

(19)
(12)(KR)
(A)(51) 。 Int. Cl. ⁷
H05B 33/10(11)
(43)2002 - 0082127
2002 10 30(21) 10 - 2002 - 0021479
(22) 2002 04 19

(30) 09/839,885 2001 04 20 (US)

(71) 343

(72) 14534 16
14472 9
14580 1245
14580 716
14559 9

(74)

:

(54)

1 (OLED)

2 (OLED)

3 2 3-3 2

4 2 4-4 2 (LEL)

5 N () 4

6 2 LEL 가 가

6a 6b 가

6a (oblique angle)

6b

7a 7d 가

6 가

7a 1 1

7b 가 1

1

7c 2 가 2 1

7d 2 가

1

8 6 가 가 2 (chill roller)

9 가 가 6

- 10 가 가 , 6 ,
- 11 가 , 가 6 ,
- 12a 12c ,
- 11 ,
- 12a ,
- 12b 2 ,
- 12c n , 가 ,
- 13 11 가 6 (,)
- 14 , , 11 ,
- 15 ,
- 14 ,
- 16 3 ,
- 17 2 LEL , 가 (dopant) , 가 .

- 10 : 11 :
- 12, 16 : 13 : -
- 14 : 14a :
- 14f : 14v :
- 15 : - 100 :
- 110 : 130, 140, 150, 160 :
- 140C : 140H :

144 : 145 : 가

170 : 200 : -

220 : 230, 630 :

240, 640 : 400 :

420 : 422 :

490 : 492 : 가

590 : 594 :

592, 596, 692 : 690 :

700 : 720 :

(organic light - emitting device)

1 2 2

(passive)

(ITO; indium - tin - oxide)

(anode),

 10^{-3} Torr
$$2 \quad . \quad (\quad)$$

가 () () ()
(pixel) (-) , .

(active)
(TFT)

1 . 2

5,550,066

2

29 , 4,539,507 , 4,720,432 , 4,769,292 , 4,356,4

(dark defect) (bright defect)

가

가 2 (crystal mass - sensor device) (quartz crystal) - 가

(mass - loading) 가 가 " 가

, 500 2,000 (nm) 가

, 가 가 가

" "

가

가

,

,

,

가

1

,

2

1

,

1

,

1

,

,

,

1

3

.

(OLED)

가

-

,

가 50

500

,

.

,

가

.

(substrate)"

,

OLED

1 ()

(precursor)

.

(structure)"

,

.

1

,

(OLED)

(10)

.

-

(11)

1

(12)(

,

)

.

(HTL)(13),

(LEL)(14)

-

(ETL)(15)

.

2 (16)(,)

- (15)

1 (12)

.

(1

8)

, OLED(10)

.

2

,

(100)

,

(100)

(102)

(104)

()

.

(107)

(106) (102, 104) ,

.

(1

08)

(100)

.

 10^{-3} Torr 10^{-6} Torr

.

,

(110) ,

-

(HTL)

(130) ,

(LEL)

(140) ,

-

(ETL)

(150) ,

2

(

160) , (102) (170) (104) (180) .
 (103) , (105) (104) (,) .
 (102, 104) - () .

3 2 3-3 (110) (110) (110)
 C) (110H) . 1 (12)(1) (11)
 (111)가 . (111)
 . , (111) (103) (170) .

4 , 2 4-4 LEL (140) .
 (140H) (140C) . (11) (141) .
 , (11) ,
 1 (12) , 1 - (13) , - 2 (13)
 0) . (144) (142) , (144) (14a)
 (14b) . (144) (245, 247) (240) (244,
 246) 가 (145) 가 .

가 , (14a) ,
 (14v)() .

- (200) (11) ,
 (14f) .

216) . (200) (220) (200) (210) (220) ((14f)
 - (220) (220) (222) . (224) (232)
 - , (14f) (220) (222) (224) (232)
 (230) (226)
 (234) (236) (240) .

, (14v) 가 , (14f)
 . (220) (222) , (240) (245,
 247) (144) 가 (145) , , (14)(1)
 . , (200) ,
 (144) 가 , () .

(144) 4 ,

. . (R.G. Spahn) 2000 3 3 09/518,600

5 (14) N - 4 - (200)
 . [N 가 (14)
 - , (220)
 . , (220) N
 , .

6 , (140C) (140H) 2 (140)
 . (144) , (14v) , (141)
 (11) 4 (140)
 가 가 (400) (420) , (427)
 (140H) 가 (421) , (420)
 (421) (425) (425)
 . (425) (indexed stepper motor)
 .

(420) (14v) . (shield)(429) ,
 (14v)
 (422) , (14f) (11) [2 (130)(HTL) (11) 1 (12)(
 1) - (13)] (422) 7a 7b, 8
 (420) (14f) . (422)
 10 2 ()
 가 .

