S14 - 3) , (5) ((D))/
 ((P))
 0.02mm / 0.03mm = 0.666
 (5) ((D))/((P))

$0.15\text{mm} / 0.24\text{mm} = 0.625$

(D))/(P)

$0.02\text{mm} / 0.03\text{mm} = 0.666$

(D))/(P)

$0.15\text{mm} / 0.24\text{mm} = 0.625$

(P) (D) (P) (D))/(P)

3가 4 (A, A') (B, B') 가

[4]

	1	2	3
(A)	0.666	0.666	0.666
(A')	0.625	0.500	0.416
(B)	0.666	0.666	0.666
(B')	0.625	0.500	0.416
	0.041	0.166	0.250

P) ±0.2 (D))/(P)

가 ±0.2 (D))/(P) (D) ((+) / 2) 가 ±0.1

(1)

(1)

(2)

(Ag), (Ti)

(Al)

< 15 () >

(18) , 35 , (10) (1) (5)
 (3)

, 36 (10) (5) (18)
 (18) , 가 (40)가 (1, 2)
 (37, 38) , (4) (10)

, 35 ,
 (18) (7) 가 (7) ,
 (5, 9) (7) (30) (5) (18) (9)가 가 (10)

(S15)

37a (S15) , 37b (S15) , (18)
 (5, 9) 5a (S3)

, 5a (S3) 가
 (3) , (7) (3)
 (1, 2) (7) , (13) (12)
 (11)

(1) (7) (6) (8) (8) IC
 (6) (8) (8)
 Q13, Q14

(5, 9) (7) (5, 9) (7)가 ,
 (6) (8) (7)가 가 ,
 IC(15)

(18) (silicon oxide)(SiO_x), (silicon nitride)(SiN_x), TiO_x, ZrO₂, Al₂O₃, Ta₂O₅,
 Nb₂O₅, Nb₂O₃ (18) (3) (3)

(18) (7)

38 (5) (18) (7) , 37a g
 . 39 38 h-h .

(7)가 (18) (5, 9)

(5, 9) (7)가 (5, 9) ()
 (18) , (7) (30) , (5)
 (9)

, (18) (7) (30)
 (5) (9)

40a 40b (S15 - 2) .

37 (S15) (18) (7) , 가 .
 (7) (18) (18) (12) .

(S15 - 2) (18) , (Q3, Q4)
 (7) .

(7) (7)
 (12) 가 .

< 16 () >

(10) , ,
 (S16)가 .

(10) ITO
 가 .

(Al), (Ag), .

(Al) , ITO ITO/Cr/Al
 , Cr/Al .

(10) 가 (S16) (a), (b)

(a)

(10) (10) ITO/Cr/Al 가 ,
 가 .

, Al 800 , , 1000

Cr ITO Al , Cr 300 500 .
 , Cr SiO₂ .

(b)

(10) Cr/Al , (10) ITO/Cr/Al 가 (,
) , ITO 가 () 가 . ,
 (10) , , 가 .

41a 41b . 41a
 , 41b .

42a 42b . 42a ,
42b ,

43a 43b . 43a
, 43b .

(a) (b) (S16) . Cr Al

(1) ITO가 (etching) , 가 (3) (resist application), (exposure),

(2) , Cr Al , 가 .

(3) Cr Al . , (5, 9) Cr/Al

ITO (10) 가 , ITO/Cr/Al Al Cr 가 ITO 가 ITO 가

< 17 () >

44 (S)가

(58) (59) (60)
(62) (63) (61)

(64)가 (63) (64) (light - guiding plate)(65) ,
(65) (cold cathod fluorescent tube) LED(Light - Emitting Diode,
) (66) (66) (65)

(67) () (58)
, SiO₂ (67)

(61) , (68) , (69)가
(black matrix)

(J) , 가 ,

SiO₂ (70) (69) (71) (67)

(71) SiO₂ (68)

(68) , SUS , (68)

(68) 가 , (68) (specularity) (diffusivity) 가

(68) (69) , (, ,)가 가

(58, 61)

200 700 (7) (58, 61) (12) (74)

(68) (S)

(60), (59), (12)

(68) (12) (68) (12), (59), (60)○

(64) (63), (64), (61) (68) (69) (12), (59), (60)

(61) (68) , 가 , (contrast)

(68) (61) (61)

(61) 가

(68) 가 가 , 가 (68)

(68) 50 500 , , 100 400 , : 30% 70% 5% 50%

(68) 가 250 , 65% , 15%

(S)가 가 (68) 가 , (58) (59)
가 .

rnal Diffusing Sheet,) . (DAI NIPPON PRINTING CO., LTD.) IDS(Inte
(bead)
(flat sheet)가 .

(58) (59) , , (68)
, 가

(S) (68) . ,

(S) , (67) ITO (41 43).
(Ag) 가 가
. Al - Cr . AI

, 800 1500

(ITO/Cr/Al)

< 18 () >

(S) 가 45 .

(76) (79) , (S) (75) /
(75) . (receiver)(77) (microphone)(78)

(S)가 (80) (81) 46 .
(81) (79) . , , , ,
(pedometer), GPS(Global Positioning System,), POS(Point Of Sale,),
(handly terminal), .

(79) (81) (S) , 가

(bistable) , STN
TN 가 , STN

(S)
, ATM(Automated - Teller Machine, (sewing machine), (stereo),
-), ,

가 .

, , 가 , .
, , 가 가 ,

(57)

1.

가 1 ;
가 2 ;

1 2 ;

1 2 ;

;

1 ;

, 1 ;

2.

1 , 2 .

3.

1 ,

4.

3 , 2 .

5.

가 1 ;
가 2 ;

1 2 ;

1 2 ;
 ;
 1 ;
 1 1 2 ;
 1 1 1 ; ,
 2 , 1 1 ; 1
 2 ; , 2
 2 , 2
 6.
 1 , , , 2
 7.
 1 , , , 2
 8.
 1 , , 2 , 1
 9.
 1 , 2 , 1 ,
 10.
 1 , 가
 11.
 1 , 가
 12.

1 , 1 , .

13.

1 , 2 , .

14.

, , 1 ;

, , 2 ;

1 2 ;

1 2 ;

;

1 ;

, , 1 ;

, , ,

, , .

15.

14 , , .

16.

14 , , .

17.

14 , .

18.

1 , .

19.

18 , .

20.

18 , .

21.

1 가 .

22.

1 가 .

23.

5 가 .

24.

5 가 .

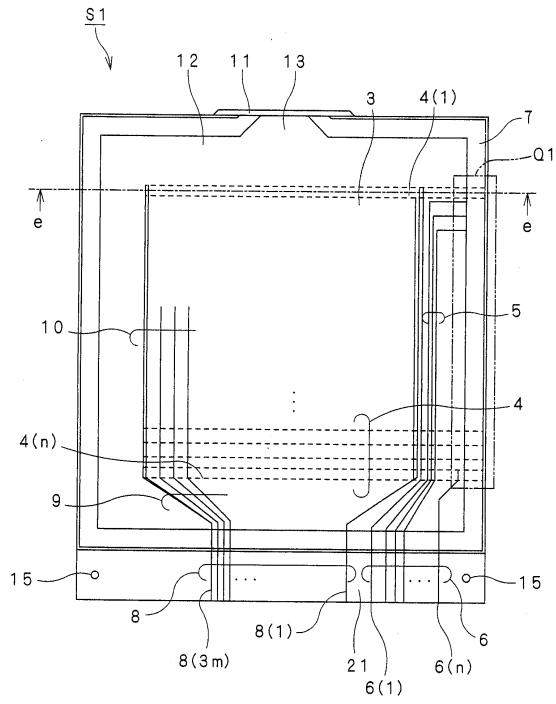
25.

