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(11)
(43)

2003 - 0017406
2003 03 03

(21) 10 - 2002 - 0049892
(22) 2002 08 22

(30) JP - P - 2001 - 00251089 2001 08 22 (JP)

(71) 가 가
5 7 1

(72) 5 7 1 가 가
5 7 1 가 가

(74)

:

(54)

(LCD) (TFT) 1 , 2 (LC) .
1 2 . 1 .
1 2 1 2

1

, , , ,

1 1 LCD ,

2a	2f	1	,	
3		1		1
4		2	LCD	,
5a	5f	2	,	
6		3	LCD	,
7a	7f	3	,	
8		4	LCD	,
9a	9i	1/4	가	,
10		5	LCD	,
11			(I_{λ})	(I_P)
			,	
12a	12b	6		LCD
				,
13		7	LCD	,
14	15		.	

LCD

LCD , , LCD

LCD , LCD 가

, LCD (STN) (LC) (GH) (PLDC) (TN) , (cholesteric) 가 .
 가 , LCD (TFT) / / (MIM) " "

. LCD , 가 .

1.2.27 LCD 가 14 15 . LCD 가 (200
US 6,195,140) 2955277 1 29
, 1 8 49 11 11 29 27 53 6
3 2955277 1 10
2955277 1997 7 28 9 - 201176

14 (3) (4) (5)
. TFT (6) (4 5)
. TFT(6) (3) (4) (5)
(8) (7) / (ITO)

, (3) (7) (7) ,
(3) (8)

(7) , (8)

15 , 가 .
(df) (7) , (dr) (7) (dr) (8)
(19) (1) (17)
15 , 25 .

, (dr) (df) 1:2가 (17) 가
(7) (17)
가 . (7) (17)
(19) (19)

(LC) , (LCD) (TFT) 1 , 2
 1 2 . 1
 1
 2 2 1 .
 , ,
 .
 []
 , 1 13
 .
 1
 1 3 LCD 1 . 1 , LCD
 (T(11), (12) (11 12) (13) . LC
 D , TFT MIN
 1 (11) (14), (15), TFT(16), (17), (1
 8) (19) . (14) (15) . TFT(16) (15) . TF
 T(16) (14) (16a), (15) (16b), (16c)
 (16d) . (15) (16a) (16b) .
 (17) TFT(16) . (17) (16d) (20)
 . (19) (17) (18) (19)
 (18) (19) , (20) (16d) . (18)
 (19)
 가 (18 19) .
 (21) (22) (21) (18)
 . (22) (19) .
 (13) (12) , (18)
 HAN (19)
 (homogeneous) TN .
 (11) , (23)가 (14) , (24)가
 (15) .
 (13) 가 가 , (12) (25), (26) (27) ,
 가 . (12) (27)
 , (18) (13), (25)
 (12) .
 (28)가 (13) (11) . (28) (14),
 (15), (17) (19) (13) , (13),
 (25) (12) .

2a 2f 1 .

2a , TFT(16) (14) (16a) (16a) (14)
(15) , (15) (16b), (16c) (16d)

2b , TFT(16) (17) (17) (16d)
(20) . TFT(16)
가 MIM .

2c , ITO (19) (17) (19) (19)
(16d) (20) .

2d , , (Al) (18)
(19) (19)

2e , (18) (19) 가
(pretilt) 90
(UV) (29) (18)
가 UV , 가 (19)

2f , UV (29)가 , UV (21)
(18) UV (22) , U
(19) , UV 가
가 UV

(12) UV (22)
3 , (18) HAN 가 ,
(19) TN 가

18) (19) 2a 2f (

, (n × d)
가 가

, " " , TN

TFT 1 7
0 TFT

0 가 , 2 가 , , 70 가 , 0 가 . , 가 .

2

4 5f LCD 2 . 2 (17)
(30) 1 .

4 (11) (17) (30) , 1 (30) TFT , (16d) (20) 가 . (

5a 5f , 2 . 5a 5f
2a 2f .