(420) . , , ,
 .

, , (420)
 (14f) (420)
 . (420)
 7a 7d (420) (14f)
 7d . (429) 7a
 .

(690) , (14f) (11) (14)(1)
 (422)가 가
 (422) () () , (690)
 (425)가 () (420)
 () , (692)
 (690) (14f) [(420) 가
] (14f) (14v)
 . (690) (14f)
 [(690) 가
 (14f) (422)가 t₁ , (14f - 1) (420)
 (7a) . (14f - 1) 가 (692) 7b , 6
 (692) .

(14f - 1) (690) (422) t_1 (420) () .
 (636) 가 (690) (694) , (634) (640)
 . (632) (630) (626)
 , (14v) (644, 646) (645, 647) 가 (144) 가 (145)
 (690)

ter) (690) (interferome
 otometer) . , (690) (spectroph

, (420) 3 , (14f - 1) (592, 596)
 . , (420) (14f - 2) , (422) 7c
 t_2 , t_2 t_1

) , (,
) , [14f - 1(14f - 2)] " .
 (activating radiation)" , - ,
 가 , ,

, 0.2 % 2.0 %
 (hue shift)

6 (144) ,
 (14a) . (J. Shi) 2000 5 19
 09/547,949 .

17 .

[(14f - 1, 14f - 2), (14f)]
 , (590) 7c (420)
 (14f - 1) (592) - .

2 (596) [14f - 1(14f - 2)] ,
 (594) , (594)
 (photomultiplier) , ,
 CCD CMOS .
 , - ,
 . 6 , ,
 . (420)가 (UV) 가 , 2
 , 가 ,

가 EP 1036828 A
 1 , (De Freitas) Proc. SPIE - Int Soc. Opt. Eng.(200
 0) 4076 152 161
 (590) (594) (spectrofluorimeter)
 , (420) , (14f - 1) 7d (490) 가
 (492) (420) (144)
 (14v)
 가
 가 (492)가 - () (140H)
 (140H) (140C)
 가 (492) (490)
 , 가 (492) -
 (14f - 1, 14f - 2) , (640)
 , (420)
 (14)(1) (11)
 (144) (가 (140C)
) ,
 , (14)(1) 20nm 200nm 가 .
 (, 가)
 1nm 10nm , (14) 가
 100nm , 2.5nm/ (420) ,
 40 , (144)
 6a 6 (140H) . (420)
 (14f) . 1 (420 - 1)() 1

(420 - 1) (14f)(- 7c) -
 (592A) , (14f)
 (596A) , (592A, 596A)

가 (492), (692) (422) 6

6b 6 (140H) , (420)
 (690)

1 (420 - 1) (692 - 1)
 (14f) (14f)
 2 (420 - 2) , (690) (692 - 2)

[6 (11)]

(630) (144) (640)(6) , (420)

8 , (400)가 가 2 (700)
 6 (140) (140H)

596) (14v) , (692) (690) (630) , (592,
 6 , (729) (722) 6 (429)
 (422) 8
 가

(700) (720) (794) () (720)
 (690) ()
 () , (690) 6
 (722)

(700) (796) , (792) 가 (790) , (798)
 가 (790) (798) (14f) (722)
 (720)

(700) 6 (400) (722)
 (720) (14f)
 (692, 596 592)
 (794) (720) , (14f)

(790) 가 (790) (14f) (14f)
 (798) 가

9 , 6 가 (420) (491)
 (491) (14f) , 가 (492)

10 , 8 (700) 가 (790) (797) ,
 (14f) (795) (790) 가 가 (
 793) (790) 가 (793) 가
 , 가 (140) (140H) ()

11 , 6 (140) (140H) , 6
 (400) (400r) (400r) (425SC)
 (425M) (421M) (420r)
 (425SC) (420r) ,
 3 (3rpm)

(420r) 1 (420 - 1)
 6b (420) (420r)가
 (592A, 596A, 692) 6a

11 (490R) , (490R) (492
 L), (140H) (492W) (492M) (420r) (
) (490R) (14) 가
 (690)(6) ()
 (,)

11 , 7a 7d [14f(r)] (420 - 1)
 (12a 12c) (420r) [14f(r)] (429) (429h)
 (429a) (429a) (14v)(11)

12a 12c , (420r) 가 (420 - 1) ,
 가 , ,

12a, 11, (420r) ()
 (14v)(11) (429a)
 " [1 × 14f(r)]" .

(692) 13 (420r) (429a)
 (692) [1 × 14f(r)] (690)(6
) .

(592A, 596A) 6 6a .

[11 (490R)] (492M) . ,
 12a (420r) .

12b (429a) 2
 , (144)(6) 가 12a
 2 (420r) . , 12b "
 [2 × 14f(r)]" .