14 가 .

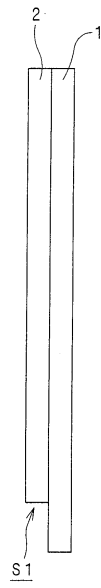
26.

14 가 .

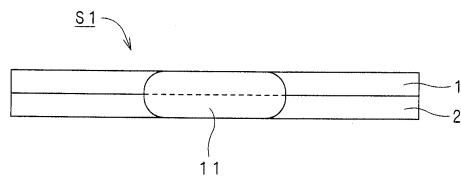
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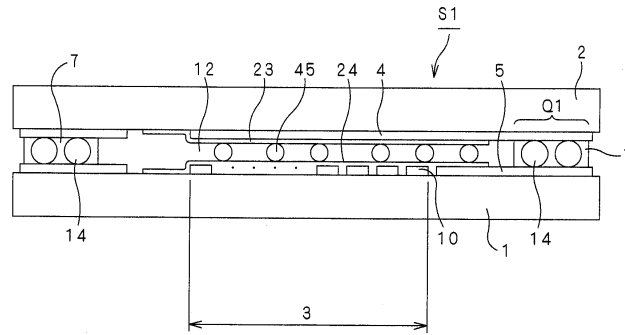
1b



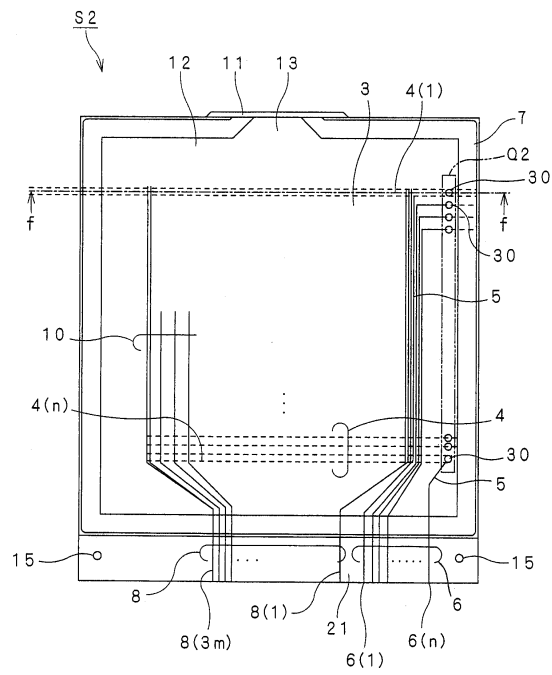
1c



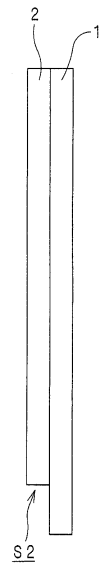
2



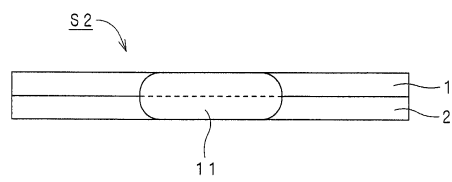
3a



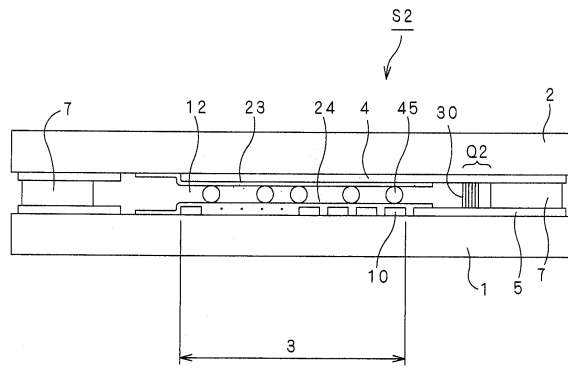
3b



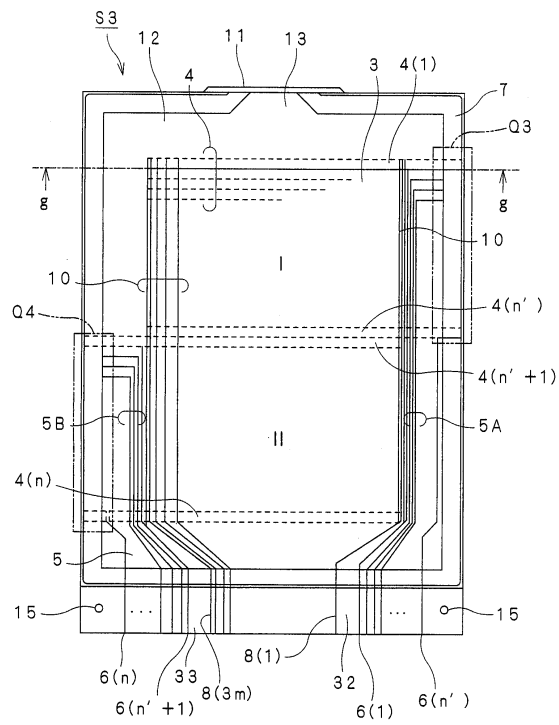
3c



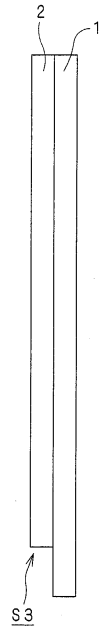
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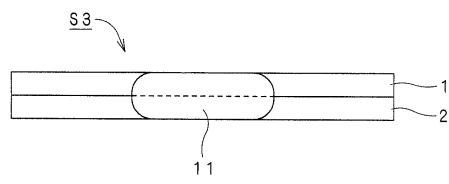
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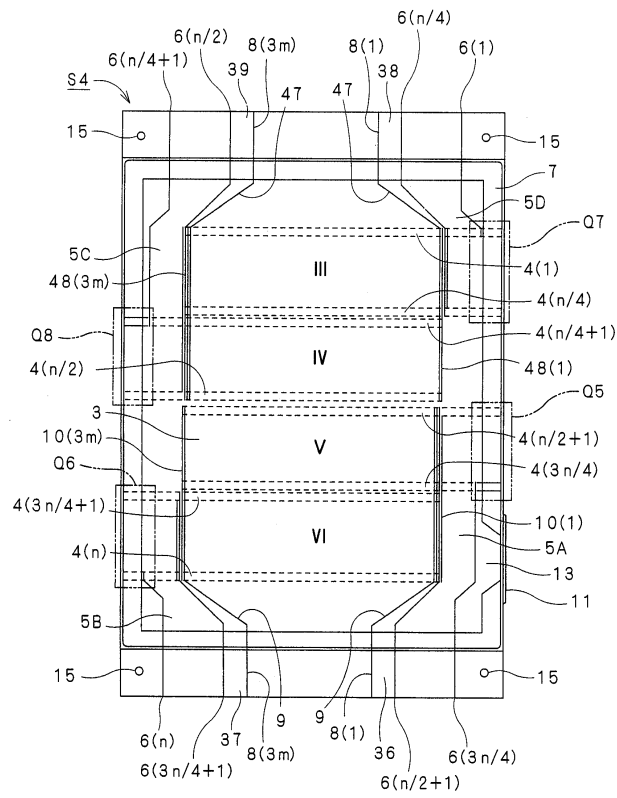
5b



