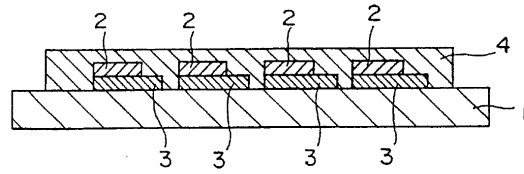
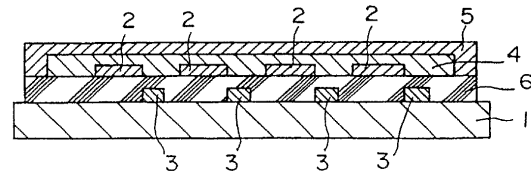


(a)



(b)



(c)

(EL)

, EL () , EL

() EL 가 ,

, 17 (101) 1 () (102), (104)
2 () (105) EL , (103) 1
(102) EL 가 .

EL 96 - 180974 EL 가 .

, 99 - 31590 , 18 (201)
(203) (202) () (202)
(203) (206) , (203)
(202) EL 가 .

, PCT WO97/34447 19 (301) (306),
(302), (304) (305) EL , (302)
(303) (303) (306)
EL 가 .

, 17 EL 1 () ,
가
(短絡) , (段差가
가 (漏話)가 ,
가 .

, , , , 1k
, , , 100
, 가 ,
가 .

, 18 EL , , 가
, , 가
, 17 EL , 가

, EL , EL
, ,

, PCT WO97/3447 EL 가 , ,

가

, 가 , 가

EL

가

가

EL

EL

[1] 가 (1)

XY

EL

EL

EL

가

EL

가

가

가

EL

()

[2] , 1 EL

[3] , 1 EL

EL

가

[4] , (2)

XY

EL

EL

가 , EL 가

가 , 가

[5] , 1 2 EL

가

[6] , 1 2 EL

가

가 , 가 , 가

[7] , 1 2 EL

[8] , (3) XY EL EL

EL

가 EL (

[9] , 3 EL

[10] 3 EL EL

[11] (4) XY EL

EL

가

[12] 3 4 EL

가

[13] 3 4 EL

가

가

[14] 3 4 EL

1c Y-Y 1 EL , 1a , 1b X-X

2	1	EL		
3	1	EL		
X	, 3c	Y - Y		, 3a , 3b X -
4	1	EL		
5	2	EL		, 5a , 5b
6	2	EL		, 6a
	, 6b			
7	2	EL		, 7a
	, 7b			
8	3		EL	
	, 8a	, 8b	X - X	
9	3		EL	
10	3		EL	
11	3		EL	
12	3		EL	
13	3		EL	
	, 13a	, 13b	X - X	
14	3			EL
15	5	EL		, 15a
	, 15b	X - X		
16	6	EL		
17			EL	, 17a 1
	, 17b			
18			EL	
19			EL	

EL

1

1

EL

1

1

EL

1

, 1a

, 1b

X - X

, 1c

Y - Y

1.

1

EL

(1)

()

(2),

()

(4),

(5)

EL

(2)

(5)

XY

(2)

(5)

EL

()

(8)

(1)

(2)

(5)

(6)

(1c),

(6)

(2)

(3)

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(1b).

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, (3) (6) (2)

, (2) (3) (2) (6) EL (6) (8) (3)

(7) (7) (3) (2)

(3b).

, 1 (2)

, (6) (7) , 3 (5)

(6) (2) (2) (7) (2) (3)

(2a)

, (2a) (2) (3)

, 3b (through - hole) (7) (2a)

, 4 (2) (2) 가

(2a)

, (7) (3) (2) 가

, (2) (3)

, 가

가 EL (3) (2)

가 EL (8) 가

, (3) (2)

(6) (3) (2) (6) (3)

(3) (2)

, (3)

, (3)

, (3) (6) (2) (3) (3) 가

(2)

2.

, EL

(1)

가

30%

EL
 가 (가 4.0 eV)
 가
 i), (Pd), (Pt) , In - Sn - O, ZnO:Al (ZnO A1 가), In - Zn - O, SnO₂:Sb (SnO₂:Sb (SnO₂:Sb (Au), (N
 2 Sb 가)

(가 4.0 eV)
 I - Li, Al - Mg, Al - Ba, Al - Ca, Al - Sc, Al - Yb , BaO, SrO, MgO , A
 (20nm) , LaB₆ TiN

300nm 2 200nm 가 2
 10nm EL 가
 가 300nm 가

(2)

EL EL 가
 가

(,) 5k
 L 가 5k 가 E

1k 가
 가 10cm (1cm) 100

5 × 10⁻⁴ cm 5 × 10⁻⁴ 가

(Ta), (Au), (Cr), (Ti), (Nd) (W), (Al), (Cu), (Ag), (Mo),

Mo - W, Ta - W, Ta - Mo, Al - Ta, Al - Ti, Al - Nd, Al - Zr

TiSi₂, ZrSi₂, HfSi₂, VSi₂, NbSi₂, TaSi₂, CrSi₂, WSi₂,
CoSi₂, NiSi₂, PtSi, Pd₂Si

1

[1]

	(μ · cm)
Al	3
Cr	25
Ta	180
Ta:Mo	40
Ti	84
Mo:W	15
Mo	53
Al:Ti	10 30
Al:Ta	10 30
Al:Nd	6 14

Ta Al Ta ,2 , A1 Ta ,Cr Au ,Cr Al , A1 Mo Cu Ta

Cu Ag

Ta, Cr, Mo

가 100nm μm

200nm 5μm

가 100nm , 가 EL 가

() EL , 2μm 1,000μm

, 5μm 300μm

100μm 2μm 가 가 , , EL

(3)

가 $0.2\mu\text{m}$

10nm

() , $500\mu\text{m}$ 1mm

, 2 MV/cm

가

가

가

가

가

SiO_2 , Al_2O_3 , Ta_2O_5 , Si_3N_4 ,

가 SiO_2 , MgO , YbO_3

가

가

EL 가 ,
6)가 $1 \times 10^{-13} \text{ cc} \cdot \text{cm}/\text{cm}^2 \cdot \text{s} \cdot \text{cmHg}$

0.1 %

(JISK712

, $10\mu\text{m}$

(4)

EL

EL

가

EL

, DCM()

EL

()가

EL

()

EL
가

가 30%

EL

가 20nm

(100%)

100

150%

가

가

2

5

7

EL

)

, b

EL

2

2

a

5

(

I.

EL

(5)

(2)

1

EL

(5)

(1)

(2),

(2)

(8)(1)

(4)

(5) XY

(2)

(3)

(2)

(3)

(6)

(2)

1

EL

()

1

5

7

5 (8) (2) (3)
 (6) .
 , 6 , 5 가 (2) (3) ()
 (6) .
 , 7 (2) (3) (6) .
 , 1 .
 , EL 가 가 .
 , EL , 1 가 가 .
 , EL , () 가 .
 , , .
 , .

2.
 가 (4), (5) 2 EL (1), (2), (3),
 (6) 1 .
 3
 , 3 8 14 EL 8 14 3
 EL .

1.
 3 (1) (3) (2), (4) (5)
 (2) (5) XY EL
 , .
 (1) (3) (2) ,
 (2) (3) (2) EL .
 , , ,
 , 가 .
 , 3 , .
 , , .
 , 3 , EL .

가 ,

,

3

가

가

,

,

2.

3

8

14

3

1

EL

1

,

EL

3

EL

8a

8b

(1)

(3)

(3)

(8)

(3)

(6)

(6)

(3)

(3)

(3)

(6)

, CVD,

(5)

)

(6)

9

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3

(7)

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10

(6)

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EL

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(7)

11

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12

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(6)

(2)

(2)

(6)

12

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(7)

(2)

(3)

13b

(7)

(2a)

(2a)

(2)

(6)

1

4

(7)

(2)

(6)

14

(2)

(4)

(5)

(2)

XY

1(

3)

(2)

(3)

(8)

EL

가

(3)

(6)

4

, 4 . 2 EL

, (1) (3) (2), (4) (5)
, (2) (5) XY EL

(1) (3) (2) ,

(2) EL (3) ,

(3) (3) (6) .

(3) (2) (8)

, (2) (3) (6) , (3) (2)
(5)

, (2) (3) (6)
, (3) 가 ,

3

5

15 5 15 EL 5
, 15a , 15b X - X .

, 5 1 EL 가 (7)
, EL 1 . ,
5 (7)

1.

15a 15b , 5 (6) (7) (2)
, (3)

(7) (2) (6) 가 , ,
, (7) (3) (2) 가 , 가 , ,

2.

5 (6) (7) , (7)

IC28T - 3 ())

, 160 , 10
가 200nm
, 9

N303

SiO₂

nm IZO , IZO() , 120

IZO HPR204 , TMAH

, 130 , 10 , IZO (5%)
IZO

N303 , 11

EL

PS , 10atm% X

())

가

(1 -) - N - [N - (3 -) - N -] (MTDATA) 4, 4' - [N -

: 4, 4' - (2, 2 -) (DPVBi)

: (8 -) (Alq)

()

, 가 가

가 $665 \times 10^{-7} \text{ Pa}$ ($1 \times 10^{-7} \text{ Torr}$)가

가 , 1 14 , EL , 1 EL 가

가 200nm가

MTDATA: 0.1 - 0.3nm/sec., 60nm.

NPD: 0.1 - 0.3nm/sec., 20nm.

DPVBi: 0.1 - 0.3nm/sec., 50nm.

Alq: 0.1 - 0.3nm/sec., 20nm.

Ag: 1.3 - 1.4nm/sec., 200nm (Ag Mg).

Mg: 0.1nm/sec.

(2) EL 가

EL () () , DC12V 가

, JIS Z 8701 CS100 (()) 300cd/m²
CIE , CIEx=0.14, CIEy=0.20

240 1 EL

2

(1) EL

1

, IC28T - 3 (()) , 160 , 10 ,
SiO₂ 200nm

, N303 , 10 ,
SEM(Scanning Electron Microscopy,)

, 1 EL (, 12 13), 3

(2) EL 가

EL () () DC12V 가

300cd/m² , JIS Z 8701 CS100(()) CIE CIEx=0.14, CIEy=0.20

, EL , 240
1

3

(1) EL

2 EL (15) 1
 ZPNI100(()) 2 EL
 SEM

(2) EL 가

EL () DC12V 가
 CS100 () 300cd/m²
 { 6 (240 × 2
 40)} ± 10cd/m²
 , JIS Z 8701 CIE IEx=0.14, CIEy=0.20

EL , 240 1

4

(1) EL

2 SiO₂ 2 EL

(: 500μm) V259PA(())
 , 180 , 10 TMAH 가 200nm

(2) EL 가

EL () DC12V 가
 CS100 () 300cd/m²
 cd/m² ± 10
 , JIS Z 8701 CIE CIEx=0.14, CIEy=0.20

EL , 240

5

(1) EL

5 EL 1 OA2(())
 50nm가 가 200nm

, TMAH(HPR204()) , 130 , 10
 , / HCE(가 ()) / /
 3(가 ()) , 8 / , N30

, ITO ITO() 120nm 가
 , ITO
 , 11 TMAH
 , 130 , 10 가 , ,

ITO , / ITO 47% , ,
 , 11 /ITO (, 11
 (6)).

, /ITO V259PA (()) , 180 , 10
 , () ,
 O , /ITO () , IT
 (7) . , 7
 EL

(2) EL 가
 EL () () DC12V 가
 , CS100 300cd/m²
 , JIS Z 8701 CIE , CIEx=0.14, CIEy=0.20

, EL , 240
 1
 1

(1) EL

1 EL EL 1 , , 1 EL
(18).

(2) EL 가
EL DC12V 가
CS100 250cd/m² 1

1

, 1 CIE CIE_x=0.14, CIE_y=0.20 ,

, EL 가 10
()가 240 15 , ,
가 , ,

2

(1) EL
2 EL , 1 EL (17
) .

(2) EL 가
EL , DC12V 가 , CI
CS100 300cd/m² ,
E CIE_x=0.14, CIE_y=0.20 ,

, EL 가 10
()가 240 10 .

