Fig. 1A

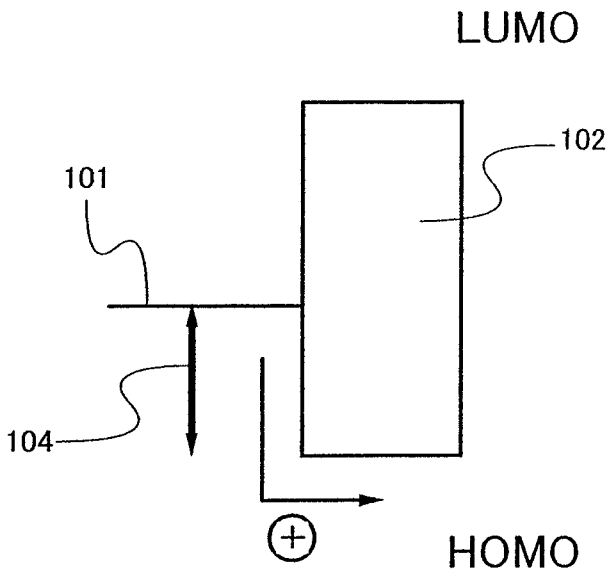


Fig. 1B

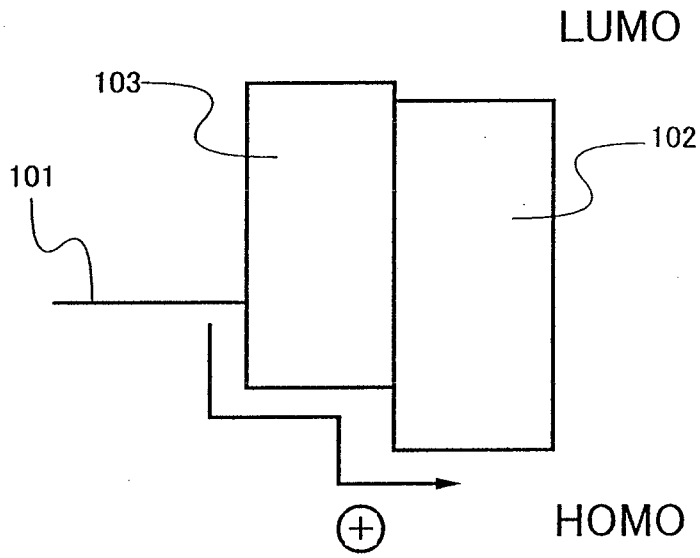


Fig. 2

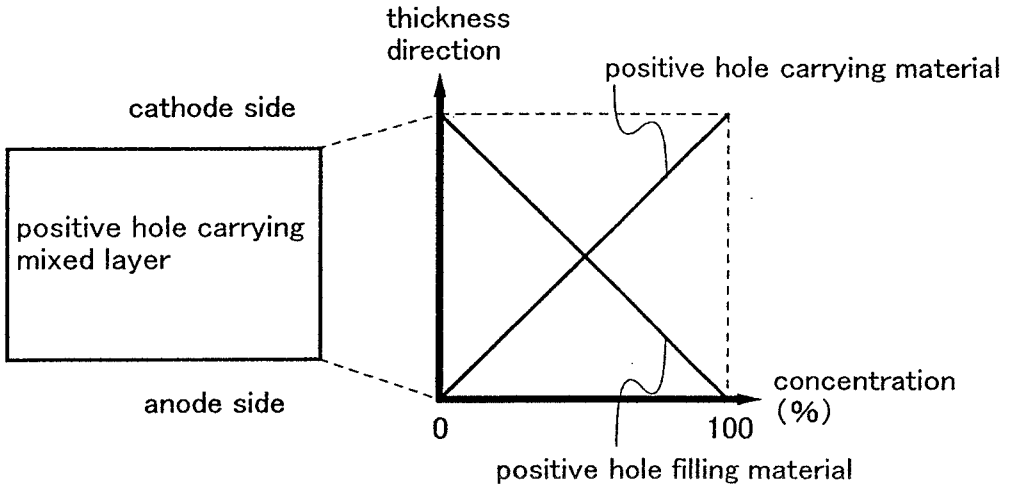

thickness
direction
positive hole carrying material
cathode side
positive hole carrying
mixed layer
anode side
concentration
(%)
0
100
positive hole filling material

Fig. 3

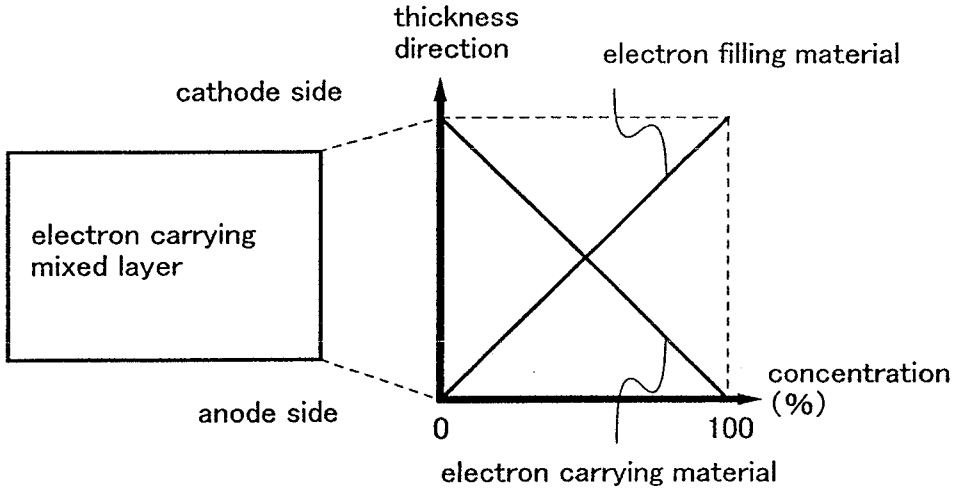

thickness
direction
electron filling material
cathode side
electron carrying
mixed layer
anode side
concentration
(%)
0
100
electron carrying material