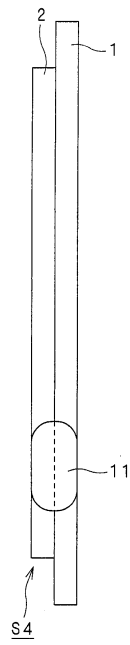
5c



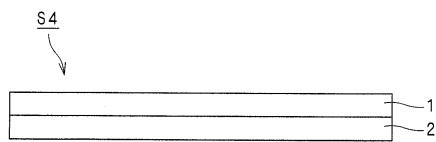
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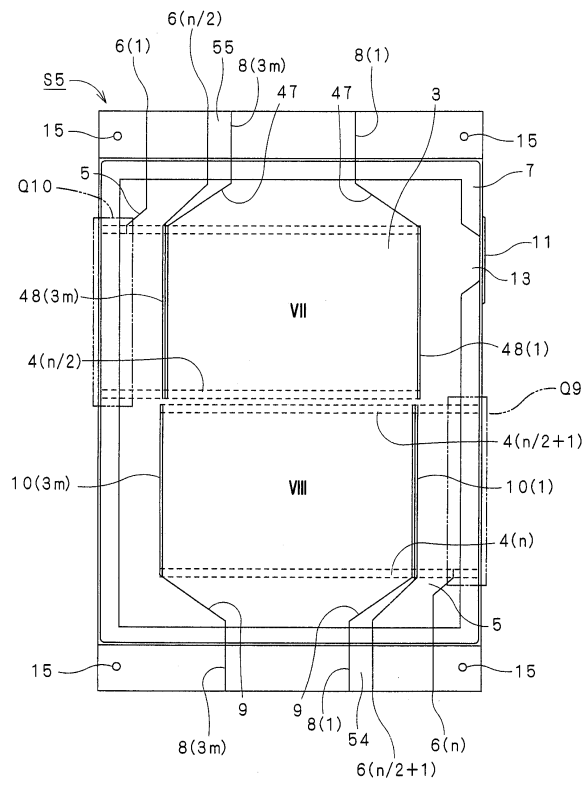
6b



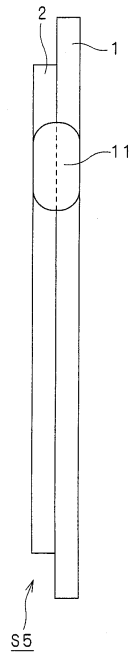
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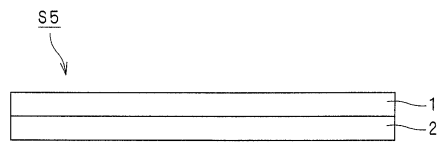
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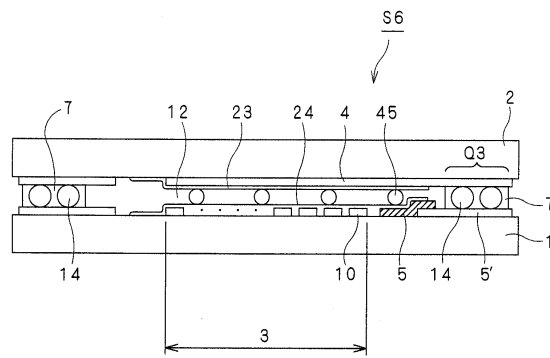
7b



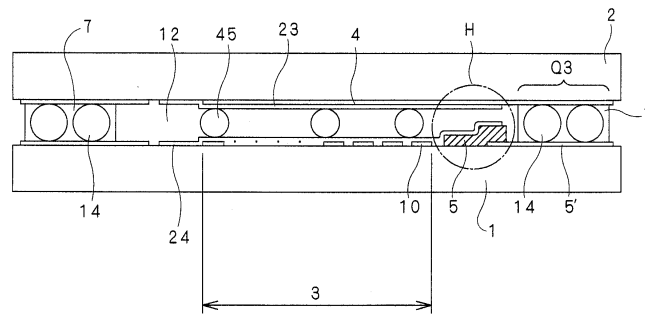
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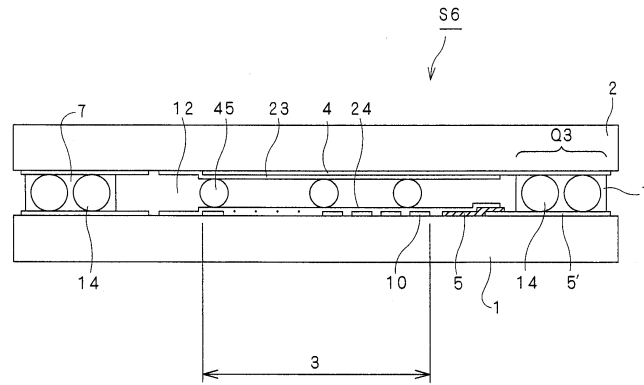
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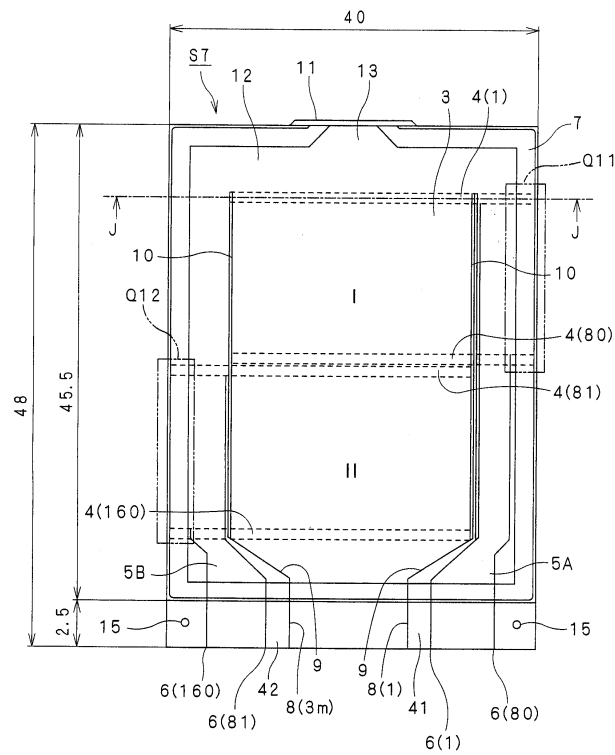
9a



