

(19)  
(12)(KR)  
(A)(51) 。 Int. Cl. <sup>7</sup>  
G02F 1/1335(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  
 2 . 2 1 .

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 <sub>1</sub> )	(I <sub>P</sub> )
			,	
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) (4) (5)  
(8) (3) (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  
 ( TFT) (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

0 TFT 1 7  
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)  
. (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 , 가 . 90 , 1/4  
 , 가 . HAN , .

1/4 가 500  
 700 $\mu$ 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 (32) , (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 )



1

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

$$\frac{1}{\sqrt{1 + \left(\frac{\sigma}{2}\right)^2}} = \frac{1}{\sqrt{1 + \left(\frac{\sigma}{2}\right)^2}} \quad (13) \quad \frac{1}{\sqrt{1 + \left(\frac{\sigma}{2}\right)^2}} = \frac{1}{\sqrt{1 + \left(\frac{\sigma}{2}\right)^2}}, X =$$

$\frac{1}{2} \left( \frac{1}{2} \right) = \frac{1}{4}$  (11)  $\frac{1}{2} \left( \frac{1}{2} \right) = \frac{1}{4}$  (13)

$\frac{1}{2} \left( \frac{1}{2} \right) = \frac{1}{4}$  (12)  $\frac{1}{2} \left( \frac{1}{2} \right) = \frac{1}{4}$  (31)  $\frac{1}{2} \left( \frac{1}{2} \right) = \frac{1}{4}$  (32)

$\frac{1}{2} \left( \frac{1}{2} \right) = \frac{1}{4}$  (1P)  $\frac{1}{2} \left( \frac{1}{2} \right) = \frac{1}{4}$

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.  $I_p$  가  $3\mu m$  이고,  $I_p$  가  $3\mu m$  LCD 가,  $(I_p)$  (dr) 가,  $(I_p)$  가,  $10/5$ ,  $(11)$   $1/4$   $(32)$  가,  $가$ .

6

12a      12b                  LCD                  6                  .

,                                  (CLC)                  /                  (33)

/                  (33)                  (11)                  (14)                  (28)                  .                  (12)                  , 1/4

(32)                  (27)                  (13) 가                  .

6, / (33) (11) 1/4 . , 1/4 (32) 12a CLC / (33) (13) 가 . 12b , 1/4 (32) CLC / (33) (13) 가 . , 1/4 (12) .

7

C 13 / (33) LCD 7 . 1/4 (32) CL

14) / (33) (11) (14) (28) . 1/4 (32) (

/ (33) . (12) , 1/4 (32) 가 (27)

.

(12) 1/4 (32)

2001.8.22

2001 - 251089

가

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

가

(57)

1.

(TFT) 1 ;

2 ;

1 2 , ,  
 1 , 1  
 2 1 1 2 1  
 .

2.

1 , 1 TFT ,  
 , 2 .

3.

1 , 1 TFT , 1 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.

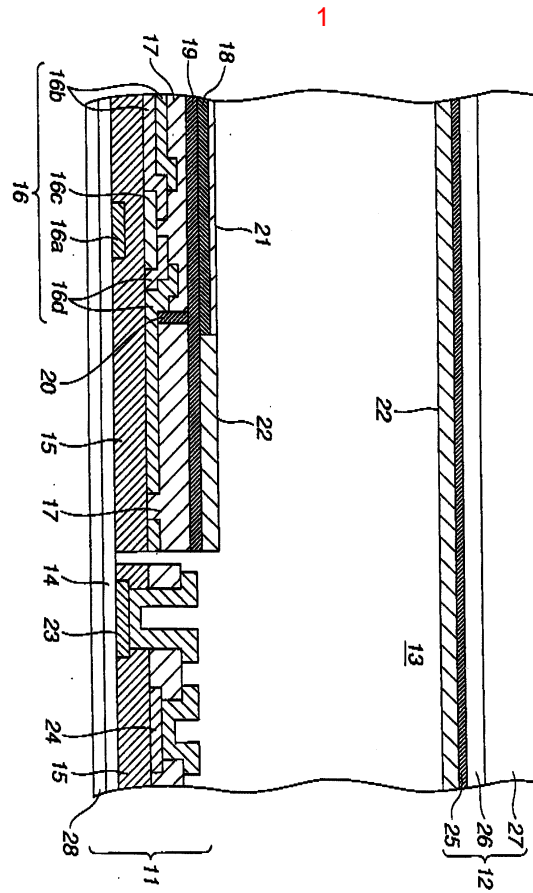
8 , 2 (CLC)  
.

11.

