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10-2004-0051483
2004 06 18

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(22) 2003 08 19

(30) JP-P-2002-00360283 2002 12 12 (JP)

(71) 가 가
3300

(72) 가 1-19-4-103

가
5-28-7

3-7

1225-11

(74)

:

(54)

(800) (100), (200), (300)
(600) (700) (500) , (500)

1
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1

7

가

9 B-B

가

1 1

1

1

1

1

23

23

28	27	C-C		
29	27		23	C-C
30				1
31				
32				1
33		OLED		
34		OLED		

1 :

2 :

3 :

4 :

7 :

8 :

20, 20R, 20G, 20B :

21 : ()

22 : ()

23 :

24 :

100 :

200 :

300 :

500 :

600, 601, 602 :

700 :

800 :

900 :

950 :

, , ,
 , OLED(Organic Light-Emitting Diode))
 , OLED) . OLED ()
 가 , . OLED , ,
 33 OLED , OLED , (40
 0) (200), (103), (102), (101), (200) ()
 300) 가 , (200) ()
 (300) 가 가 (101) , (103) , ,
) (1000) , 33 (102) , - , (400
 , 가
) ((1000)
) (20% , , OLED ,
 「 1」 「 2」 , OL
 ED가 , , , , ,
 [1]
 2001-332388
 [2]
 2001-507503

34 OLED . 34 , (100)
 (300)) , , (1000) , , ()
 , 가 , , , ,
 , 34 , OLED

OLED

OLED

()

,가

가

(,)

가

가

1

1

2

3 , 2

(20R),
3 가

2 A-A
(20G),

가 (20B)

(20R, 20G, 20B)
가

(800)
(300)

(300)

(300)

(500)

가 (500) (800)

(300)

(200)

(500)
(100)

(200) (300) () () ,
 (100) 3 , , 1
 , 2 , , .

0) (200) , (500) (700) 가 (70
 , (500), (600) , (100)
 (500) , 가 가 (900) (800)

(900) , 가 ,
 (900) (600) (950)
 (600) (900) (600) (100) ,
 000) , (900) (900) (1
) (900) , (1000)

(950) 가 , (900) (800) , 가
 , (950) (600) (900)가
 900) , (950) 1 μ m , (900)가
 , (950) 1 μ m .

00) H2 (25) H1 , (300) (6
 (700) (700) (100) (600) (600)
 (700)

(500) (900)가 , (900) H1>H2가 (600)
 (900)가 , (600) (900) ,

3 0) (300) 가 , (20
 , , 가 , ,
 (300) (200) (100) (600) (600)
 (600) (950) (,) (2000)
 , (950), (900;)

, (600) , (600) (600)
 (700) (600) , (800) (600)
 , (800) , (2001) (600) , (700)
 , (700) , (600)

,)가 () , 1 2 (600) (600) ()
 25)가 , , (500) ()

(600) (700) 가 , (600) (300) , (300) 100%가 , (600) (300) 가 , (600) (300) 가 , 1μm

2 , (600) () H2 W (H2/W)>(H2/H) 가 H가 , OLED

1) 가 H2/W=0.1 , (25) () (600) 4 W(2) (600) H2(OLED (0° 4)) = 23° 30° 가 = 45° 가 = 60°

50° 가 20° 30° 가 가 가 45° 가 가 (定性的) (定量的)

(200) (600) (200) 5 6 (600) 5 1, 2 n1, (600) sin 1/sin 2=n2/n1 가 (600) n1 2 n2 (600) n1 n2 2 1 , n1>n2 1 n1<n2 L2 가 L1 L2 (600) (600) (700) (300) 가 가 , n1>n2 (200) (600) (600) , n1<n2 , n1>n2 (600) (300) (600) (300) (700) (200) 1.8 2.2 (300) ()

1.3 1.7

(2) (7) (8) (1) (800) (2) (3)가 (3, 4) P

N TFT(Thin Film Transistor) (4)가 (9)

(1) 가 (800) 8 (20)가

G1, G2, ..., Gm D1, D2, ..., Dn (24) (23) (23) N TFT (21) (23) (24) OLED N

TFT (9) (22) (24) OLED (24) OLED Va (24)

(21) (21)가 (23) (21)가 가 (22) 가

(22) (24) (23) (23) (22)

가 (23) (22)

9 10, 1 2 9 10

9 B-B (800) (30) (30) (30)

(24) (300) (26) (300) (30)

(31)

-Li (300) 가 Al, Mg, Mg-Ag Al

Li (Li₂O, LiF) Al-Li

(500) (31) (300) (500)가

(500) (31) 가

(500) (300) (300) (100) (200) 가 (300) (

200) (300) (200) (200) (500)

(500) (500) (500)

μm (700) (600) 가 (500) (800)

(500)

(500) (100) (200) (300) (2)

IT0(Indium Tin Oxide)가 , IZO(Indium Zinc Oxide)

(200) (100) (200) (300)

2 3 1

-4, 4'-) , -NPD(N, N'- (-)-N, N'- 1, 1'- -4, 4'-), TPD(N, N'- (3-)1, 1'-)
 (-6-(p-)-4H-) Alq3((8-)) DCM-1(4-()-2-

TPD , -NPD, ()
 Alq3 , Beq

(2,2-)) , BCzVBi(4,4'- (2-) TPD , -NPD, DPVBi(4,4'-)
 3 () Zn(oxz)2(2-(0-)- Alq

PEDT/PSS(Polyethylene dioxy thiophene Polystyrene sulphonate) PPV(poly(p-phenylene vinylen)
 (101) 가 PPV F8(Poly(dioctylfluorene))
 , F8 (100) PVK()
 +nm

(100)

(S.Miyaguchi, etal.: 'Organic LED Fullcolor Passive-matrix Display', Journal of the SID, 7, 3, pp221-226(1999)) (500)

(100) (T.Shimada, etal.: 'Multicolor Pixel Patterning of Light-Emitting Polymers by Ink-Jet Printing', SID, 99 DIGEST, 37 6(1999)) (500)

(200) (500) (700)

(700) (700) 가 가 가

가 (OLED) 가 가 가

(700) 가 가 가

(700) 가 (600)

(600) (200) 가 (600)

(600) (700) (700)

(600)

가 (600) 가 (600) H2가 H1

(600) (950) (900) 가 (900) (500) (900)가 (600) (800)

(950) (950) (2) 가 (900) (800) (2) 가 (900) (800)

(1) 8, 11 12 11 G1, G2, ..., Gm
 가 VG1, VG2, ..., VGm 12 1 1
 VG1 2, ..., Gm VD1, (23) (21) VG1 11 G1, G
 1 G1 (21) VG1 가 t=t₀
 가 G1 (21) 가 VG1 t=t₀+Tf Tf
 가 , Tf/m 가 , 1/60 가 , 1

가 D1, D2, ..., Dn 1 1 가 VG1 VD1,
 (23) t=t₀+Tf 12 d2 t=t₀ , VG1 VD1
 (22) 가 () , 가 Va()
 가 가 (2)
 가 1μs
 가 ()
 가 ()
 가 (800) 가
 가

