

(19)  
(12)(KR)  
(A)(51) 。 Int. Cl. <sup>7</sup>  
G02F 1/133(11)  
(43)2002 - 0018088  
2002 03 07(21) 10 - 2001 - 0052355  
(22) 2001 08 29

(30) JP - P - 2000 - 00259989 2000 08 29 (JP)

(71) 가 가  
가 5 7 1(72) 5 7 1      가      가  
5 7 1      가      가  
5 7 1      가      가

(74)

:

(54),

, 1 , , 1  
가 . 1 /4 , ,  
. , 1 , ,  
. ,

5

, , , 1/4 , ,

1a      1b ,      1b ,      1a  
(white display) ,      (black display)

2a      2b    ,      2a    OFF(        )  
      ,      2b    ON(        )    .

3 1

4 1/4

5 2

7 4

8 5

9a 6 . 9b 9a A - A

10a                  10c

11a            11b

12a      12b

13a 7 . 13b 13a B - B

14a 8 14b

15a , 15b 15a

8

>

101, 201 :

102, 202 : 1/4

103, 203 :

104, 204 :

105, 205 :

106, 206 ;

107, 207 : 1

208 :

n Display (T. Sonehara et al., 1989, p. 192 (1989))

, 가 ( 1).  
1a 1b , 1b , 1a 1b , 1a

1 , (1101) , 1/4 (1102) (1103)  
, (1104) , , , ,  
P - (1105) (1107) , , , 1/4 가

45 ° , 1/4 (1002) (1106) , (1103)  
 1103) . TN STN , 가 , (1103)  
 /4, , 가 /2 가 . , (1103) P - (11  
 05) , (1104) . , P - (1105) P - (1105) P - (1105)  
 , , , , , , , ,  
 106) . 가, 1/4 (1102) P - , (1101) P - (1  
 105) . , , , , , , , ,  
 가 , , , , , , , ,

, 1b , (1103) 가 가  
 , (1103) 0 , 0 . , (1103)  
 . , (1107) (1101) , (1101) 1/  
 4 (1102) . , 가 , (1106) . , (1103)  
 가 , (1103) , (1106) , (1103)  
 (1106) , (1104) ,  
 (1106) (1108) , . (1103)  
 (1103) (1108) 1/4 (1102) , P - (1105) , 90 °  
 가 S , (1101) . (1101) P - (1105)  
 , S - (1109) (1101) , . 가  
 , (1103) , .

가 6 - 59287 10 - 197844 ( , "  
4" " 5" ) .  
4 , - ,  
5 , ,



$$2, 1, 2, , 1, 1, 1, 2$$

3.

， 1 ， ， (視差) 가  
， 1  
，  
가  
，  
가

1 2 가 가

3

2

, (cut)가 , 가

가 (負) 2

(負) , 가 , 1 2

가 가

, , (正) , 가  
, , 2 ,  
2 , ,  
4 , 가 . , 1  
2 , 1° .

가	,	가	.	가	,
,	2	TN가	,	,	가
,					가

1 25  
가 .

가 가 ( )  
가 ) .

1 25  
가



, 1b 2b , (1003) 가 가 , , , (100  
          , (1003) 0 0 , , , (100  
 6) (1003) , (1003) , , , (1003)  
       (1006) (1010) , , ,  
          , (1006) (1006) , (1006)  
       (1003) , (1006) 1/4 (1002) P -  
       , 가 . , 가 ,  
       , 가 .