9b



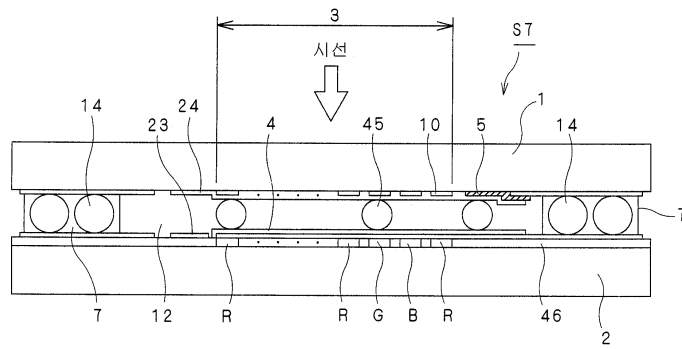
10a



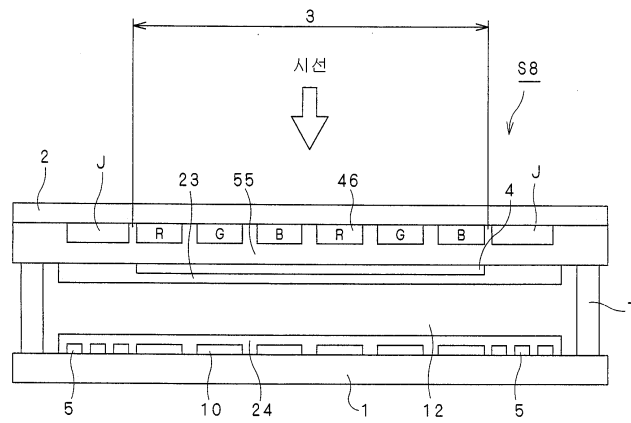
10b



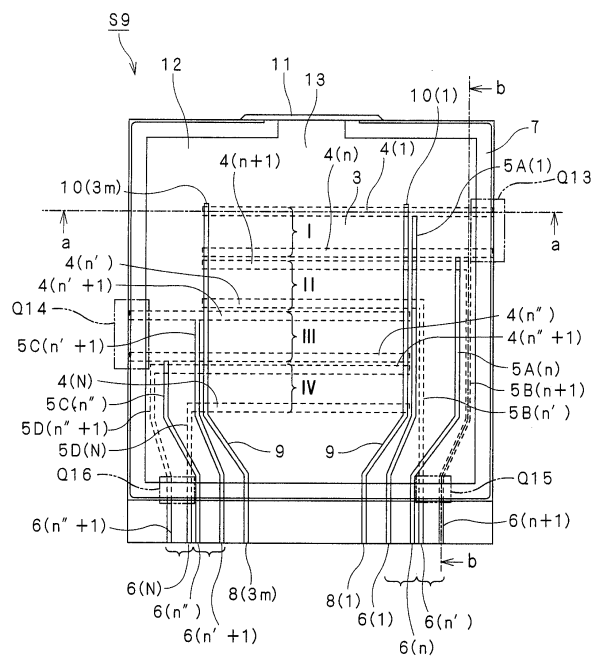
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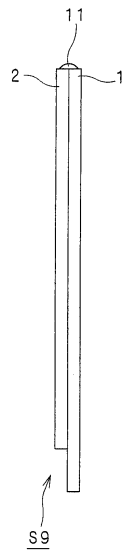
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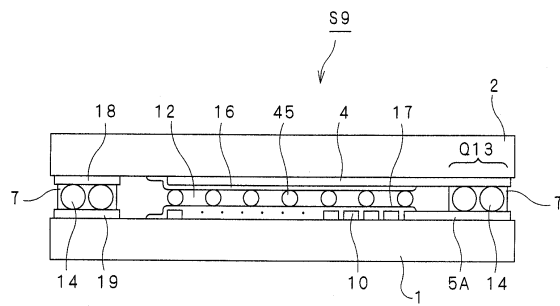
13a



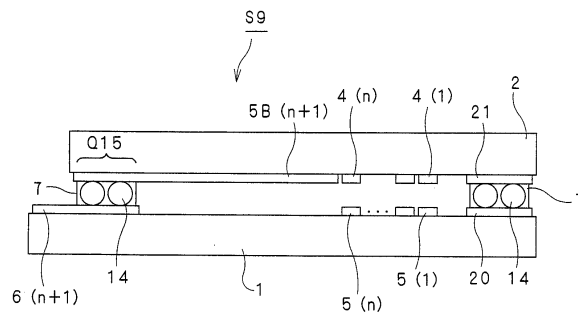
13b



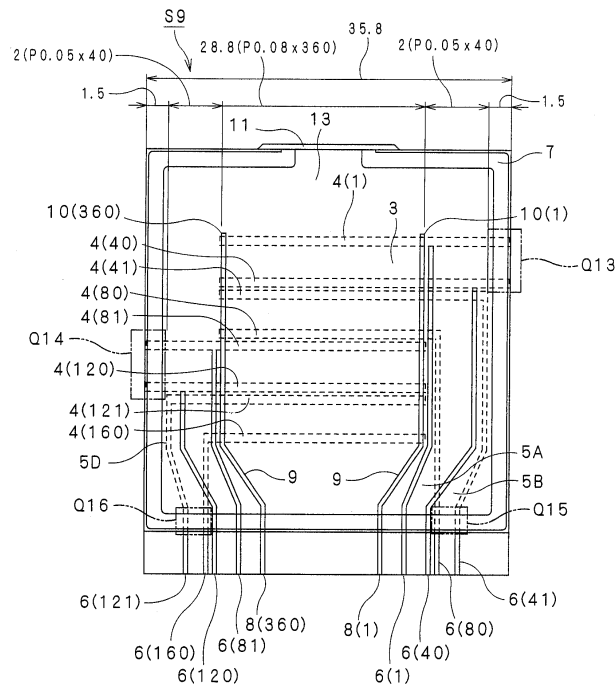
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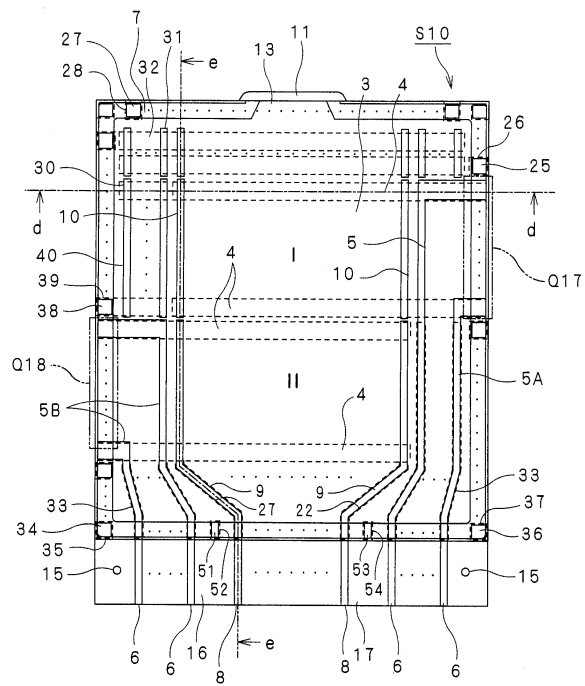
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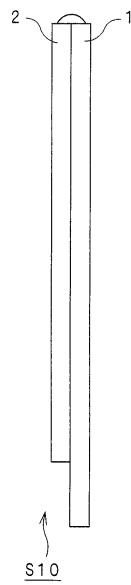
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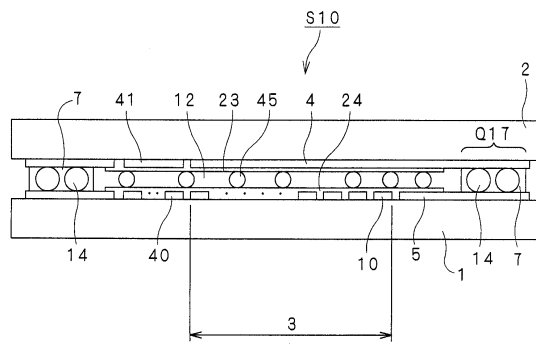
17a