가 가 가
() 가 , 가 ,

[2]

					cd/m ²	CIE _x CIE _y	
1	1	IZO 120nm	Al 200nm		300	0.140.20	0/240
2	3	IZO 120nm	Al 200nm		300	0.140.20	0/240
3	15	IZO 120nm	Al 200nm		300	0.140.20	0/240
4	3	IZO 120nm	Al 200nm		300	0.140.20	0/240
5	7	IZO 120nm	Al 200nm		300	0.140.20	0/240
1	18	IZO 120nm	Al 200nm		250	0.140.20	15/240
2	17	IZO 120nm	Al 200nm		300	0.140.20	10/204

가

EL (1)

EL

가

EL

EL (2)

EL

가

가

EL

EL (3)

EL

EL (4)

EL

(57)

1.

XY

2.

1 ,

3.

1 2 ,

4.

XY

5.

2 4 ,

6.

3 5 ,

7.

3 , 5 6 ,

8.

XY

9.

8 ,

10.

8 9 ,

11.

XY

12.

9 11 ,

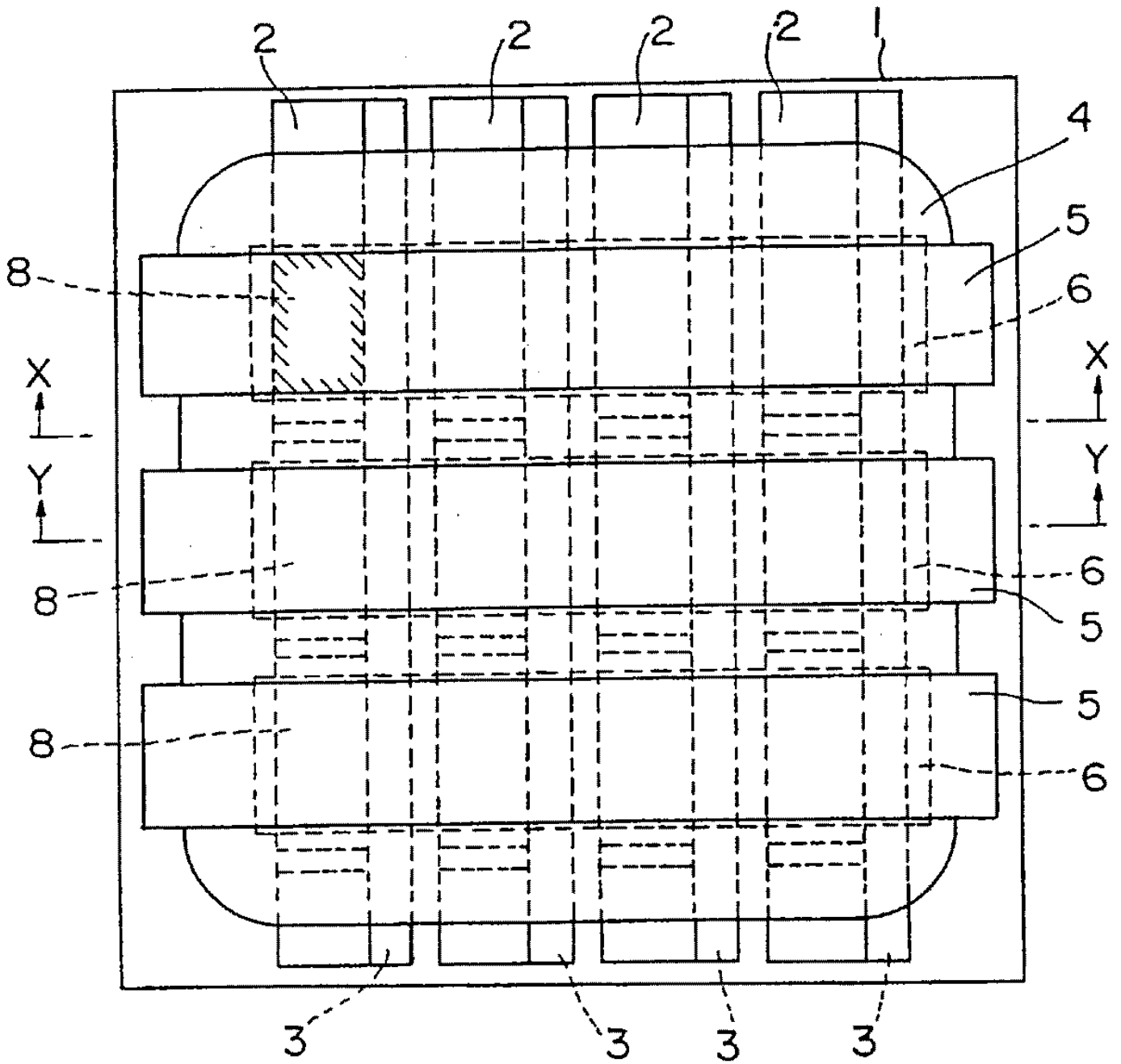
13.

10 12 ,
가

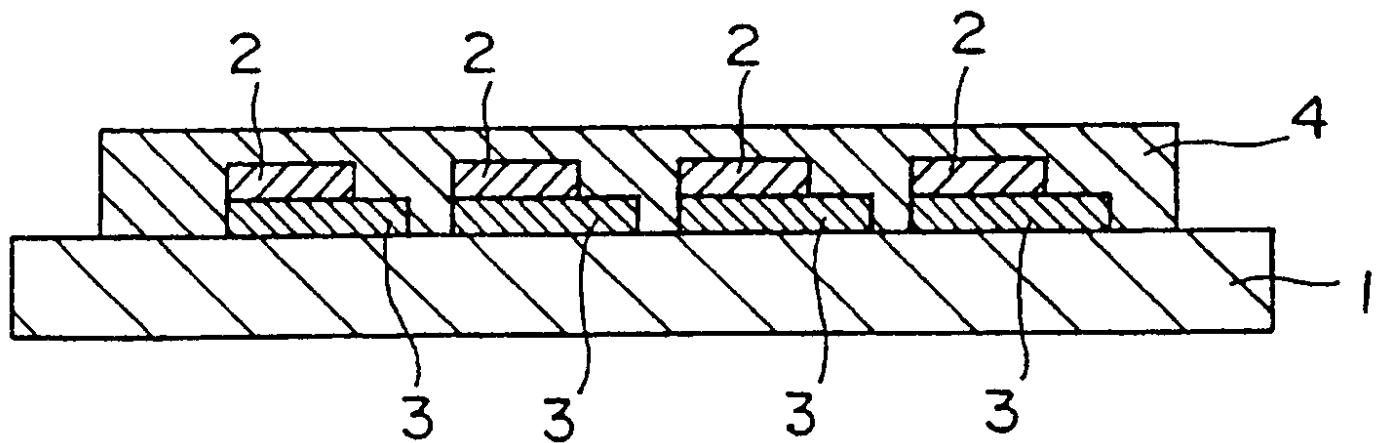
14.