) 가

, 1 . , , , (TFT)

1

, , 가

가

1  
( )  
2  
(cut) 가

(cinnamic group)

M - LCD 1996/IDW 1996 Digest of Technical Papers p 337

A

## 가 가

가

가

3

, , , , , , ,  
 , 2 - , 2 - , 2 - , N,N - , , ,  
 , N,N - , , , , , , ,  
 , , , , , , , , , , , ,  
 , 2,2,3,3 - , 2,2,2 - , 2,2,3,3,3 -

. , 2,2,3,3,4,4 -  
 - 1, 5 - , 1,1,2,2,3,3 - 1 - 1, 3 - , 2,2,2 -  
 , 2,2,3,3,3 - , 2,2,3,3 - , 2, 2,3,3 -  
 2,3,4,4,4 - , 2,2,2 - , 2,2,3,3 -  
 , 2,2,3,4,4,4 -

7  
 가  
 , 2, 2 -  
 , 2 -  
 - 2 -  
 ;  
 ;  
 ;  
 ;

3 , (106) 1 (107) , (105) (1  
 ( ) . 2 (103) , (104)  
 06) (105) (103) 1 (107) . , 1/4 (102) (1  
 (103) 1 (107) . , (101) , (101) 1/4 (102) 45 °  
 03) . (104) 偈 .

$$\begin{array}{ccccccccc}
 & (101) & & 1/4 & (102) & & (100) & (101) & \\
 1/4 & & & & 45^\circ & & . & , & , \\
 & ( ) & 45^\circ & & & & ( ) & 45^\circ & \\
 & , & (101) & & 1/4 & (102) & & & \\
 \end{array}$$

, (101) 1/4 (102) , (rightward circular - polarized light)  
                         . 4  
                         . , 4 , (101) (901) (105) (right - twisted)  
 (102) 1/4 (102) (902)† (101) , (101) 1/4 45 °

, (104) 1/2  
가 0 (100) (101) 1/4 (102)  
, (104) 가 0 (104)  
, (105) (pitch) (104) (104) 가 0  
, (104) 1/4 (102) (101)  
101) (130) 가

, (104) 가 (104) 가 , 1/4 (102)  
                 (104)  
                 (105)  
(105) . , , , ,

, (104) (retardation) 가  
· , 가  
· , (105) , 가 (bright)  
가 ,



, 가 . , ,  
(205)가 (204)  
2가 , 가

1 (300) . (305) ,  
(308) (308) (liqu  
id crystal drops) , 가 , (330a) , 6a  
, 가 , 가 ,  
가 .

(300) 가 (305) 가 (308)  
308) 가 (330b) . , . , . , 6a , (330a) , , ,

(308) , ITO ( )  
 (308) (photosensitive monomer) ,

(308)

가

가, 2

(308)

(308)

가

13

7

4

410, 411), (R), (G) (B), . . . ,  
 가 . . . , 가  
 , , R. Mauer, D. Andrejewski, F - H. Kreuzer, A. Miller, SID90DIGEST, 110  
 - 112 (1990) , (403)  
 , (405) (chiral pitch) Liquid C  
 rystals, Vol. No.18, 319 (1995)

(405) (409, 410, 411), R. Mau  
er, D.Andrejewski, F - H. Kreuzer, A. Miller, SID90DIGEST, 110 - 112 (1990)  
. , (405) 가 ,  
(405) . , . ,  
(405)

(chiral agent)  
(twisting direction)

(cholesteric material layer) (405)  
(406)

(404)

(405)

가

(burning)

가

180

가

3

가

3

(405)

(405)

1

(409, 410 411)

(R,

G B)

, 3

(leftward circular - polarized light)

1

(rightward circular - polarized light)

(404)

가

(405)

(404)

가 " 0"

,

(pitch)

(404)

가 " 0"

3

(405)

(409, 410 411)

(408)

(outgoing light) (430)

(430)

(

408)

가

1

(405)

가 " "

(404)

(406)

1 3

, 4

(404)

(retardation)

,

가

(405)

1

3

(Bragg)

,

1/4

(wide - band quarter - wavelength plate)

,

5

8

5

4

,

,  
 (509, 510 511) 3 . (512) 가 (504) 2 ,  
 (503) 4 . , (512)  
 ) (509, 510 511) 3 (512)  
 (505) (μm)  
 (505) (parallax)

, 6 . 9a 6 , 9b 9a A - A' . 9a 9b

9a , (picture signal line)(620a) 1 (607) ,  
(620b) . (620) (620a)  
, (622a) (620a) 가 , (622)  
(622) (622a) , (620a) (622a)