5b , TFT(16) (30) . (30) (16d)
(20) . (30) ,
 . () ,
 .

2 1 가 . 2 (28)
(12) (26) TFT (30) , (12)
(26) , (26) . ,
 ,
 .

3

6 7e LCD 3 . 3 1
(17) (30)가 2 . 6 4 , 3 ,
(12) 가 , TFT (11) (15) (1
8) 가 . (18) TFT(16) (16d) (30) (20)
(19) . (30) (19) . 6 ,
(18) (18) (30) (30)
(18) .

3 2 가 . 3 (28)
TFT (30) . (12) (30)
 , (30) . , (18) (30)
 ,
 , (12) 가 가 (12)
(pdsitioning) 가 , .

7a 7e 3 7a 7c , 3
7a (18) , 5a 5c 2 , (가
18) 5d (19) 5d
. 7d 7e 5e 5f .

7a , (16a) (14) (16a) (14)
(15) . (18) (16d) (15) . (16b)
(16c) TFT(16)가 .

7b , TFT(16) (18) (30) . (30) (18)
(20) 가 .

7c , ITO (19) (30) . (19) 가 (19)
(18) (20) .

7d 7e 5e 5f , 2e 2f
. , 7d 7e .

4

8 LCD 4 (13) 가 TN
1, 2 3 가 . 4 (11) (31) 1/
4 (32) , (12) (31) 1/4 (32) .

8 (11) , (31) (14) (28) . 1/4 (32)
(14) (17)((30), 4 6) . 8 (14) , 1/4
(32) (13) 가 가 (27) . (31) (13) 가
(14) .

(31) (31) 가 . (11) , 1/4 (32)
(31) 45 . (12) , 1/4 (가
32) (31) 45 .

1/4 , (13) , (12) (31) .
(32) . (18) , (13)
(13) . (12) 1/4
(32) . (12)
(31) .

1/4 (13) (12) (31)
. 1/4 (32) .
(13) (18)
(13) (12) 1/4 (32)
(31) . (12)

, (13) , (11) (31) (28) (13)
 . 1/4 (32) . (12) 1/4 (32)
 . (12) (31)

, (13) , (11) (31) (28)
 . 1/4 (32) . (12) 1/4 (32)
 . (12) (31)

8 , 4 (14 27) (31) UV 1/4
 (32) 가 .

4 , 1/4 (32) (31) (14 27) (13) 가
 . 1/4 1/4

1/4 , 가 , 1/4
 , 가 . 90 ,
 HAN ,

1/4 가 500
 700 μ m

9a 9i (31) 1/4 (32) 가

5

10 LCD 5 (13) 가 TN
 1, 2 3 . 5 (11) (31) 1/4 (
 32) , (12) (31) 1/4 (12) 1/4
 (32)

8 (11) , (31) (14) (28) . 1/4 (32)
 (14) (17)((30), 4 6) . 8 (12) , 1/4
 (32) (13) 가 가 (27) . (31) (13)
 가 (14)

(12) 1/4 (32)

1/4

, (28) (11) (31) 1/4 (32) (13)
 . (13) , (12) 1/4 (32) (31) . (I_λ)

1

$$I_{\lambda} = (1/2) [(\Gamma/2) (1/X) \sin X]^2$$

$$[\varphi^2 + (\Gamma/2)^2]^{1/2}, \lambda = \quad, (n \times d) = \quad (13), \varphi = \quad, \Gamma = 2\pi(n \times d)/\lambda, X =$$

$$\quad, \quad (11) \quad (31) \quad (13) \quad, \quad (13)$$

$$\quad, \quad (12) \quad (31) \quad, \quad 1/4 \quad (32)$$

$$\quad (I_P)$$

2

$$I_P = (1/2) [(1/X) \sin X]^2 [\phi^2 \cos^2 \phi + \sin^2 \phi (\Gamma/2)^2]$$

$$+ \sin^2 \phi \cos^2 X - \phi \sin 2\phi \cos X [(1/X) \sin X]$$

$$11 \quad I_{\lambda} \quad, \quad (dr) \quad 가$$

$$I_P \quad 3\mu m \quad, \quad 가 \quad 3\mu m \quad LCD \quad, \quad (I_P) \quad (I_{\lambda})$$

