

(19)
(12)

(KR)
(A)

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(43)

2002 - 0015002
2002 02 27

(21) 10 - 2001 - 0041183
(22) 2001 07 10

(30) JP - P - 2000 - 00209706 2000 07 11 (JP)

(71) 가 가
가
5 7 1

(72) 5 7 1 가 가

(74)
:

(54) 가

1 (17) (5) , 2 가 , (7)
, (9a) , 1 .

8

1 , (in - plane switching type)

;

2 1 A - A' ;

3 ,

4 가 ;

5 가 ;

6 ;

7 ;

8 7 A - A' ;

9a 1 ;

9b 1 B - B', C - C', D - D' 가 ;

10a 2 ;

10b 2 B - B', C - C', D - D' 가 ;

11a 3 ;

11b 3 B - B', C - C', D - D' 가 ;

12a 4 ;

12b 4 B - B', C - C', D - D' 가 ;

13a 5 ;

13b 5 B - B', C - C', D - D' 가 ;

14a 6 ;

14b 6 B - B', C - C', D - D' 가 ;

15 가 ;

16 가 ;

17 ;

18 17 A - A' ;

19 ;

20			19	A - A'	;
21	22	20			
;					
23	19				;
24			25	A - A'	;
25					;
26			25	A - A'	;
27a			1		;
27b	1	B - B', C - C', D - D'		가	;
28a			2		;
28b	2	B - B', C - C', D - D'		가	;
29a			3		;
29b	3	B - B', C - C', D - D'		가	;
30a			4		;
30b	4	B - B', C - C', D - D'		가	;
31a			5		;
31b	5	B - B', C - C', D - D'		가	;
32a			6		;
32b	6	B - B', C - C', D - D'		가	.

*

1, 11:

2:

3:

4:

4a:

4b:

5:TFT

5a:a - Si

5b:n⁺ a - Si

6:

7:

8:

9a, 9b, 9c:

10:

12:

13:

13a: (R)

13b: (G)

13c: (B)

14:

15:

16a, 16b;

17:

18:

(in - plane switching type)

가 , 가 .

가 , 가 .

가 , 가 .

가 가 가

가 가

가 , 1

1 (comb - like shape) 가 , 1

1 가 가 ,

1 가 가

1 가 가

(orientation) 가

가 가

가 가 가

가

1 2

1 (1) (2) (3) 1 (1)

(4) (6) (7) (4)

(8) (2) (6) (7) (3) (1)

5) (2) (6) 가 (7) (16a) 1 (1)

(3) (18) (8) 1

(6) (7)

2 (11) 가 (12) (13) 2 (11)

(13) (12) (13) (14)

18) (14) 2 (11) (15) (16b)

(15)

(18) (17) (18)

(18) (7) (17) A1

(16a) (16b) 가 (17)

(7), (13) (17) (7)

(5) (2) (7) (6)

(7) (3) (17)

(7)

가 (7) 가
가

가

(offset)

가

가

가

가

(2)

(3)

(17)

(6)

(3)

(6)

(3)

Vcom

(3)

가

(3)

(7)

), 4.5

가

A2

Vd

(7)

6.5

(3)

(biased)

(7)

2.0

가

(6)

(6)

(3) 가 , (3) (2) -10 +20 Vg
 가 . (6) (2)

(7) (3) L2 5 10 μ m . (6) (3) L
 1 2 μ m . (3) (6) 가 (6) (3) (3)
 (12) (2), (7) (3)
 ,가 (6) 가 (3)
 (3)

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

4 (6) (7) (17) (6) (3)
 (17) E1 A1 , (3) (7) E2 가
 (17) 가 (3) (7) (17) (17) (3) ()
 7) (17)

(cluster)가 (stress) K11, K22 K33 (stretching), (twisting)
 (bending) 가 (strain) 가

(6) (3) E1 (17)
 (17) (3) (7) (6) (3) (3)
 (7) E2 (17) (3) (7) 가
 가 가 (17) 4 가 가 (6) (3) 가
 (17) 가 가

(3) (3) (7) L3 (6) (3) L1 (6) 8 μ m
 (2) 15 .

5 , (3) E3 .
 (17) 가 가 (17) (17) (3)
 (17) (17) (3) (17)

7) (17) , (17) 가 (3) (7) (17) (17) (17) (3) (7) R1 가 R2 가 R1 가 (3) / (6/3)

7 8 1 2 1 2 (17) 1 (17) 1 2 가

1 (1) (2) (3) (1) (4) (6) (7) (4) (3) (8) (6) (7) (4) (8) (2) (6) (5) (2) (6) 가 (7) (5) (2) (5) (5) (7) (3) (3) (5) (7) (6) (7) 1

(9a) (8) (9a) (2) (6) (7) (8) (18) (8) (8) (8) (9a) (18) (16a) (1) (9a) / (2/6) (3) (17) / (2/6) (3) 가 (7) (3)

2 (11) 가 (12) (13) (11) (13) (7) (13) (13), (7), (5) (17) (14) (18) (14) (11) (15) (16b) (15)