가 (420r) 가 [, 6 ()
 690)) , (630) (640) 6
 (630) 가 (692) (429a) , (690)
 (144) 가 가 " (thermal mass)"
 .

12c , (429a) n
 (14) " [n × 14f(r)]" 12a 12b 3 .

(692) (690) (14)
 가 .

(144) ()
 (14a) 가 가 (145)(
 6) .

6 (11) () , ,
 2 OLED (150) .

(492M) (490R)
 , (14) .

(11)가 (14) (140)

8 (700), 10 (720)
(722) 11 (400r) (7
29)

13 (429) 11 (692) (420r) 6 (140H) 가 ,
(429a)
(692S) (692) (6, 6a 11 ,
(429) (692) (429) (429h)
(692S) (692) (14v)
(429a) (692)
(14f) (420r) [14f(r)]

14 11 (140H)
(490R), (490r) (592A, 596A) 11

(429) (429hm) 가 (14v)
(429a1, 429a2, 429a4) . 3
, 2 , 4

(429) (429hm) 14 15 16

15 (429) (429hm) 1 (420 - 1)
(429a1, 429a2, 429a4) , [14f1(r), 14f2(r), 14f4(r)]
가 (420r)(16) (420 - 1)
가 (420r) 가 ,
(429a2) [14f2(r)] (429a1) [14f1(r)] 2 가
(429a4) [14f4(r)] 가 (429a2) [14f2(r)]
r]] 2 가 (429a1) [14f1(r)] 4 가
16 [14f1(r), 14f2(r), 14f4(r)]

(429) (429hm) 0.2 (mm) 0.8 ()
0.5mm 1.0mm (- 가)

(420 - 1)
(692a1) [14f1(r)] (690m)
[14f2(r)] (692a4) (692a2) [14f4(r)]
(429a1, 429a2, 429a4)
()

(690m) (630)
(640)(6)

(692a1, 692a2, 692a4) 3 14
가 , (420 - 1)
, 가 (690m)

17 2 (140) , (144h)
(dopant) (144d) 가 [14v() 14dv(
)]

17 6, 6a 11
, 17 (690) 6 , (490R) 11
, 17

(144h) (640h) (645h, 647h) 가 (144h)
145h) 가 (14ha)
(640h)
(630h)

(144d) (640d) (645d, 647d) 가
(145d) 가 (14da)
(640d) (598) (594dc)
(638) (630d)

17

(594dc) (429) (429h) (429a) (420r)
[14f(r)] , {
(594dc) [14f(r)] } [(596A)]

0.1 % 1.5 %

[14f(r)] , (420r) [(11) (14f)]
[14f(r)] , (144h) (690) (14ha)

가

가

가 2

OLED

(100)

(130, 140, 150)

/

,

가

.

,

.

(57)

1.

,

,

가

,

가

,

,

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가

1

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2

1

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1

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1

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1

3

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2.

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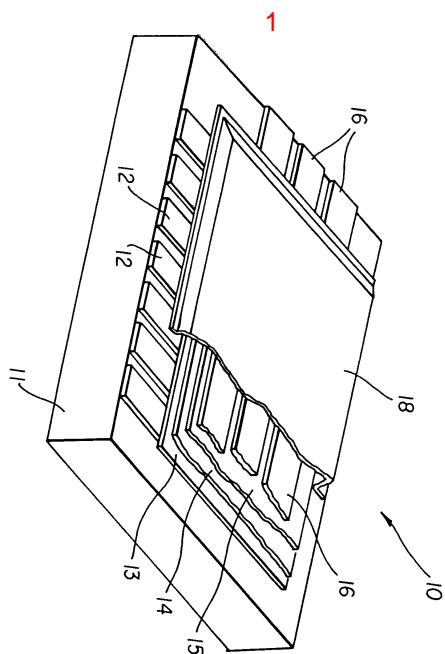
,