$$\quad, \quad, \quad 10 \quad 5 \quad, \quad (11) \quad 1/4 \quad (32) \quad 가$$

$$\quad, \quad$$

6

$$12a \quad 12b \quad LCD \quad 6 \quad (CLC) \quad / \quad (33)$$

$$\quad, \quad / \quad (33) \quad (11) \quad (14) \quad (28) \quad (12) \quad, \quad 1/4$$

$$(32) \quad (27) \quad (13) \quad 가$$

$$6 \quad, \quad / \quad (33) \quad (11) \quad 1/4 \quad, \quad$$

$$CLC \quad / \quad (33) \quad (13) \quad 가 \quad 1/4 \quad (32) \quad 12a$$

$$\quad, \quad 1/4 \quad (32) \quad CLC \quad / \quad (33) \quad (13) \quad 가 \quad 12b$$

$$\quad, \quad 1/4 \quad (12)$$

7

$$13 \quad LCD \quad 7 \quad, \quad 1/4 \quad (32) \quad CL$$

$$C \quad / \quad (33) \quad (12) \quad 1/4 \quad (32)$$

$$14) \quad / \quad (33) \quad (11) \quad (14) \quad (28) \quad, \quad 1/4 \quad (32) \quad ($$

$$\quad / \quad (33) \quad (12) \quad, \quad 1/4 \quad (32) \quad 가 \quad (27)$$

(12) 1/4 (32)

2001.8.22

2001 - 251089

가

(LC) , (LCD) 1 2 (TFT) 1 2 , 2
 1 2 1 2 1 2

가

(57)

1.

(TFT) 1 ;

2 ;

1 2 , ,
 1 1 , 1
 2 1 2

2.

1 , 1 TFT ,
 , 2 .

3.

1 , 1 TFT , 2 ,
 1 2 가 , 1 2 .

4.

1 , 1 TFT ,
 , 2 .

5.

1 , .

6.

1 , (homogeneous) , (homeotropic) , TN , HAN
OCB .

7.

1 , 1 HAN , 2
TN .

8.

1 , 2 $1/4$.

9.

8 , $1/4$ 가 .

10.

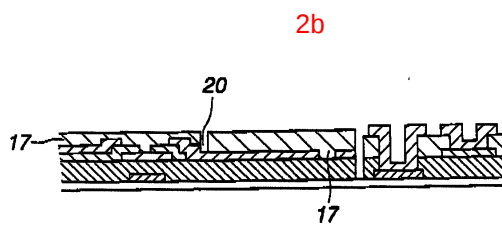
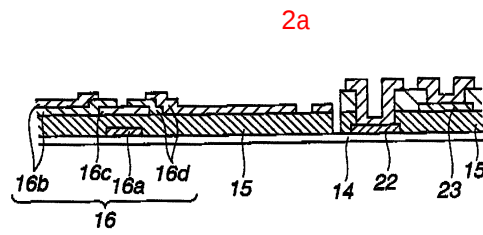
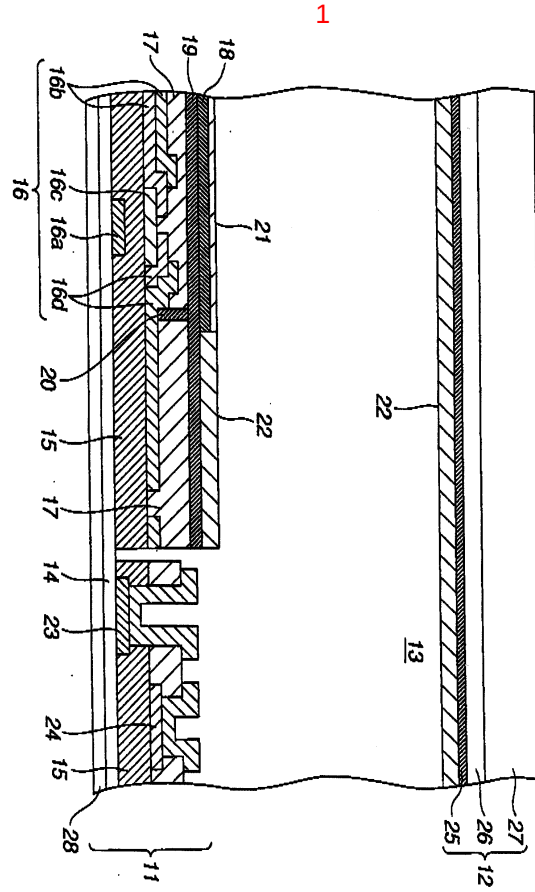
8 , 2 (CLC)
.