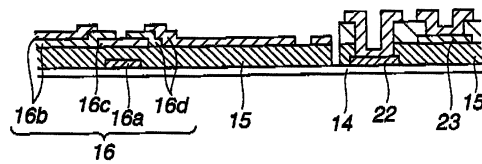
8 , 1 2 1/4 .

12.

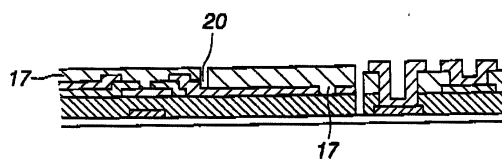
9 , 2 (CLC) CLC  
1 2 1/4 .



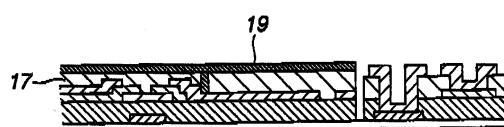
2a



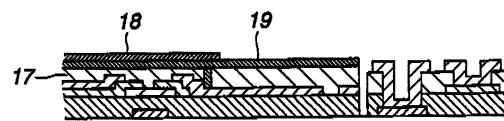
2b



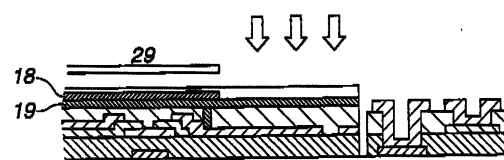
2c



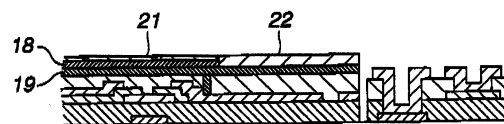
2d



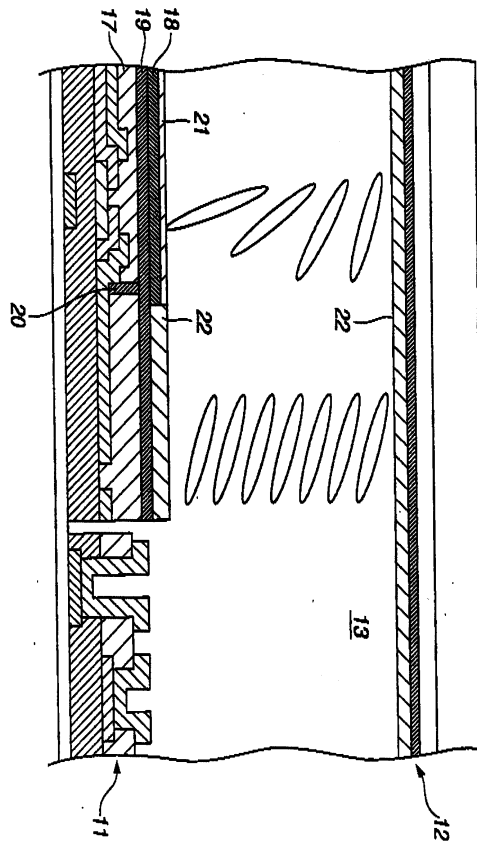
2e



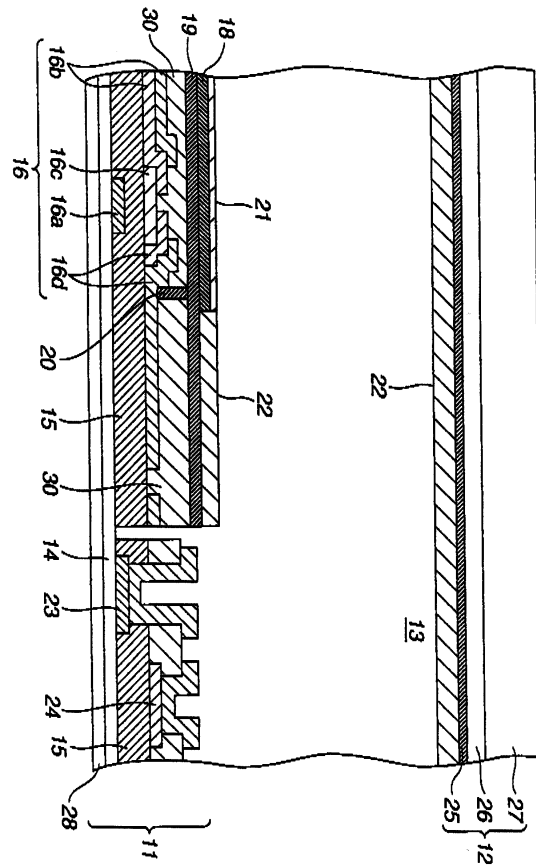
2f



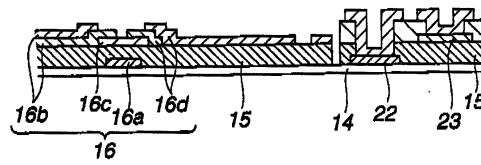
3



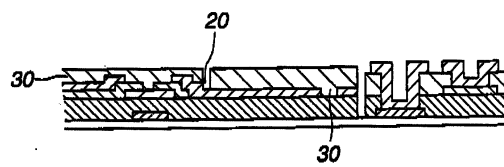