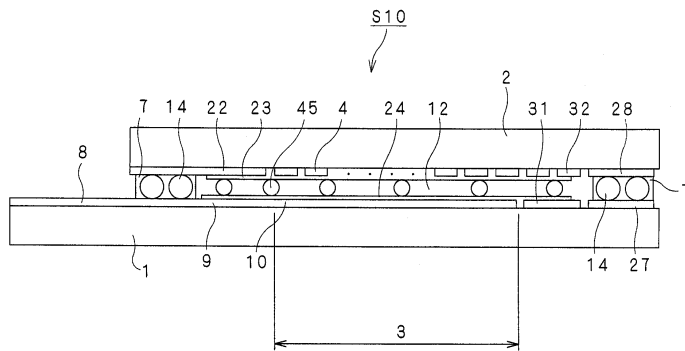
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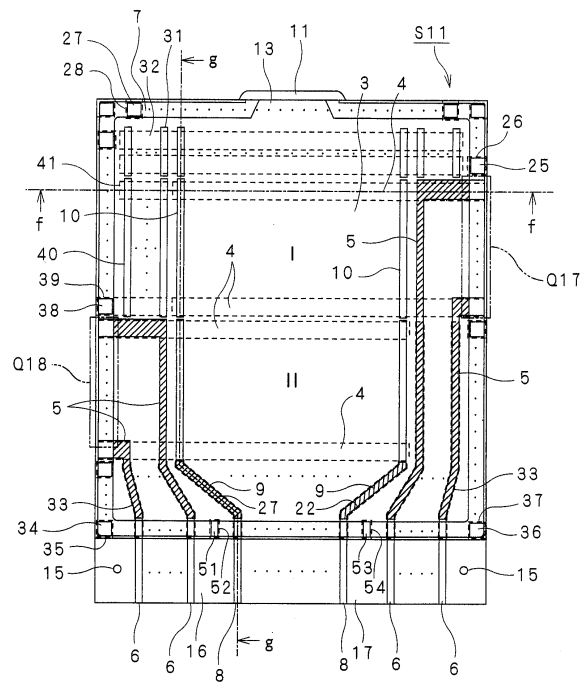
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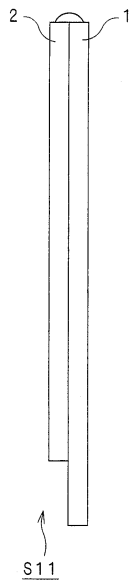
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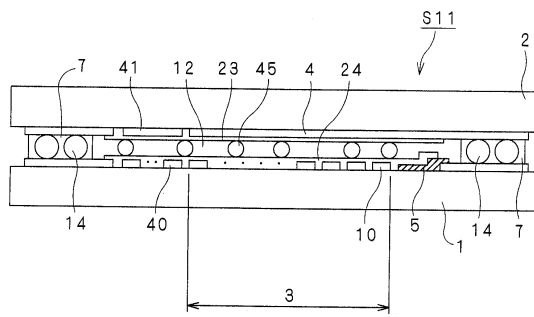
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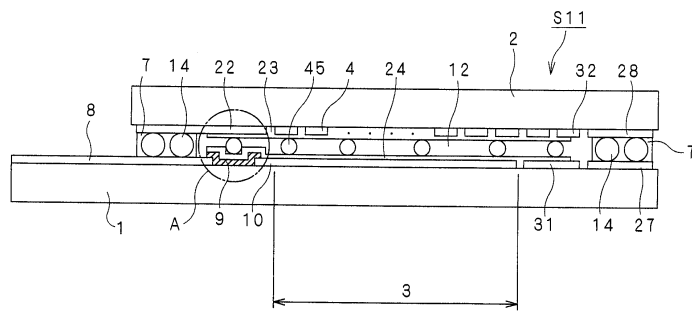
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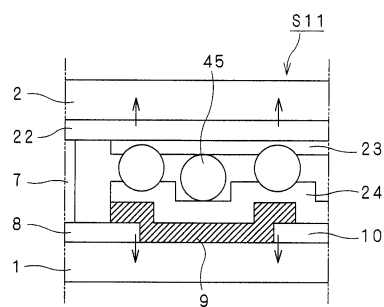
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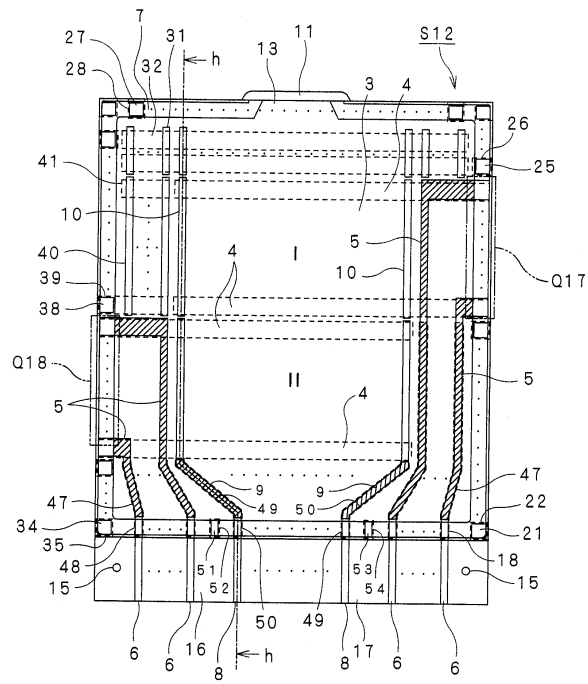
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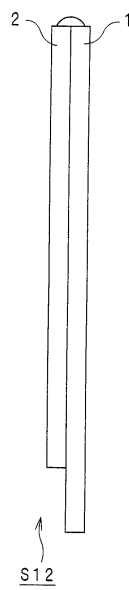
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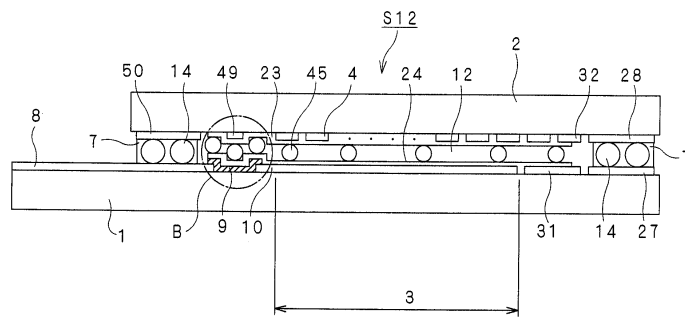
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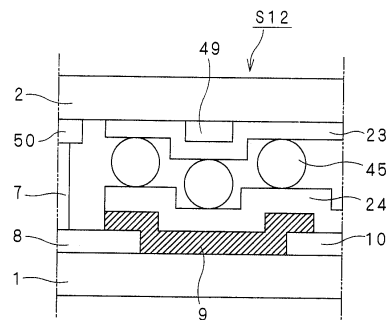
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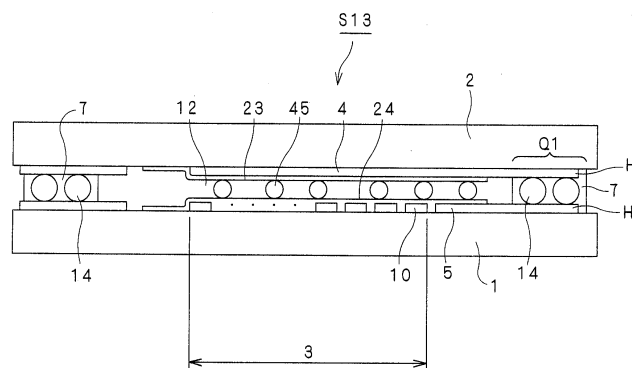
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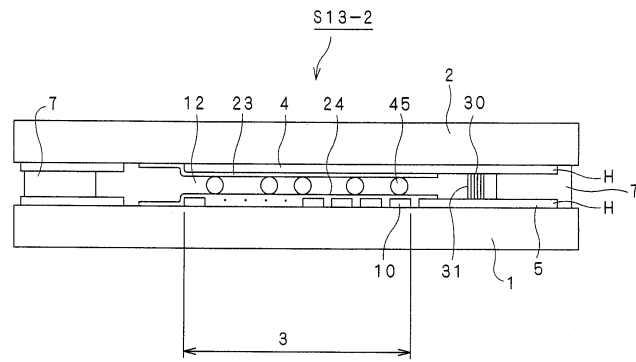
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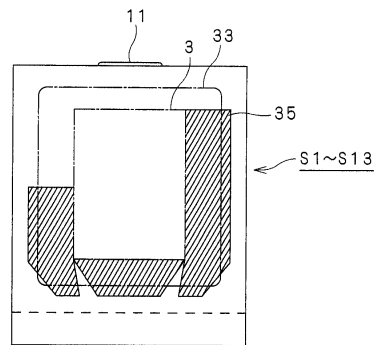
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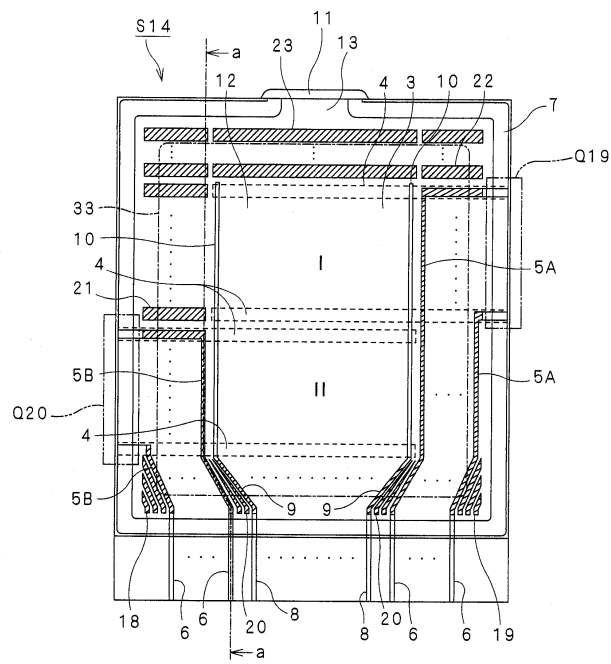
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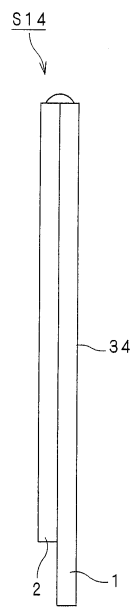
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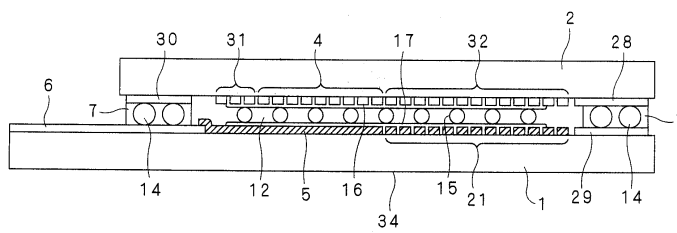
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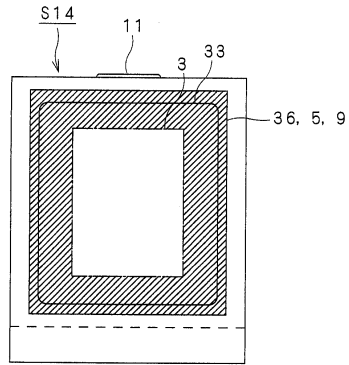
30b