(18) 2 1 (17) (18)
 (9a) (18) (7) (9a) (17) A
 (18) (18)

1 (16a) (16b) 가 (17)

(7) (3) 가
 (2) (5) 가 (6)
 (7) (7) (3) (1)

7) 1

(1) Cr 9a 9b 14a 14b (1) (bake)
 (latent image) (2) (3) ()
 () () (3)
 (1) (2) (2)
 (3) 9a 9b

(3) CVD (4a) n (4a) (4b),
 (5a) n (5b)

n (5b) (5a)
 (2) (5a) n (2) n (5b) n (5a) (5a)
 (2) (5a) 가 (5b) 10a 10b (5a) (5)
 / n (5b) (5a)

()
 (6), / (7)
 (6) (7)
 / (5a)

11a 11b n (5b) (5a)

, CVD () (8)
 . (8)
 . (8), (4b)
 (4a) , 12a 12b , (2) (6)

(8) ITO (swell) . ITO ITO
 () () ITO
 , 13a 13b , ITO ITO
 (10) ITO (10)

(18) (9a) (9a) (7)
 (3) (7) / (2/6) (9a) (9a) (9a)
 () (9a) (3)
 (9a) (9a) (7) (3)
 (9a) 14a 14b

2 (9a), 2 1 (14) (18) (8), 1
 1 2

(9a) 1 2 (18) 1
 (18) (9a) (14) (18) (9a) (7)
 / (2/6) (9a) (9a) (17)
 (7) (9a) 가 (9a)

가 가 가 가
 (3) 1 1 (7) 2 가
 15 16 . 1, , 가
 , 2, , (9a) 1

2 1 , 1 가 가 가
 . , 1 가 . 가 (9a)
 / (2/6) (3)
 , 가 (9a) (7)
 / (2/6)
 , (7) (9a) / (2/
 6) (3) (6) (3) (
 2) (3) (7) (7)
 , (3) (7)
 / (2/6) (7)
 (3) (7) / (2/6)
 . (9a) (7) 가
 , (7)
 , / (2/6) (3) (3) , (3)
 (9a)
 (7) (17) / (2/6) (3)
 (9a) (17)
 (3) (17)
 , (9a) (9a) (18) (9a) (9
 가 a) , 1 2
 2 17 18 , 1 1 (17) 1 2
 (9a) 1
 1
 (9a) (7) (3) (9a) ,
 (3) (7) (7) (17) (9a) (17)
 (2/6) (3) (17) (9a)

(9a) (17) (9a)
(9a) (9a) (17) (17)

(3) (17) 가
1

(18) / (2/6) (3) (3) (9a)
(18) (3) (18)

2 (17) (17) 1
(9a) (7) 2
(18) (dropping injection) (17) 가 (18)
(9a) (17) (9a)

19 22 (9a) (13a, 13b 13c) 3
1 2

1 (3) 1 (17) 1 2

1 (1) (2) (3) (1)
(4) (6) (7) (4) (7)
(6) (13a) (13b) (13a) (13c) (9a)
(13b 13c) (13b) (13c) (9a)
(13a) (9b) (13b 13c)
(21) (13b) (9c) (13a 13b) (22)
(13c)

(13a, 13b 13c) (14) (18) (14) (2)
1 가 (5) (18)
(14) (6) (7) (2 3)

19 (11) 가 (11) (15) (18)
(16b) (15)

(18) 2 1 (17) (18)
 (9a) (18) (9a)
 (18) (7) (17) A
 1
 (4) (6) (7) (2) (3) (1)
 (13a, 13b 13c) (9a) (13a) (13b) (13c)
 (9a) (9b) (13a)
 (9b) (lower parts) (13c), (middle parts) (9b) (high
 er parts), (13a) (9b) (higher parts)
 (9b) (13a, 13b 13c) (14) (14)
 (13a, 13b 13c) (9b) (18) (14)
 2 1 2 (17) 1 2
 19 22
 가 1 2 가 1 가 2
 (6) (13a, 13b 13c) (11)
 (18) (9b) 1 (9b)
 (13a, 13b 13c) (9a) 가 (13a, 13b 1
 3c) (2), (6) (3) 1 (13a, 13b 1
 (13a, 13b 13c) (6) 가 1
 (13a, 13b 13c) 가
 1 2 가
 (9b) 23 24 (14)
 (13a, 13b 13c) (4) (14)
 (9b) (18)
 (9b) 가 가 (9b) 가
 (9b) 가 (18) (9b) 가 (9a)

25 26 , 1 2 (17) 1 2
 (5), (7) , 2 (13) (12)가

1 (1) (2) (3) (1)
 , (4) (6) (7) (4) , (2)
 (8) (2) (6) (5) (2) 가 ,
 (6) 가 (5) (6) 가 ,
 (7) (5) (2) (5)
 (7) (7) (3) (3) (5) (5)
 (7) (6) (7) (2 3) 25

(9c) (3) (8) (9c) (2)
 (6) (7) (18) (8) (1)
 (8) (9c) (18) (16a)
 / (2/6) (3) () 1 3
 (9c)