11.

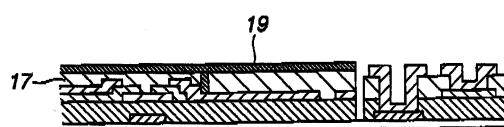
8 , 1 2 $1/4$.

12.

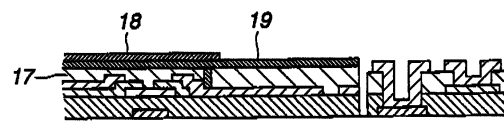
9 , 2 (CLC) CLC
1 2 $1/4$.



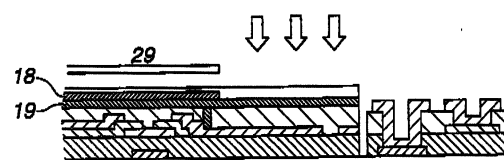
2c



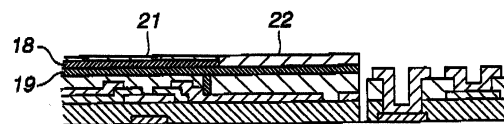
2d



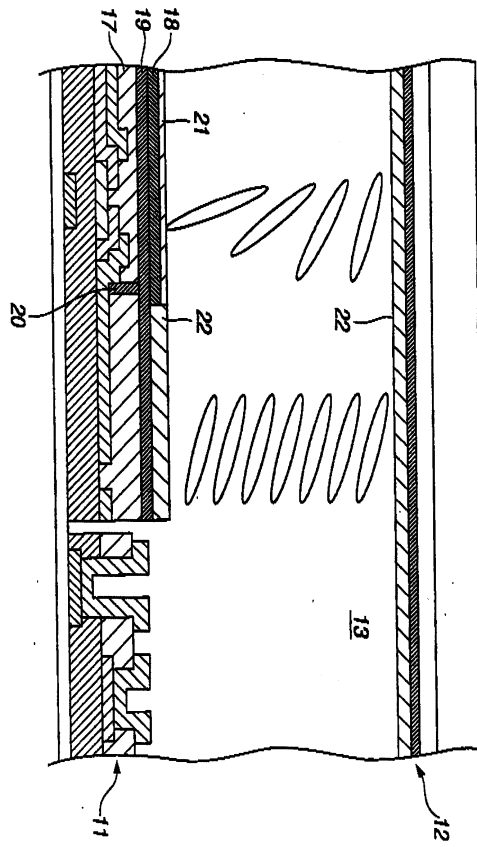
2e



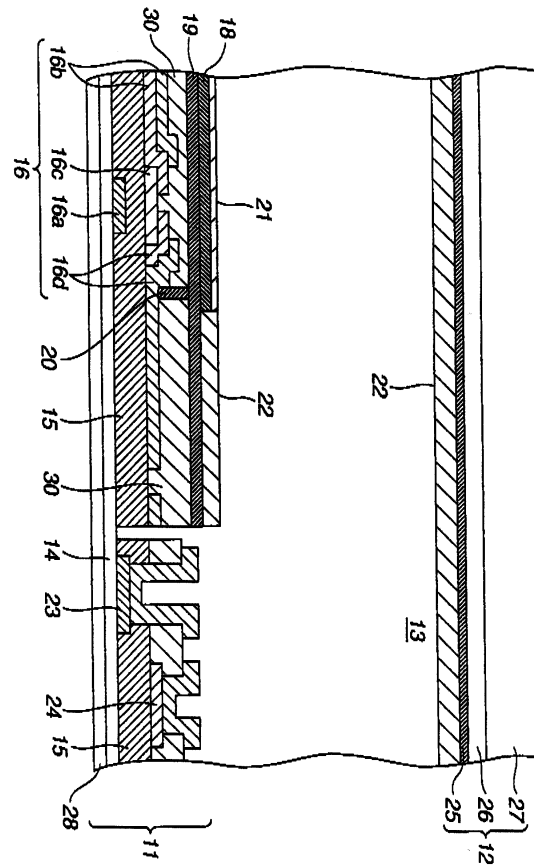
2f



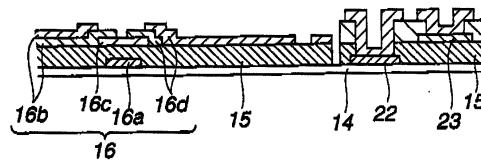
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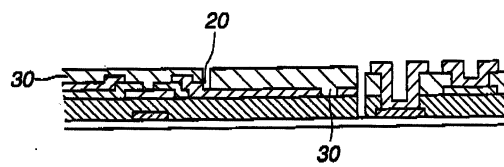
4