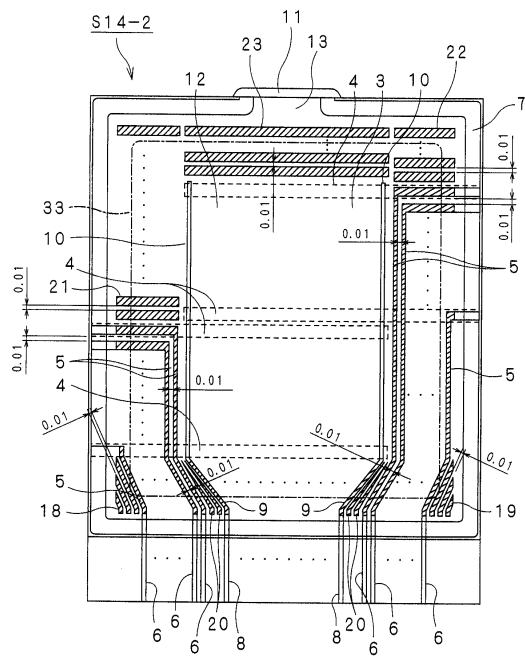
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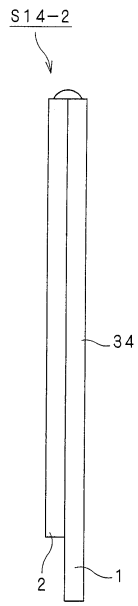
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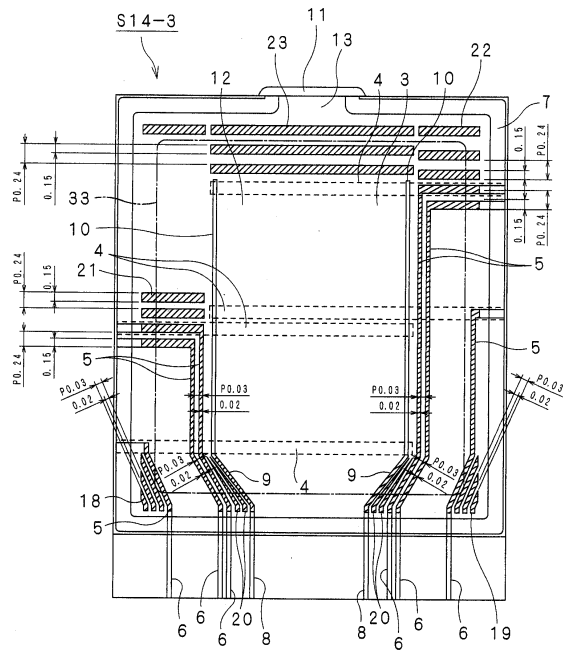
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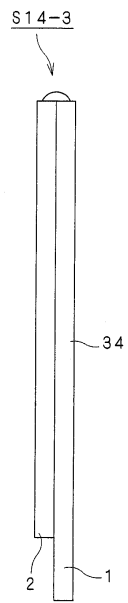
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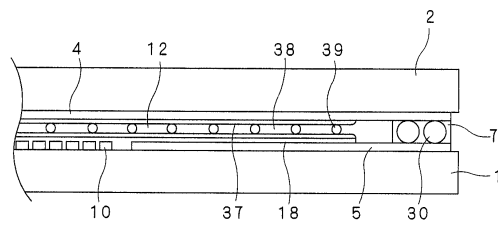
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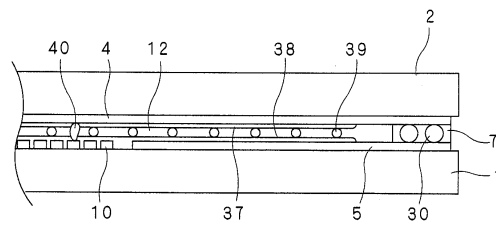
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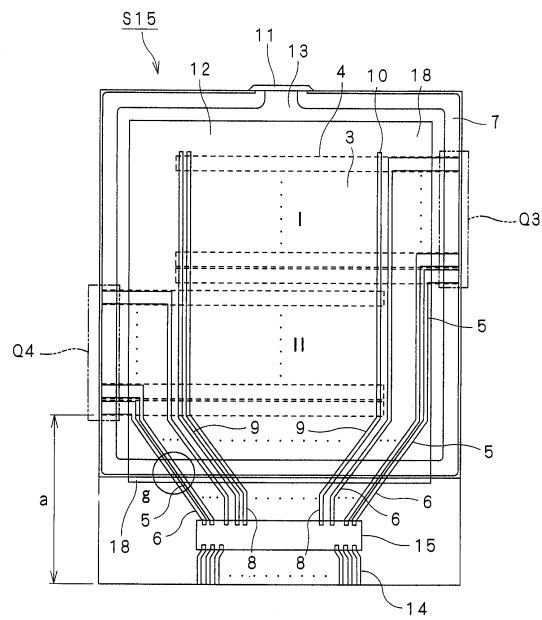
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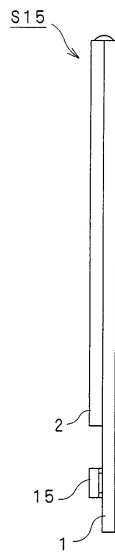
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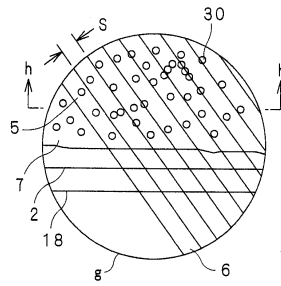
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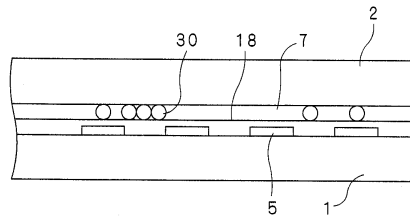
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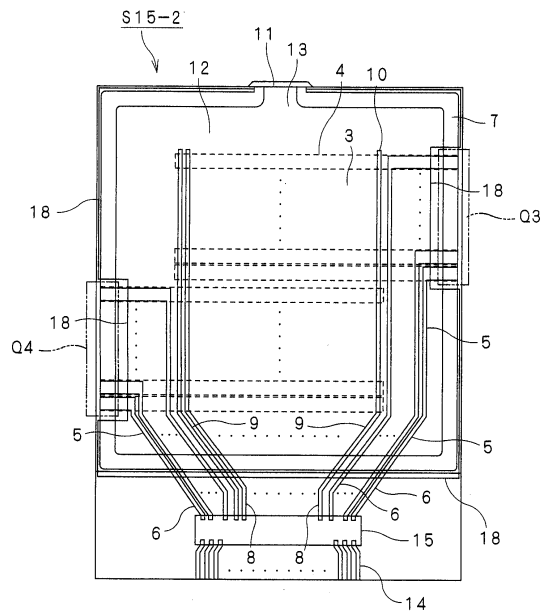
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39