2 (11) 가 , (12) (13) (11)
 (13) , (13) , ,
 (7) (13), (7), (5) (17)
 (12) (13) (14) , (18) (14)
 (11) (15) , (16b) (15)

(18) 2 1 , (17) (18)
 (9c) (18) , (9c)
 (18) (7) , (17)

A1
 (16b) (16b) 가 (17)

27a 27b 32a 32b

(6) (7) (2) (3) (1) (4)
 (4) (1) (1)
 Cr (1) ()
)가 (2) (3) (1) ,
 (2) (3) (3)

27a 27b

(3)

(4a)

(4a)

(5)

CVD

(4a)

(4b),

(5a)

n

(5b)

n

(5b)

n

(5b)

(5a)

(2)

n

(5b)

(5a)

n

(5b)

(5a)

(2)

n

(5b)

가

(5a)

28a

28b

(5)

/

()

(6), /

(7)

(6)

(7)

n

(5b)

(5a)

29a

29b

CVD

()

(8)

(8)

(8),

(4b)

(4a)

30a

30b

(2)

(6)

(8)

ITO

(swell)

ITO

ITO

()

ITO

31a

31b

ITO

(10)

(10)

ITO

32a

32b

(9c)

2 (9c), 1 (14) (18) (8), 1
 1 2 2 1 2

(17) / (9c) (2/6) (3) (17) (9c) (7)
 (17) / (2/6) (17)
 (17) (9c) (7) (3) (7)
 (9a) 가 (3) 가

(7) (9c) (17) (9c) 가

가 4 (3) 가 가 4
 15 16 4

, 4 1 5 6 가 (17)
 (9c) (9c)

/ (2/6) (3) 가 (9c) 가 (9a/29a/9b) (17)
 (9c)

1 / (2/6) (3) 가 (9c) 가
 3 가 (9c)

가 , 가 , /

1 가 , 가 , /

2

가

(potential source)

가

가

1 , (9a) (7) (3) (9a)

, (9a) / (2/6) (3) (9a)

, (9a)

(9a) 2

(9a)

(9a)

ITO

(3)

(9c)

2

(57)

1.

;

(複數個)

(17)

(3),

(3)

(offset)

(3)

(17)

(7),

(6)

(7)
(2)

(5)

(9a, 29a, 9b 9c)

2.

1 , (9a, 29a, 9b 9c) (3)

3.

1 ,
가

4.

1 ,
(29a)

5.

1 , (9a, 29a, 9b 9c)

6.

1 , (9a, 29a 9b)

7.

1 , (9c)

8.

7 , (9c) (3)

9.

8 , (3)

10.

1 , , 가
(13a/13b/13c) , (set) (13a)

11.

10 , ,
(9c) (13a)

12.

11 , (13a/13b/13c) (9c)

13.

(5) (7) , (7), (7) (3) 가
(9a, 29a, 9b 9c)

;

;

(17)

14.

13 , (1) ;

(5) (2) (3) (1) ;

(2) (3) 1 (4) ;

가 1

;

1 (5) ;

(6), (7) (5) 2 (8) ;

2 (8) (9a 29a)

15.

13 , (9a, 9b 9c)

16.

13 , (29a) 가

17.

13 가 , (9a, 29a, 9b 9c)

18.

13 ,

(1) ;

(7) (1) ; (2), (3), (6), (6)

(7), (6) 1 (13a)
1 (13a) ;

1 1 가 2
1 (13a) (9b) (下部;13b) ;

1 2 가 3 (13c)
(9b) (上部;13c)

19.

13 ,

(1) ;

(1) (2) (3) ;

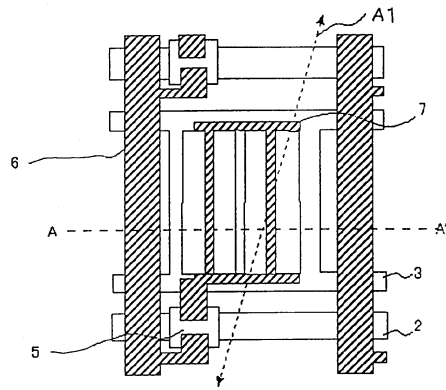
(2) (3) 1 (4) ;

1 (4) (6) (7) ;

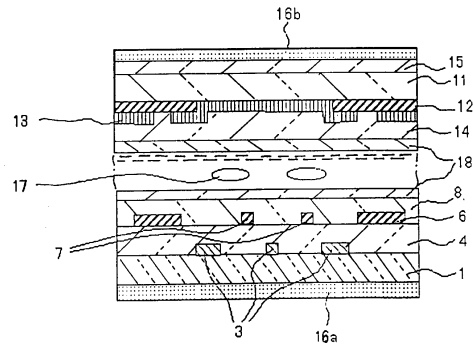
(2) , (6) (3)
;

(9c)