가

, TFT

1 13 16 13 (a) 13
 (,) (890) (800) , A1,
 Mg, Mg-Ag , Al-Li (300) (310) (300) (300) (3
 10) (310) , 13 (b) (300) (800)
 (300) (800) 가

13 (c)), (510) (510) (810) , 가
 13 (d) (500)가 (가
 가 가 가 가
 가 가 가
 가 (cinnamic acid)

가 (JSR)가 PC403 700rpm
 3.5 μ m 가

, 가 , 14 (500)가
 가 가 가 30° 60°
 가 60° 3 μ m 가 20° 3.5 μ m
) 3 4 μ m HD8010XF2(
 (810) 가

μ m

, CVD (Chemical Vapor Deposition)



(500)

15 (500) (300) 15 (500) (100) (500)
 (100) (820) (a) (500) (820)
 (830) (500) 15 (b)
 (200) ITO, IZO
 (15 (c)) (100)
 가 (200) (100)
 가 (800)
 가 10nm
 16 (500) 16 (a) , Al
 (850) (500) (700) 16 (b)
 , 가 (200) (700)
 600) 16(16 (c)) (700) ((

(600)
 가 , 가
 (600) ITO IZO 1 (600)
 AI CF₄ 가
 가 가
 가 가
 1 (500) (900) (600) (900)
 (950) (800) (950) (900) 가 , 가
 (800) (900) (800) (950) (900) , 가

가 가

00) H3가 (500) H4가 3 (500) 17 (700) (6 (700)

(600) ,

가 가 (700) (600)

(600) 18 19 (600) 가 18 (

(600) (190) 가, (2100) (

2100) 690) 3, 4 3> 4 가 ,

(300) 가 가 ,

19 (2100) (190) 가, (2100)

(690) 3, 4 (2100) 3< 4 가

가

가

1 가 (500) 20 (600) 가 (500)

(700) (600) (200) , CF 4 가

AI ()

가 () 가 , 가

가 10nm 가 300nm 가 가

(700) (200)

가 가 (500) (600)

1 가 가 , 가 (500) 21 , 20 , 가
 , (600)
 (800) (900) 가 (500) (9
 00) (800) (900) , (800) (900)
 , 1 (900) , (600) 가 (, 가
)(650) . 가
 , CVD , 가 , 가 , 가 , 가
 , 가 , 가 , 가 가
 가 . 가 , 가 , 가 가
 , 1 (100) , (100), (200), (600) (700) 1 (300) (500) ,
 24 25 , 24 25 23
 , (890) (800) , Al, Mg, Mg-Ag ,
 13 Al-Li 가 (300), (500) 24 (a) ,
 (300) 가 (800) (700) (300) (500) (70
 0) (700) (300) , (500) (70
 , 15 가 , (100) (100) (700) 가 ,
 (100) (700) 24 (b) (200) (100) (700) 가 ,
 , 24 (c) (200) ,
 a) 가 ITO, IZO , 가 (210) . 가 (210) 25 (
 , 가 (210) , 가 , 가 (210) ,
 , 300nm 가 , 10nm , 가 ,
 , 25 (b) (870) 가 (210) (500) , (500)

(300) (500) , 3 , 6

30 1

23 (700) 30 (350)

가 (350)

31 ,가 27

(550)

가 30 가

32 1

1

, OLED (CCM: Color Changing Mediums) (, CC

M) . CCM 3 (Vol.54, No8, pp1115 1120).

가 CCM 32 (500)

1 (601), (602), 2 (603) 1

2 (601) (200) 1 (601)

1 (601) (200) (100) (200) (602)

. ITO IZO

2 (602)

가 (1000) (602)

(1000)

가 (603)

(950) (900)

가 (1000)

1, 2

3 4. ,

3 5. ,

가

3 6. ,

3 7. ,

가

가

3 8. ,

가

가

3 9. ,
가

9 10. ,

9 11. ,

9 12. ,

9 13. ,

가 가 ,

4 14. ,

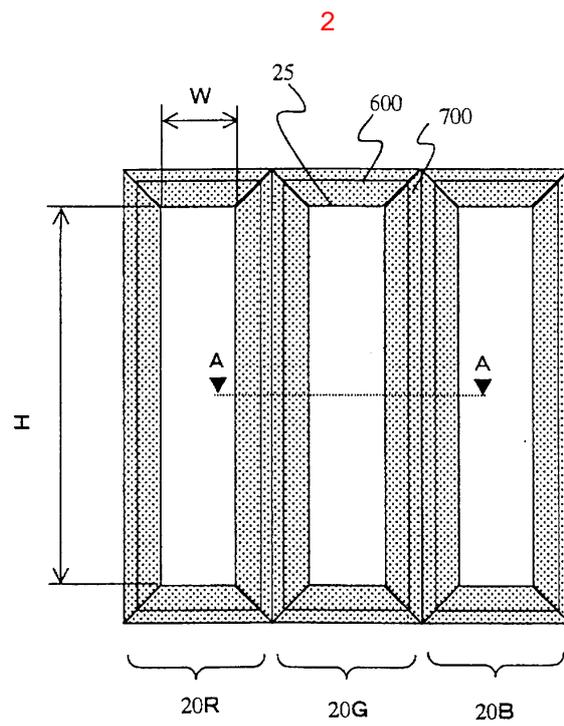
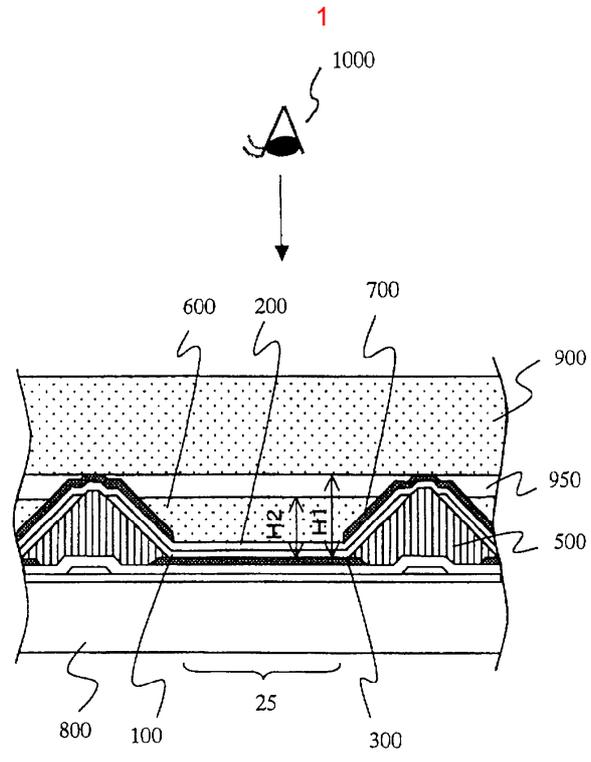
14 15. ,

