

(19)
(12)(KR)
(A)(51) 。 Int. Cl. ⁷
G02F 1/1337(11)
(43)2002 - 0047024
2002 06 21(21) 10 - 2001 - 0079700
(22) 2001 12 15(30) JP - P - 2000 - 0038 2000 12 15 (JP)
2684(71) 가 가
가 5 7 1(72) 5 7 1 가 가
 5 7 1 가 가
 5 7 1 가 가
 5 7 1 가 가
 5 7 1 가 가
 5 7 1 가 가

(74)

:

(54)

가 , .
, 1 , 2 , 1 , 2

2a

1a

2b 2a 가 .

2c 2g

3a 3i

10a 10b (B - B') , 가 가

10b 10a

$$11a \quad 11b \quad (D - D') \quad 3$$

| | | | | | |
|-----|-----|----------|-----|---|--------|
| 11b | 11a | . | . | . | . |
| 12a | 12b | (C - C') | , | | 4 |
| 12b | 12a | . | . | . | . |
| 13a | 13b | (D - D') | , | | 5 |
| 13b | 13a | . | . | . | . |
| 14 | | 1/4 | 1/2 | | (slow) |
| 15a | 15b | (E - E') | , | | 6 |
| 15b | 15a | . | . | . | . |

* * *

101, 201 : 102, 202 :

103, 203 : 104, 204 :

104a : 105 :

106 : 107, 207 :

108, 208 : 116 :

117 : 118 :

120 : 121 : 1/4

205: 214 :

215 :

가

2

가,

2947350 , , , 1 , 가 . , ,

wo 91/10936 (JP - T - 5 - 505247)
- - - (In - Plane - Switching; IPS)

Applied Physics, Vol 45, No.12 (1974) 5466
가

10 - 186351 , IPS

가

IPS

()

2 , 1 , 2 , 1 , 2 ,
가 , , , , ,

2

1

3

()

< 1 >

2a 7g , 1 2b (A - A') 2a

(; 102) 가 (101), 1 (ITO)
 . (103) (102) (rod)
 (122), 1/4 (121), (120) (101)
 , , (102) 2b , ,

(106) (107) (106) (106) , (106) (105)
 (106) (106) , (106) , (116) (104)
 (120) , , (107) (107) (122), 1/4 (121),

가 (102) , (108) (104) , (104) 가 (104) (119) (119)

(119) . . . (119)

, (119) , (102) , (119) , (119) 가 ,
, (119) 가 , (119) , (119) , (119) , (119)

2c (119) (104) . , ,
 (119) (104) . , (119)
 ,
 (104) 가 .
 2a , (104a) (104) ,
 (106)

104) 7a 7g , (104d) (104e) 偈 (104e) (104e)

4a 7g , (219)
 (119) , (219) 가
 , (219) (219) 가
 , , , 가

가 (retardation) 2 , , 1 , 2 , 2

, 가 , . 가

. 가

1/4 , 가 , 가 .
1/4 , 1/4 2 .

가 , 1/4 1/2

$$\begin{array}{ccccccc}
 & , & 2 & 1/4 & & 2 & \text{가} \\
 & 1/4 & & & & 2 & \\
 & & & 1/4 & & & \\
 (122) & (120) & & (101) & , & (122) & \\
 & & & & \text{가} & & \text{가} \\
 & & 2 & & 2 & & , \\
 & & & & & & \text{가} \\
 & & & & & & ,
 \end{array}$$

, 1/4 (120) (101), (108)
 . , ,
 . , 1/4
 45 1/4

(pre - tilt)

AM - LCD '96/IDW' Digest of Technical Papers, page 337

가

" 가

가

가

가

가

1

, 2 -

, 2 -
, 2 -

, N,N -

, 2 -

, N, N -

, 2,2,3,3,3 -

, 2,2,3,3 -

, 2,2,3,4,4,4 -

1

2 -

, 2 -

, 2 -

, N,N -

, 2 -
, N,N -

,

,

,

, 2,2,2 -

, 2,2,3,3 -

, 2,2,3,4,4,4 -

, 4 - 4' -

, 1,4 -

, 4,

1

(1)