10 , 12 13 ,

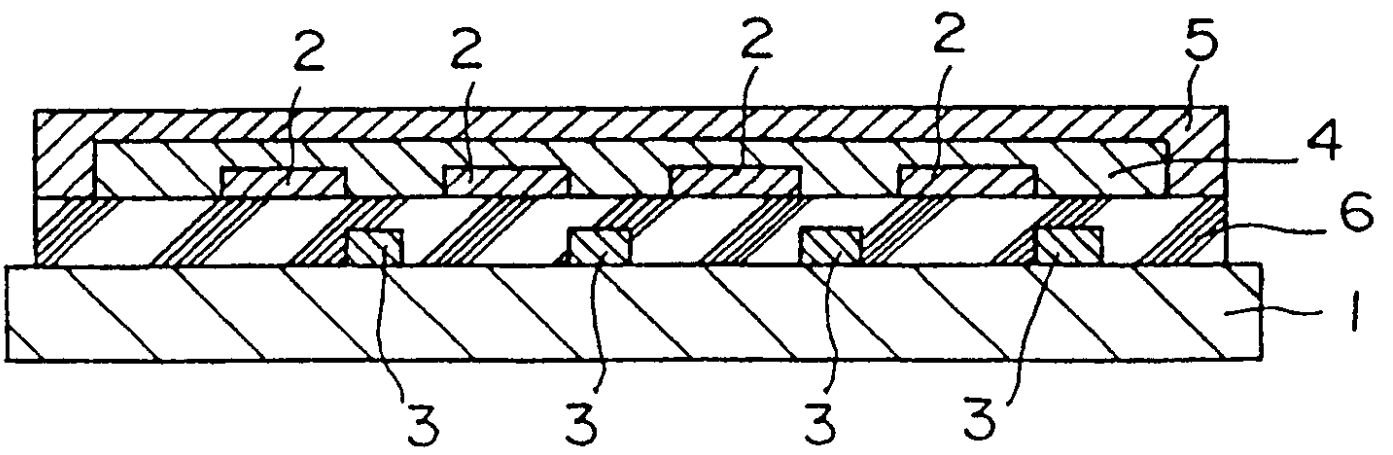
1a



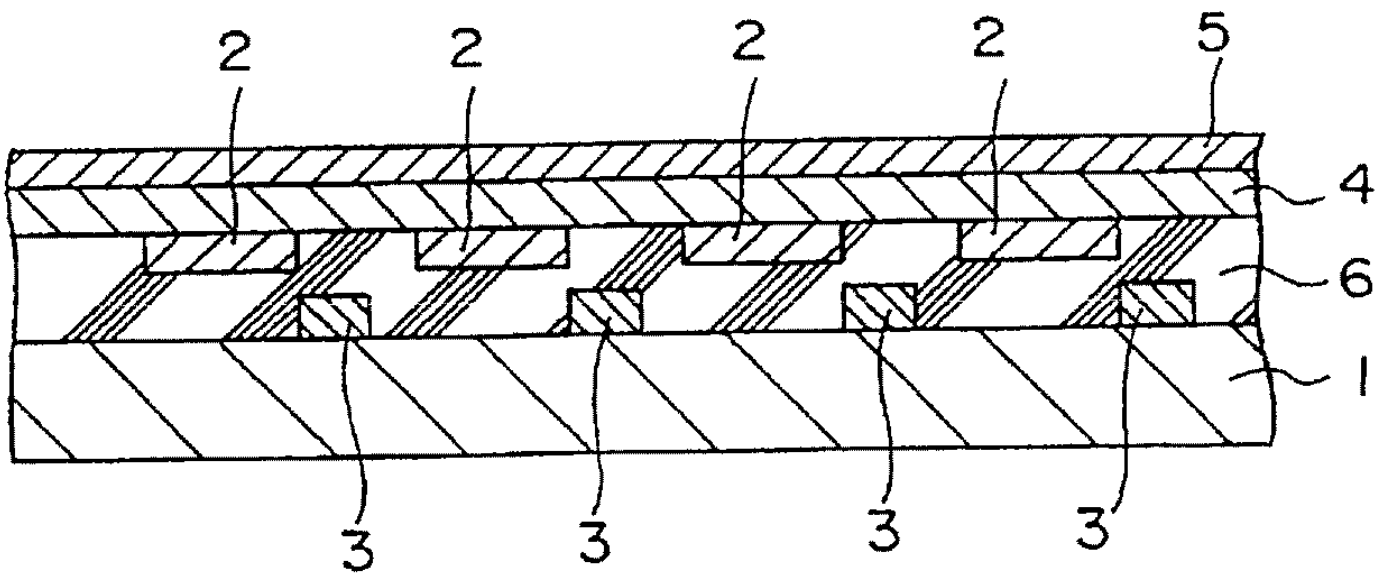
1b



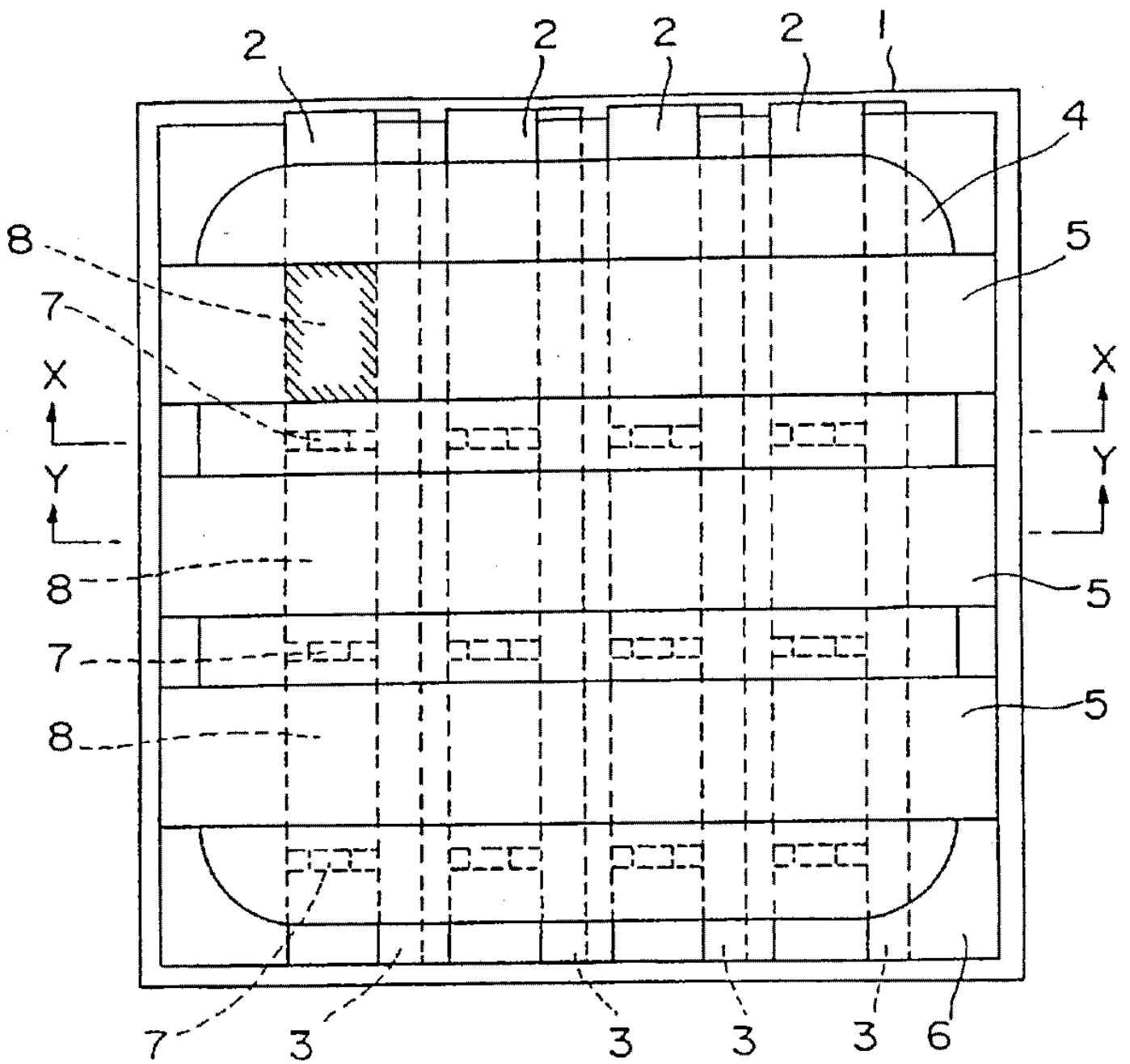
1c



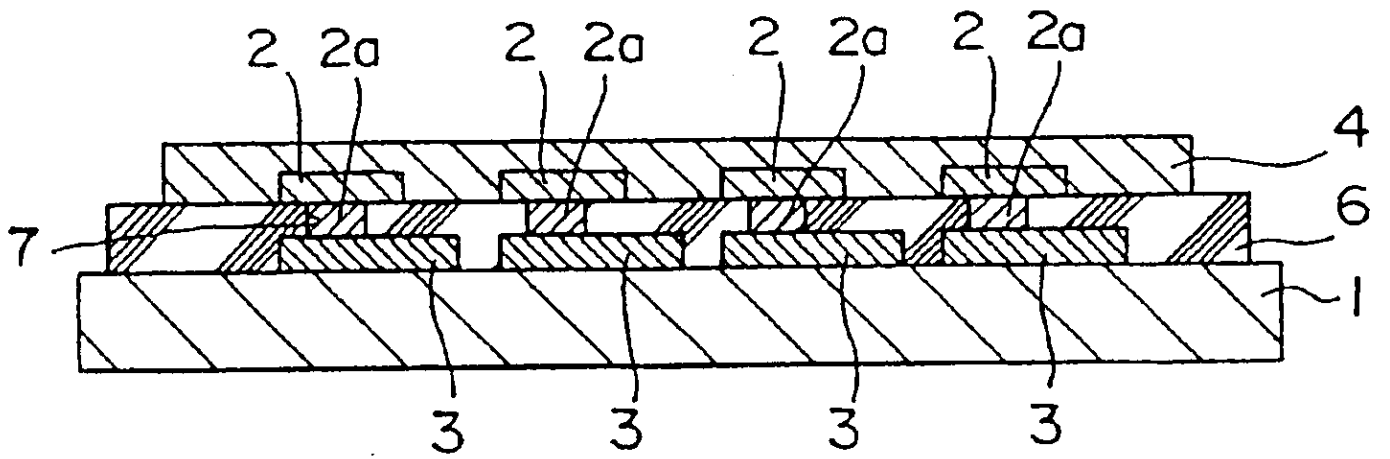
2



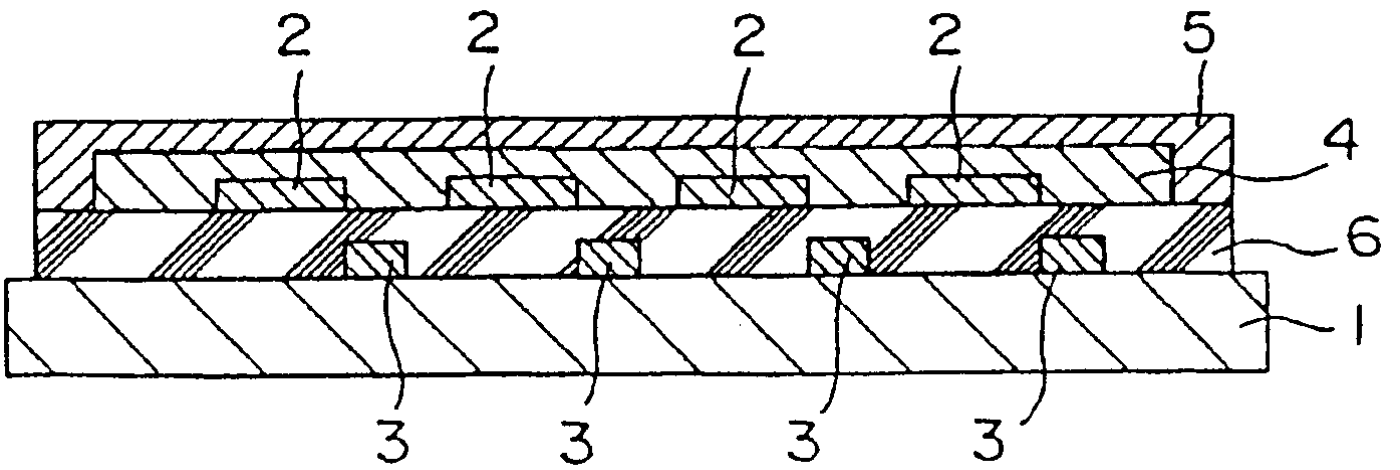