Fig. 4

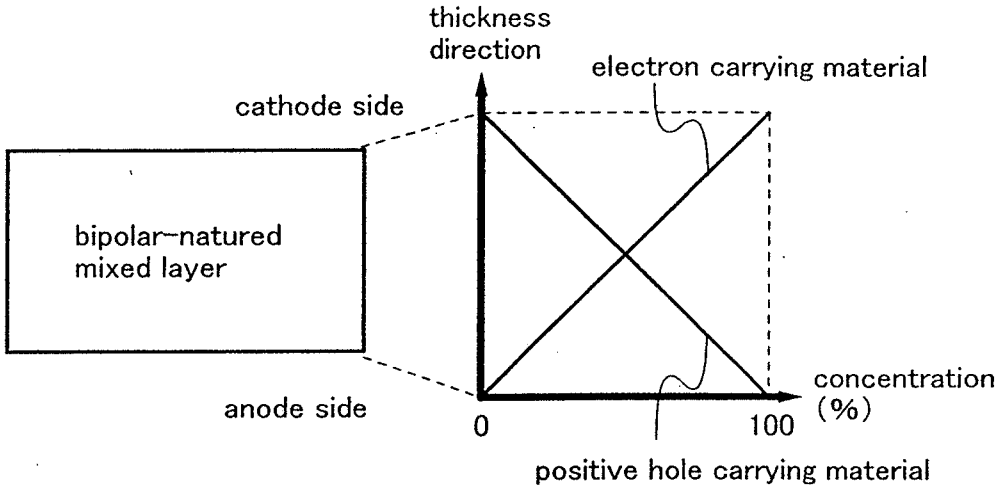

thickness
direction
electron carrying material
cathode side
bipolar-natured
mixed layer
anode side
0
100
concentration
(%)
positive hole carrying material