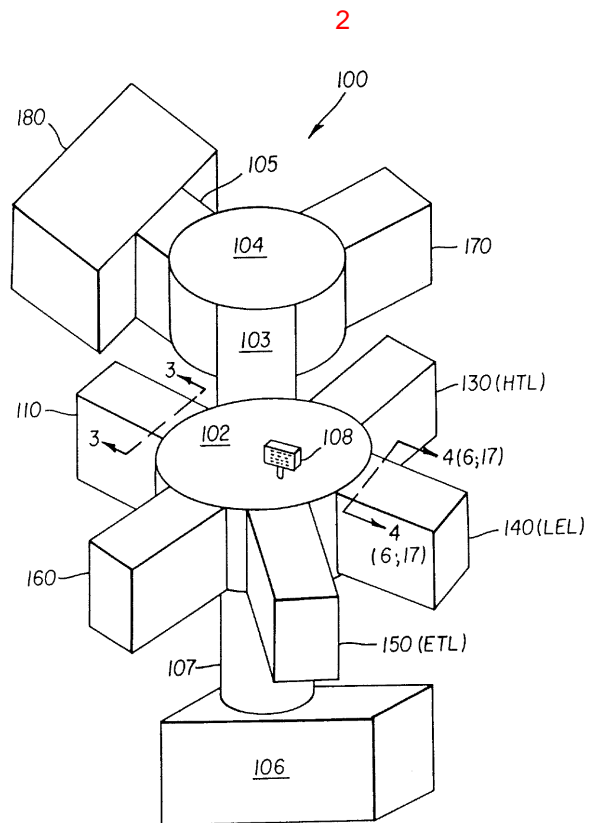
가

3

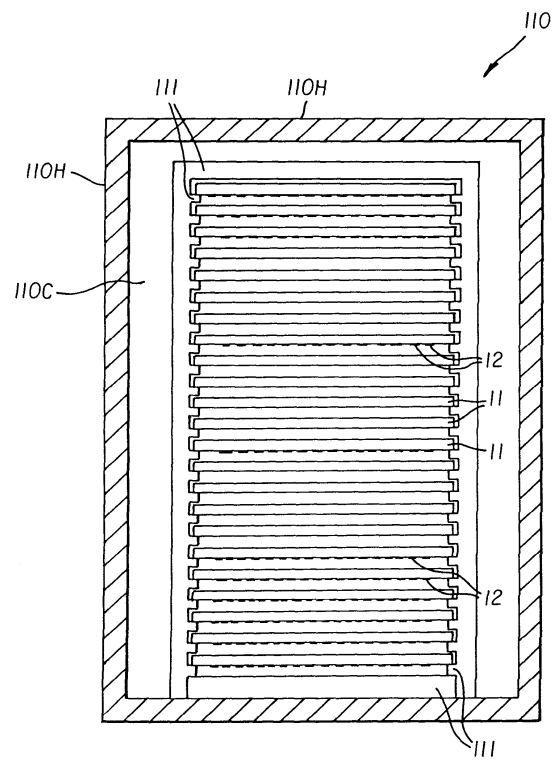
3

4

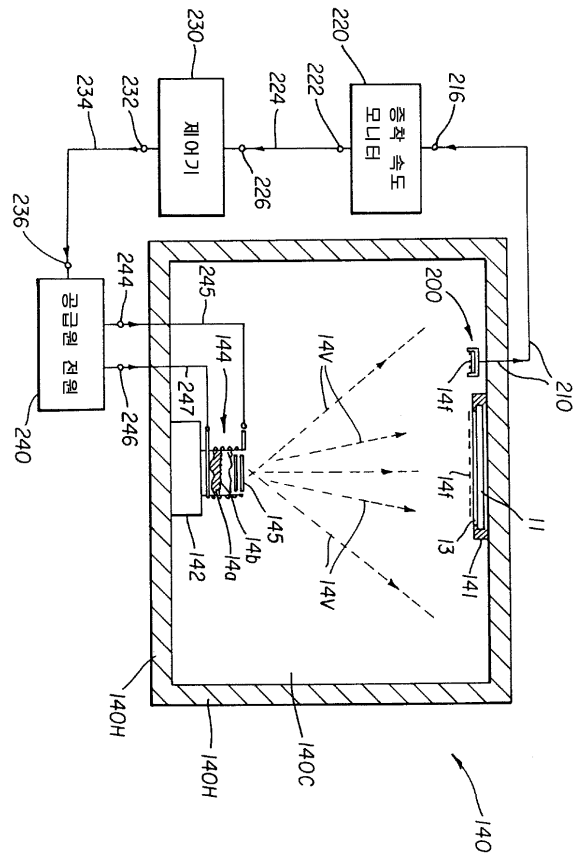




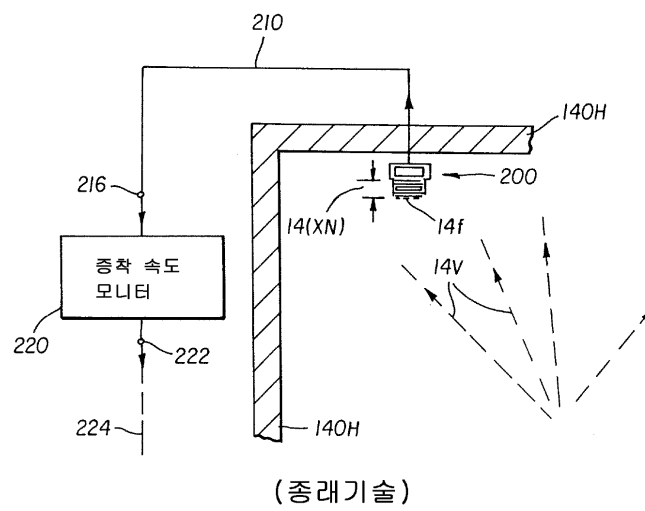
3



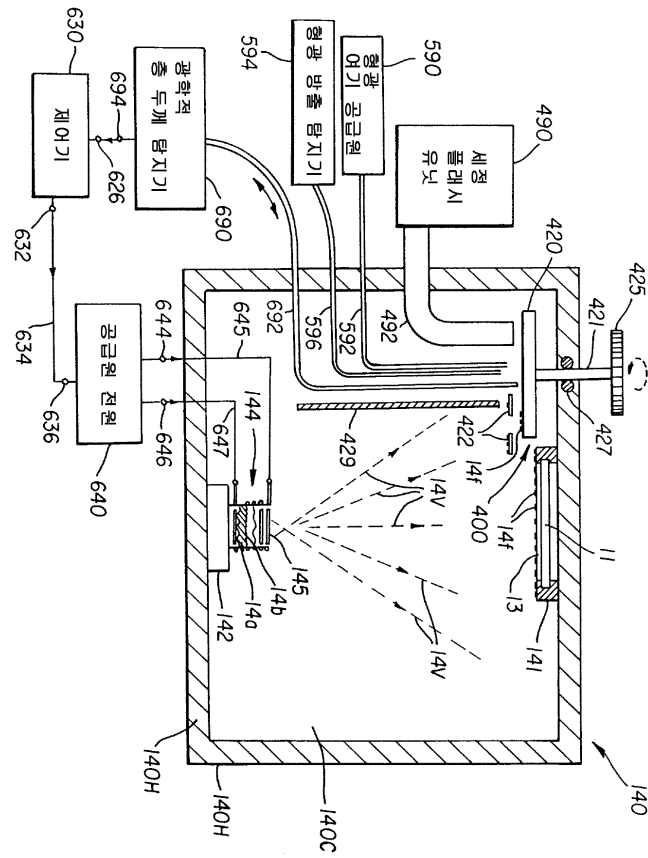
4



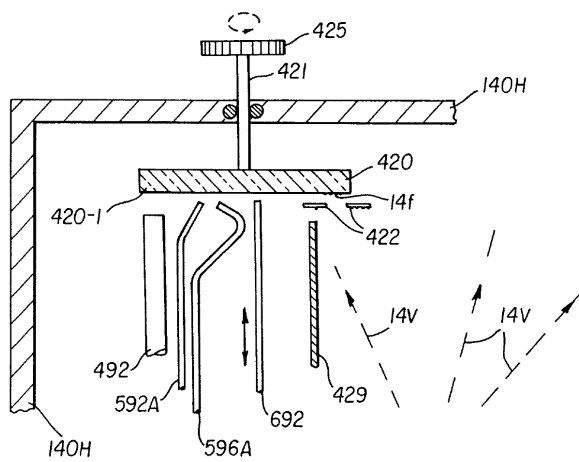
5



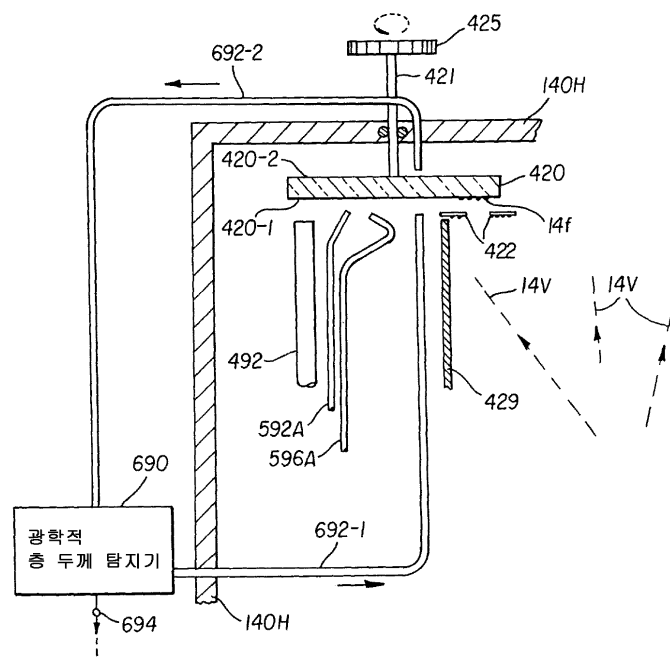
6