3a



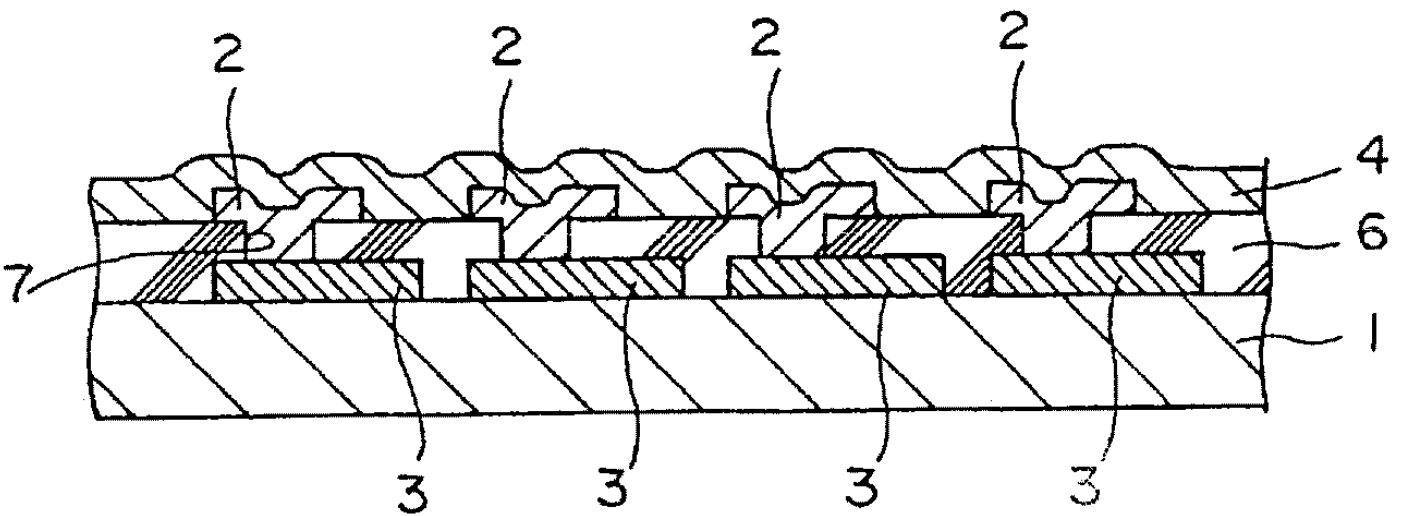
3b



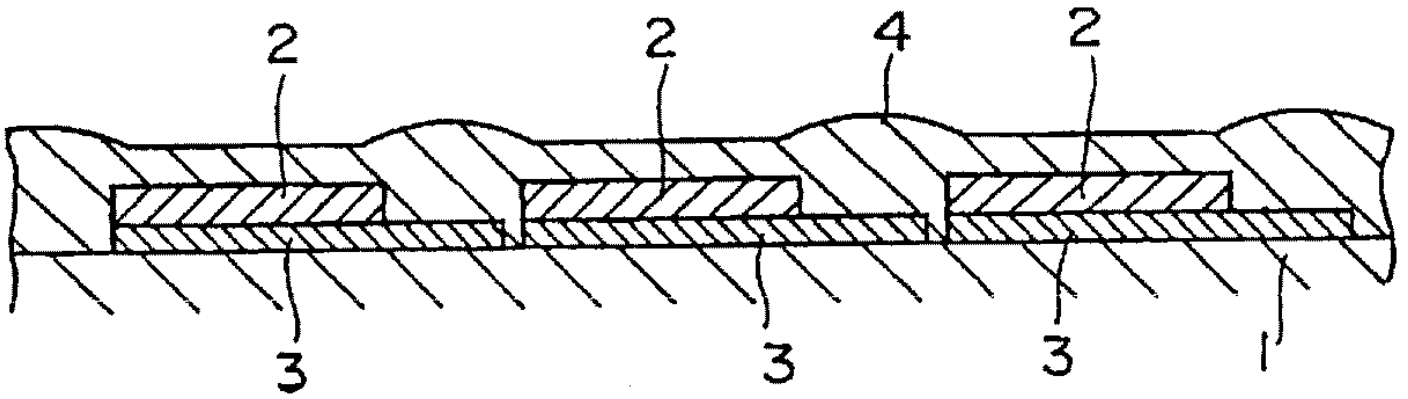
3c



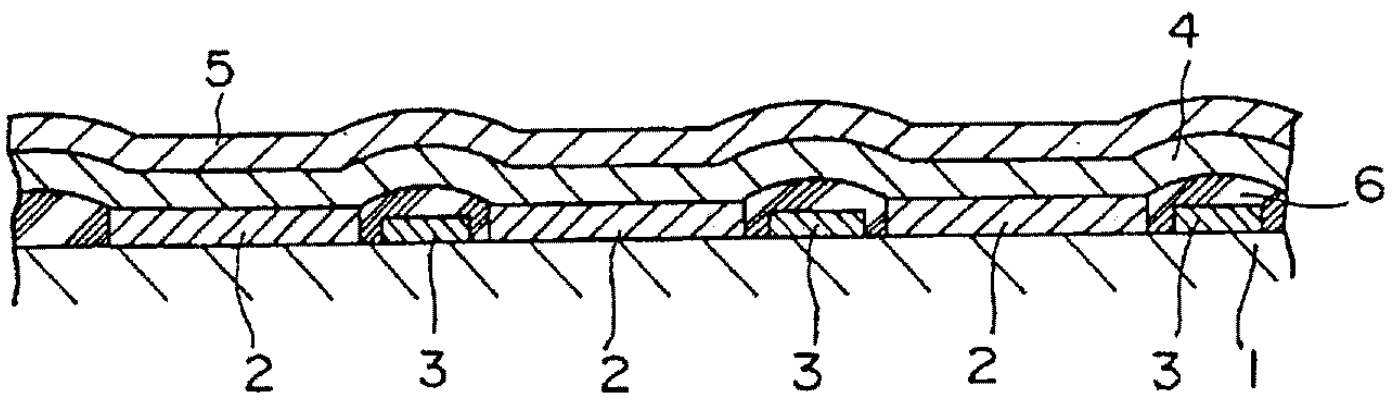
4



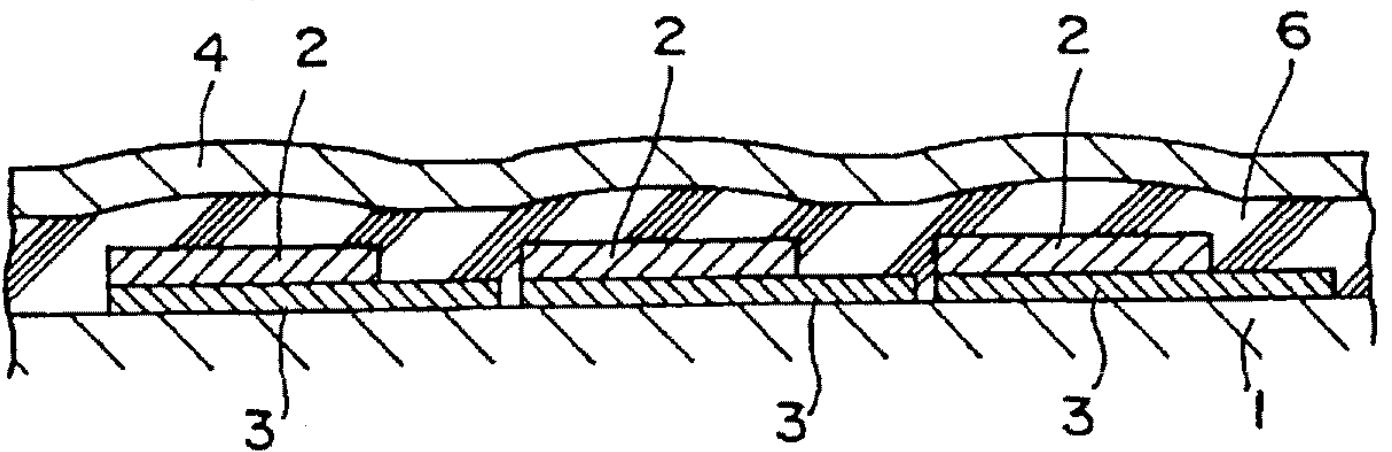
5a



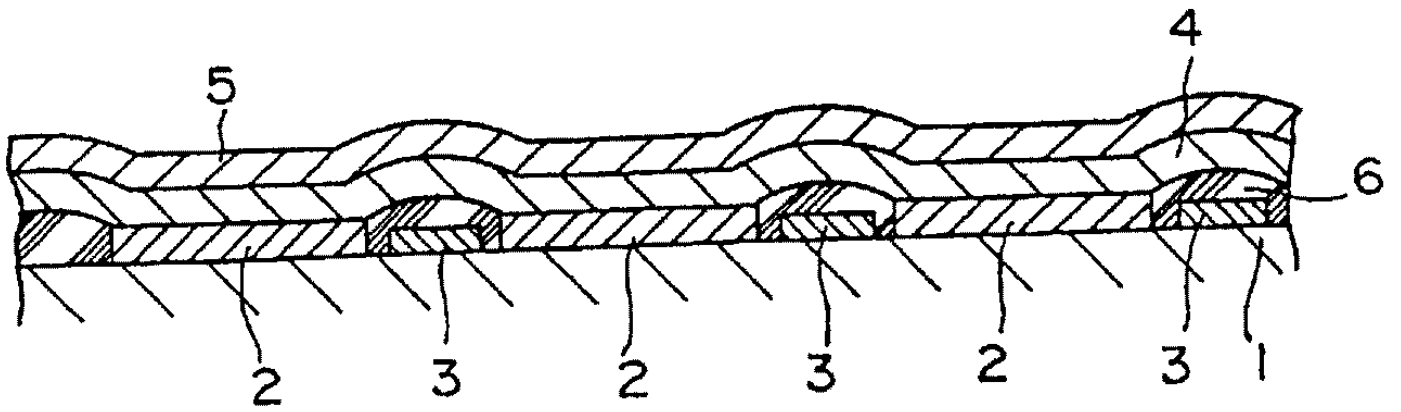