(ITO)

(101,107)

ITO

(102,106)
(107)

, (116) (105) ITO 가 ,
 (104) (102) 가 5 μm ,
 . (Nissan Chemical Industries, Ltd. " SE1211" 가)
 (103,115) 1 200 가 ,

, X,Y

가

, 가 가 (108) , 0.096 (n) 가

가

, 1/4 45 , 1/4

(2)

(107) (105) (104) (104a)
 , 1 , ,
 (104a)

, 2

< 2 >

8a 8b , 2
 2b (A - A') , 8a
 가

(103) ; 102) 가 (101) (103) (102) (ITO)
 (103) (rubbing) , 가
 (1 °) 0 ° 가 , (102) (102)
 (106) (107) (106) (106) , (116) (105)
 (104)
 (103) (108)

$$4a) \quad (104) \quad (104) \quad , \quad (102) \quad (102) \quad . \quad (10)$$

8b , (101) (103) (117)
(110) (118) .
가 , , ,

2 가

(108) 가 . , (103)
 (104) . (104) 가 , 0° (102) . (102) (102) 가
 . (104) , (102) (104) (104) (104) 8a

1 , (119) . , 가

, 8b
, 8b
, 2)
(104) , 1)
(104) , 3)
(102) , 2)
(104)

, 가 , , , 가 , , ,

1
가 , , ,
1/4
(119)

, (104) 4a 4e
 (104a) 가 . , 5a 5h
 , (104) (104c) 가
 , (104c) (104d) 가
 (104) 6a 6g (104d) (104e) (104e)
 , (104e) (104e)

가 가

, 가 , . , ,

, 1/4 ,
2 1/4

9a (108) 가 , 가 . 9b , (1
 01) (117) , (110) 가 .
 (118) , , 가 .
 1° 0°

가 2 . , , 4
), () , , , , (

JALS - 428
0° 가
가 5μm
Sumitomo Chemical Co., Ltd " New - Vac"

< 3 >

$$10a \quad 10b \quad , \quad 3 \quad . \quad 10b \quad (B - B') \quad , \quad 10a$$

(214) (215) (201), (201)
 (202) . (203) (202) (203), . , (219)
 (202) , (202) (203) (203) . .

TFT (230) (207) Cr (209;) (2)
30) . (209) (210) . (212)
. (210) (209) . TFT (230)
. (211) (213) (212) (205)
. (211) (213) n ()
. (212)

(213) (204), (204) 가
, ON/OFF . , , (204)
(204) (204) 가
(204) 2c , , ,
가 (208) .

(208) . , , 가
(203)

(219) 가 1/4

, , , , , , , ,
8a 2 8b , , , 4 , , , ,

, TFT TN 가 . (,)

가
가
가

TFT (230)
(230), (209), , (210),
(212), - (211,213), (207)
(213) ITO (204)
(205)

ITO 가 가 5 μ m
(219) 가 3.7 μ m 가 (Nissan Chemical Industries, Ltd. " SE1211" 가)
(203) 1 200 가 ,
, , , , 0.096 (n)
가 (208)
가 .

, 1 , , , , , 1/4 , , , 45 , 가
1/4

(5)

TFT 4 , 6a 6g , (104d) |
TO . , . 4 |
.