9b , Cu Al ( ) (622)  
 1 (607) , , (621) (622)  
 . , (619) (621)  
 (622) TFT (thin-film transistor) . ,  
 (620) (623) . (620)  
 (623) , n (619) , , (617) ,  
 (621) . , (618) (617) , TFT (619)  
 . , (606) (617) ,  
 (605) (617) . ,  
 (605), (606) (618) (616) (616)  
 (charge up) . (615) (615) (616)  
 (613a) . (615) (throughhole) (624) (623)

, (603) (604) 1 (607), (603) (604) (603)  
 1 (607) . (612) (603) (604) 1/4 (602),  
 , (613b) (615) (604) . , 2  
 (601) (608) (603)

(615)

(612)

(613a 613b)

TN

가

가

가

, 2 1 (607) 가 , 1 (607) 가 , 2 가 .  
(607) , , , , .

, (615) (612) (615)  
가 . , (負) (615)  
- . , (614) (614)  
(613a 613b) 가 ,

, (614) - , (613a 613b),  
 , , . ,  
 , (monomer)

, 6 , (615) ( ) (622a) ( )  
) (620a) , ,

, 10a, 10c, 11a,  
11b, 12a 12b 10a

(負) 가 , , - , . ,

, , , , 10b ,  
10a

, 10a , 12a , 12b

가 ,  
. , (chiral agent)

가  
가

6

TFT (TFT) TFT SiNx (617)  
(621) (620), (623) (619) . , (607)

3 (605) 가 1

, , (605) (616) . (6)  
16) , , (616)

, (624) , (624) (623) (616)  
· . (615) 4  
. (604) 가 .

, , , ITO (612)  
 . , 1 (607) (603) . , (61)  
 5) (613) (613a 613b) 가 . , (sealing age  
 nt)가 . , 4 $\mu$ m , ,

(負)

$$, \quad (603) \quad 1 \quad (607) \quad , \quad 1/4 \quad (602), \quad 1/4 \\ (601), \quad (608) \quad . \quad , 1/4 \quad (602) \quad (601) \\ 45^\circ \quad 1/4 \quad (102) \quad .$$

가

가	. . ,	가
가	. . ,	가
(608)	, $\pm 20^\circ$	가

가 , 가 (608)

, TFT 가 . , TN 가 . ,  
가 . , . , . , . ,  
가 . . . . .  
가 . , . , . , . ,  
가 . . . . .

, 13b 13a B-B . 13a 13a 13b  
 . 7 가 6 13a 13b , (715) 4 TN



,	,	,	,	(715)	6
(608)			(708)	,	
,	8	가	.	14a	8
,	14b		.		가 7
4a		14b		( )	(804) 1
	,	(804)		7	

가 . ON OFF 가 , (800) 7 , (806) )

, 6 7 , , , , 6 7  
(815) (815)  
,

15a

15b	15a			15b	
,	(803)	(814)		(826a)	, 1 (807)
(814)	(825b)				
,			(domain)		

(homogeneous orientation) , ,  
 가 . , 가 . , 16a ,  
 . , 16b 16a  
 16b , , (815)  
 (827)가 16b , 825b 826b 1 (807) (803)  
 (814) , , , 0° 가 , ,  
 . , 가 . , , (804) 가 ,  
 . , , 2 , ,  
 , , , , , ,  
 가 . , , , , ,

5

$$< \quad 1 \quad >$$

,  $\pm 20^\circ$  가 ,

< 2 >

, ITO , , , , 1  
가 , , , , 가  
1 , , , ,  
가 , 1 , ,  
가 , , ,

< 3 >

< 4 >

< 5 >

1 가 , TFT  
1 가 , ITO  
(JSR ALI051) , 180 , 1 가 . 1 가 ,  
, 6μm , 가 , 6μm ( )  
(正) (Merck ZLI - 4792)