5b



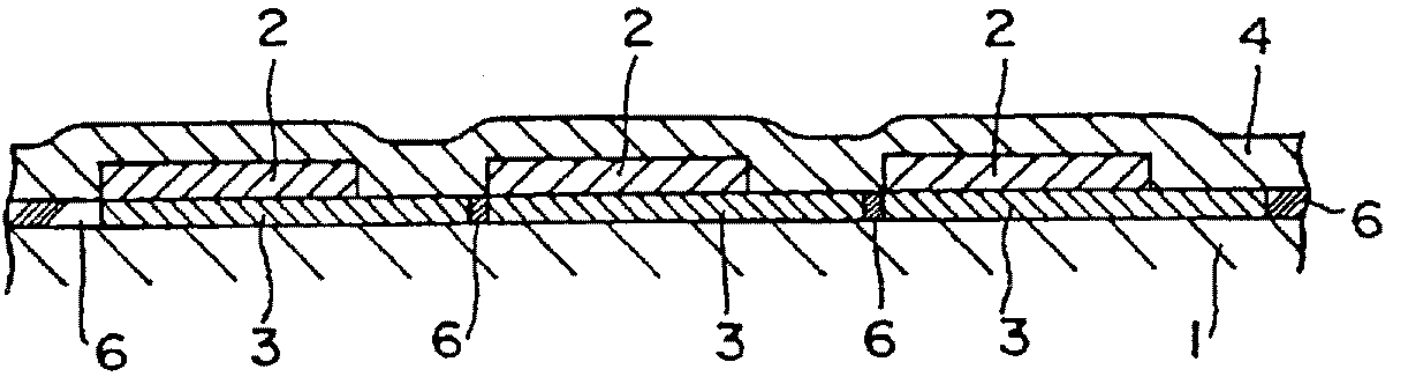
6a



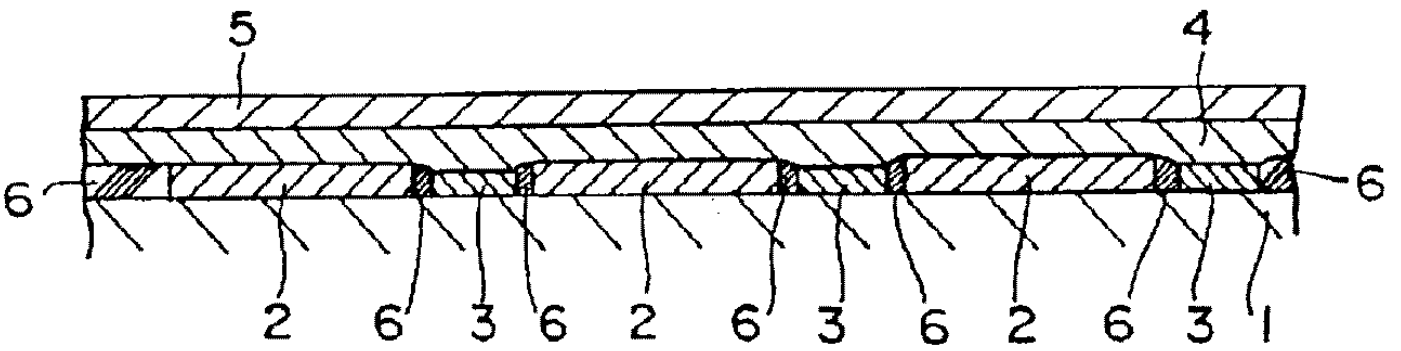
6b



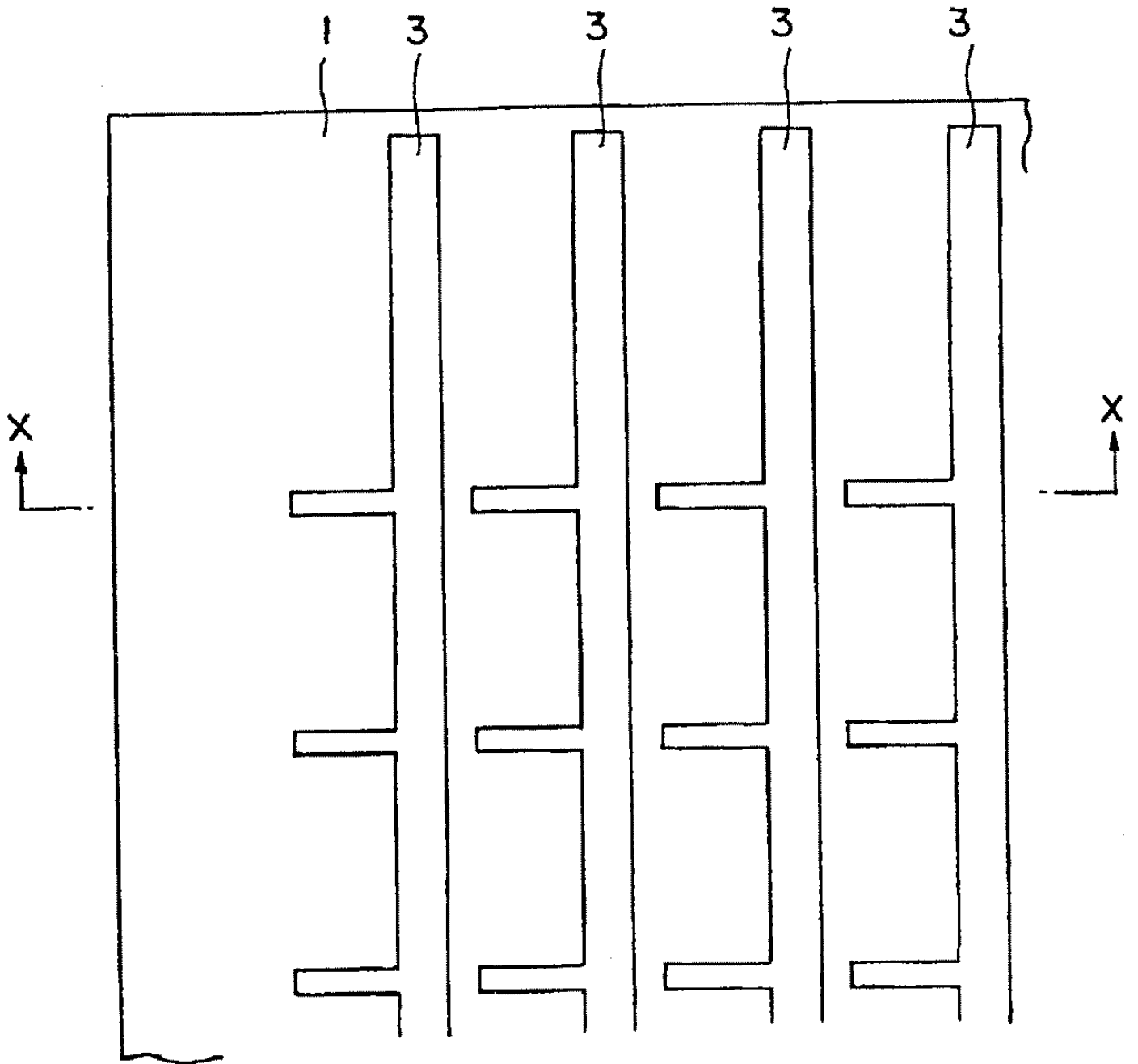
7a



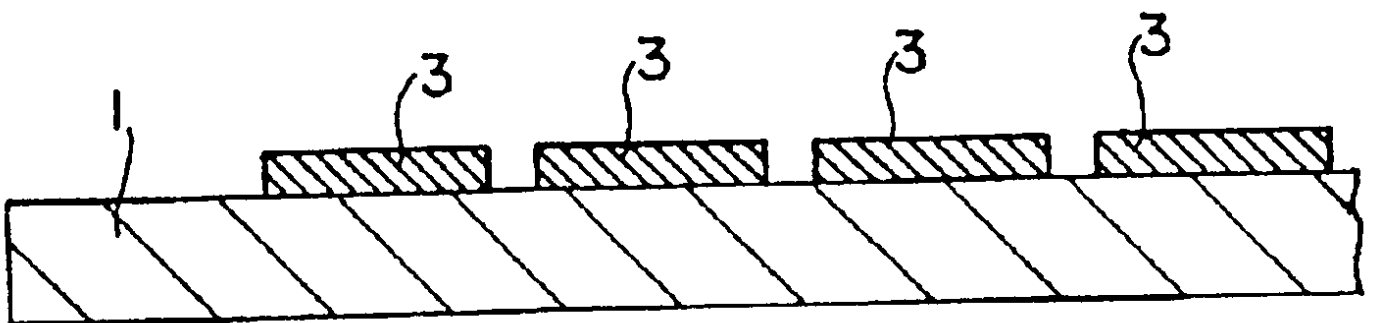
7b



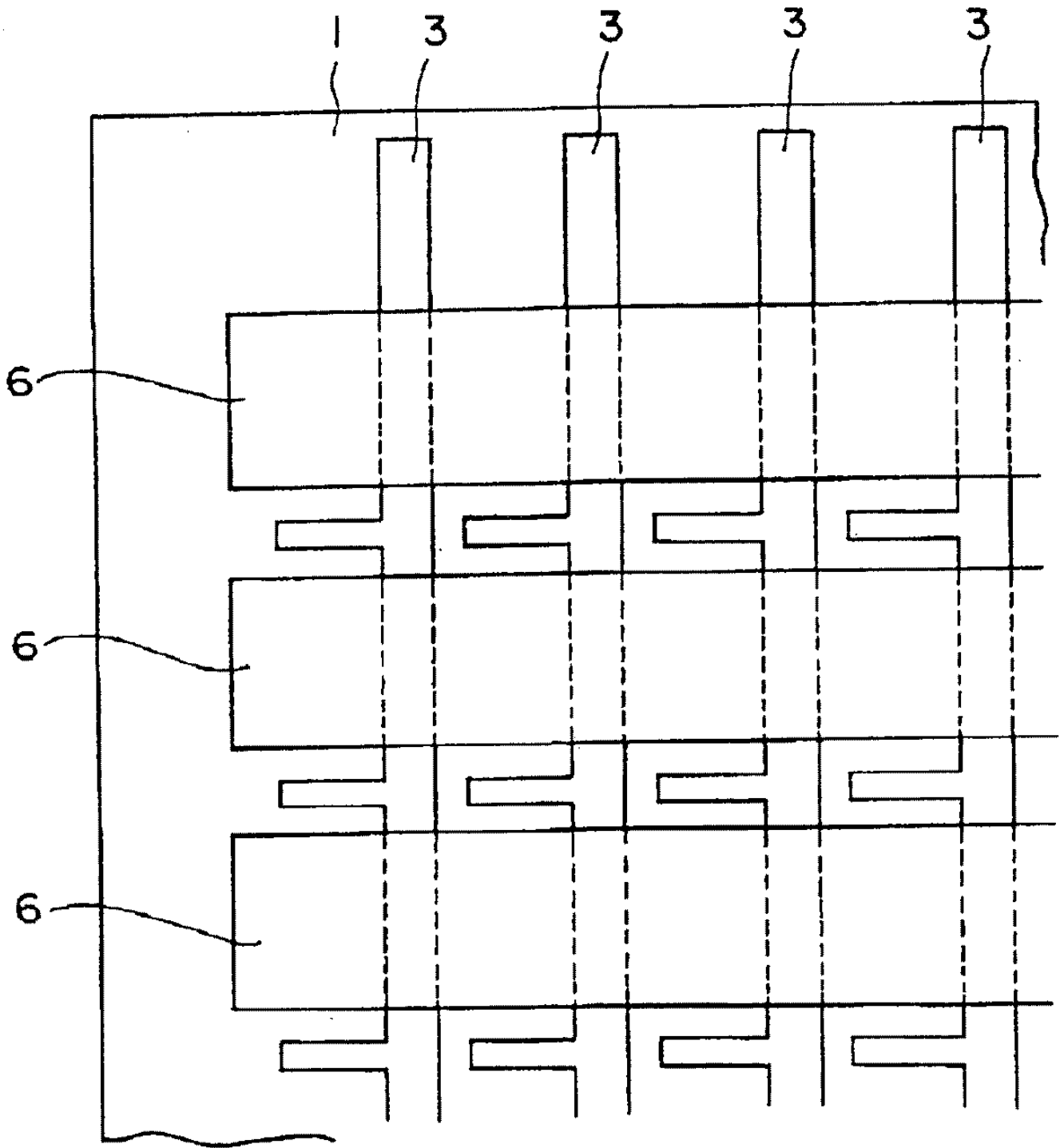