(6)

TFT 4 . 11b , 11a 11b
 , (223) . ITO , ITO (204)
 . . ,
 4

(7)

TFT 4 . TFT 4 , , , - -

4 , ITO 가
가 5 μ m , 가 4.0 μ m 가 (Nissan Chemical Industries, Ltd. " SE1211"
가) (203) 1 200 가 ,
, 가 (208) 0.095
(n) 가 . 4 , ,
, , 가 , 1/4
45 , ,

◀ 4 ▶

12a 12b , 4
12a 12b (C - C')

1/4

1 3

가 , 1/4

가
가

가

(309a)

(311a)

(304)

(309a)

(311a)

(311a)

1

(304)

(304)

(309a)

(311a)

가

(311a)

1

(309a)

가

(311a)

(309a)

가

,

(309a)

(311a)

(304)

,

6a 6g

4a 4e

5a 5h

가 , 11a 11b

, 7a 7g

1

가

, 가

가 가

가

가

가

2

, 8a 8b

4

가 , 가 . , 가 (가)

가 , 가 , 가 , 가

4 1

, 4

(8)

| | | | |
|-----------|---|-----------|--------|
| TFT (330) | 4 | TFT (330) | 4 |
| , (309), | | (310), | (312), |
| (311 313) | | (307) | |
| (305) | | (304) | (305) |
| 04) (316) | | (313) | |

4 , ITO
(Nissan Chemical Industries, Ltd.)

1 200

" SE1211"

가

가)

(303)

가 (308)

가

1/4

1/4

(9)

(312) TFT

, 7a 7g

, TFT

4

8

가

1/4

1 3

가

,

5 , (404) (; 409a) (; 411a)

가

5 , (404) (414) (408) ,

(404) (414) (408) , (409a)
(411a), IPS
(414)

3 4

가 , 가 , 가 ,
2 , 8a 8b , 4 , , ,

5 1

, 5

(12)

4 (407) TFT (430) TFT (430)
(410), (412), (409), (411,413)
(412) (410), (411), (413),

(405) . . . (414) , , , ,
 , . . . (415) ,
 . . . , (415)

(417) ,
 (416) ,
 (413) 가 5 μ m ,
 (414) 가 3.5 μ m .
 (415) .
 (417) ,
 (404) ,
 (417)

, ITO 가 , , 4
 , (Nissan Chemical Industries, Ltd. " SE1211" 가) (403)
 . 1 200 가 ,
 . , 가 , , 가 (408)
 . 0.096 (n) 가
 . , , , , , 가
 1/4 45 1/4

(13)
5a 5b 11

(-14)

(414) (417) , TFT
 12 . 3 , , JSR " JALS - 428" , " ZL1
 4792" , 가 , . 3
 9

가 . . . 가 가

(15)

5a 5h 13

(16)

1/4 . , 5V 4 . , 5V 가 40ms
5V , 2.2 V 가 , 5V 가 가
가 , 5V 가 20ms . , 0V 2300 , 2.2V
가 . ,
130

2000

5V 가 , 5V 가 30ms
, 2.2 V 가 , 5V 가 , 5V 가
10ms . , 1/4 가 가

(17)

가 2 μm , (Nissan Chemical Industries, Ltd. " SE1211" 가)
12

b) 가 . . , 가 . . , 0.1669 (

가

, 1 16.7 ms 8.3 ms 가

(18)

1/2 4

14 , $\frac{1}{4}$ $\frac{1}{2}$
 (TFT) (601) ()
 (602)

$$\begin{aligned}
 & \left(\begin{array}{c} \quad) \\ (603) \end{array} \right) \quad 1/4 \quad , \quad (\text{TFT} \quad) \quad 1/2 \\
 & (\text{TFT} \quad) \quad 1/4 \quad . \quad (\text{TFT} \quad) \quad 1/2 \\
 & (603) \quad (\text{TFT} \quad) \quad (604) \quad (601) \quad 45
 \end{aligned}$$

가

< 6 >

(719)

(719) (702) (704) 5% . (719)
가 5% 가

(719) (702) (704) 10% 90%
가 10%, , 가 90%
100%

³ , (709) 가 , TFT , (7

04) (702) 가 . (704) , (702)
(704)
,
가 (708)

(19)

TFT

4

가 $5 \mu\text{m}$
, $3.7 \mu\text{m}$

SEM

가

가

3.7 μm

4

(57)

1.