1 가

, 1 ,  $\pm 20^\circ$  가

< 6 >

, 1 가

15 ° 가 ,

≤ 7 ≥

JALS - 428) , 180 1 가 . 6 가 , 45 ° ,  
 , 90 ° , 6 가 , , (正) 가  
 6μm , 가 , ,  
 (Merck ZLI - 4792) , , ,  
 , , , , , , 4

1/4  
45 ° 가

8

1 , 12a 12b 8 가  
 가  
 TFT  
 ITO  
 (JSR JALS - 428) , 180 1 가 7  
 , 12b 825b, 826b  
 , 0° 3 가 ,  
 , 10μm, 20μm, 2μm  
 , 가  
 (正) (Merck TL - 213) ,  
 3 가 ,  
 , 1/4  
 1/4  
 45° 가

< 9 >

1  
1/4  
45 °

, . 1 가 . , , ,

< 10 >

1 , . , 10 , 3  
3 9 . , 1 , ITO . 3 . 1  
, , , ,  
가 , 1 , , ,  
가 .

(57)

1.

1

1

17

2.

1 ;

1 2 ;

1 2 , 1 ;

1 ;

2 3

3.

1 ,

4.

2 , 3

5.

3 4 , ,

2 ;

,

가

6.

1 4 ,

1 2 ;

;

;

;

가

7.

6

,

8.

6

,

3

,

9.

6

,

3

,

10.

8

,

2

11.

8

,

(cut) 가

12.

8

,

가

13.

6

,

가

14.

1

4

,

15.

1

4

1      2

,

(負)

,

가

16.

15 , 가 가

17.

1 4 , (正) , 가

18.

17 , 2

19.

17 , 2

20.

17 , 4

21.

17 , 1 2 1 °

22.

1 4 , , 가  
(homogeneous)

23.

22 , 2

24.

23 , 1 2 1 °

25.

1 ;

1 ;

; ;

;

2 ;

1 2 , 1 2  
; ;

2 1/4 ;

1/4

,

,

1 2 ; ;

26.

25 ,

27.

26 , 1 2

28.

26 , 1 2

29.

26 , 1 2

30.

1 4 , 25 29 ,

가  
invertedly)

( , )

(dot -

31.

1      4 , 25

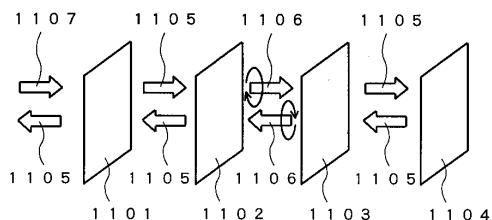
29

,

가

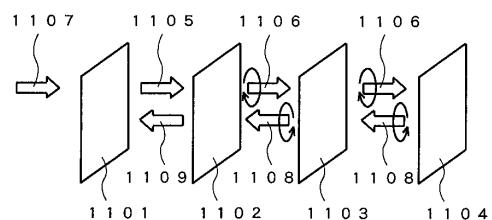
1a

(종래 기술)

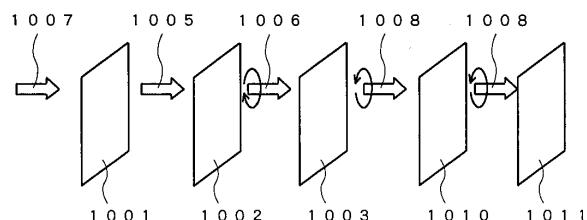


1b

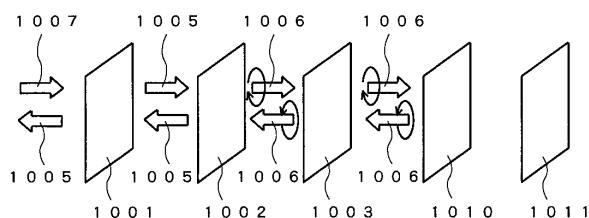
(종래 기술)