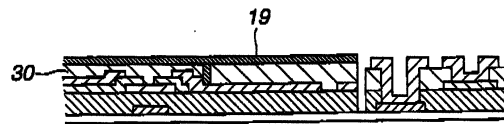
5a



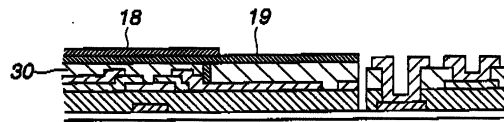
5b



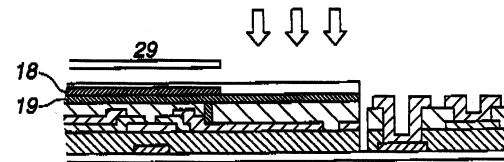
5c



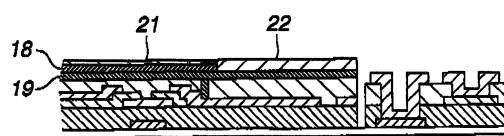
5d



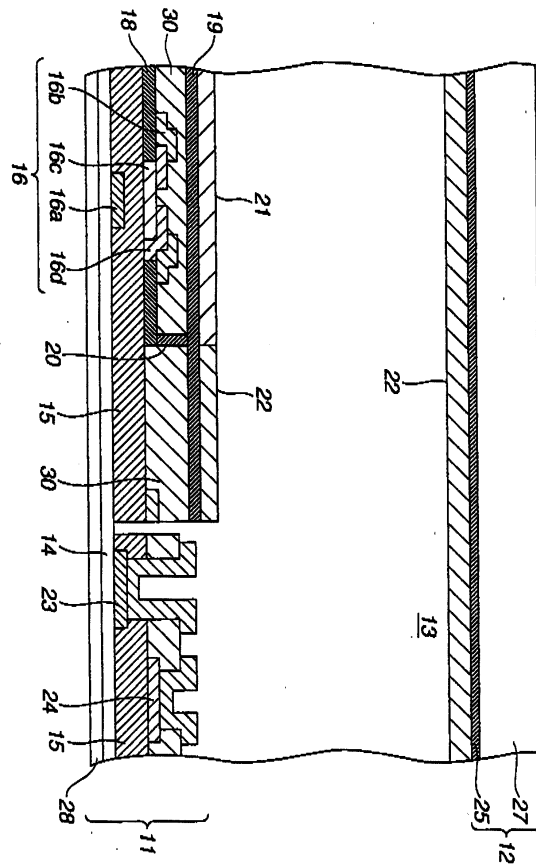
5e



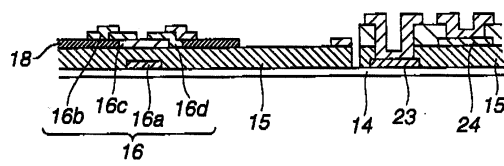
5f



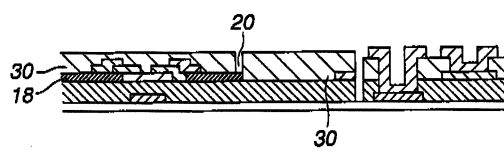
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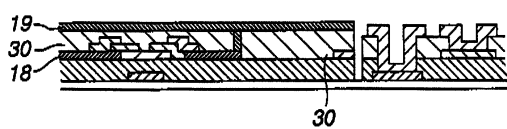
7a



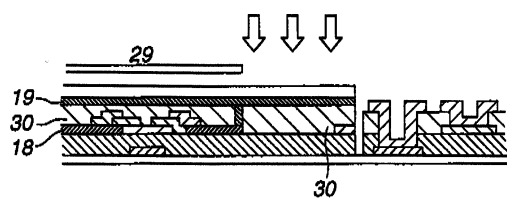
7b