4



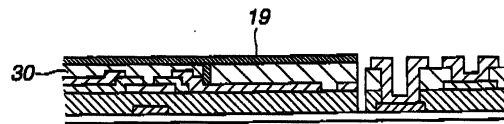
5a



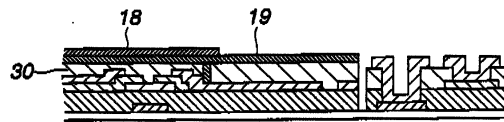
5b



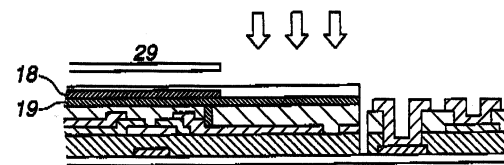
5c



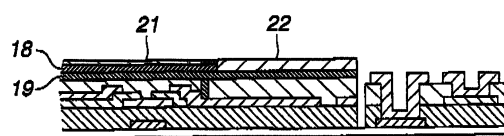
5d



5e

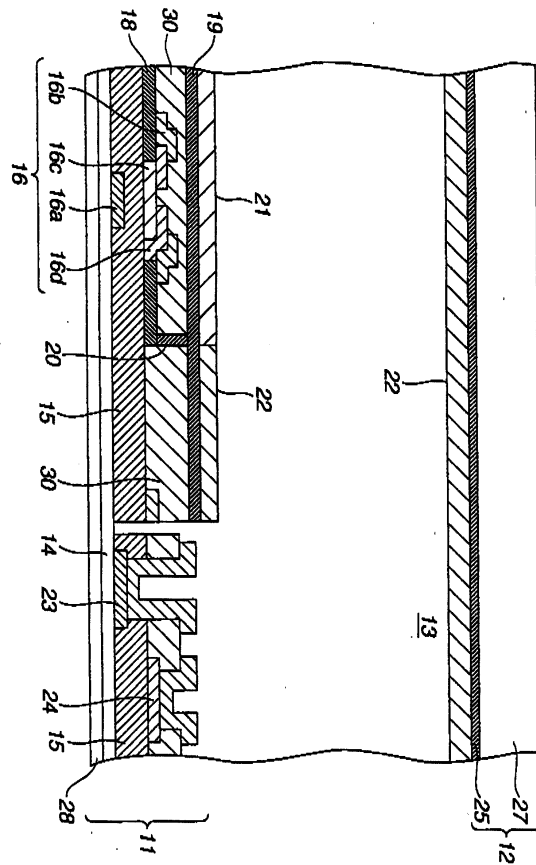


5f

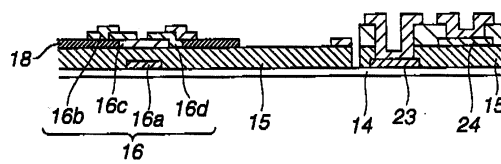




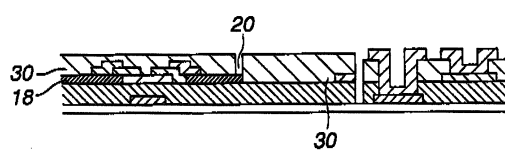
6



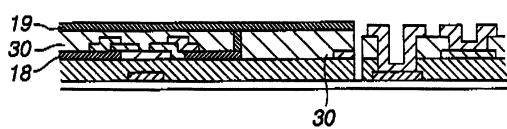
7a



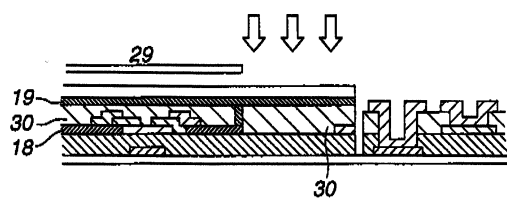
7b



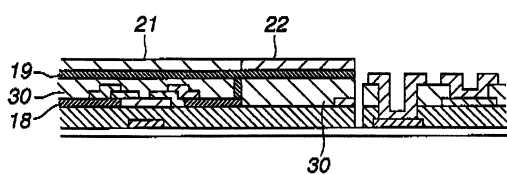
7c