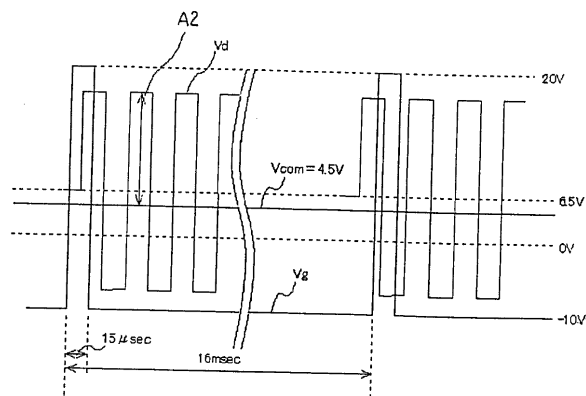
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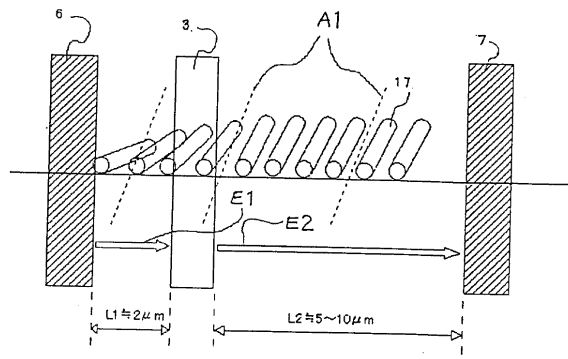
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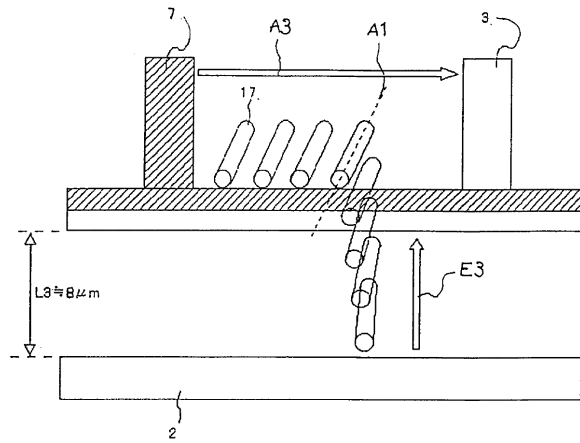
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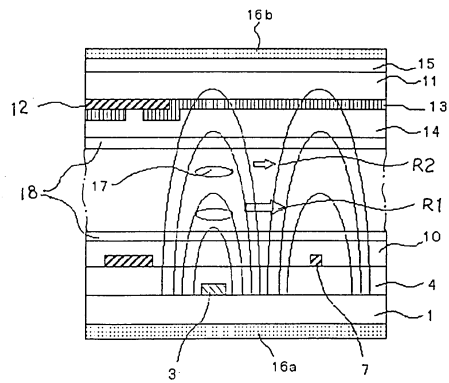
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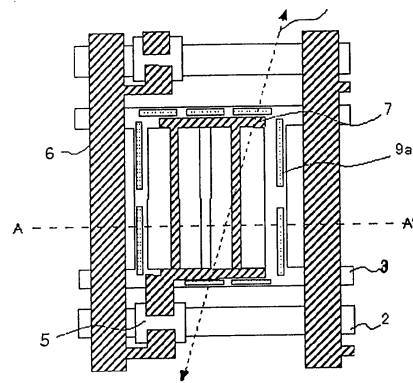
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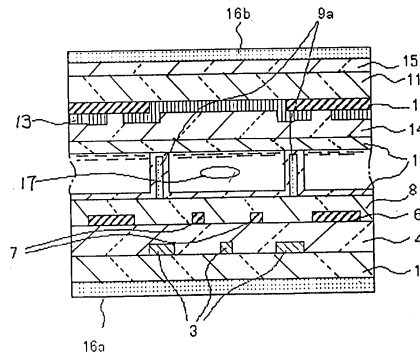
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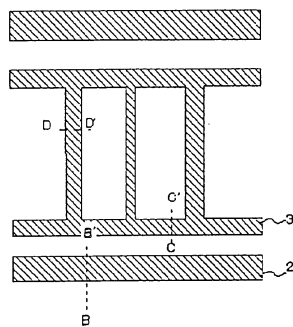
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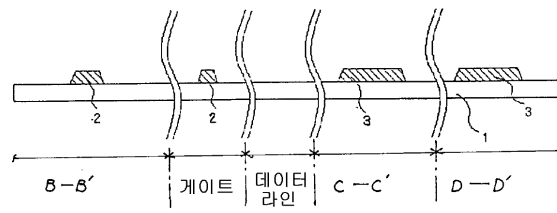
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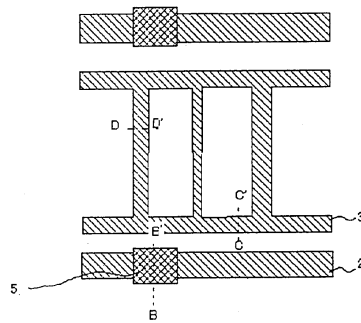
9a