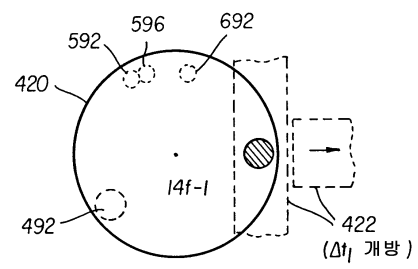
6a



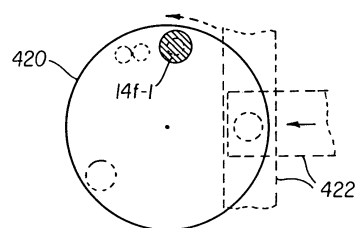
6b



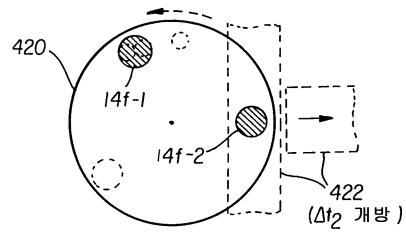
7a



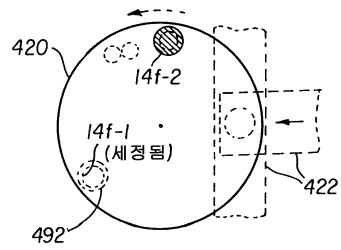
7b



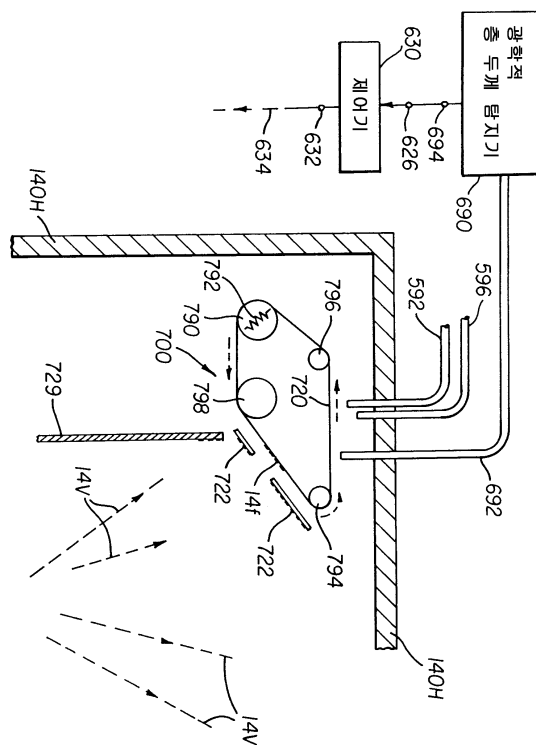
7c



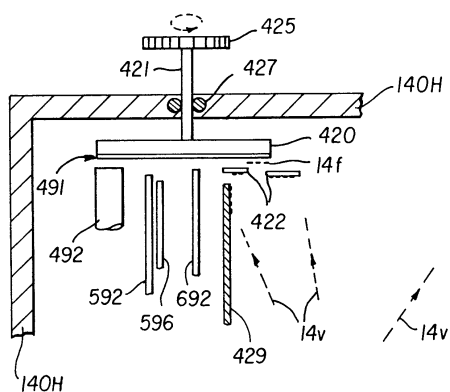
7d



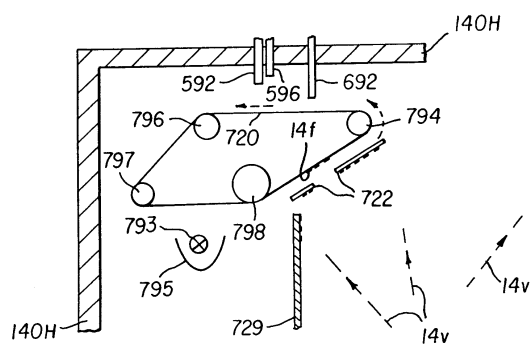
8