8a



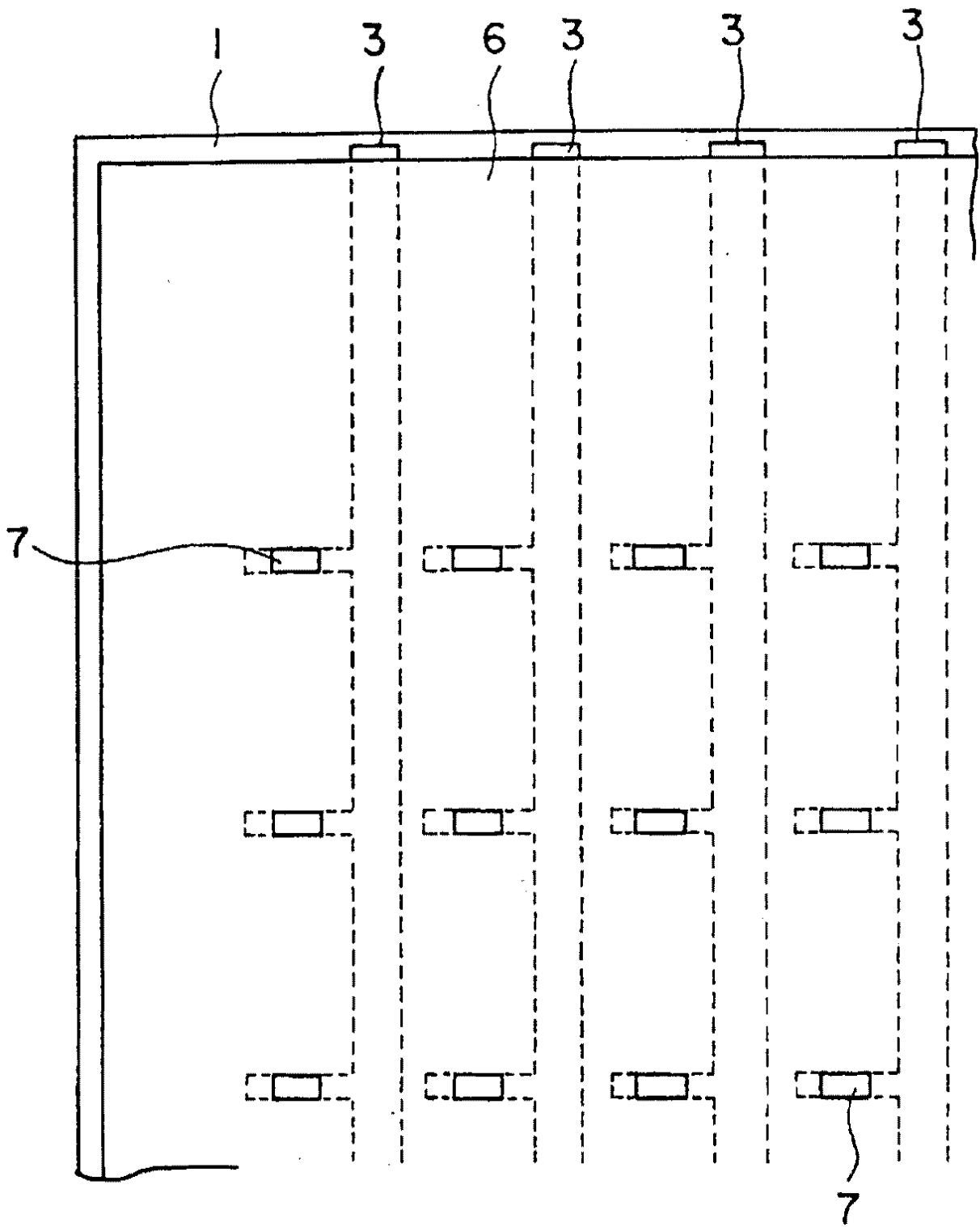
8b

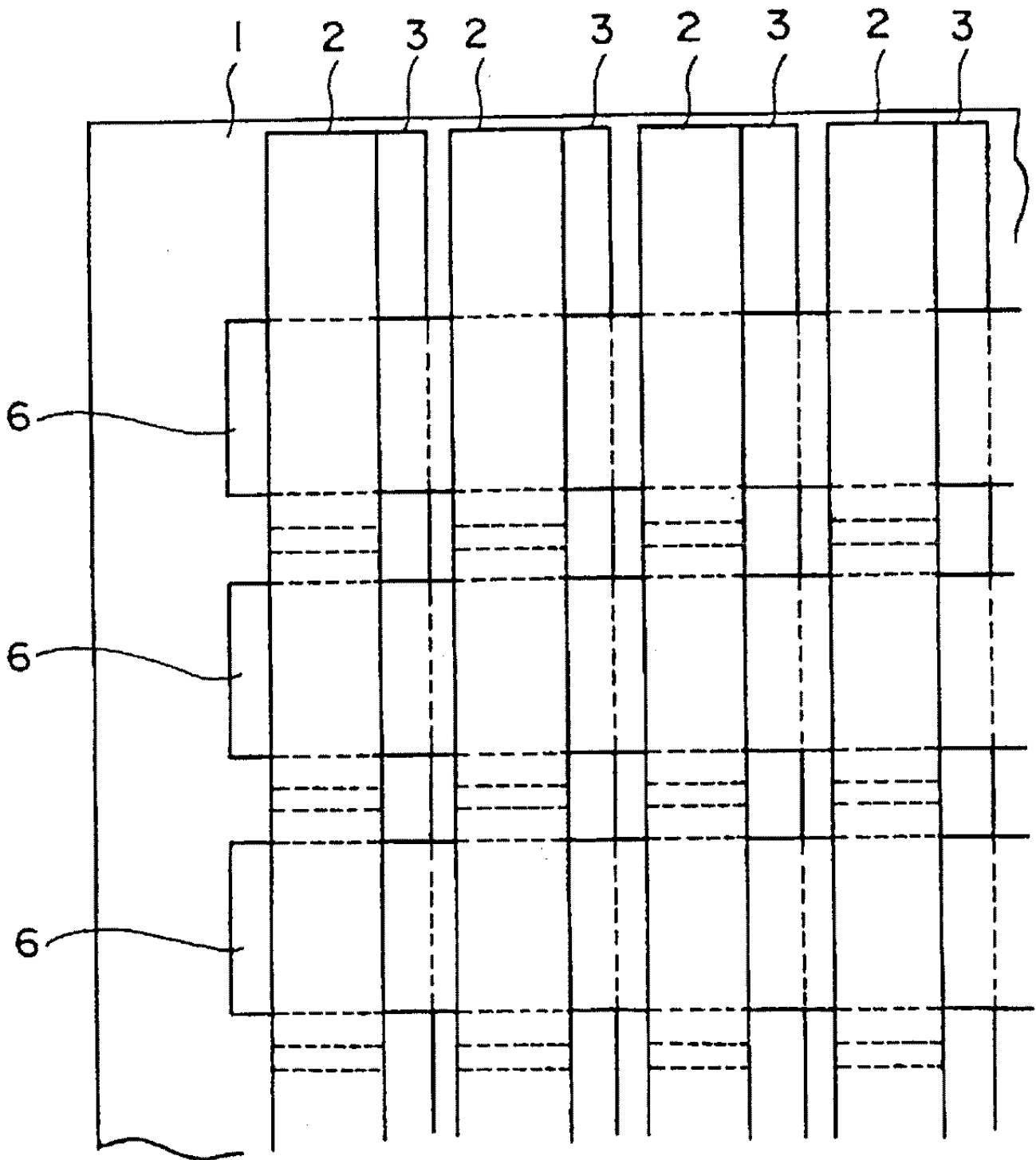


9

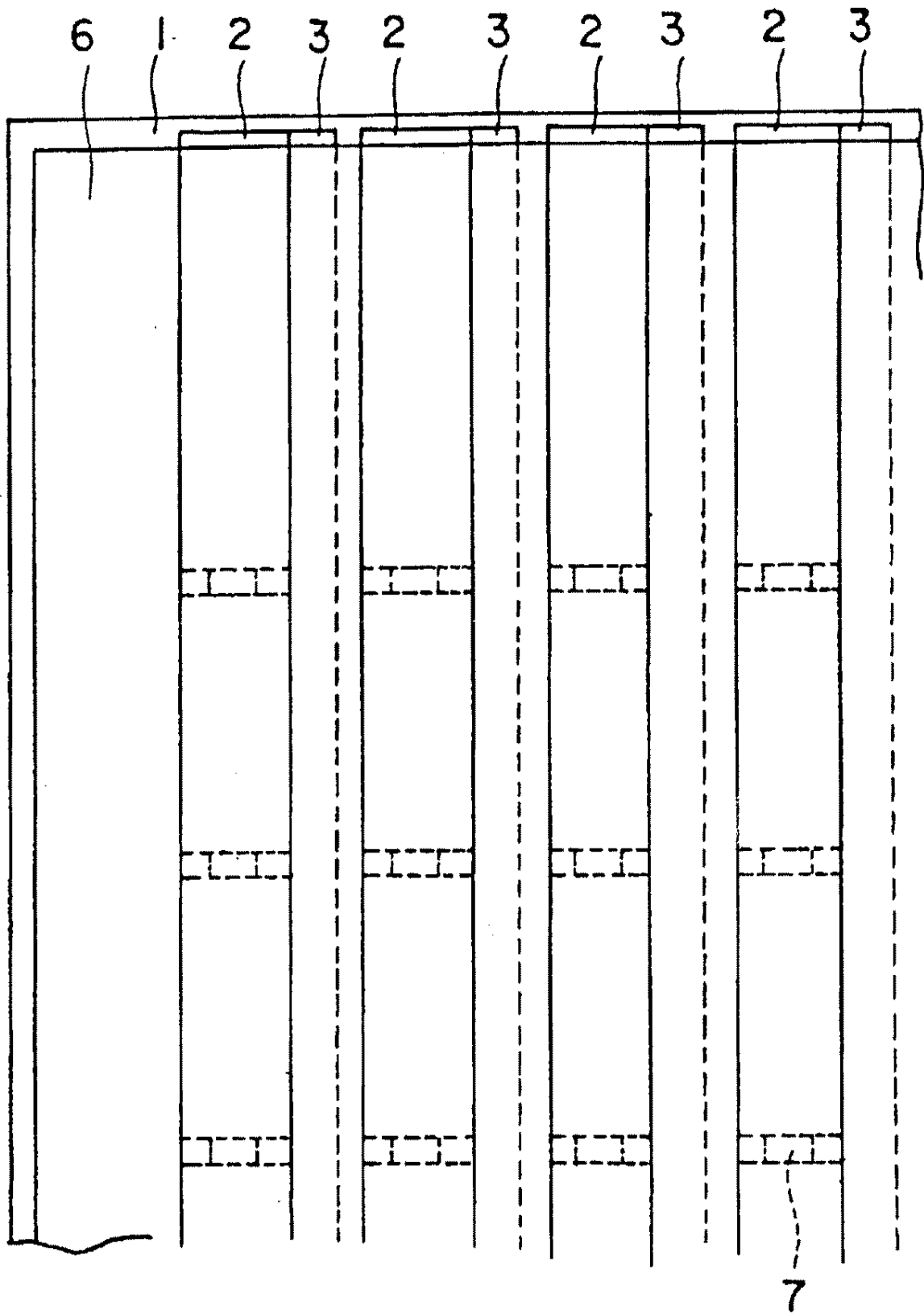


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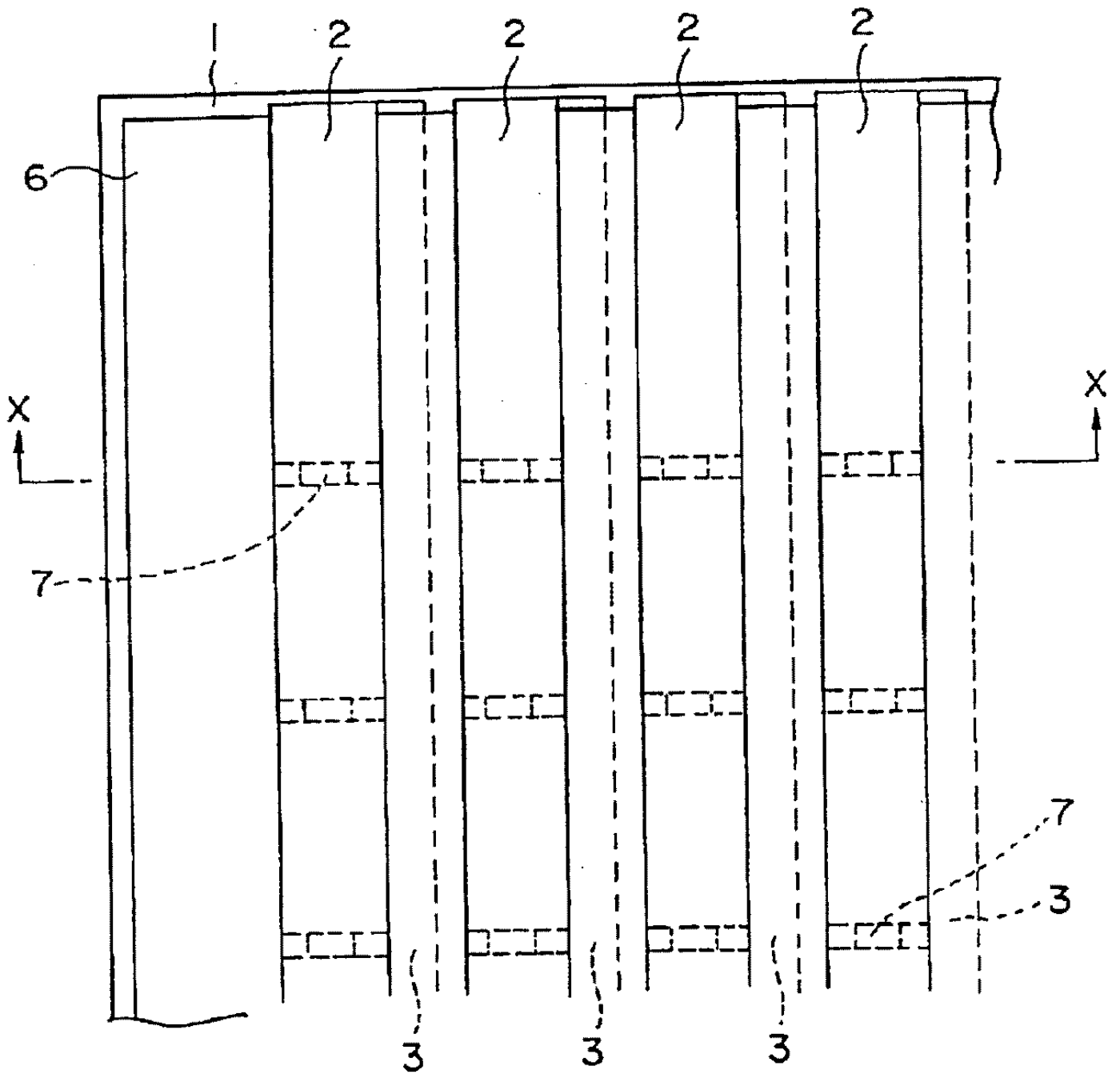