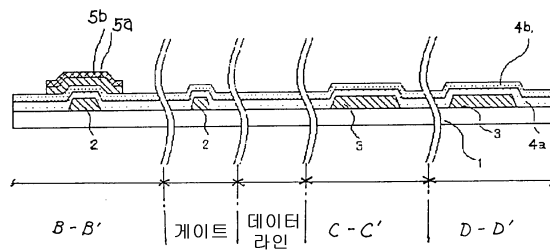
9b



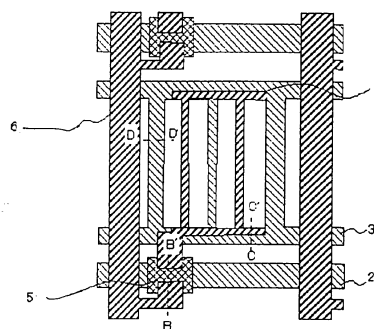
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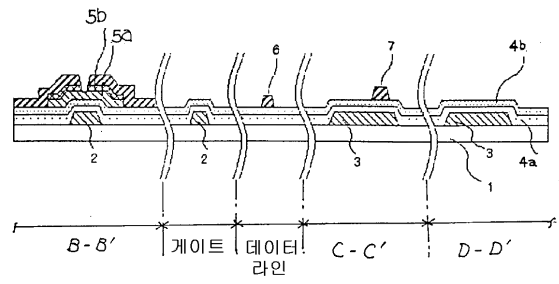
10b