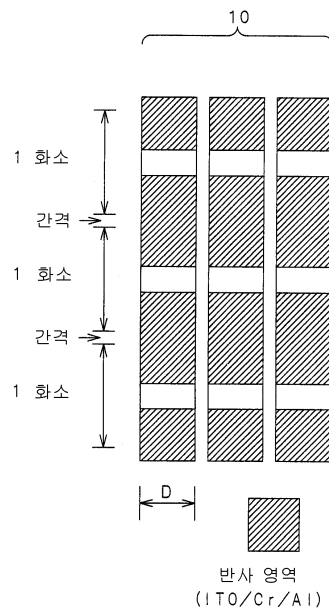
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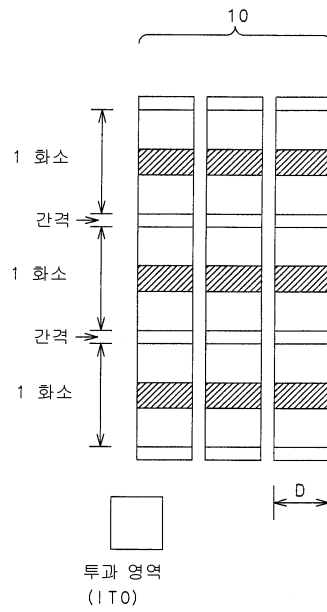
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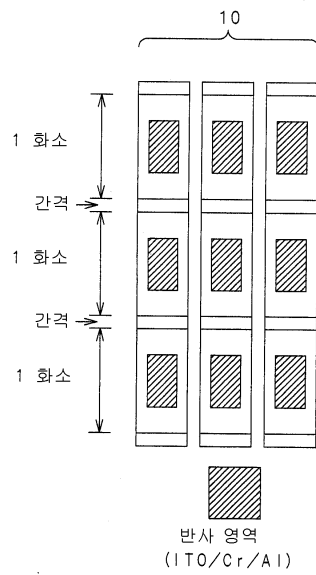
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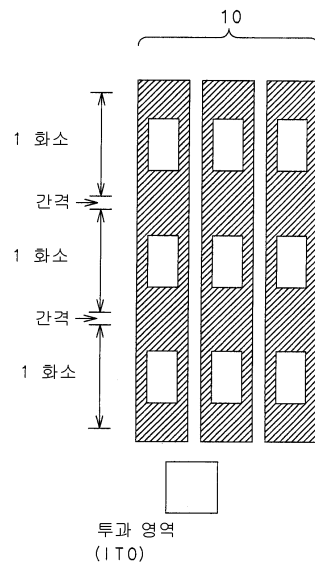
41b



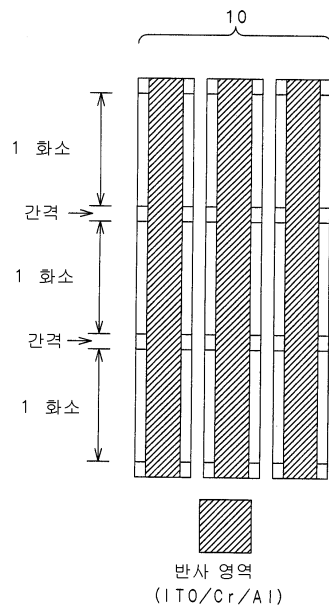
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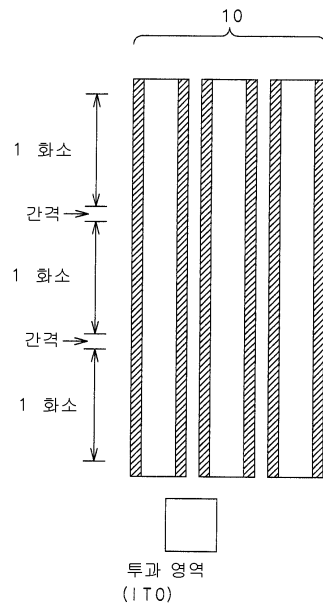
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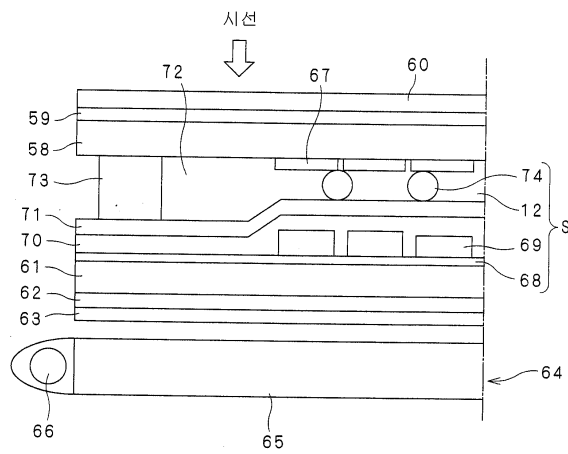
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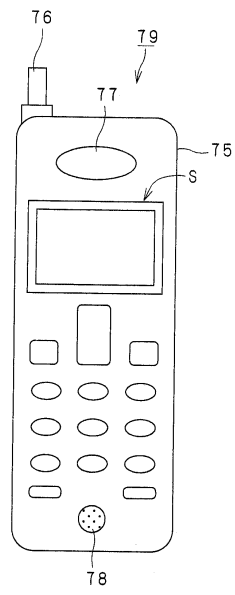
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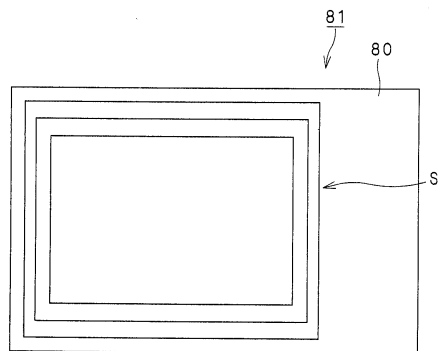
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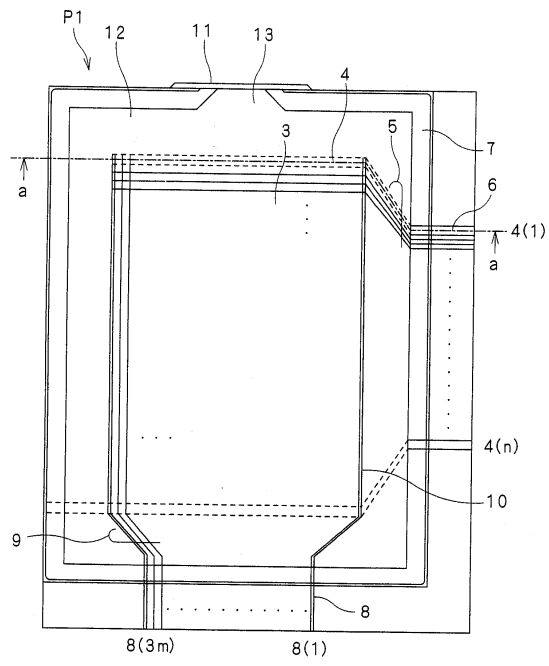
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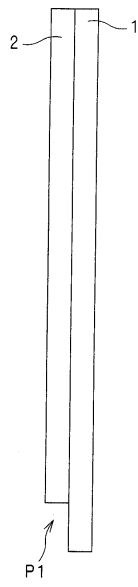
46