Fig. 5

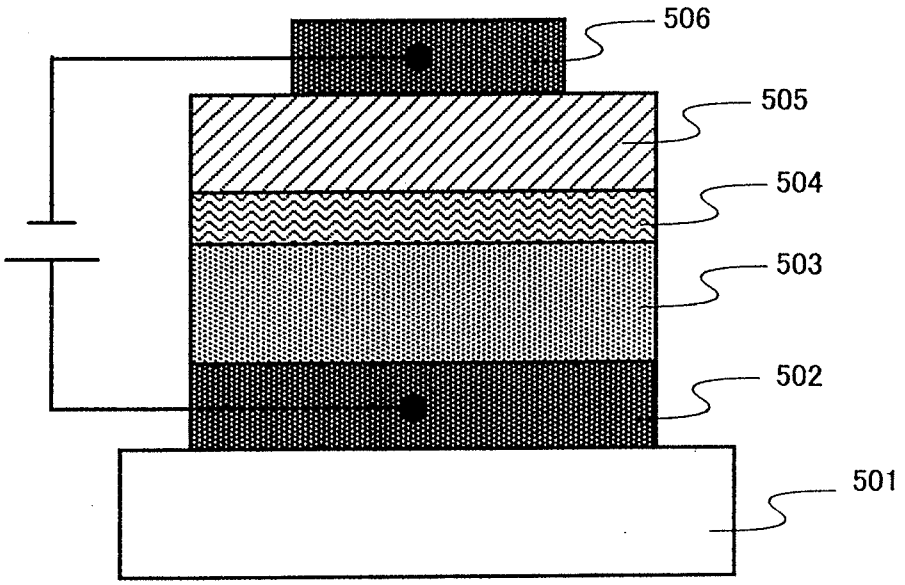

506
505
504
503
502
501

Fig. 6

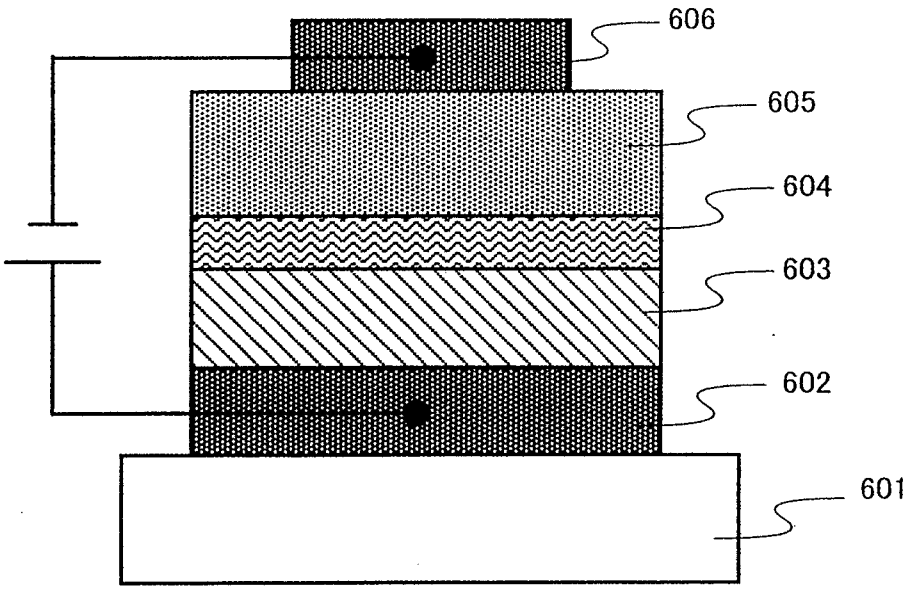


Fig. 7

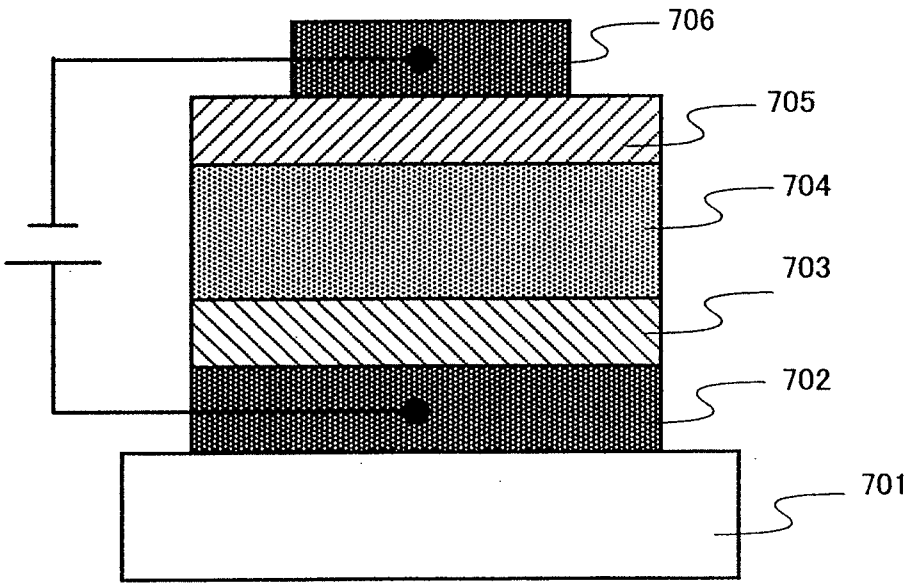


Fig. 8

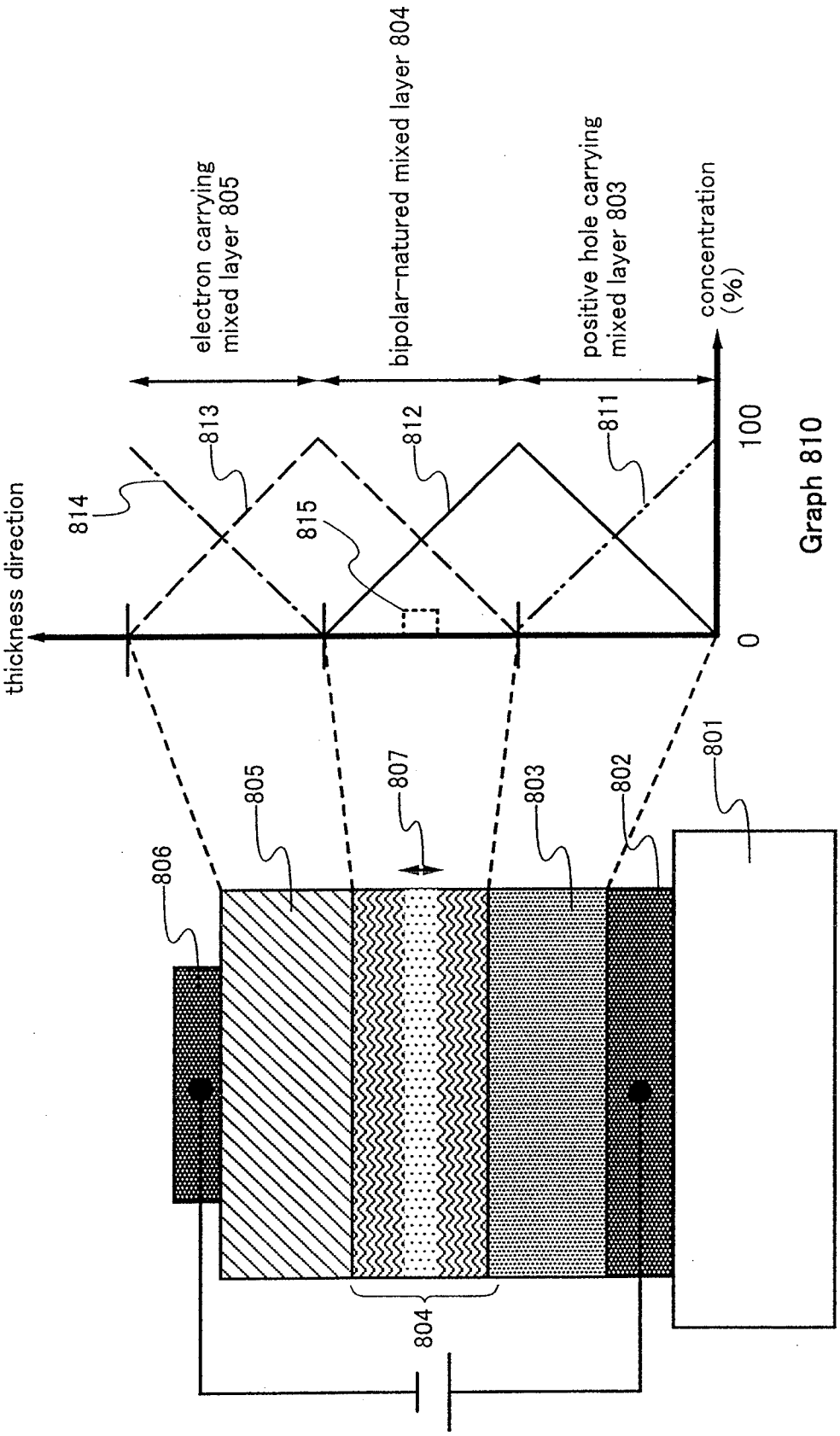

electron carrying mixed layer 805
bipolar-natured mixed layer 804
positive hole carrying mixed layer 803
concentration (%)
100
0
thickness direction
814
813
815
812
811
Graph 810
806
805
807
803
802
801
804