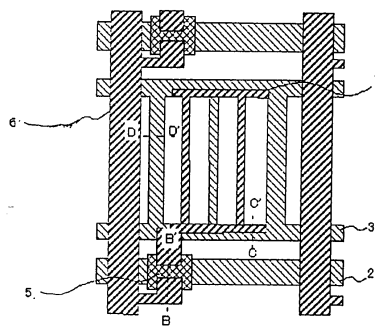
11a



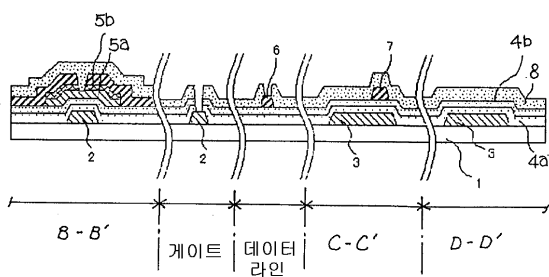
11b



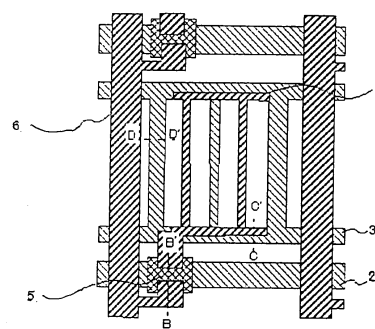
12a



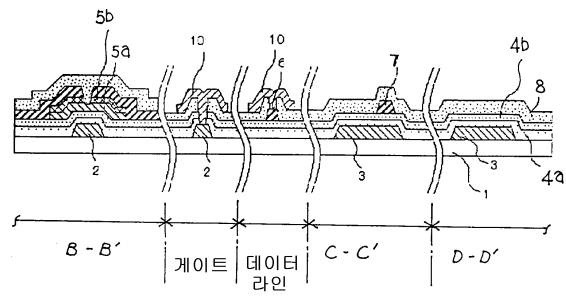
12b



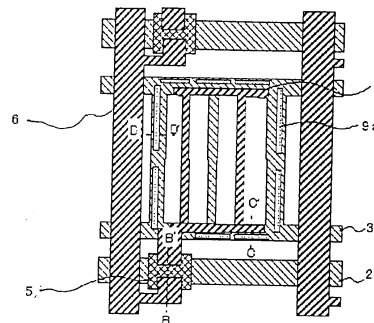
13a



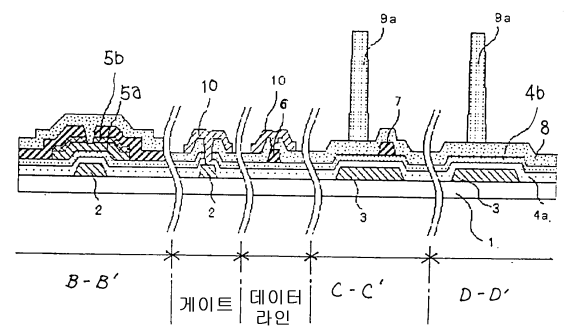
13b



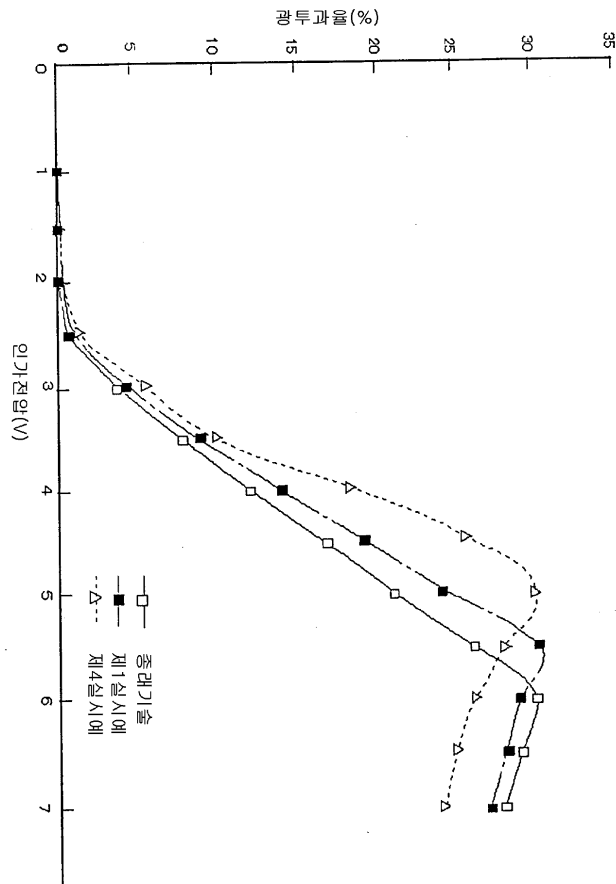
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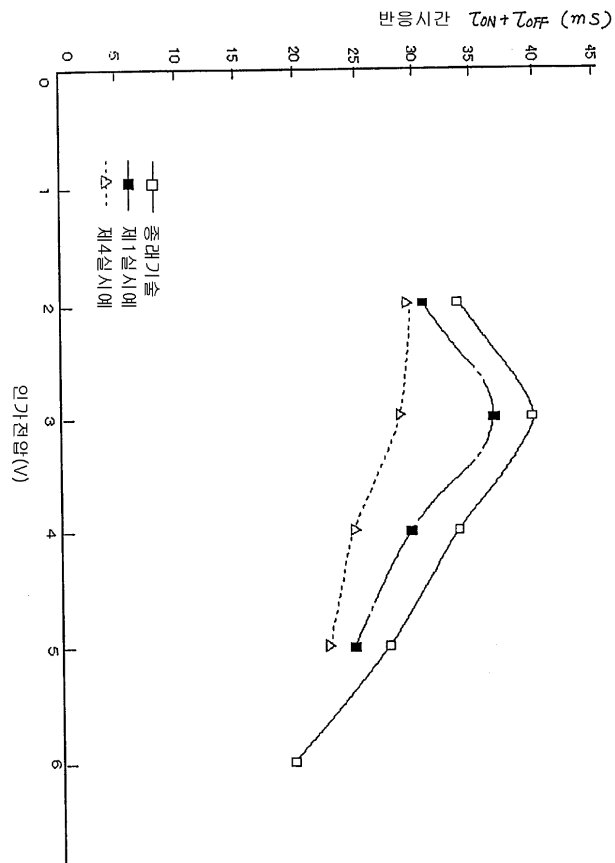
14b



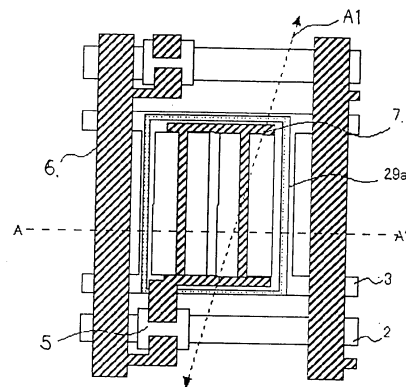
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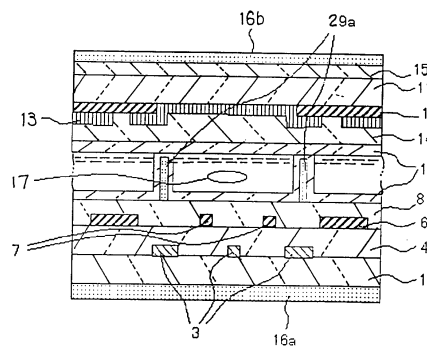
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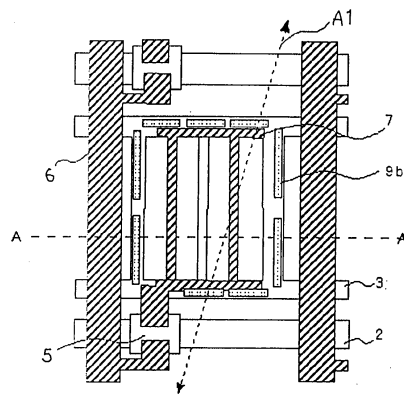
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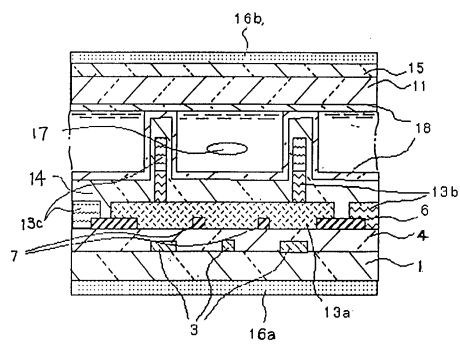
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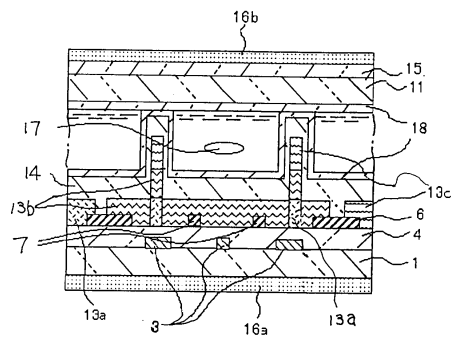
19