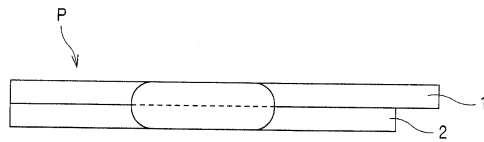
47a



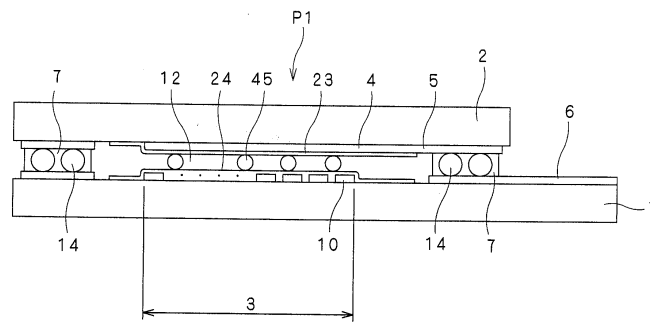
47b



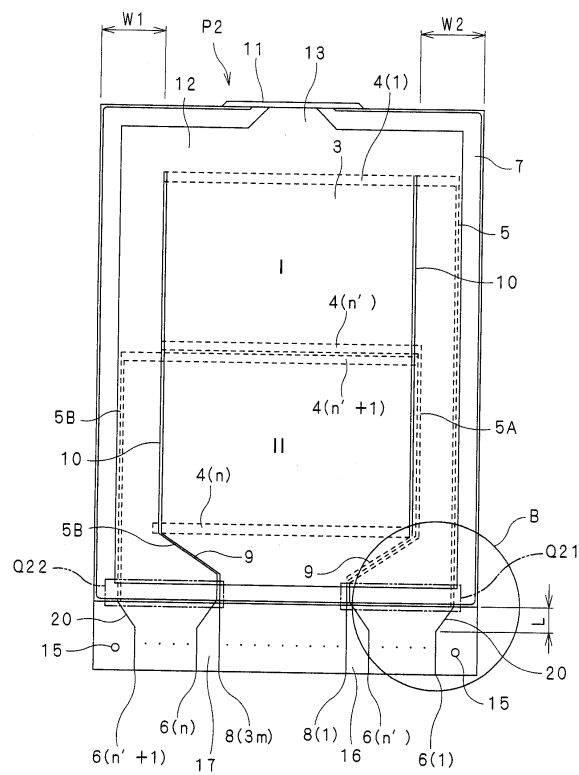
47c



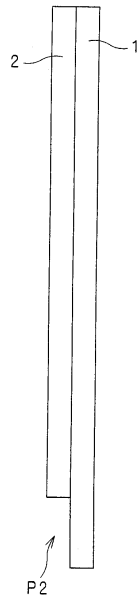
48



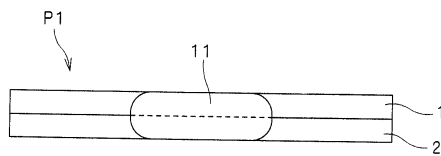
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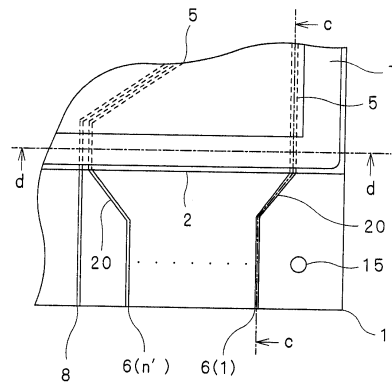
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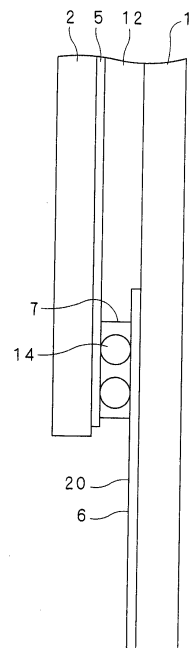
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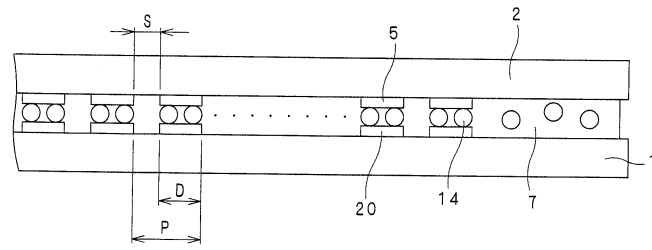
50



51



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专利名称(译)	液晶显示装置，配备有液晶显示装置的便携式终端和显示装置		
公开(公告)号	KR1020030019085A	公开(公告)日	2003-03-06
申请号	KR1020020034334	申请日	2002-06-19
[标]申请(专利权)人(译)	京瓷株式会社		
申请(专利权)人(译)	京瓷株式会社		
当前申请(专利权)人(译)	京瓷株式会社		
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IPC分类号	G02F1/1339 G02F1/1343 G02F1/1345 G02F1/1335		
CPC分类号	G02F2001/13456 G02F1/133512 G02F1/1339 G02F1/1345		
代理人(译)	HA, 桑KU HA, 杨郁		
优先权	2001261510 2001-08-30 JP 2001298550 2001-09-27 JP 2001352822 2001-11-19 JP 2001358717 2001-11-26 JP 2001361553 2001-11-27 JP 2001378905 2001-12-12 JP		
其他公开文献	KR100495499B1		
外部链接	Espacenet		

摘要(译)

分段电极10的组穿过密封树脂7的下部并连接到用于分段电极8的一组连接端子。用于公共电极6的一组连接端子沿着密封树脂7的下部与用于分段电极8的一组连接端子并置。用于公共电极6的连接端子组通过密封树脂7的下部连接到布线图案5。布线图案5穿过密封树脂7的右侧部分和显示区域3之间的区域，并且连接到基板Q1之间的导电部分。基板Q1之间的导电部分包括多个导电颗粒，以将布线图案5和公共电极4组彼此电连接。利用这种布置，液晶显示装置可以小型化。 - 1 - 图1a