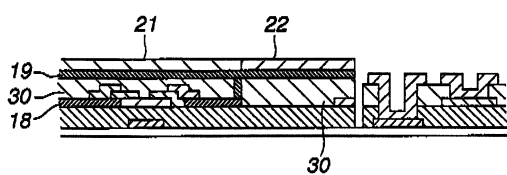
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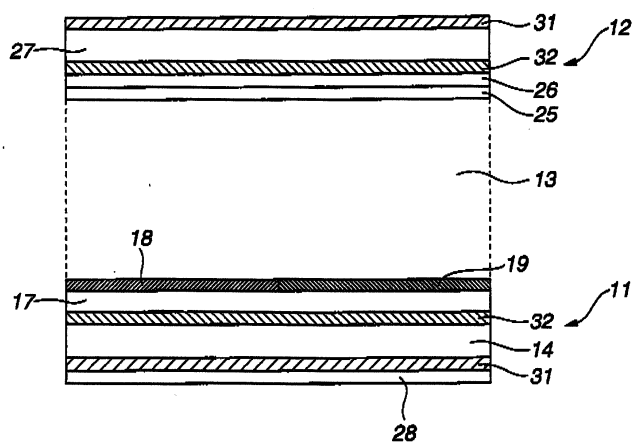
7d



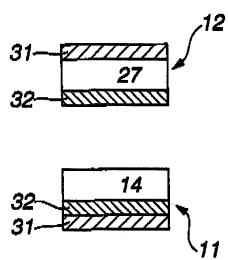
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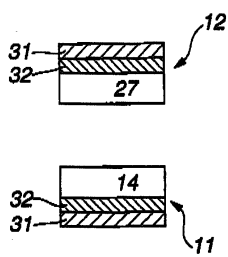
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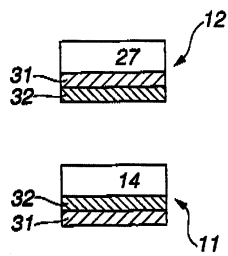
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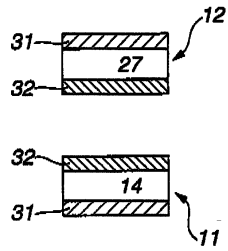
9b