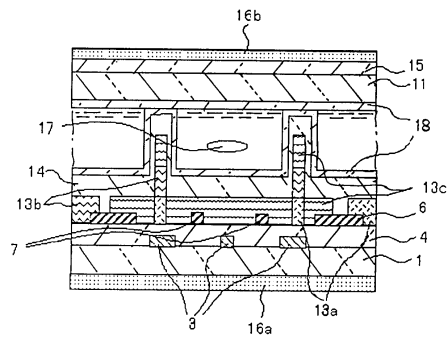
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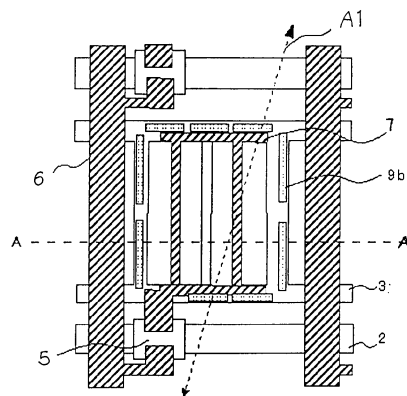
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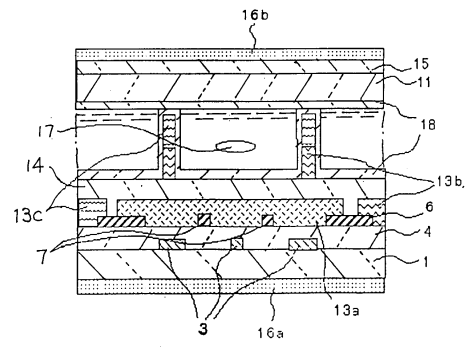
22



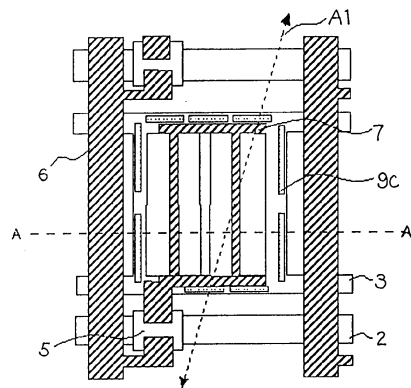
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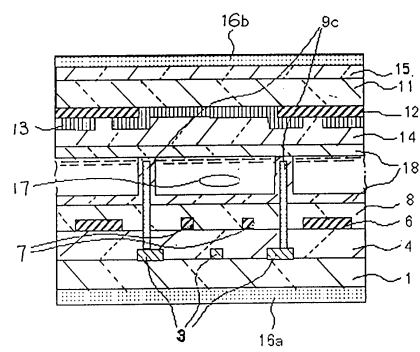
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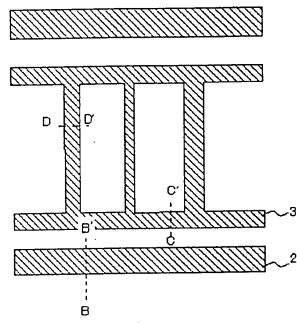
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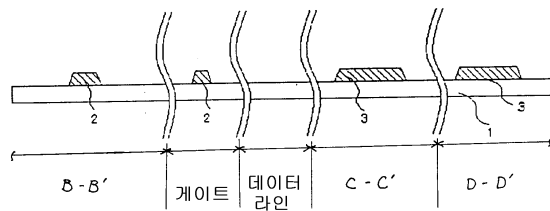
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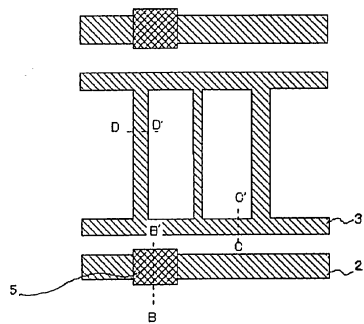
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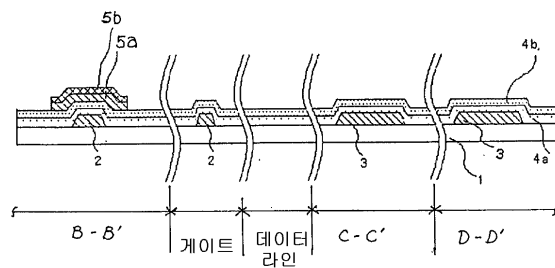
27b