1 ;

2 ;

1

2

2

가

2.

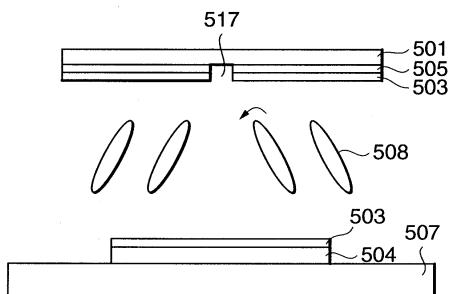
1 , 1 ,

3.

1

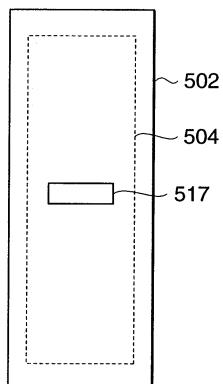
1a

종래 기술



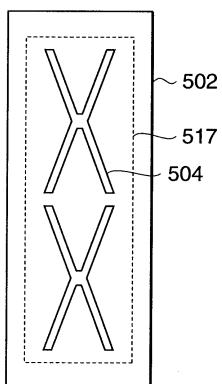
1b

종래 기술

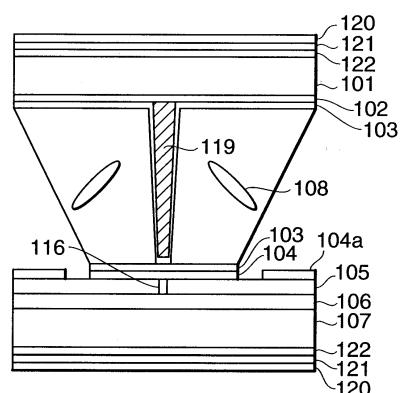


1c

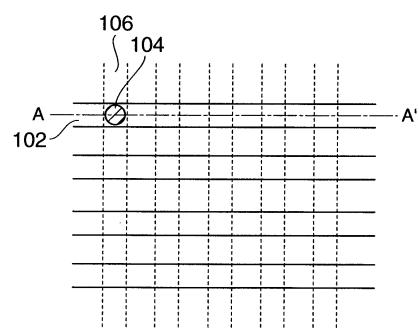
종래 기술

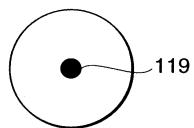
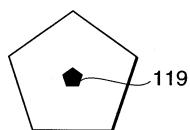
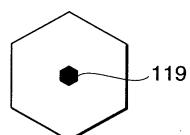
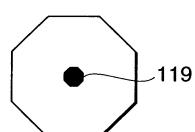
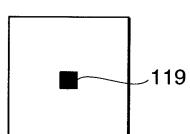