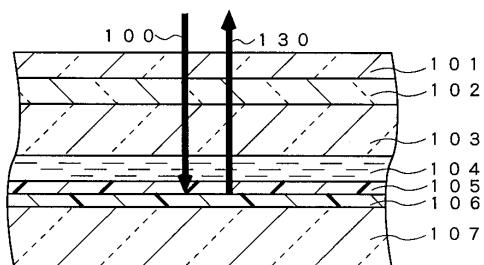
2a



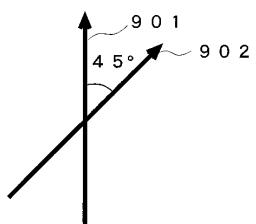
2b



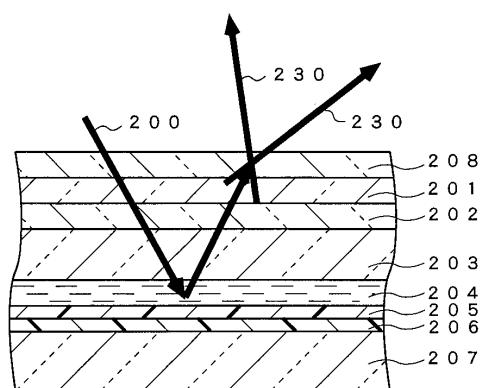
3



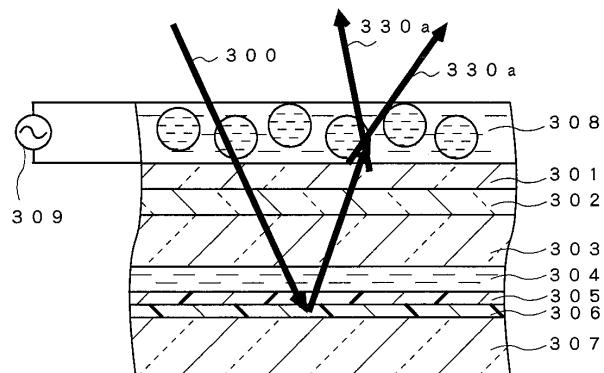
4



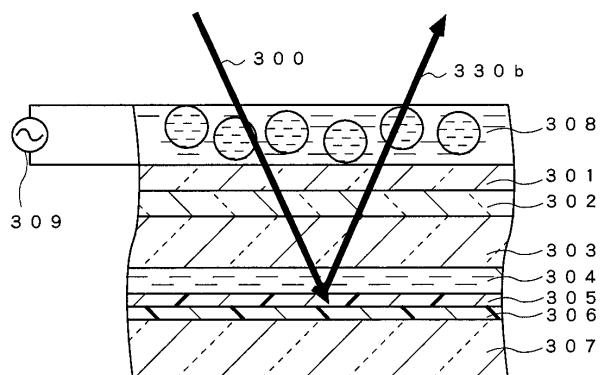
5



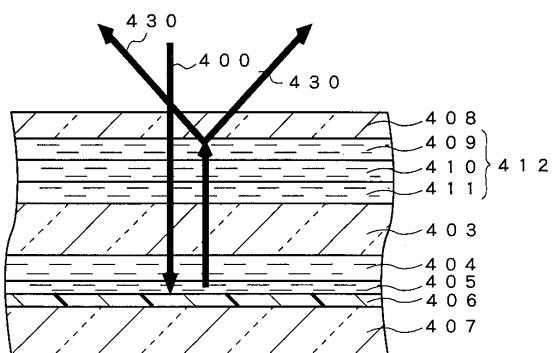
6a



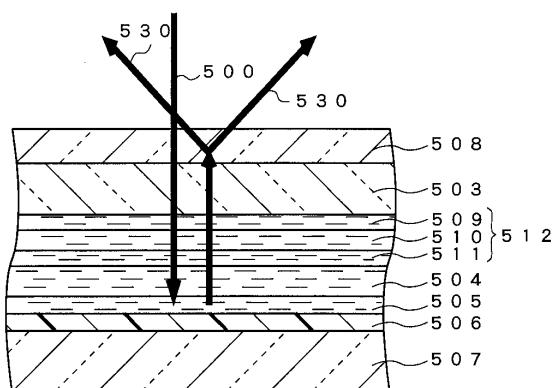
6b



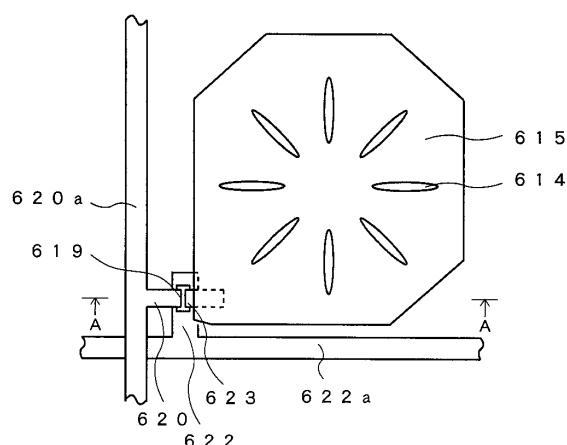
7



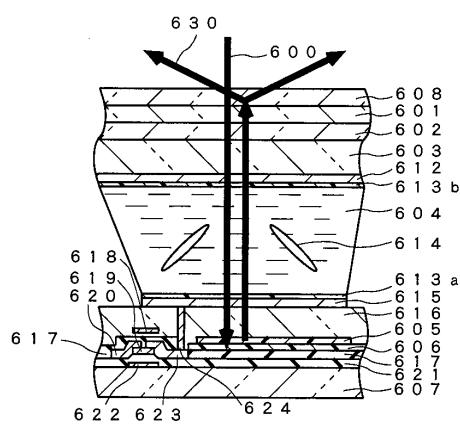
8



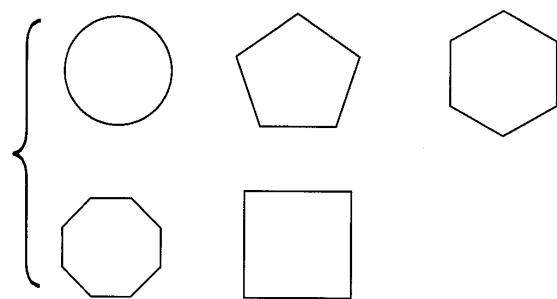