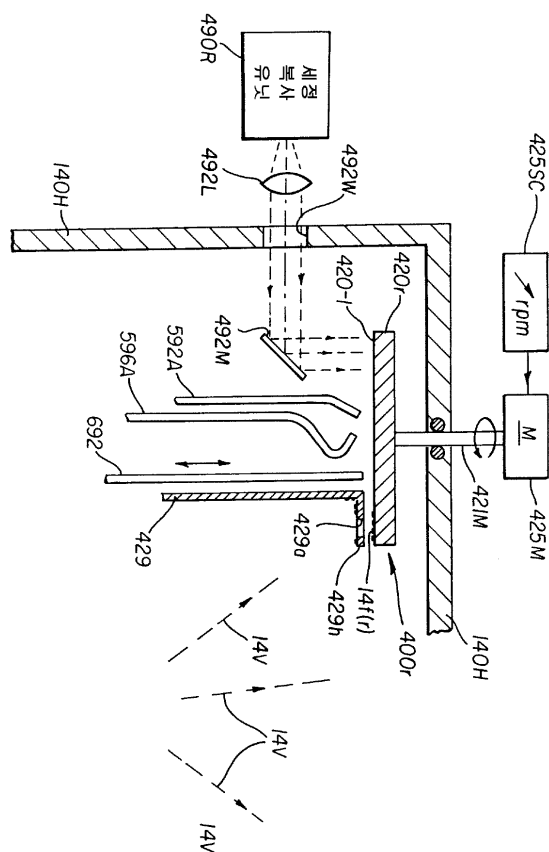
9



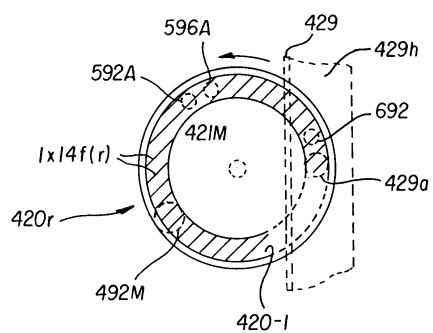
10



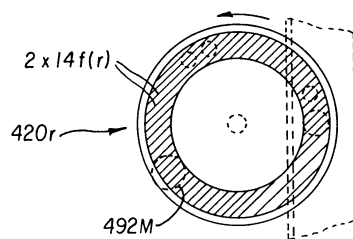
11



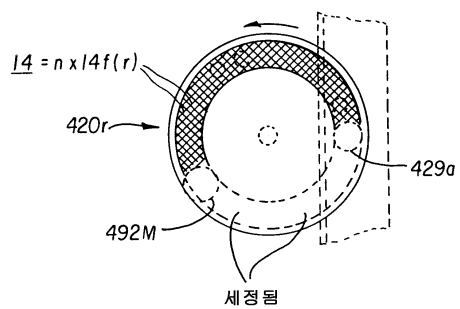
12a



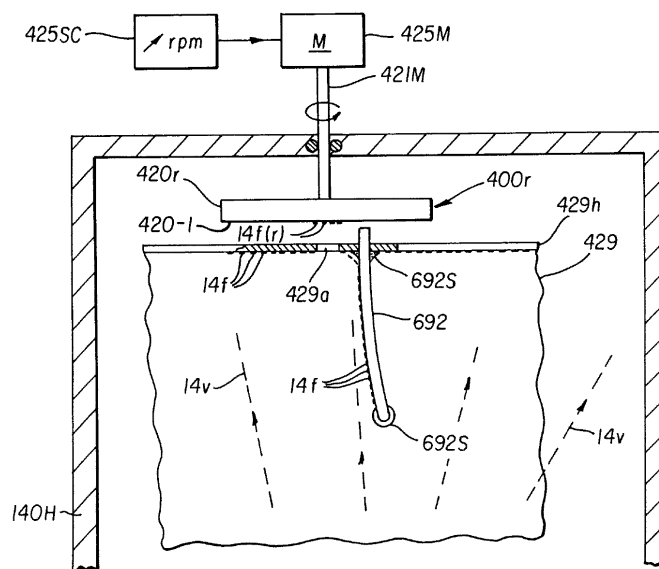
12b



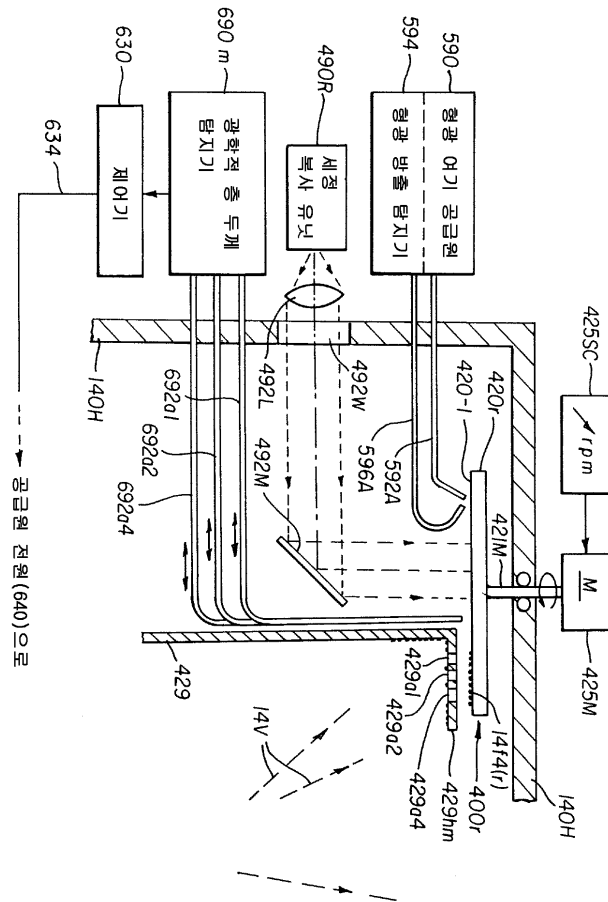
12c



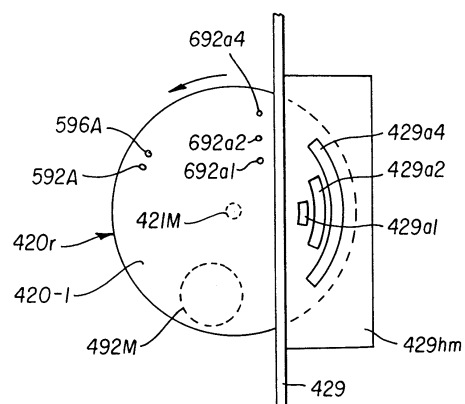
13