Fig. 9

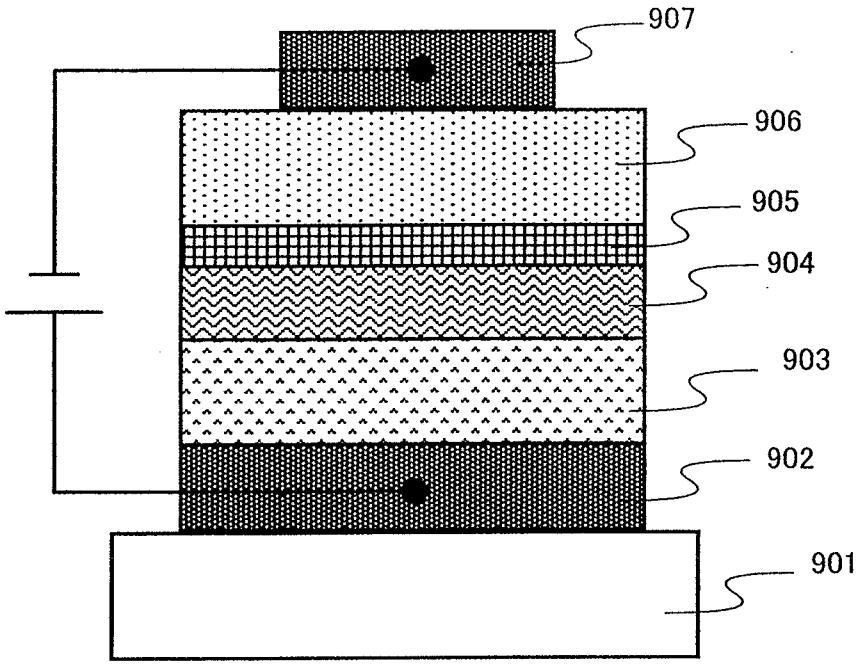


Fig. 10

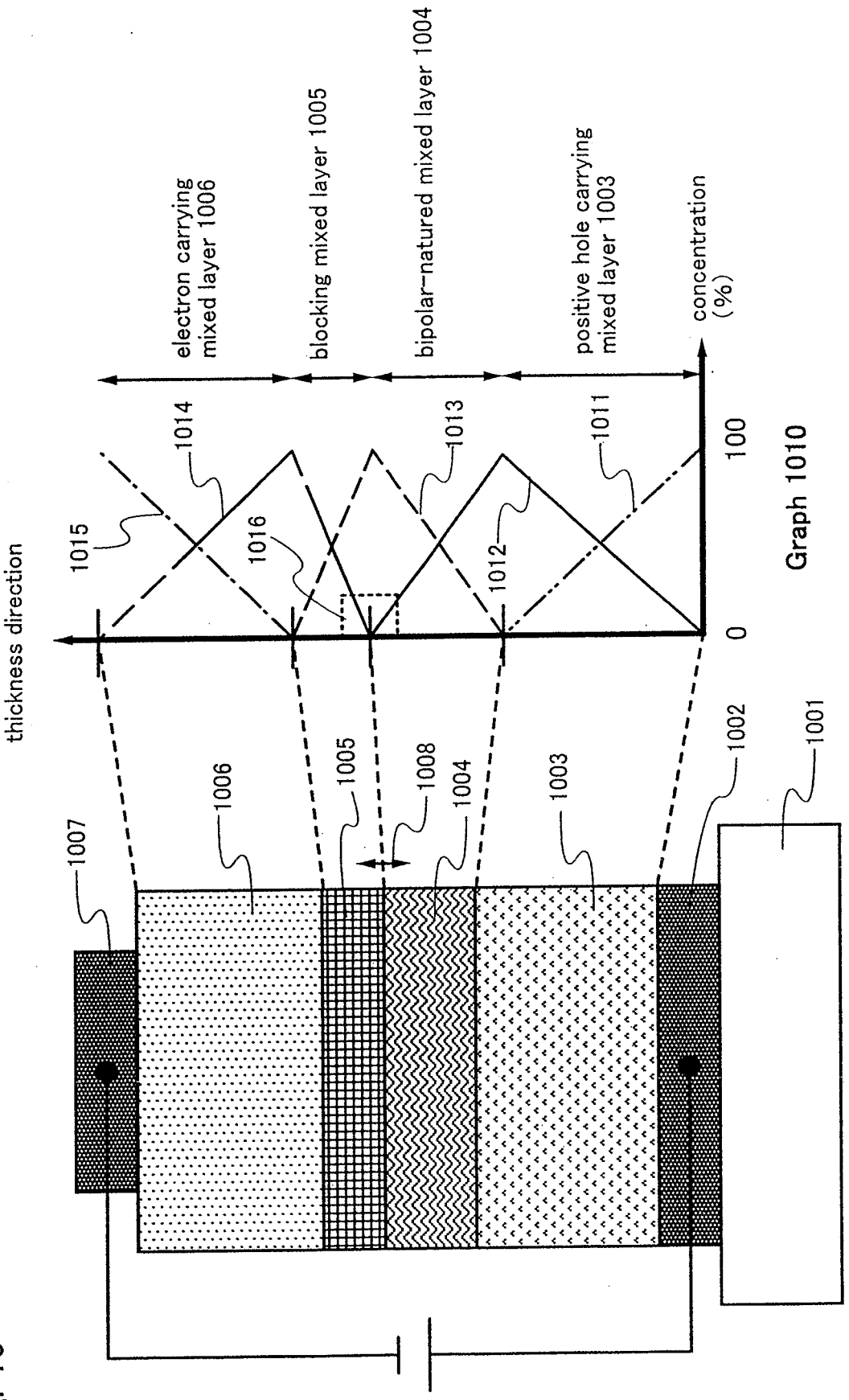

thickness direction
electron carrying mixed layer 1006
blocking mixed layer 1005
bipolar-natured mixed layer 1004
positive hole carrying mixed layer 1003
concentration (%)
100
0
Graph 1010
1014
1013
1011
1015
1016
1012
1007
1006
1005
1008
1004
1003
1002
1001