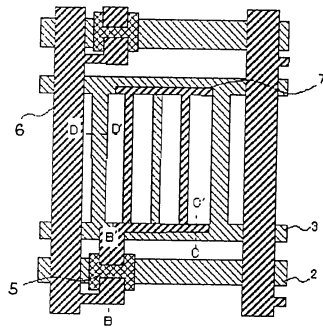
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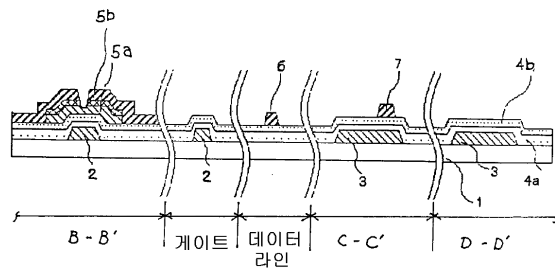
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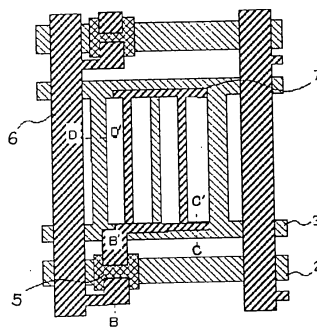
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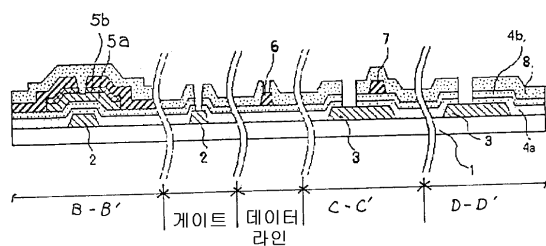
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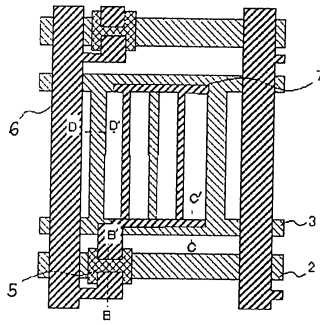
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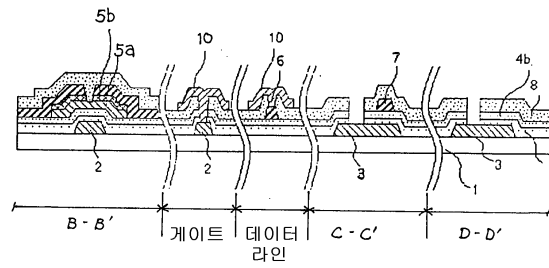
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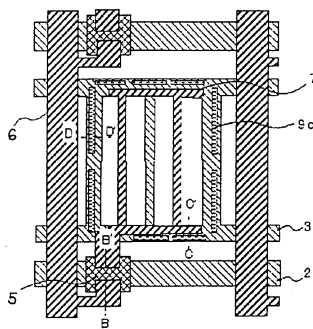
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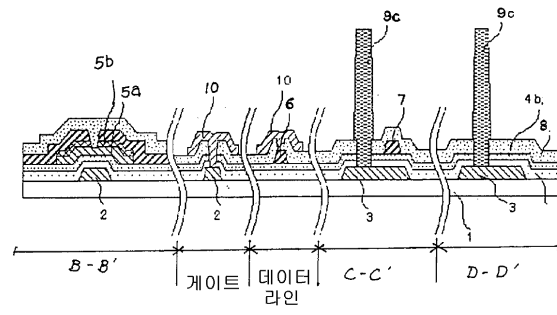
31b



32a



32b



专利名称(译)	具有由障肋围绕的像素电极的液晶显示装置及其制造方法		
公开(公告)号	KR1020020015002A	公开(公告)日	2002-02-27
申请号	KR1020010041183	申请日	2001-07-10
[标]申请(专利权)人(译)	NEC液晶技术株式会社		
申请(专利权)人(译)	日元号技术可否让这个夏		
当前申请(专利权)人(译)	日元号技术可否让这个夏		
[标]发明人	MATSUMOTO KIMIKAZU		
发明人	MATSUMOTO,KIMIKAZU		
IPC分类号	G02F1/1343 G02F1/1368 G02F1/1337 G09F9/30 G02F1/1333 G02F1/1339 G02F1/136		
CPC分类号	G02F1/133707 G02F1/13394 G02F1/134363 G02F1/133377		
代理人(译)	JO , EUI JE		
优先权	2000209706 2000-07-11 JP		
外部链接	Espacenet		

摘要(译)

平面切换型液晶显示装置具有用于显示图像的矩阵形像素，每个像素具有连接到像素电极7的薄膜晶体管5和形成在第一基板结构上的像素电极，基板结构的一部分与第一基板结构间隔开，并且液晶17之间填充有间隙，并且分隔壁9a允许液晶被阻挡而不受剩余液晶的弹性影响，以便包围液晶的一部分。8 指数方面 一种平面切换型液晶显示装置，液晶和液晶显示装置