9 16. ,

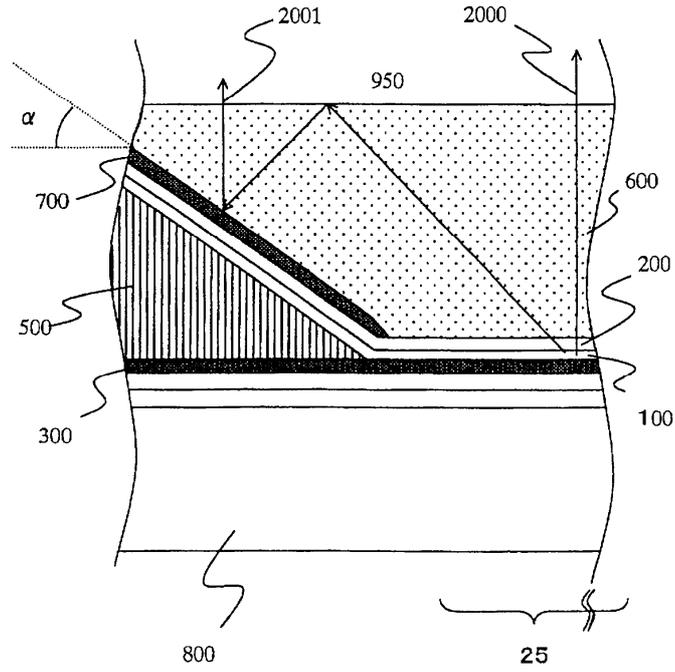
가 가

9 17. ,

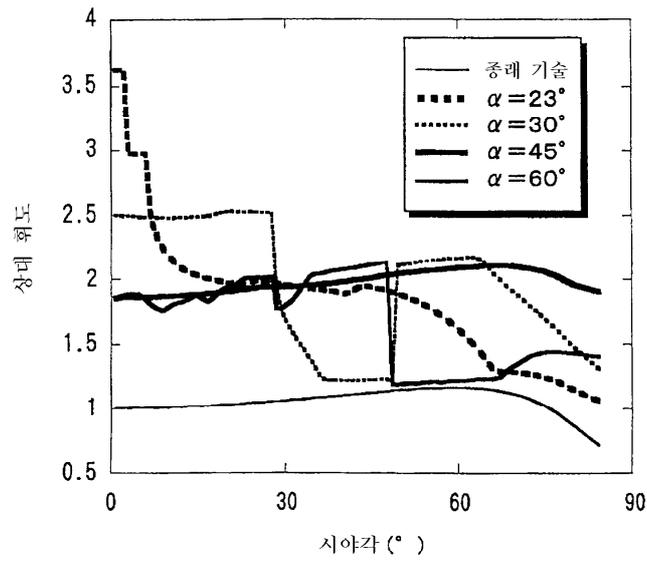
8 18. ,



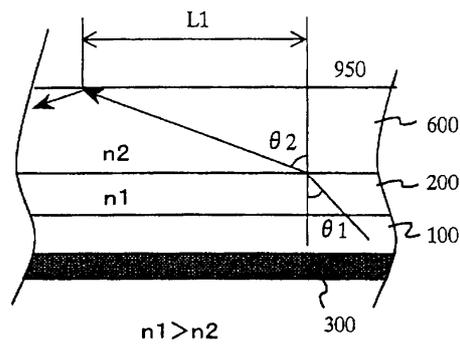
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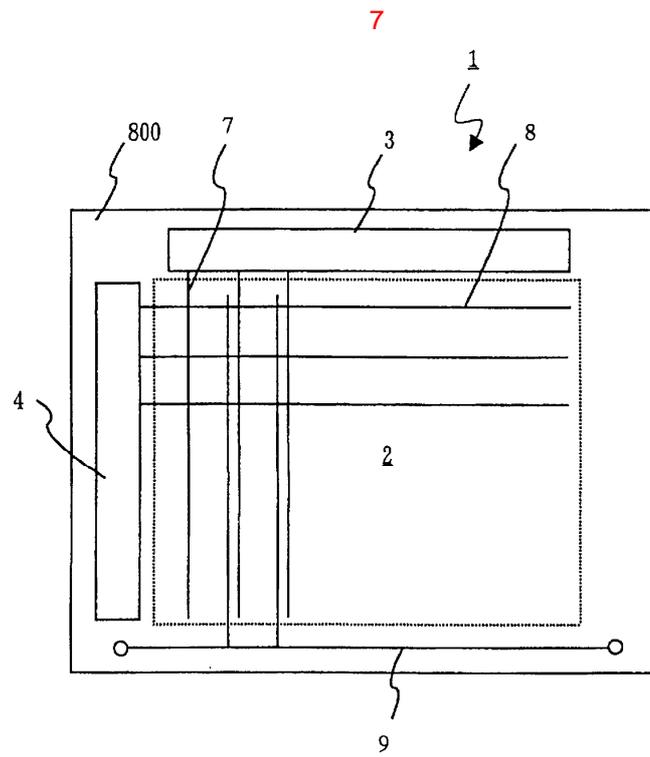
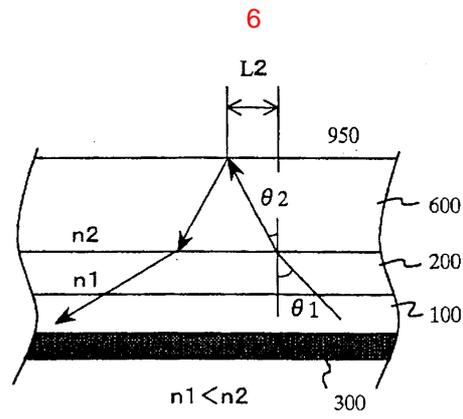


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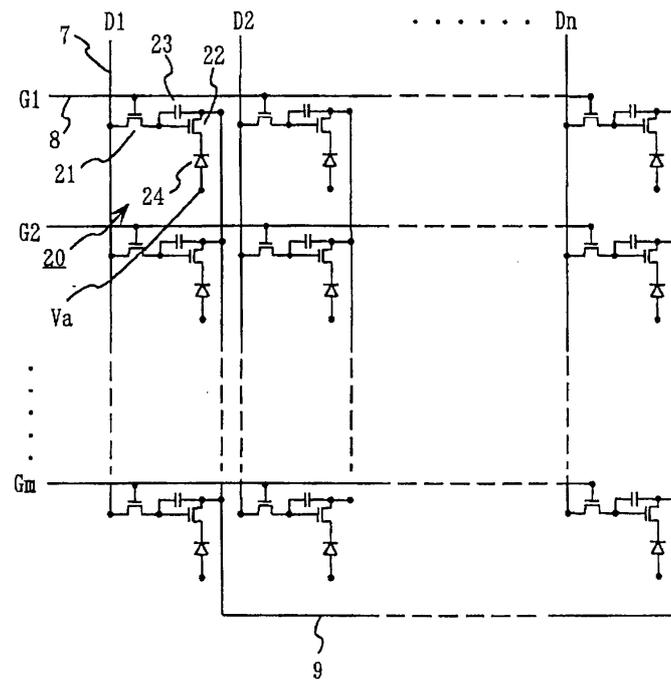