Fig. 11

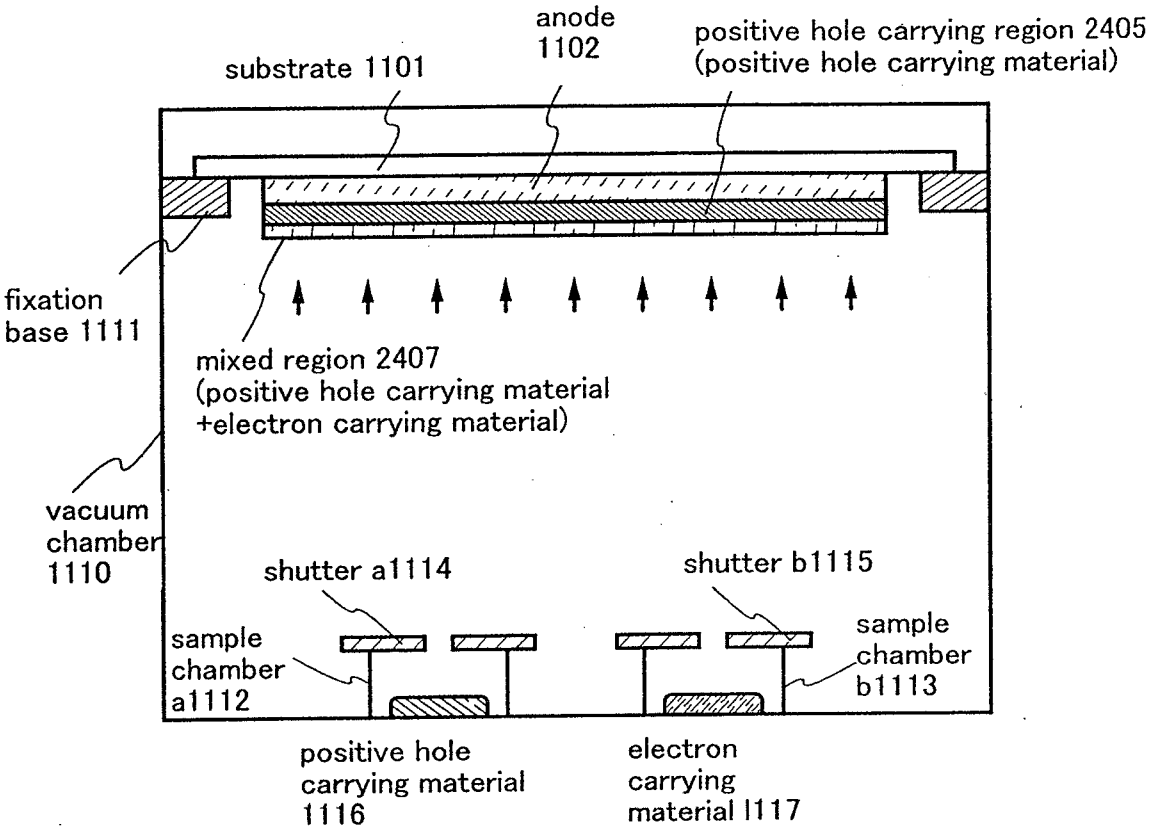

anode
1102
positive hole carrying region 2405
(positive hole carrying material)
substrate 1101
fixation
base 1111
mixed region 2407
(positive hole carrying material
+electron carrying material)
vacuum
chamber
1110
shutter a1114
shutter b1115
sample
chamber
a1112
sample
chamber
b1113
positive hole
carrying material
1116
electron
carrying
material 1117