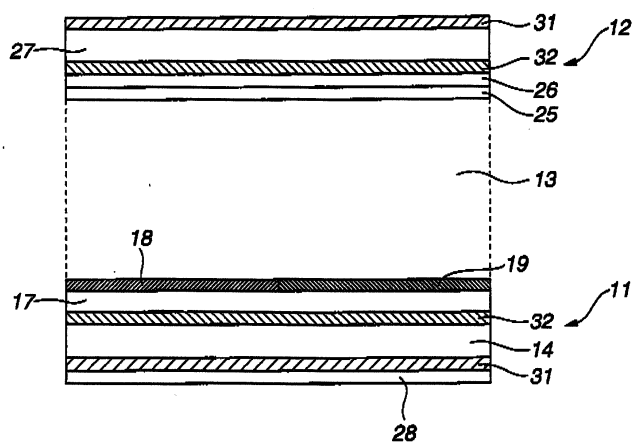
7d



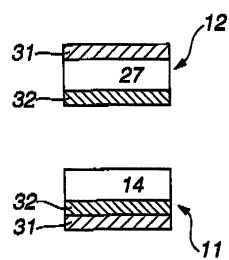
7e



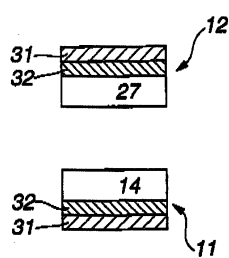
8



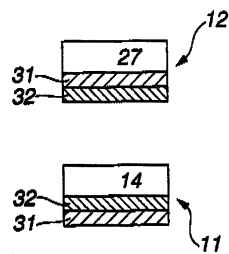
9a



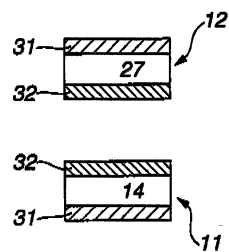
9b



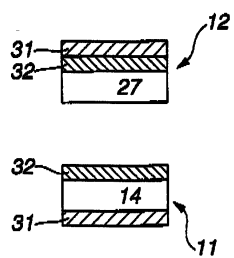
9c



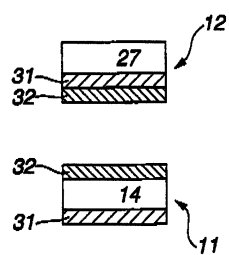
9d



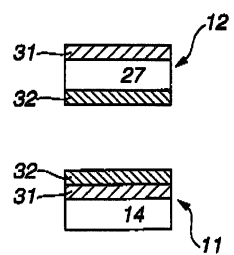
9e



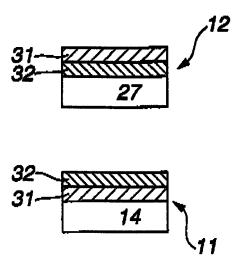
9f



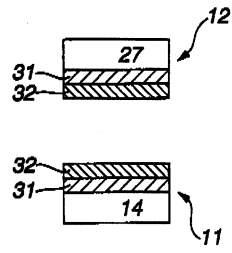
9g



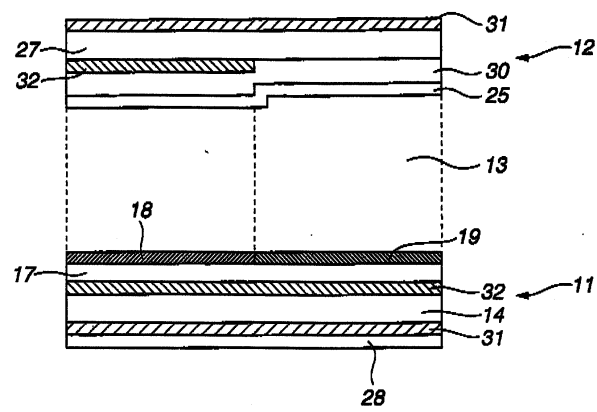
9h