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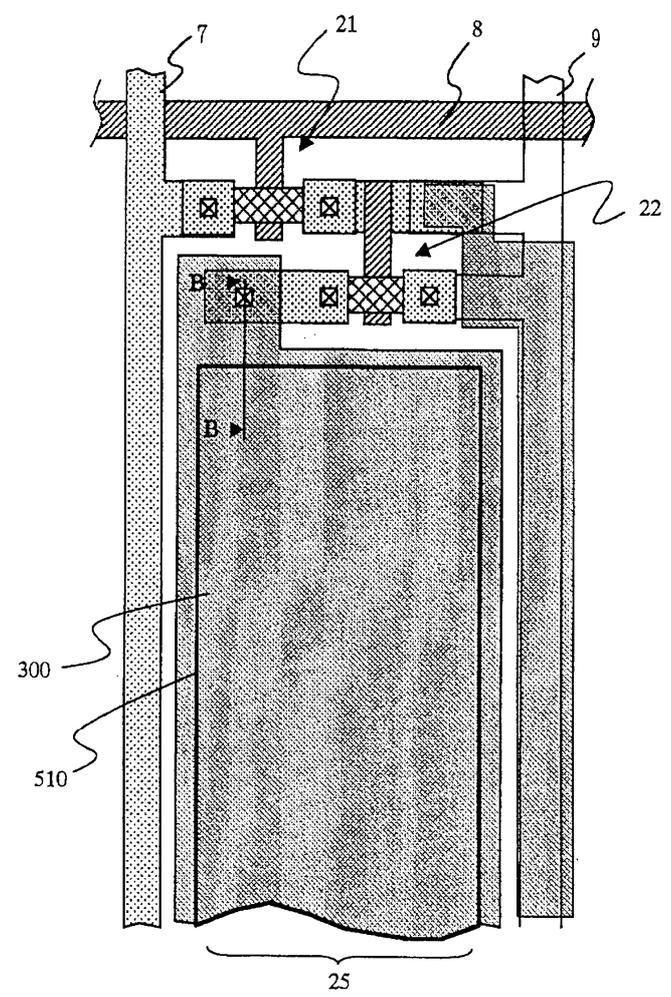