Fig. 12A

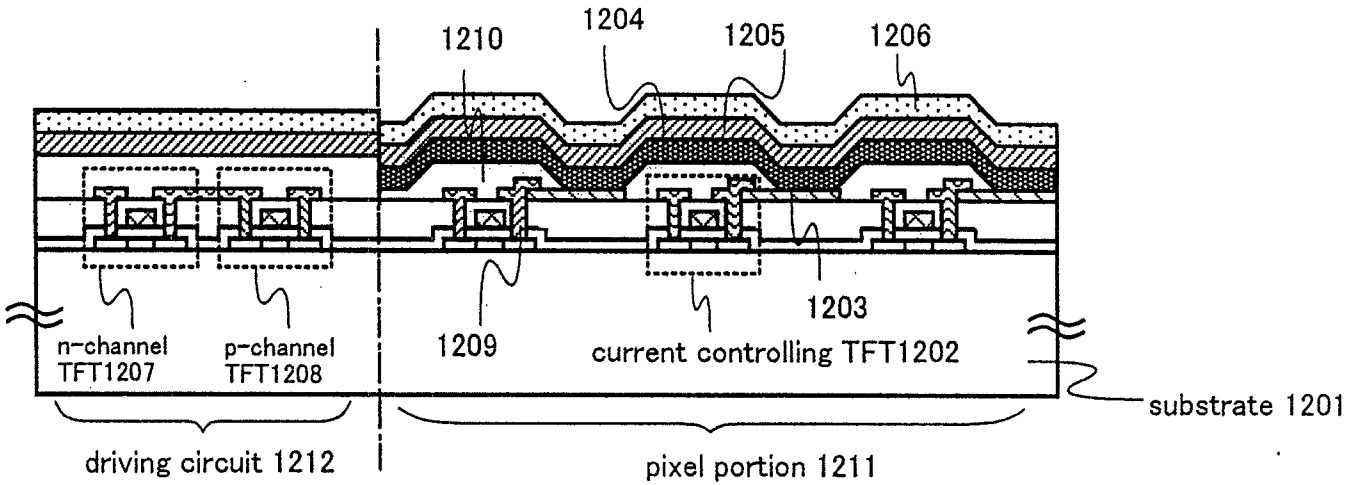


Fig. 12B

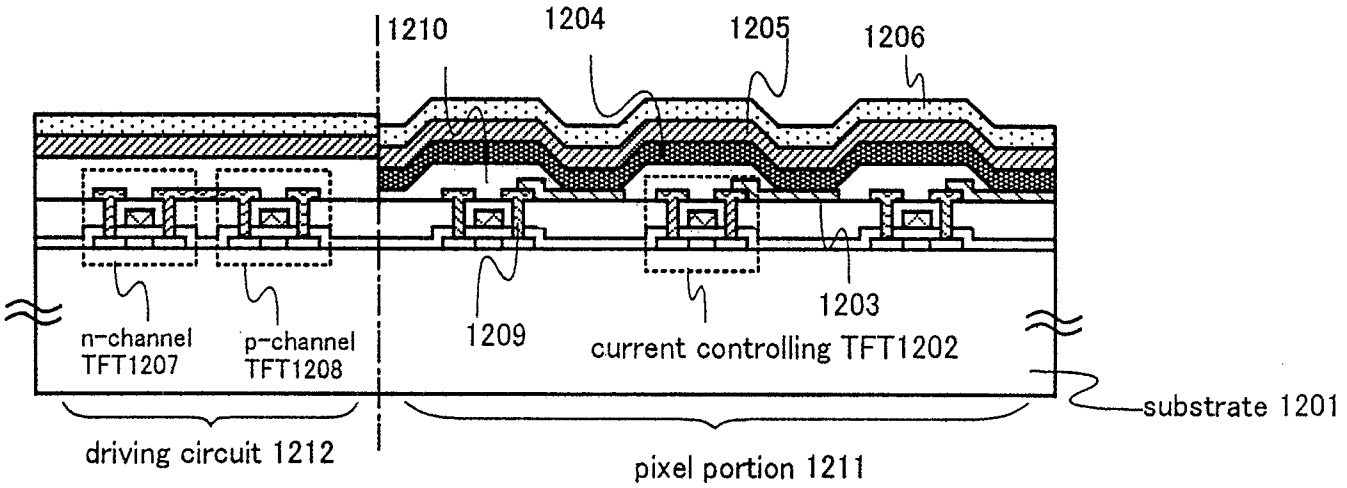


Fig. 13A

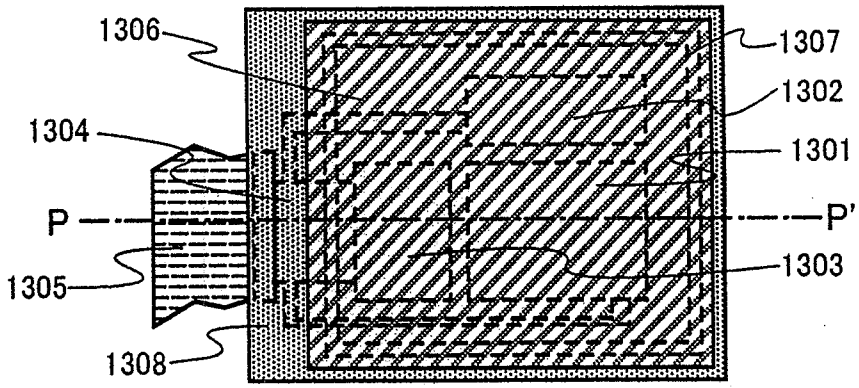


Fig. 13B