9a



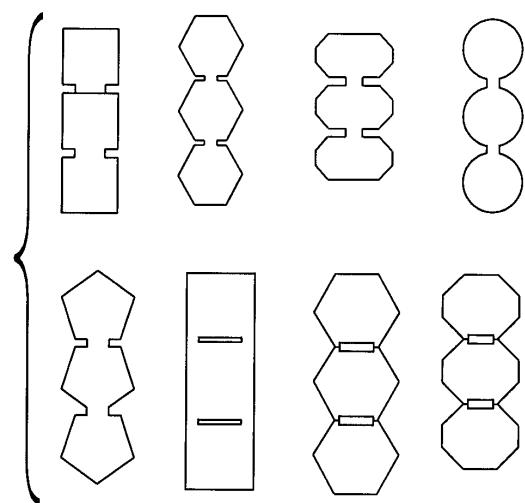
9b



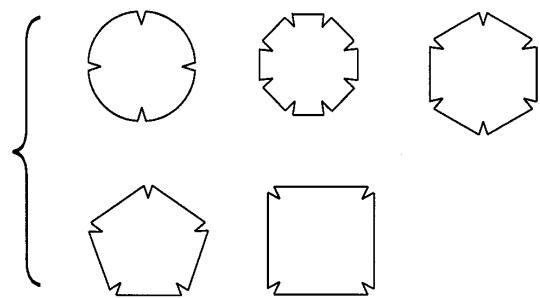
10a



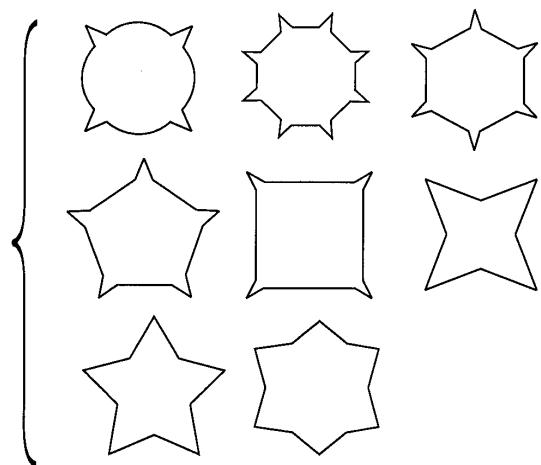
10b



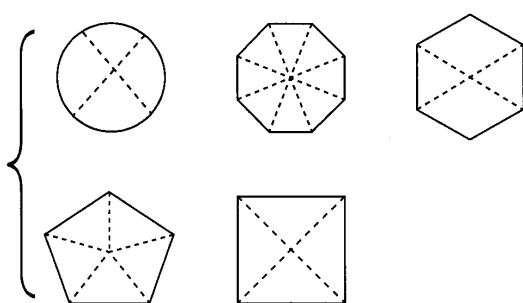
11a



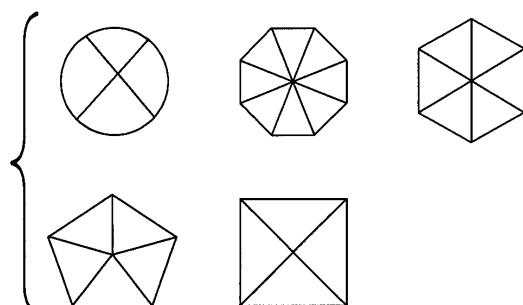
11b



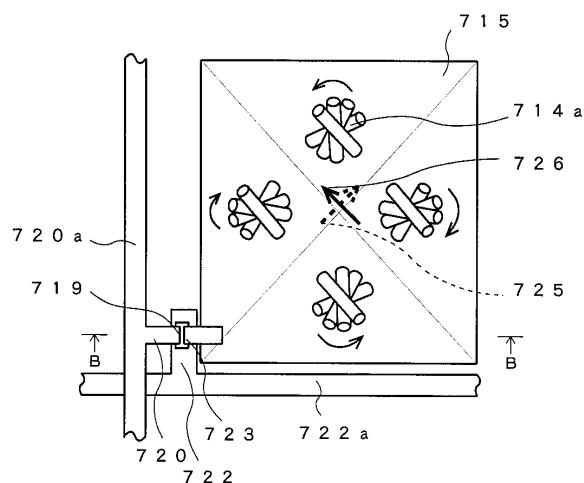
12a



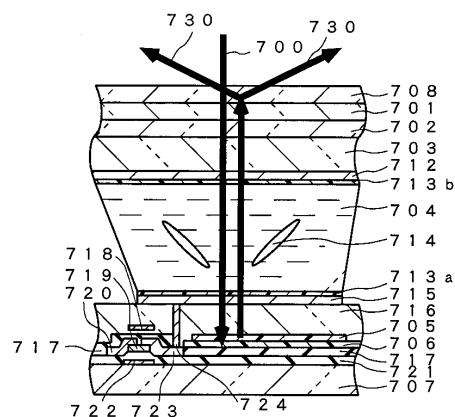
12b



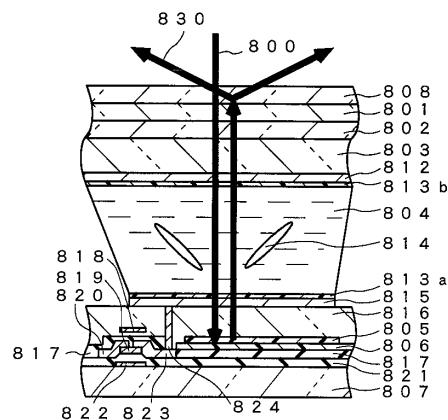
13a



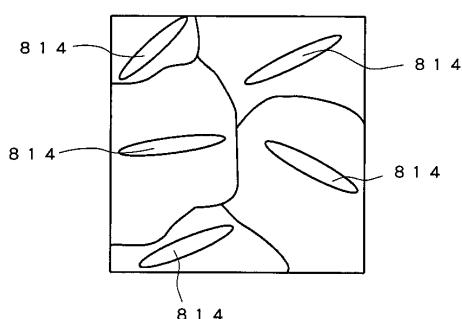
13b