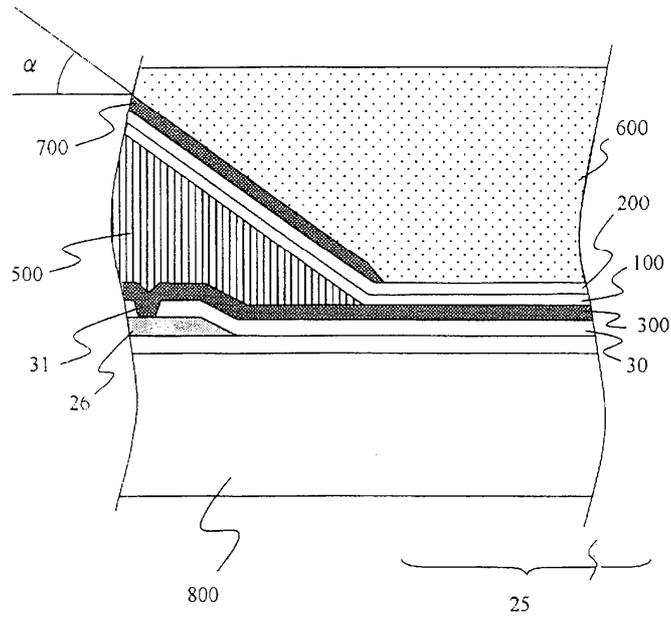
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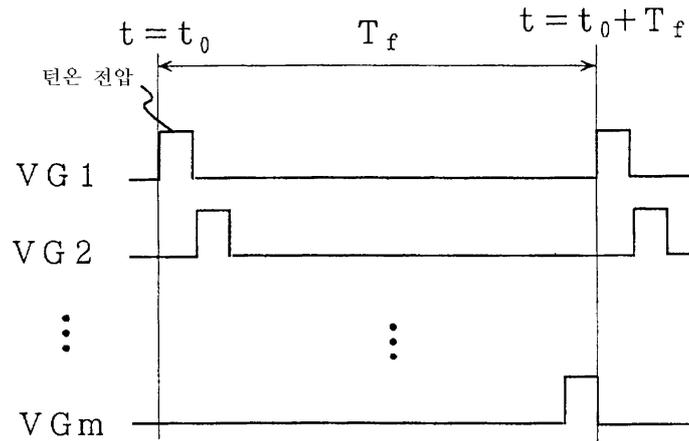
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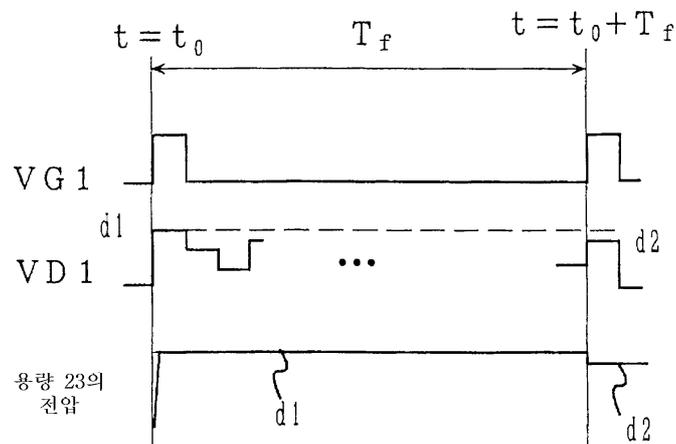
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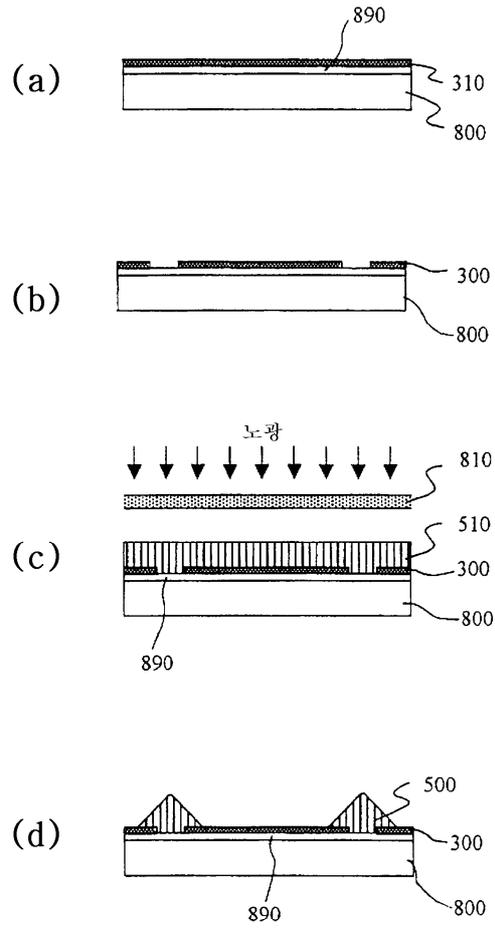
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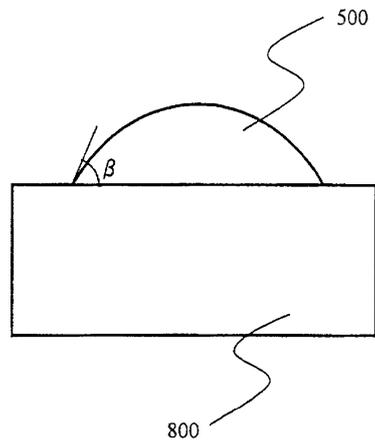
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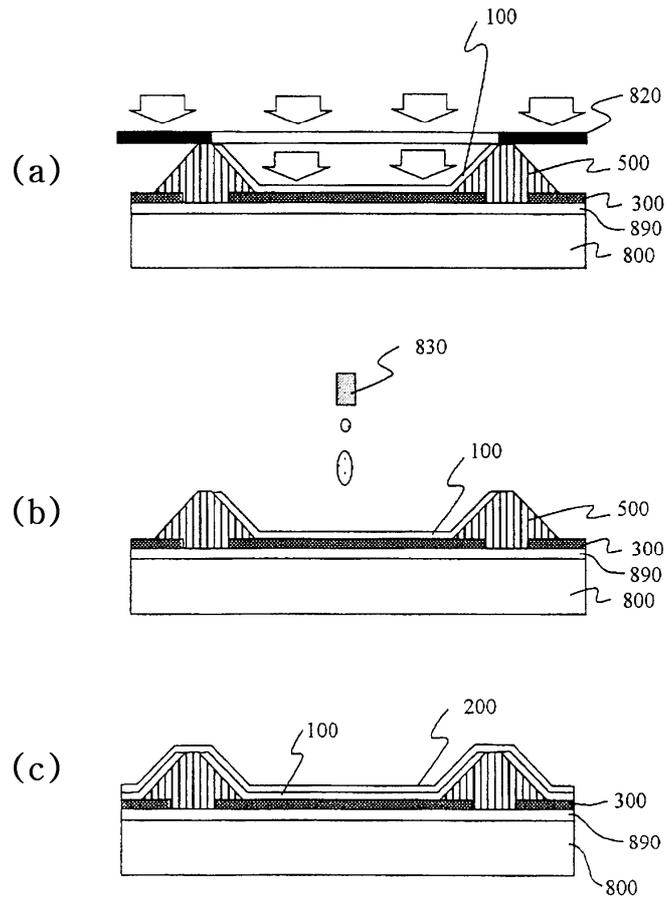
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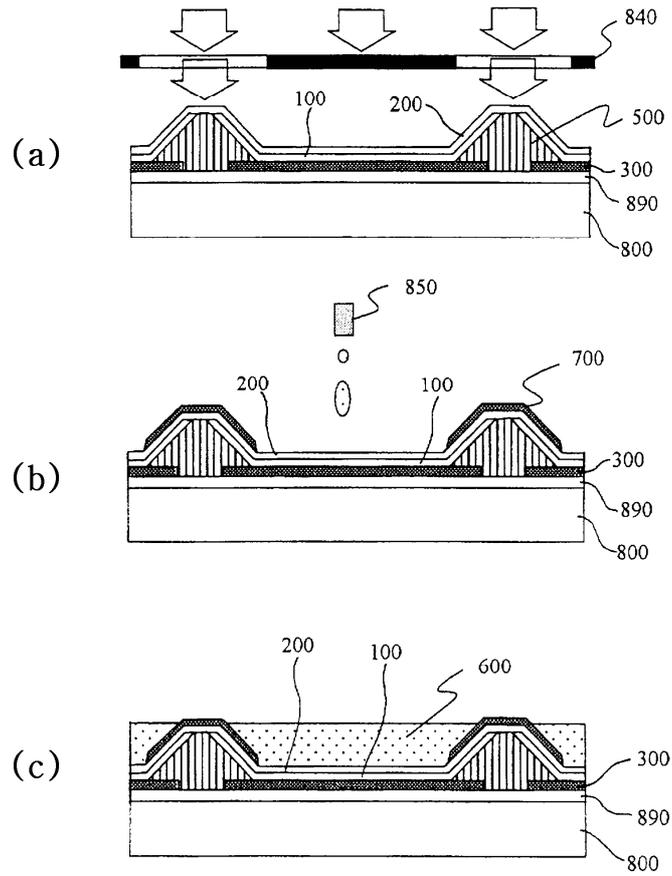
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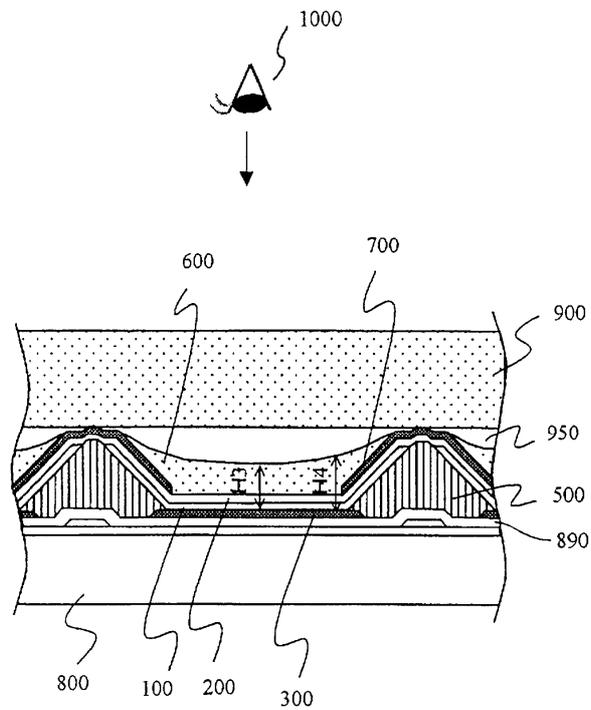
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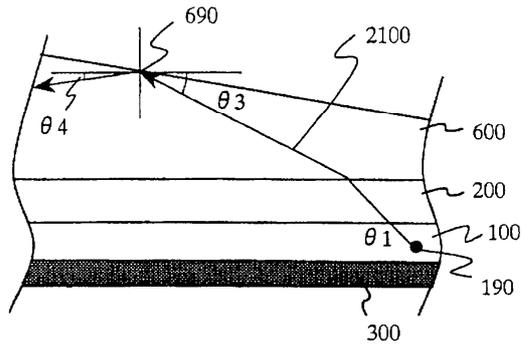
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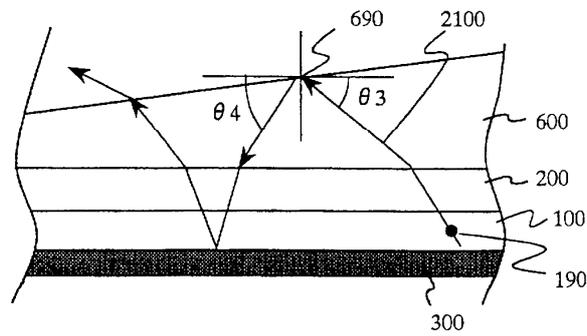
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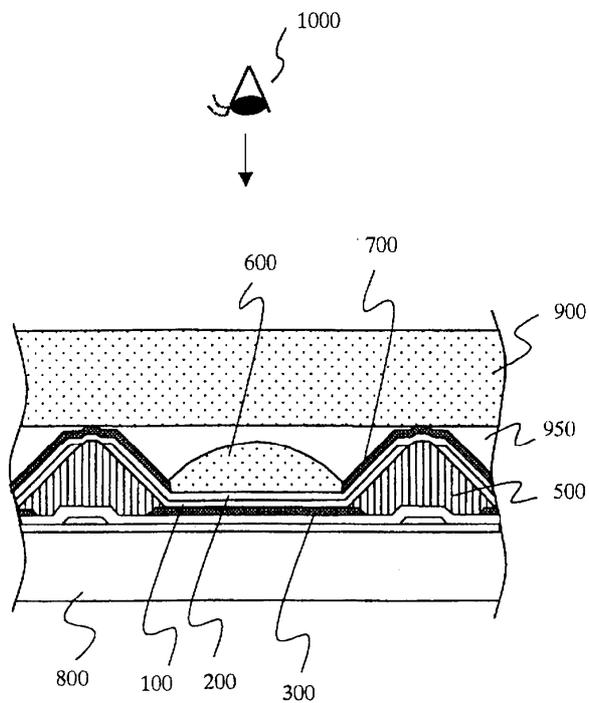
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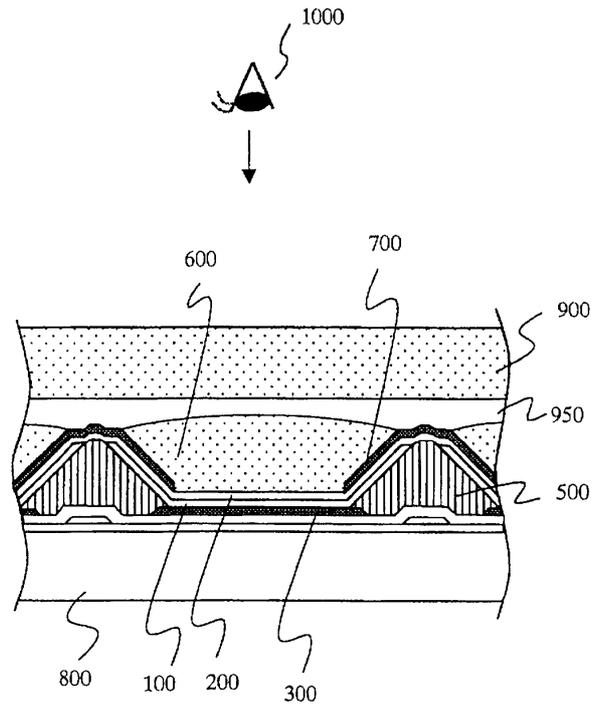
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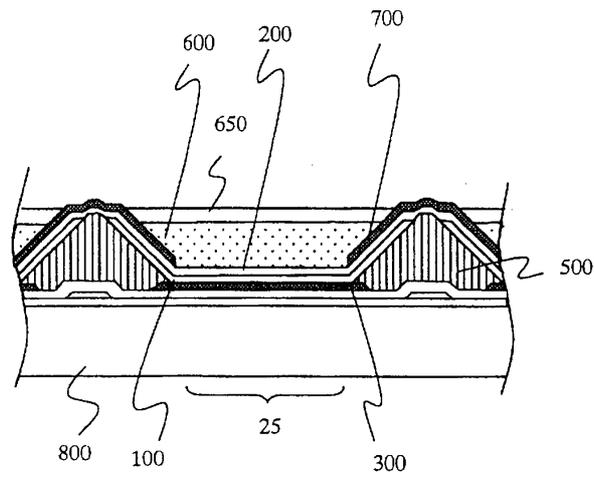
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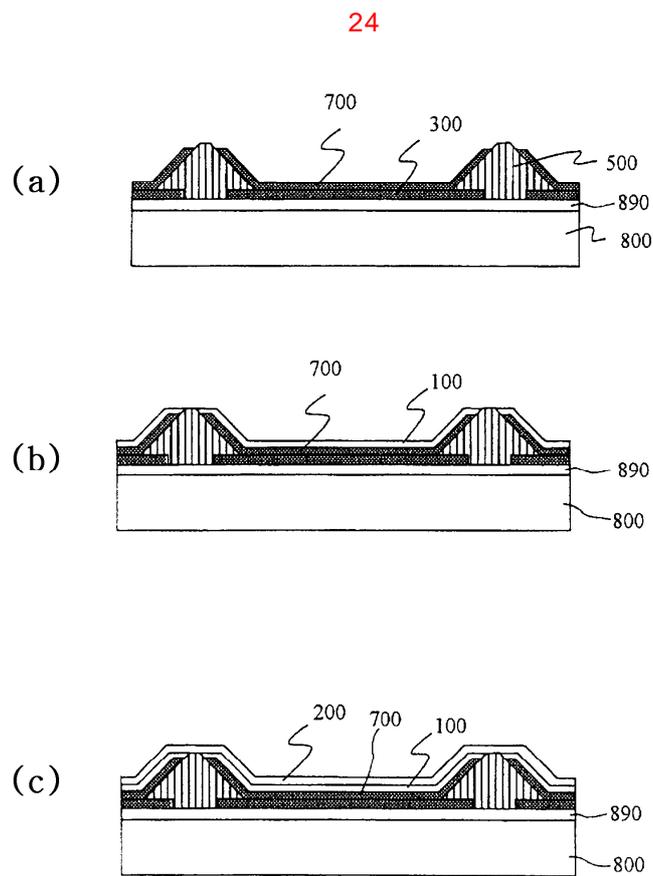
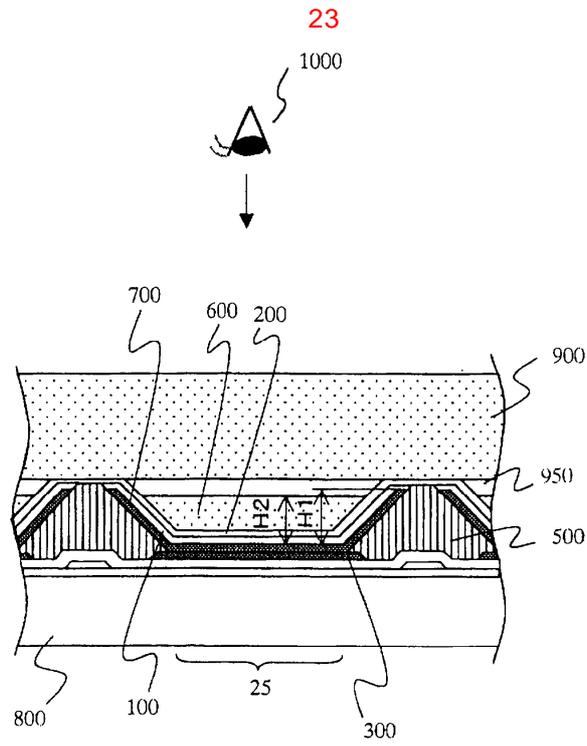