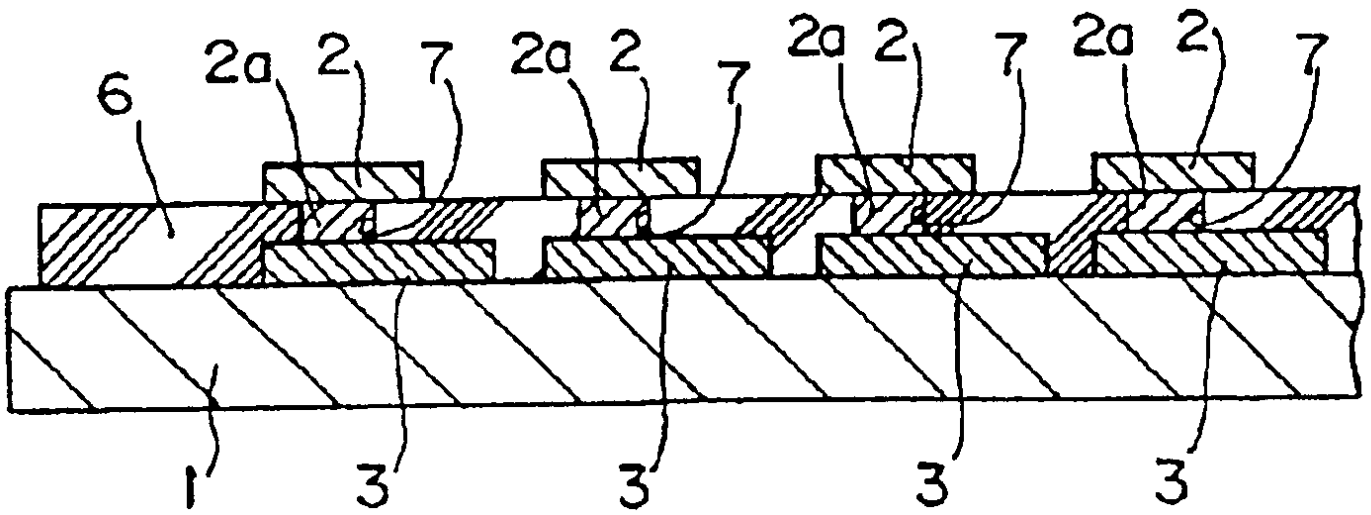
12



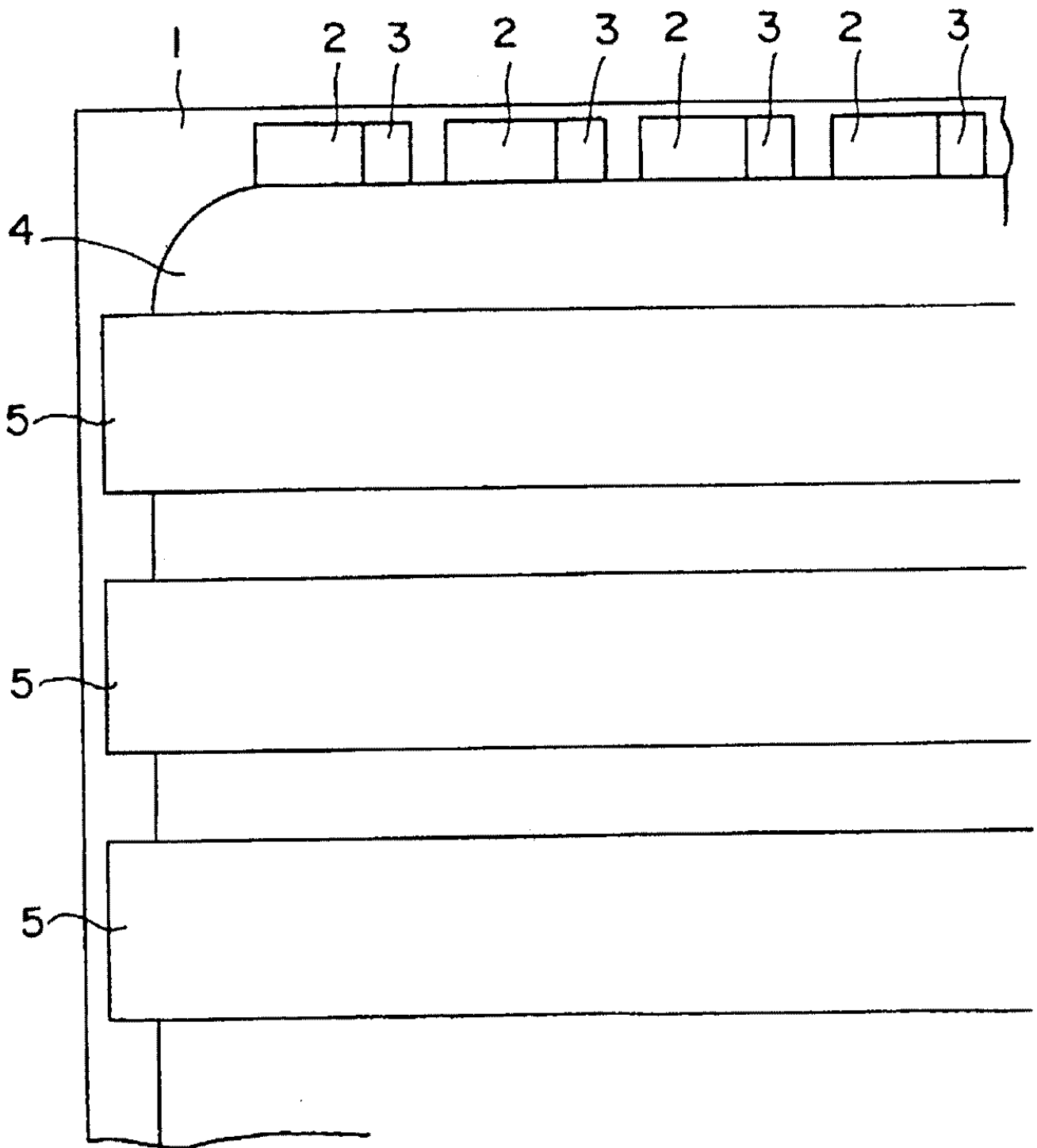
13a



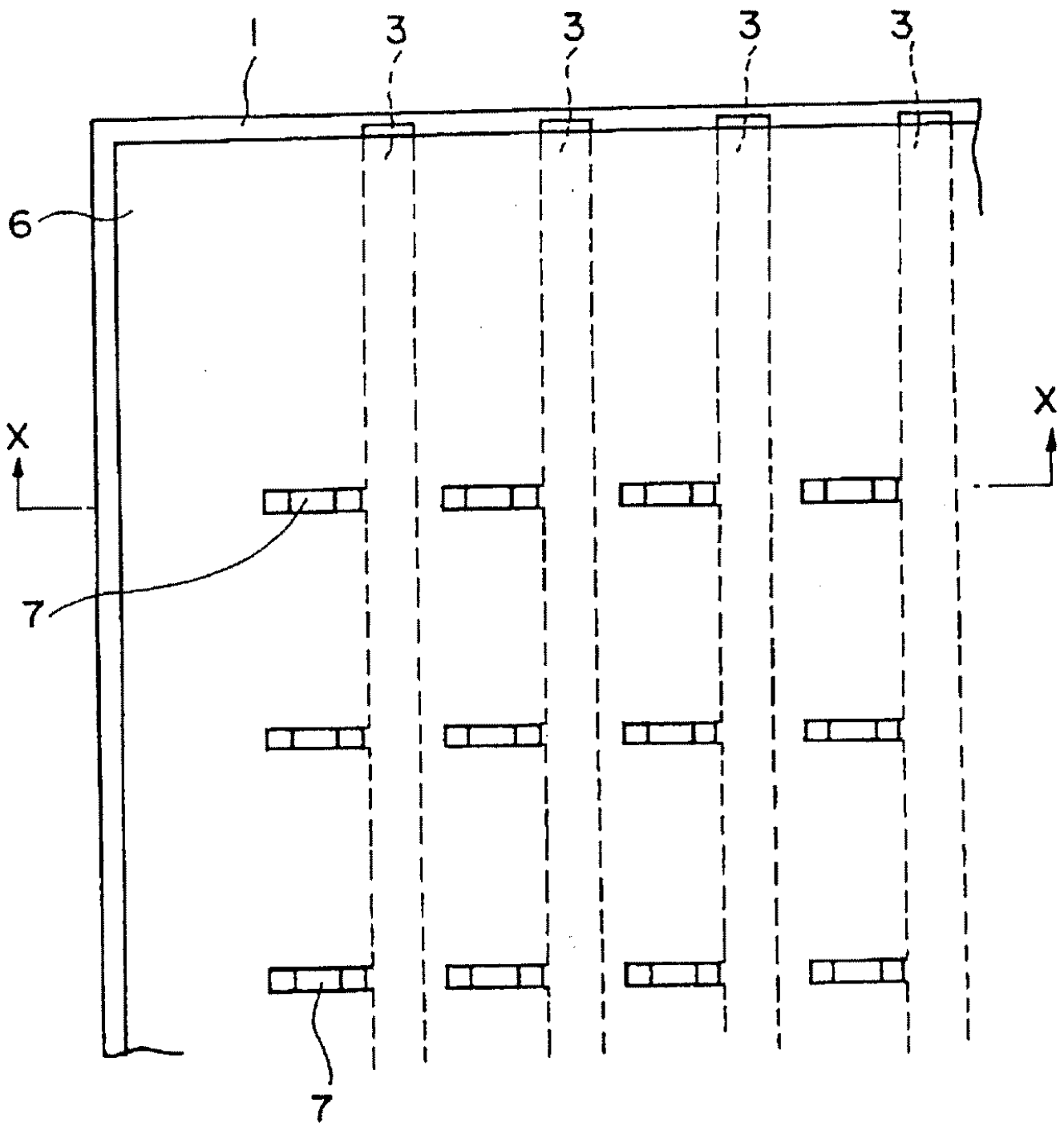
13b



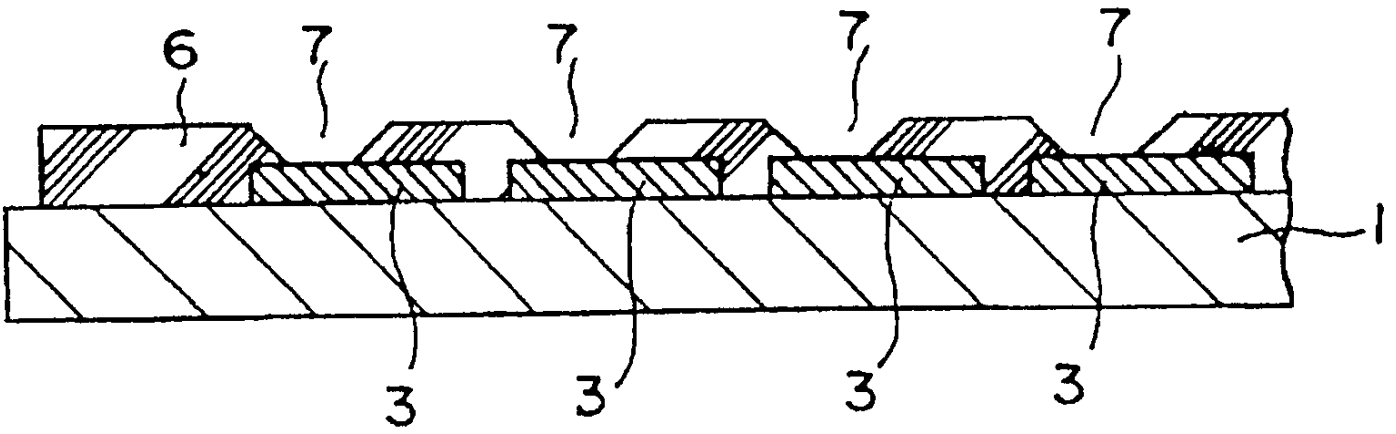
14



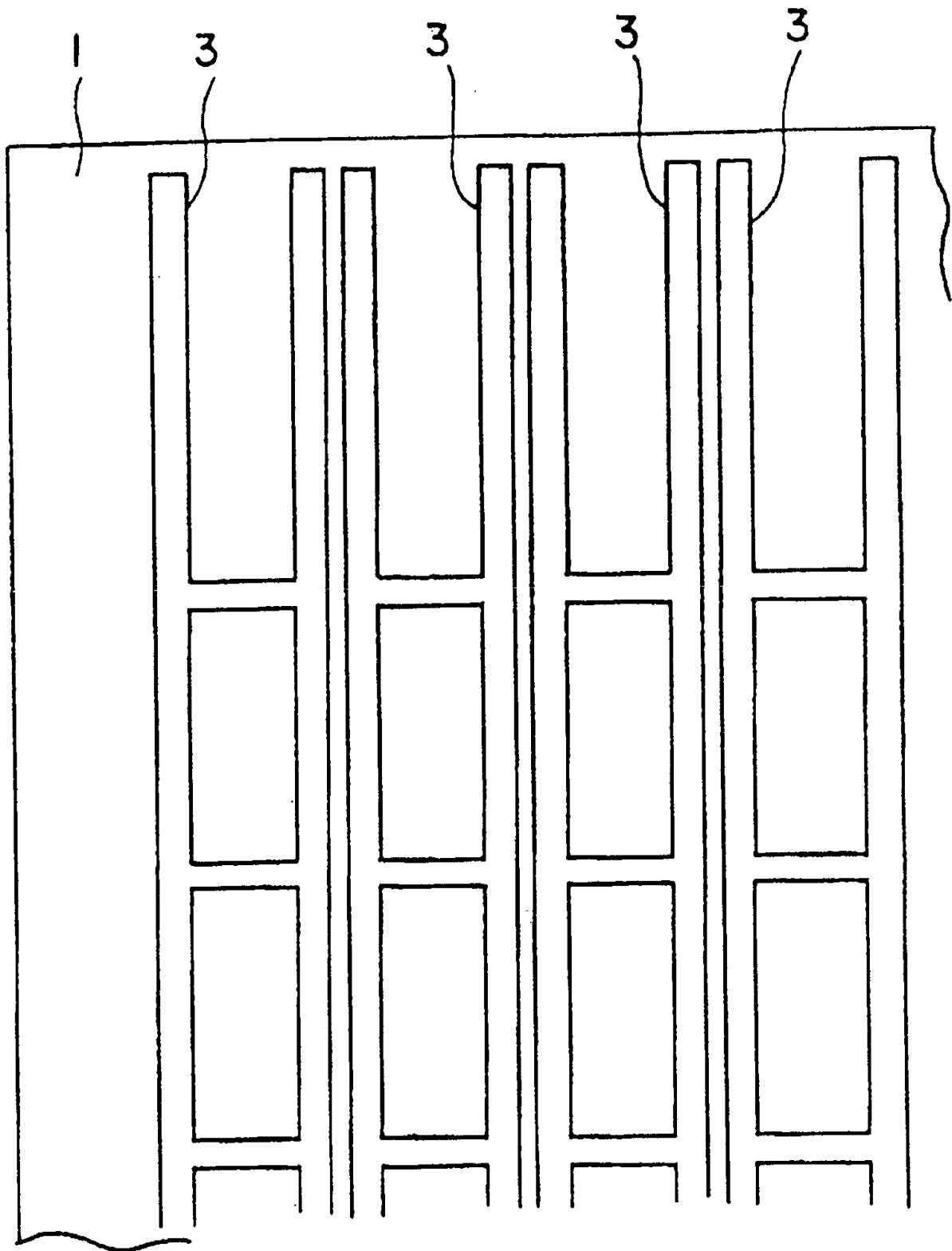
15a



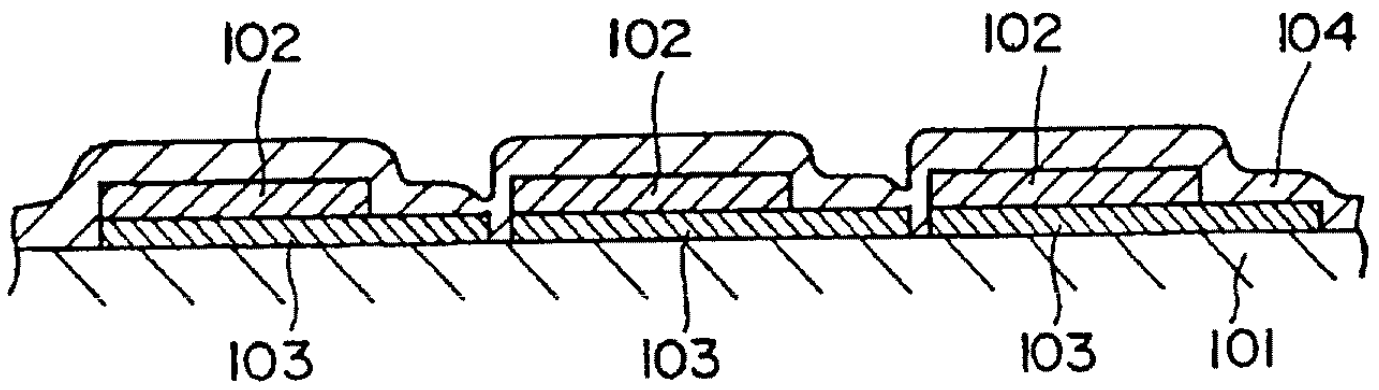
15b



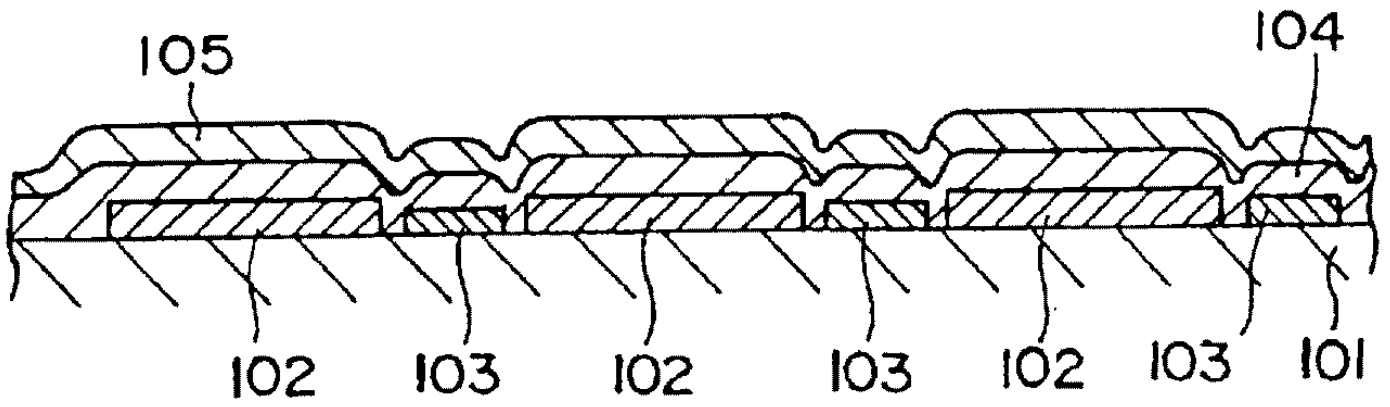
16



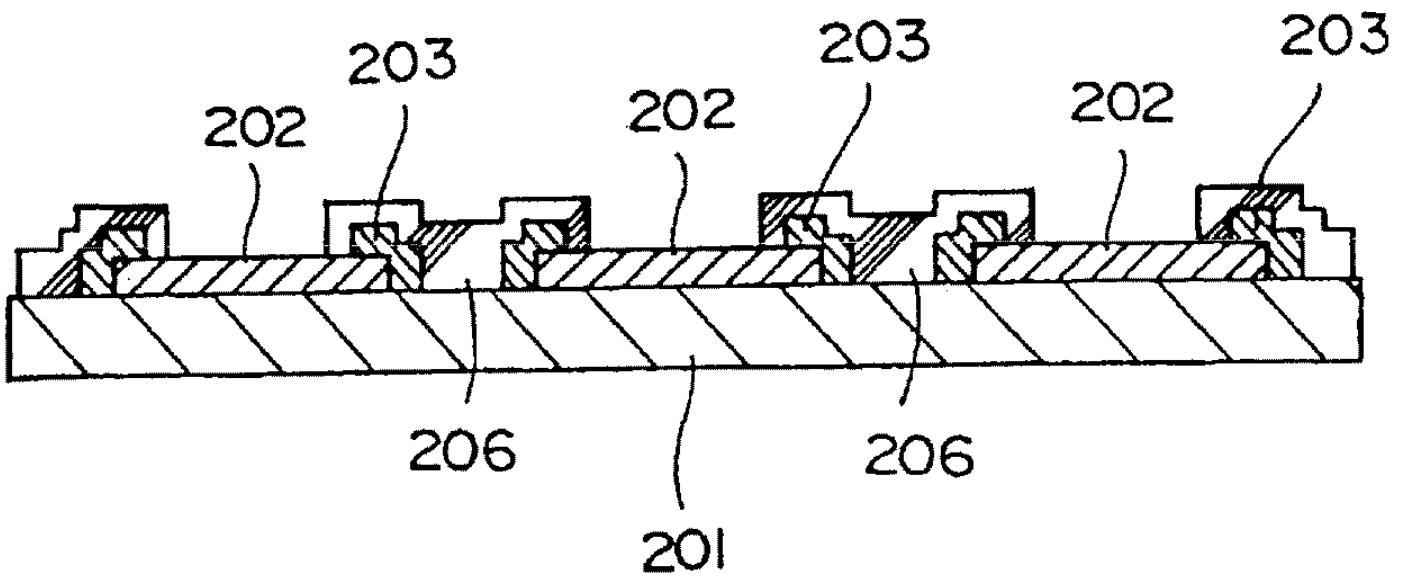
17a



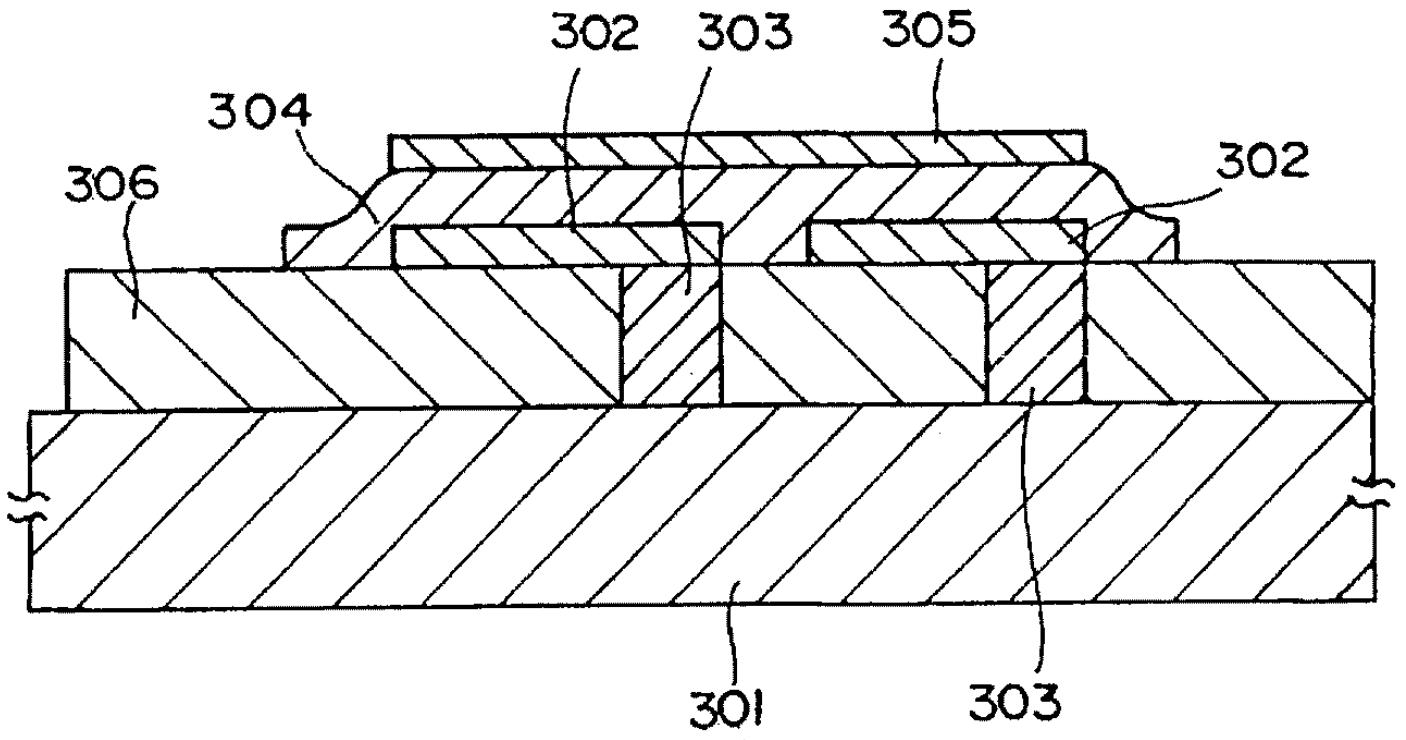
17b



18



19



专利名称(译)	有机电致发光显示装置及其制造方法		
公开(公告)号	KR1020020001812A	公开(公告)日	2002-01-09
申请号	KR1020017012517	申请日	2000-03-30
申请(专利权)人(译)	高山出光株式会社		
当前申请(专利权)人(译)	高山出光株式会社		
[标]发明人	EIDA MITSURU 에이다미쯔루 FUKUOKA KENICHI 후쿠오카케니치		
发明人	에이다미쯔루 후쿠오카케니치		
IPC分类号	H01L27/32 H01L51/52 H05B33/26		
CPC分类号	H01L27/3281 H01L51/5212		
代理人(译)	KIM, CHANG SE		
优先权	1999096947 1999-04-02 JP		
其他公开文献	KR100694959B1		
外部链接	Espacenet		

摘要(译)

本发明涉及具有大发光像素区域的有机EL显示装置和用于有效地获得这种有机EL显示装置的制造方法。在其中下电极电连接到支撑基板上的辅助布线层的有机电致发光显示装置中，依次提供有机发光介质和相对电极，并且下电极和相对电极设置在XY矩阵上，辅助布线层和下电极电连接到非发光部分，而辅助布线层和下电极彼此电连接，同时辅助布线层和下电极彼此电连接，电绝缘层设置在除电连接部分之外的部分处。

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