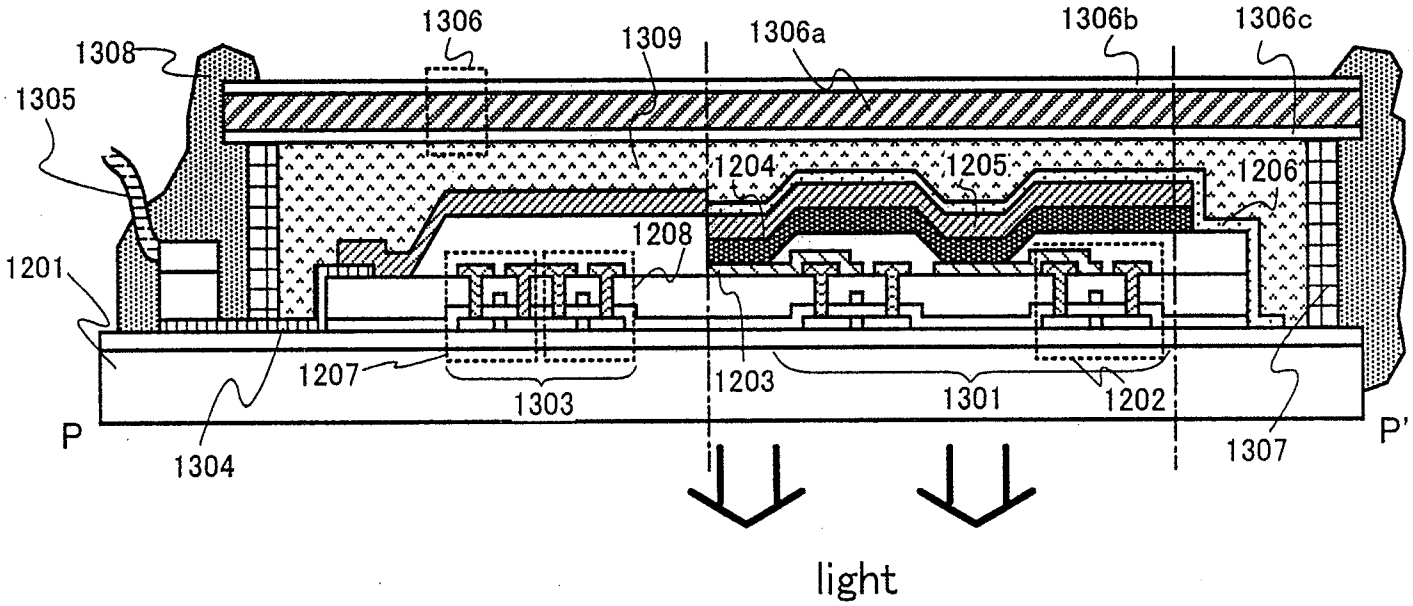


Fig. 14A

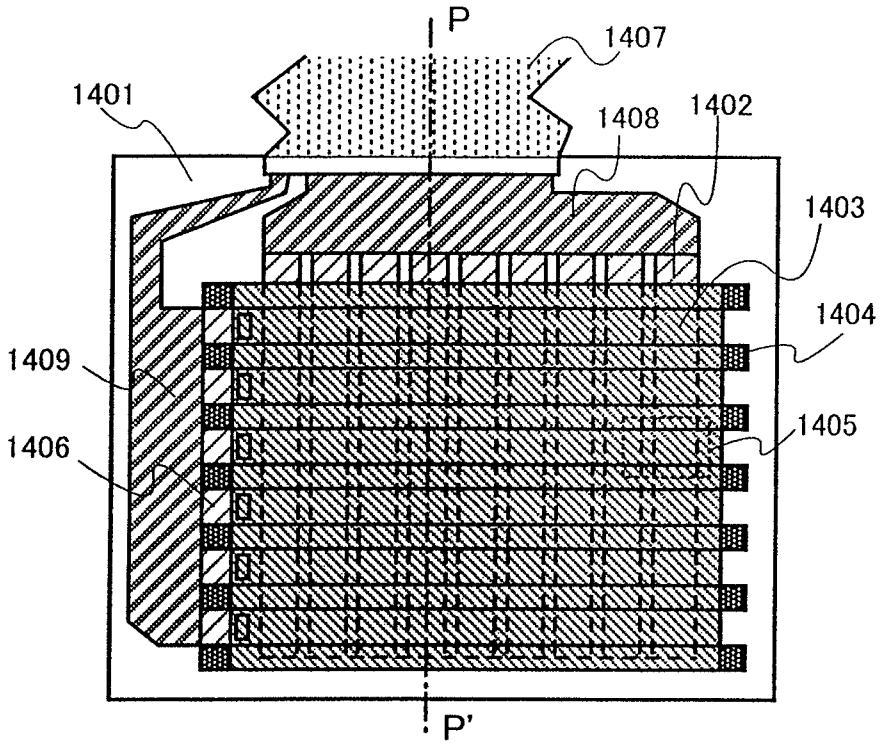


Fig. 14B

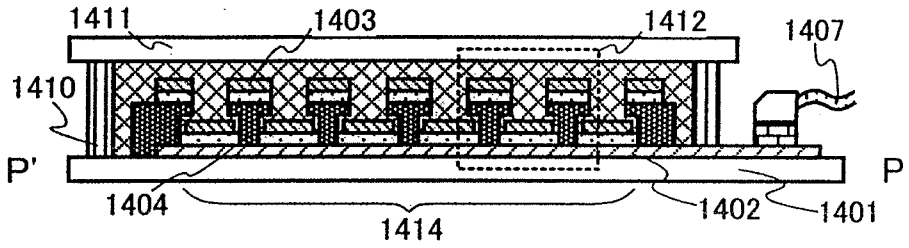


Fig. 14C

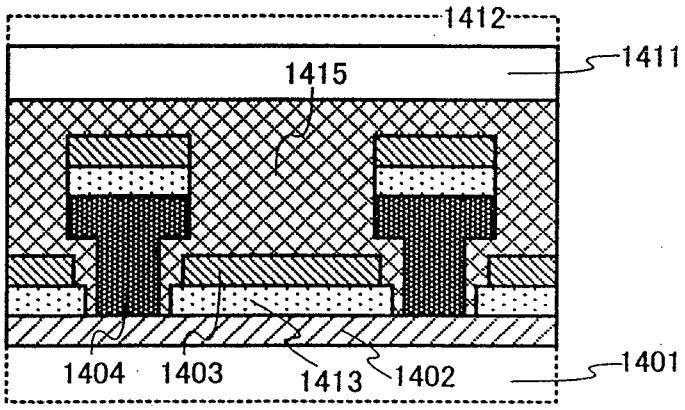