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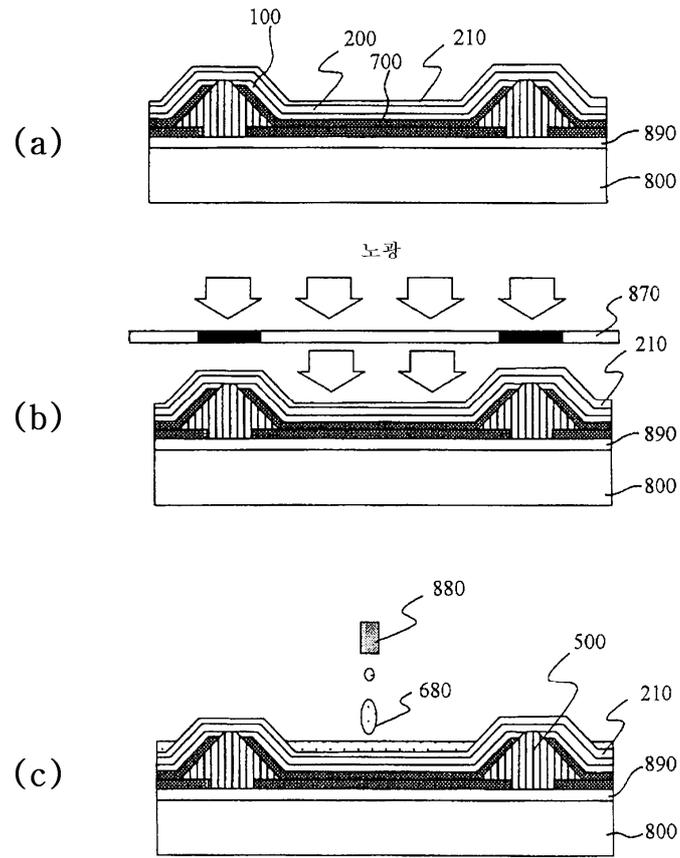