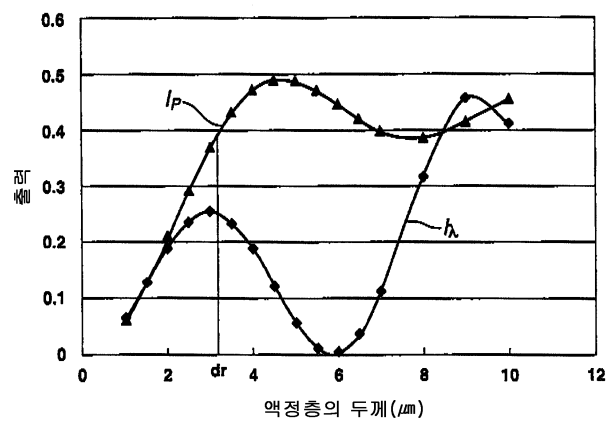
9i



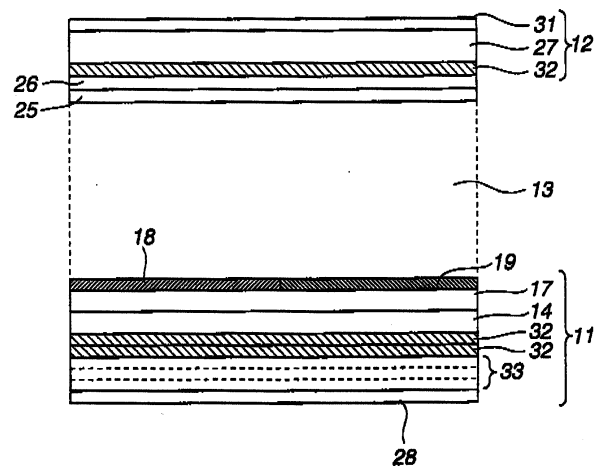
10



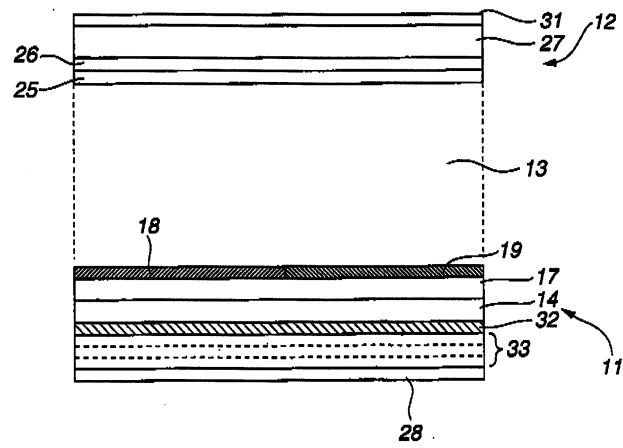
11



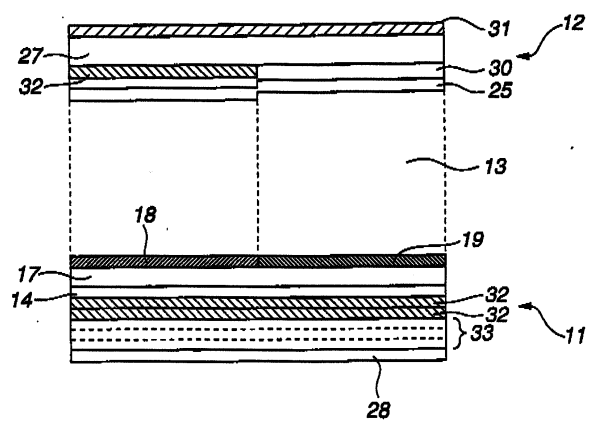
12a



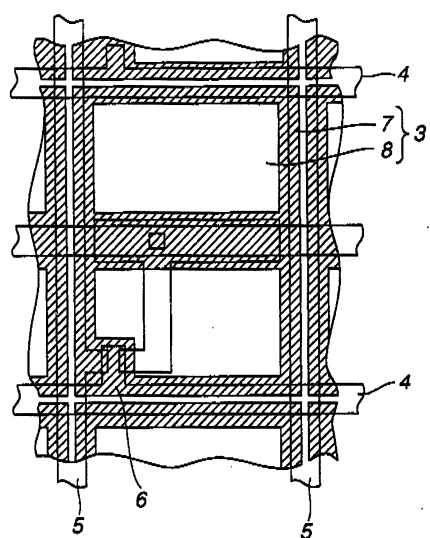
12b



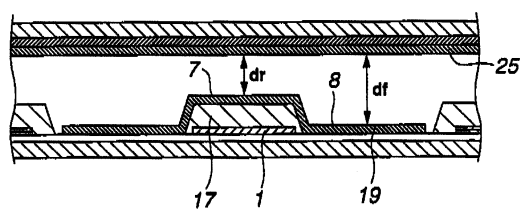
13



14



15



专利名称(译)	透射反射式液晶显示器		
公开(公告)号	<a href="#">KR1020030017406A</a>	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	<a href="#">Espacenet</a>		

## 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。