2a

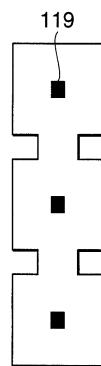


2b

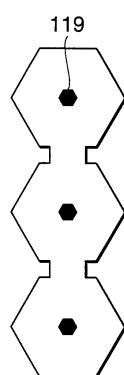


2c**2d****2e****2f****2g**

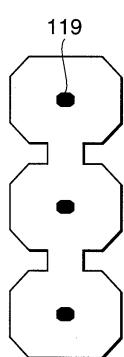
3a



3b



3c



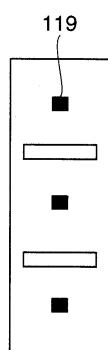
3d



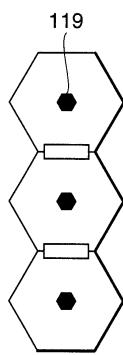
3e



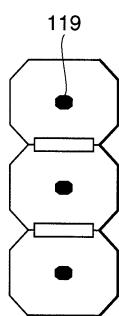
3f



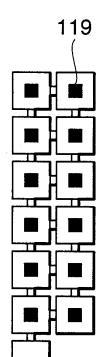
3g



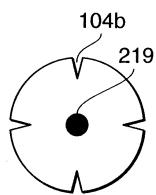
3h



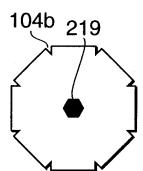
3i



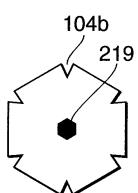
4a



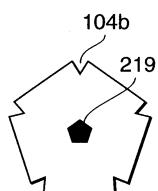
4b



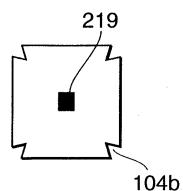
4c



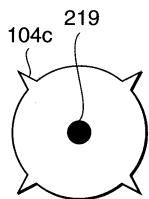
4d



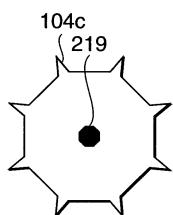
4e



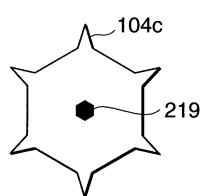
5a



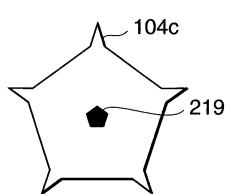
5b



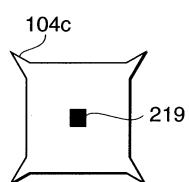
5c

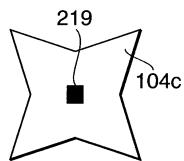
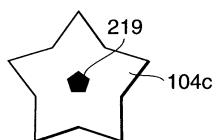
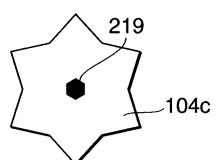
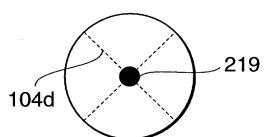
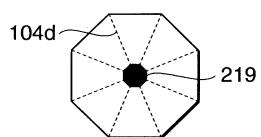
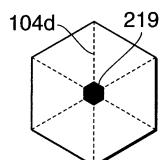