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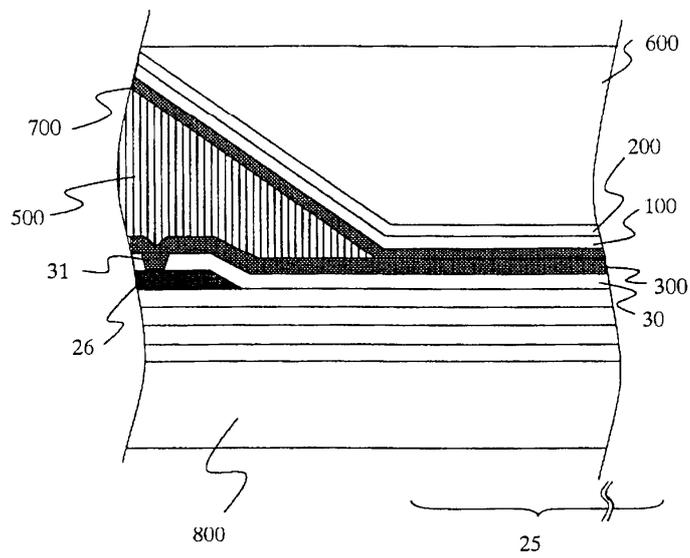


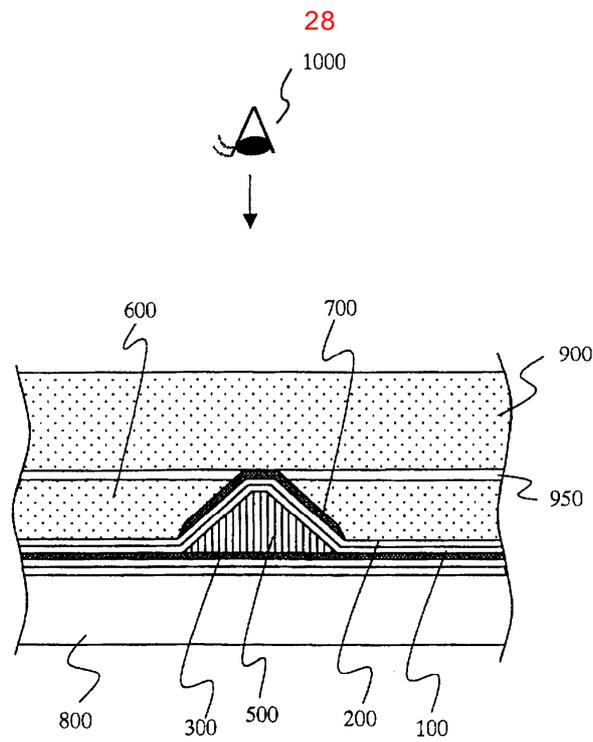
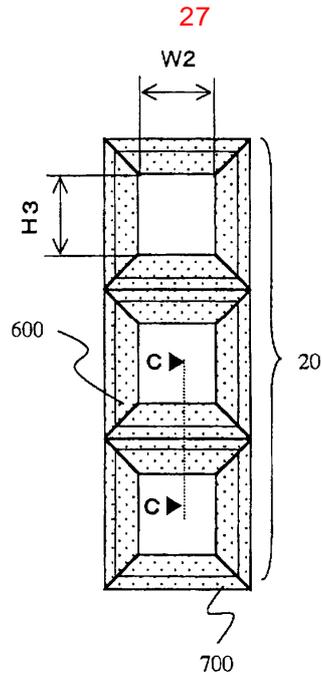


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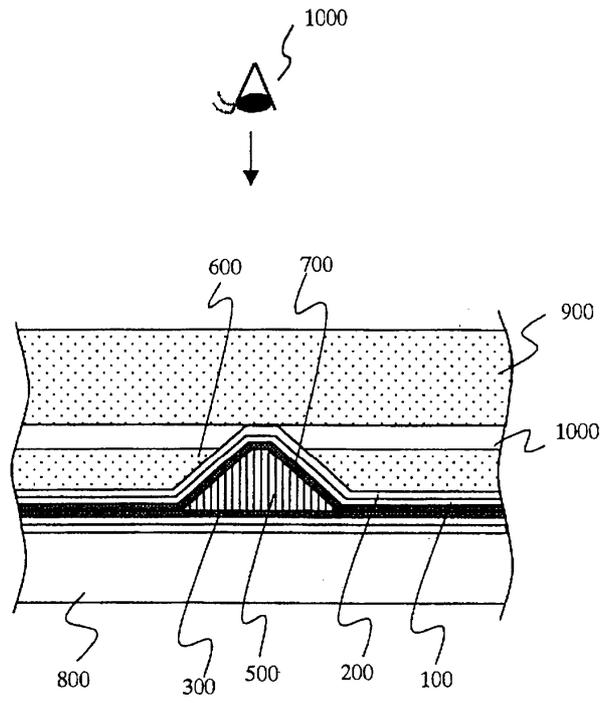