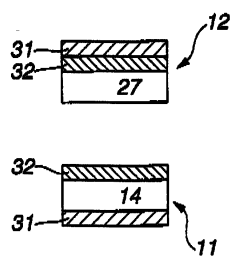
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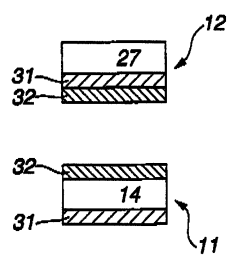
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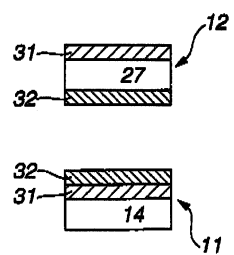
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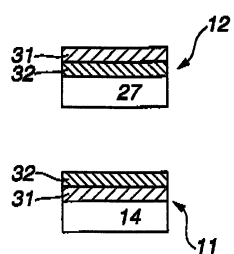
9f



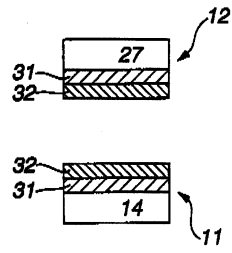
9g



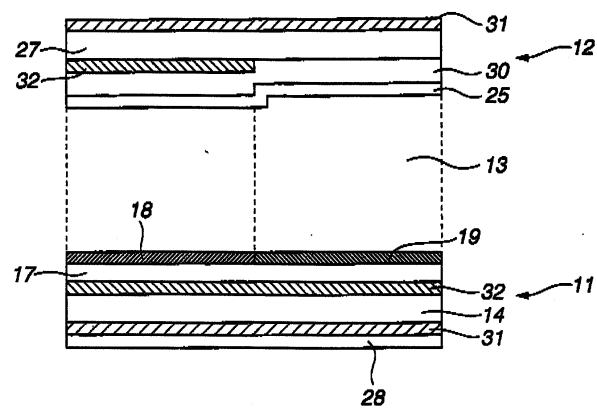
9h



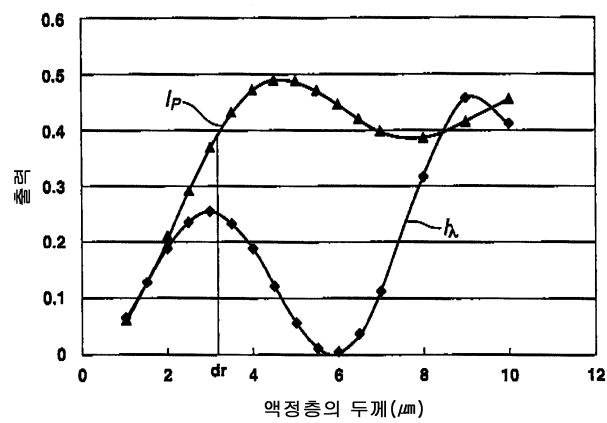
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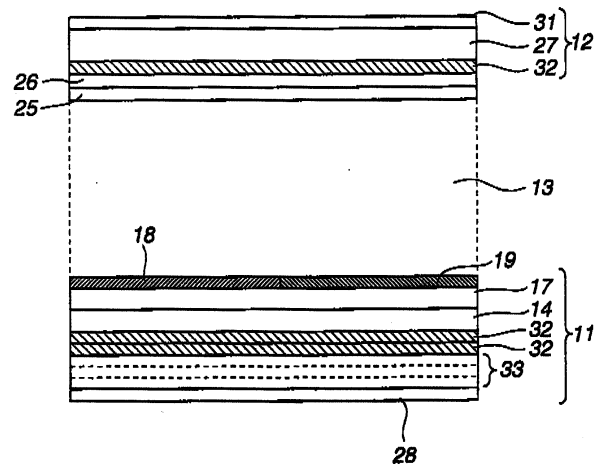
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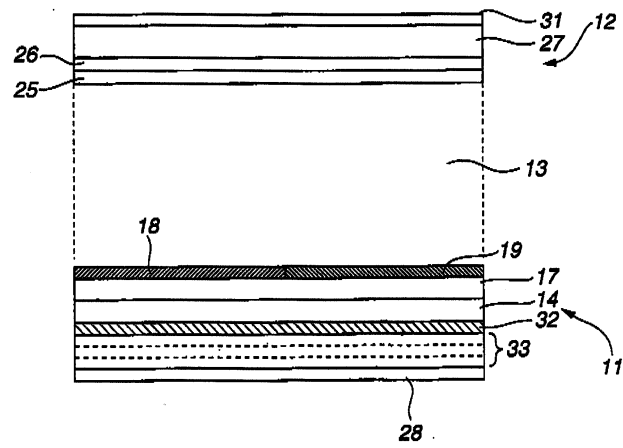
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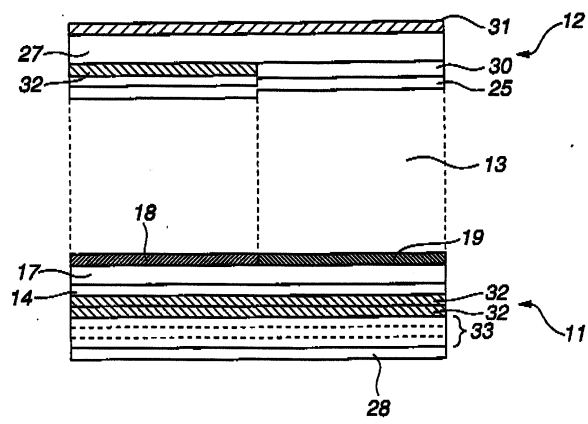
12a