5d

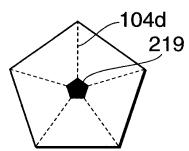


5e

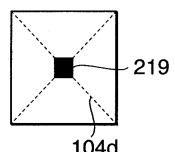


5f**5g****5h****6a****6b****6c**

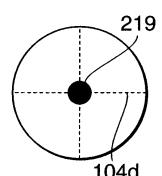
6d



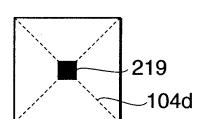
6e



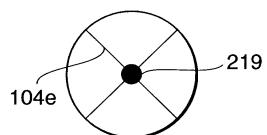
6f



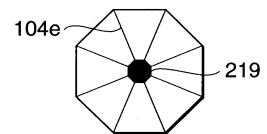
6g



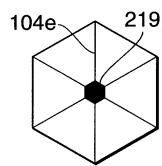
7a



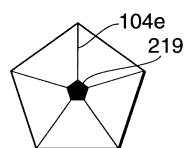
7b



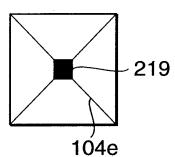
7c



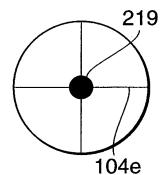
7d



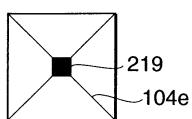
7e



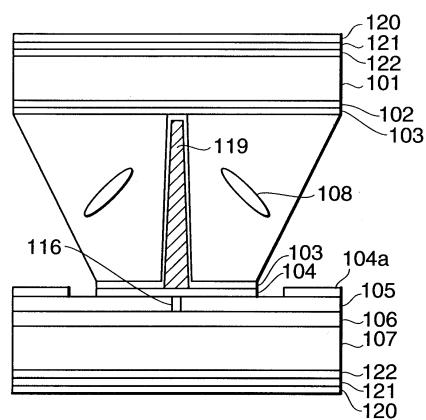
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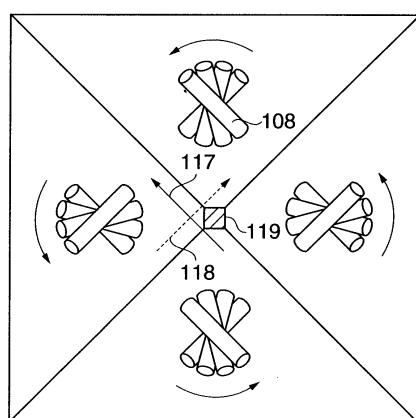
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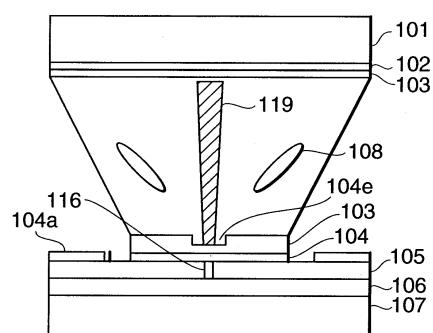
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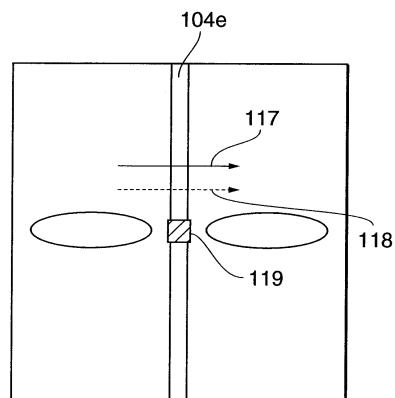