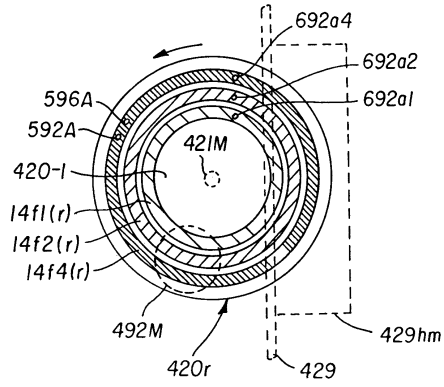
14



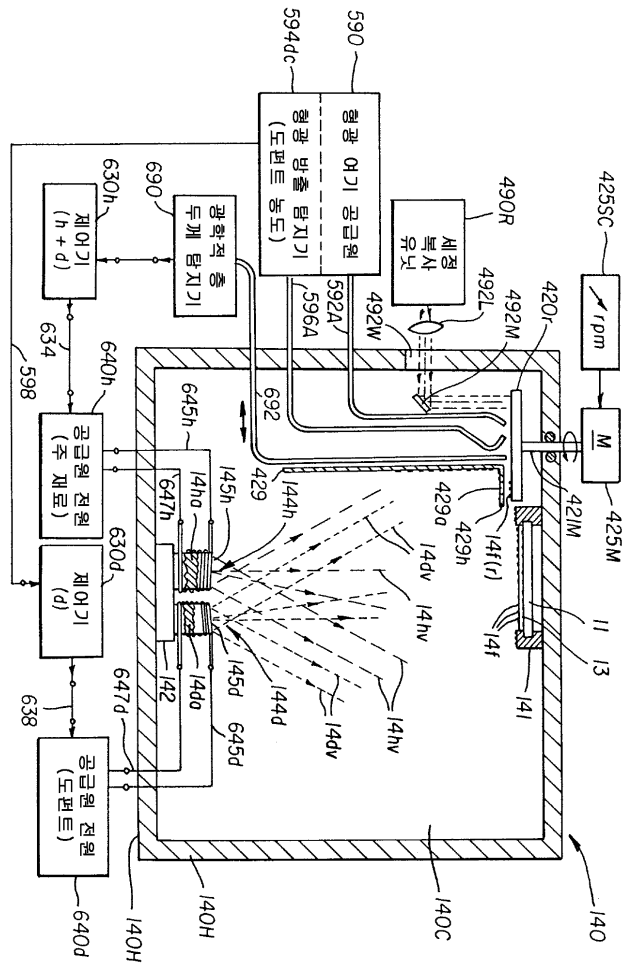
15



16



17



专利名称(译)	有机层沉积设备和掺杂的有机主材料的层沉积设备		
公开(公告)号	KR1020020082127A	公开(公告)日	2002-10-30
申请号	KR1020020021479	申请日	2002-04-19
[标]申请(专利权)人(译)	伊斯曼柯达公司		
申请(专利权)人(译)	柯达公司针		
当前申请(专利权)人(译)	柯达公司针		
[标]发明人	VANSLYKE STEVENA 반슬라이크스티븐에이 MARCUS MICHAELA 마르쿠스마이클에이 SPOONHOWER JOHNP 스폰하우어존피 SPAHN ROBERTG 스판로버트지 FREEMAN DENNIS R 프리맨데니스알		
发明人	반슬라이크스티븐에이 마르쿠스마이클에이 스폰하우어존피 스판로버트지 프리맨데니스알		
IPC分类号	H01L51/50 C23C14/54 C23C14/12 H05B33/10		
CPC分类号	C23C14/12 C23C14/547		
代理人(译)	KIM, CHANG SE 张居正, KU SEONG		
优先权	09/839885 2001-04-20 US		
外部链接	Espacenet		

摘要(译)

公开了在有机发光装置的制造中通过有机材料的物理气相沉积来监测有机层的形成和控制的装置。