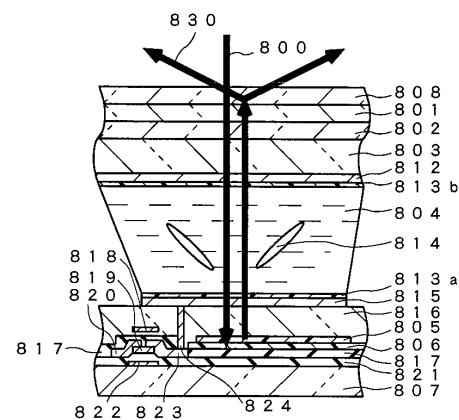
14a



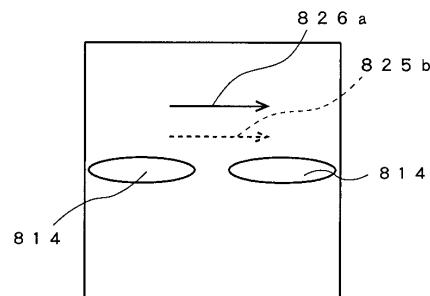
14b



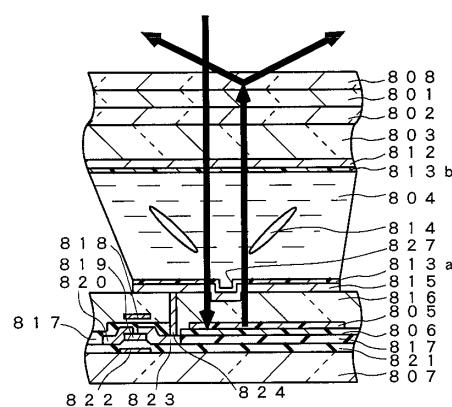
15a



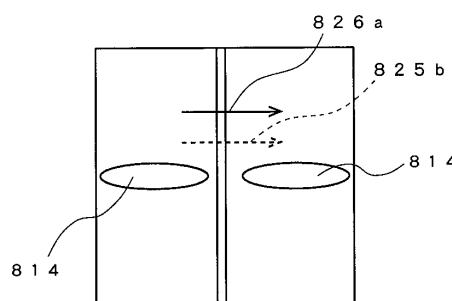
15b



16a



16b



专利名称(译)	反射型液晶显示器，其制造方法及其驱动方法		
公开(公告)号	<a href="#">KR1020020018088A</a>	公开(公告)日	2002-03-07
申请号	KR1020010052355	申请日	2001-08-29
[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	SUZUKI MASAYOSHI 스즈끼마사요시 SUZUKI TERUAKI 스즈끼데루아끼 ISHII TOSHIYA 이시이도시야		
发明人	스즈끼마사요시 스즈끼데루아끼 이시이도시야		
IPC分类号	G02F1/1335 G02F1/1334 G02F1/1347 G01R31/319 G02F1/1368 G02F1/13363 G02F1/136 G02F1/133		
CPC分类号	G01R31/31905		
代理人(译)	CHANG, SOO KIL		
优先权	2000259989 2000-08-29 JP		
其他公开文献	KR100475327B1		
外部链接	<a href="#">Espacenet</a>		

### 摘要(译)

本发明公开了一种反射型液晶显示器，该透明基板将液晶层置于该间隔中并面向第一基板并被布置并沿光入射方向布置在第一基板的前方。1/4波片布置在透明基板中。偏振片沿光入射方向布置在前侧的一侧。此外，由胆甾型材料和反射层组成的滤色器布置在第一基板的液晶单元的内侧。在宽视角的情况下，散射膜沿光入射方向布置在偏振板的前面。反射型液晶显示器，胆甾型材料，散射膜，1/4波片，保护膜，液晶分子。