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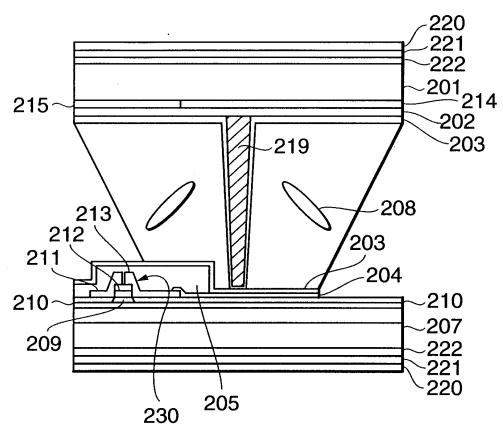
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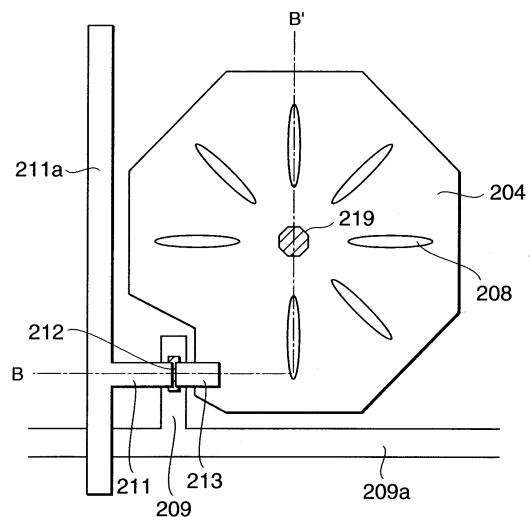
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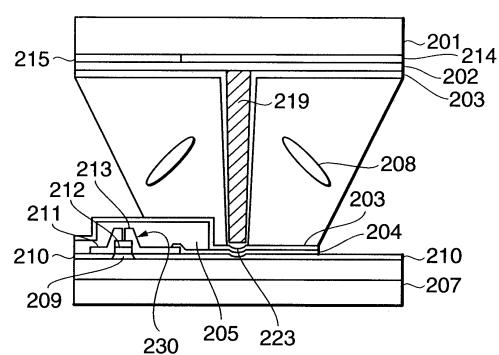
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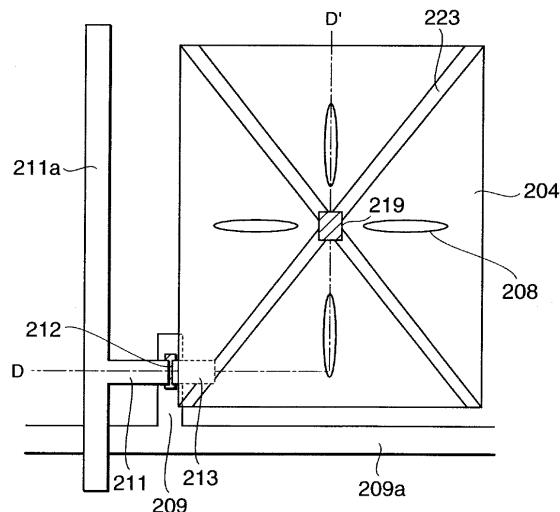
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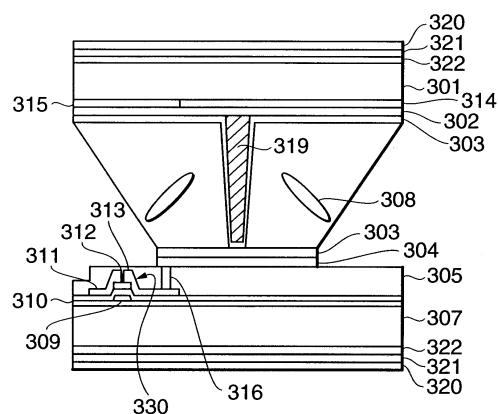
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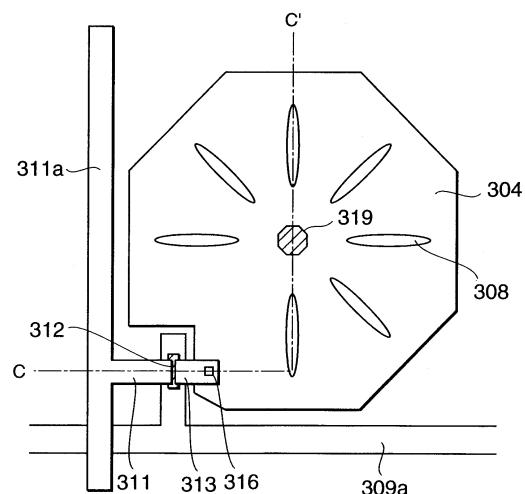
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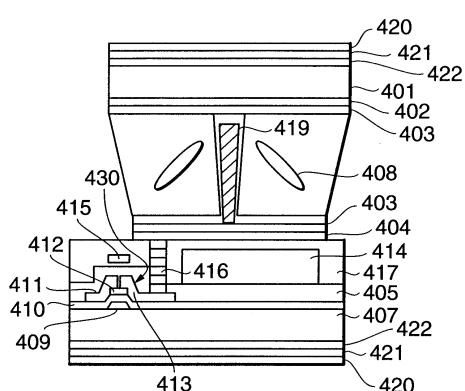
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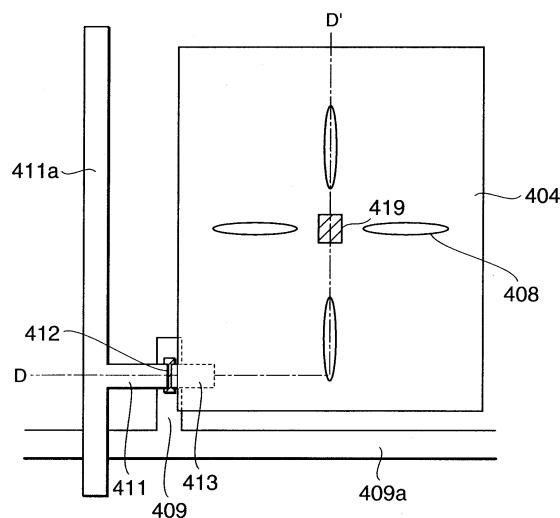
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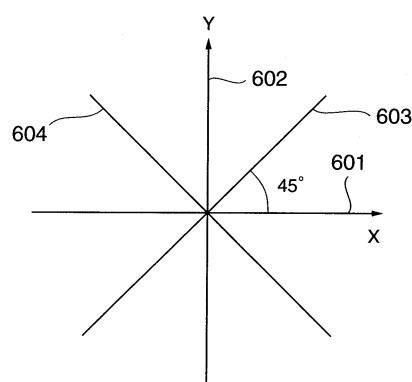