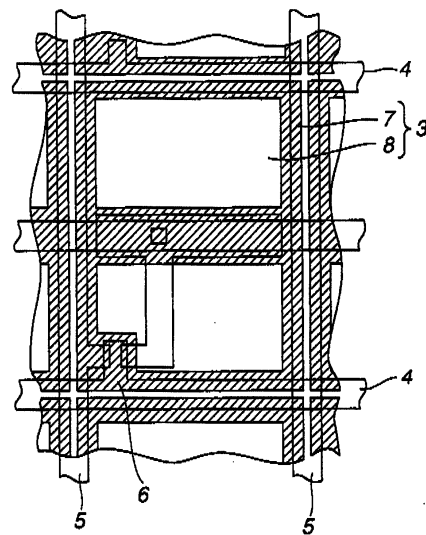
12b



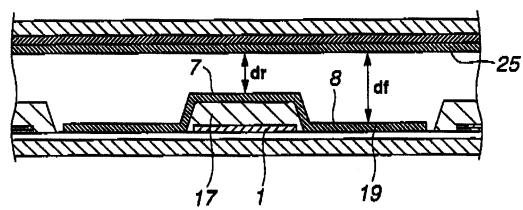
13



14



15



专利名称(译)	透射反射式液晶显示器		
公开(公告)号	KR1020030017406A	公开(公告)日	2003-03-03
申请号	KR1020020049892	申请日	2002-08-22
[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	IKENO HIDENORI 이케노히데노리 SUZUKI MASAYOSHI 스즈키마사요시		
发明人	이케노히데노리 스즈키마사요시		
IPC分类号	G02F1/1368 G02F1/13363 G02F1/1335 G02F1/1337 G02F1/1343		
CPC分类号	G02F1/133753 G02F1/133514 G02F1/133555 G02F2001/133638		
代理人(译)	JO , EUI JE		
优先权	2001251089 2001-08-22 JP		
其他公开文献	KR100670168B1		
外部链接	Espacenet		

摘要(译)

目的：提供一种半透射型液晶显示装置，能够消除反射模式和透射模式之间的光程差，使两种模式下的出射光束强度最大化，并具有有源矩阵基板表面的平滑度。