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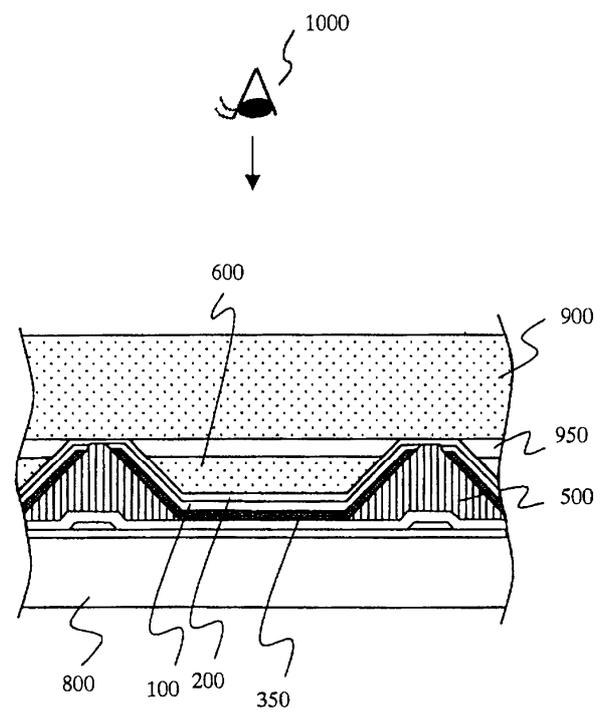




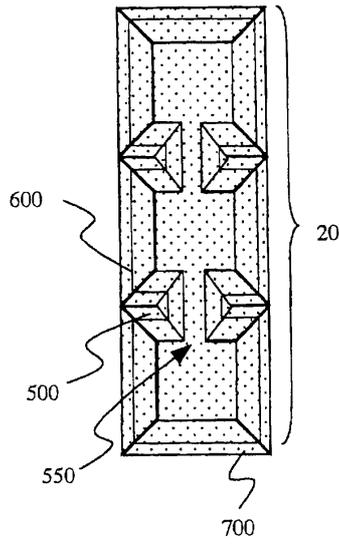
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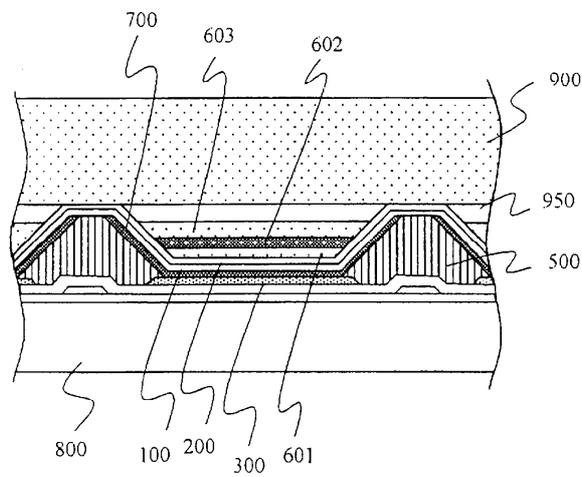
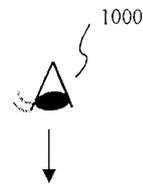
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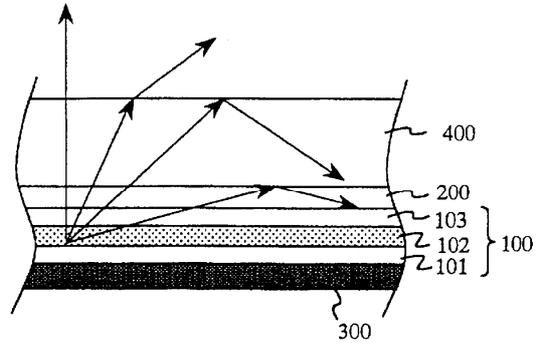
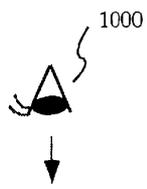
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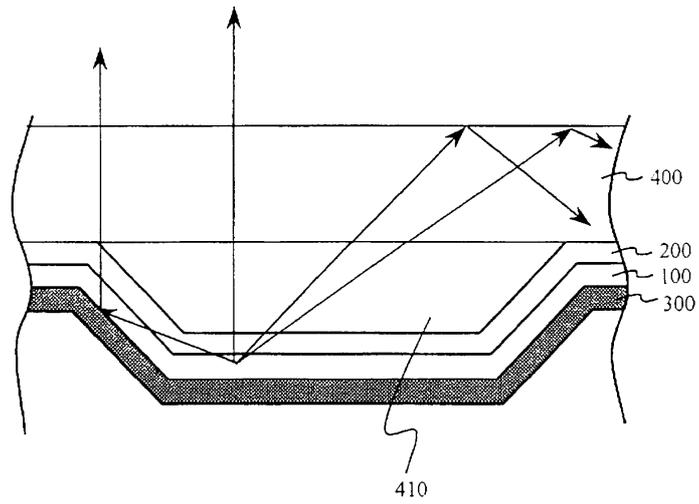
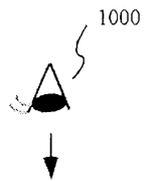
32



33



34



专利名称(译)	发光器件和使用其的显示器件		
公开(公告)号	KR1020040051483A	公开(公告)日	2004-06-18
申请号	KR1020030057101	申请日	2003-08-19
[标]申请(专利权)人(译)	株式会社日本显示器		
申请(专利权)人(译)	株式会社日本排气量		
当前申请(专利权)人(译)	株式会社日本排气量		
[标]发明人	ADACHI MASAYA 아다찌마사야 TSUJI KAZUTAKA 쯔지가즈따까 MURAKAMI HAJIME 무라까미하지메 NISHIMURA ETSUKO 니시무라에쯔꼬		
发明人	아다찌마사야 쯔지가즈따까 무라까미하지메 니시무라에쯔꼬		
IPC分类号	H05B33/02 H05B33/22 H01L27/32 H05B33/26 H01L51/52 H05B33/12 H05B33/04		
CPC分类号	H01L27/3248 H01L51/5221 H01L51/5271 H05B33/04 H01L27/322 H01L51/5281 H05B33/22 H01L27/3246 H05B33/14 H01L2251/5315 H01L51/5237 H01L51/5206 H05B33/02 H01L27/3295 H01L27/3211 H01L27/3258 H01L27/3262 H01L27/3265 H01L51/5203 H01L51/5234 H01L51/524 H01L51/5246 H01L51/525 H01L51/5262 H01L51/5275 H01L2251/5353		
代理人(译)	CHANG, SOO KIL LEE, JUNG HEE		
优先权	2002360283 2002-12-12 JP		
其他公开文献	KR100944311B1		
外部链接	Espacenet		

摘要(译)

发光显示设备，可显示高光提取效率且无光学串扰或显示模糊的高质量图像。具有倾斜反射表面700以围绕发光区域的突起设置在具有有机膜100的像素，透明电极200和形成在基板800上的基板800上的反射电极300之间如图500所示，透明波导层600形成在由突起500围绕的区域中，处于对于每个像素光学分离的状态。1 指数方面 透明电极，反射电极，自发光型显示装置，波导层，发光层，