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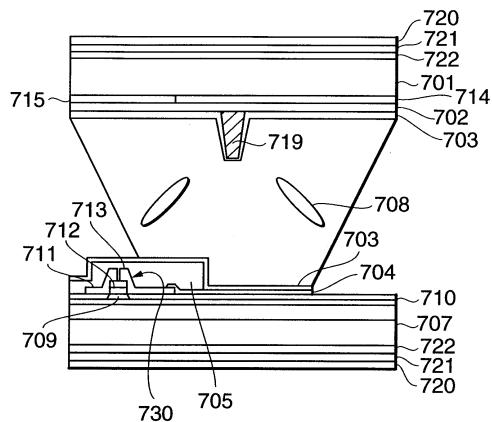
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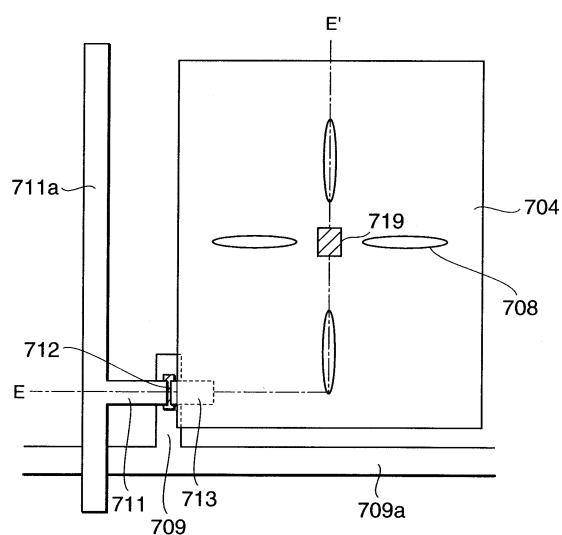
14



15a



15b



| | | | |
|----------------|--|---------|------------|
| 专利名称(译) | 液晶显示器 | | |
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| 申请号 | KR1020010079700 | 申请日 | 2001-12-15 |
| [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 ISHII TOSHIYA 이시이도시야 SUZUKI SEIJI 스즈끼세이지 MATSUYAMA HIROAKI 마쓰야마히로아끼 KAWADA KIYOMI 가와다기요미 HIRAI YOSHIHIKO 히라이요시히코 | | |
| 发明人 | 스즈끼마사요시 이시이도시야 스즈끼세이지 마쓰야마히로아끼 가와다기요미 히라이요시히코 | | |
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摘要(译)

本发明提供一种液晶显示装置，其在宽视角下具有高对比度并且抑制颜色劣化。液晶显示装置包括：第一基板，其上形成有多个像素电极；第二基板，其上形成有对电极；以及液晶层，夹在第一基板和第二基板之间，在其上进一步设置多个突起，并且每个突起位于相应的一个像素电极的基本中心部分。

- 1 - 图2a 指数方面 液晶显示器，扭曲向列液晶，垂直取向，水平取向，像素电极，公共电极，凸起，间隔物，偏振片，半波片，四分之一波片，