Fig. 15A

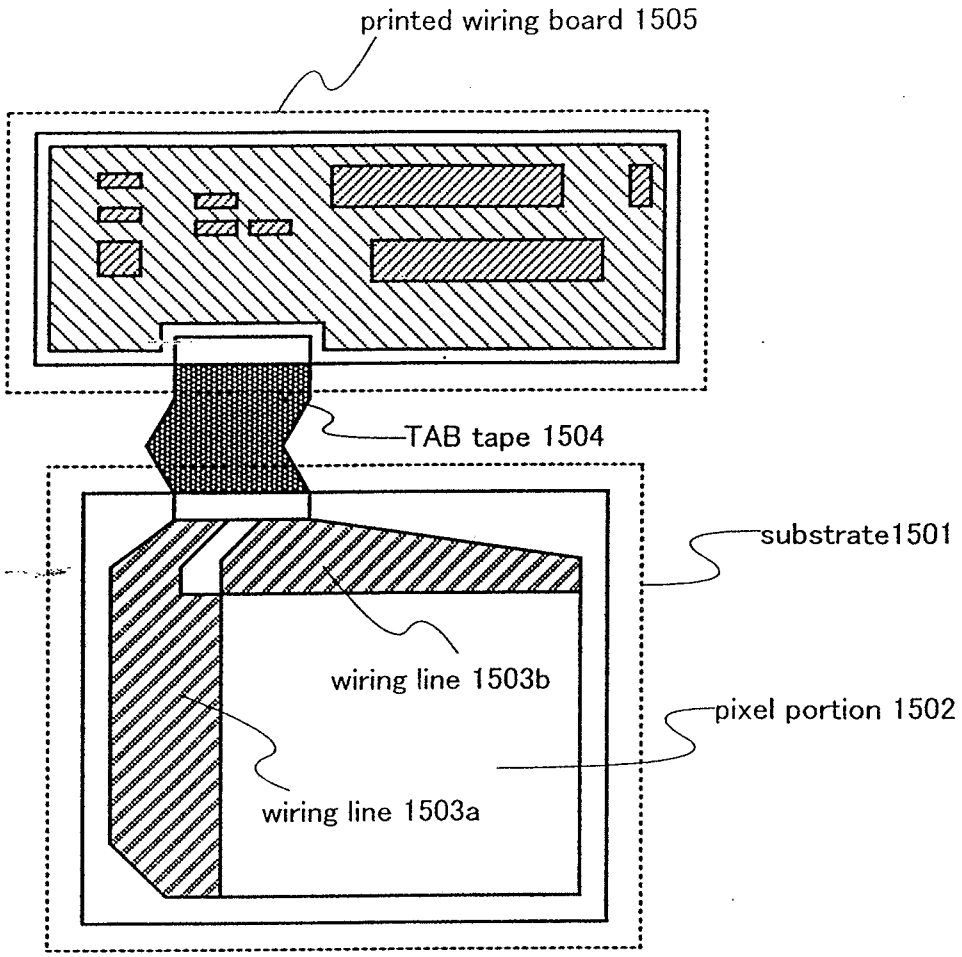


Fig. 15B

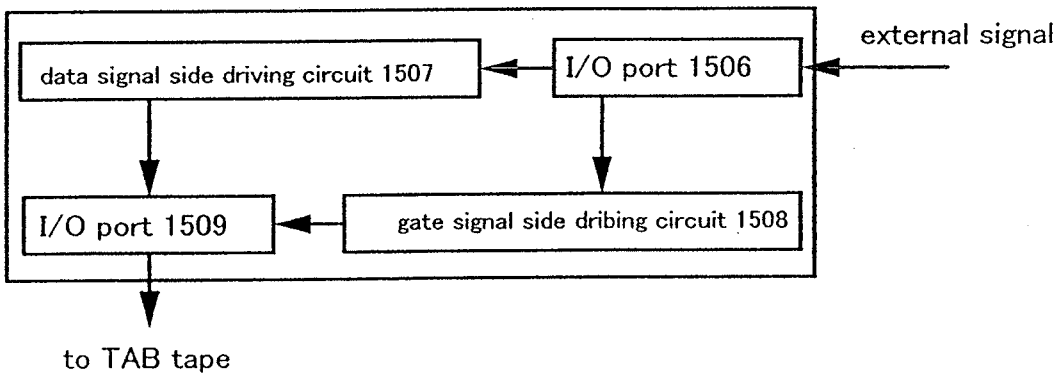


Fig. 16A

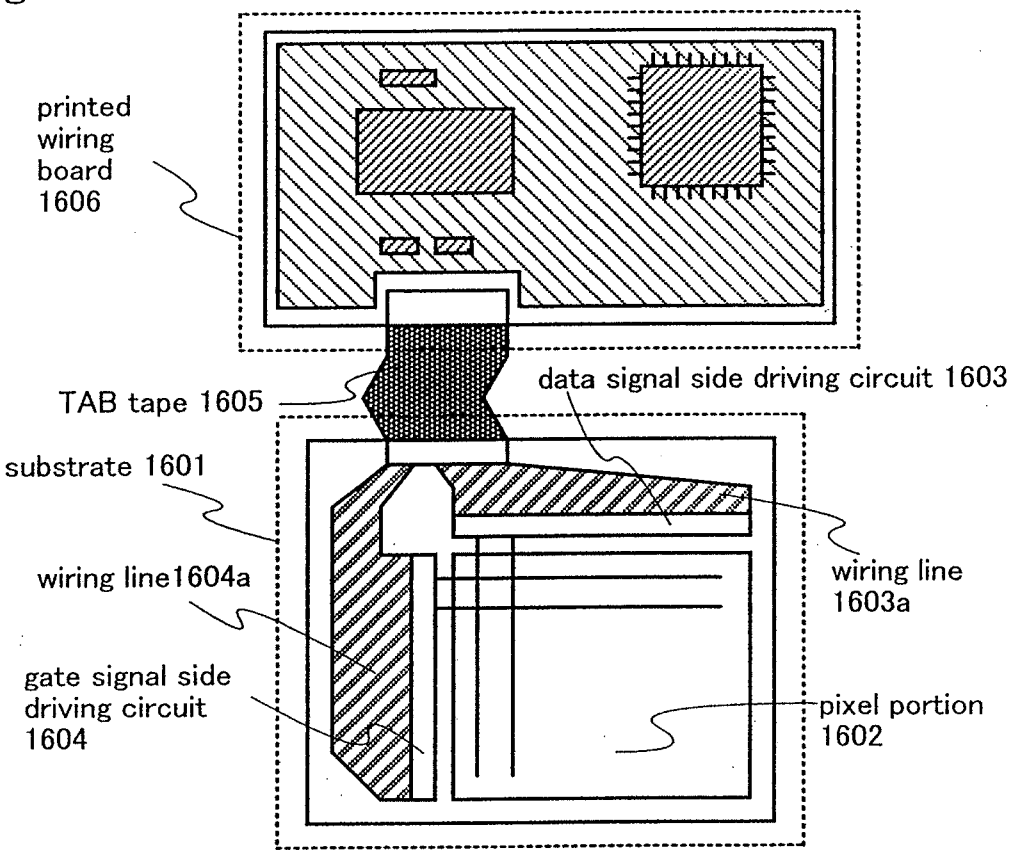
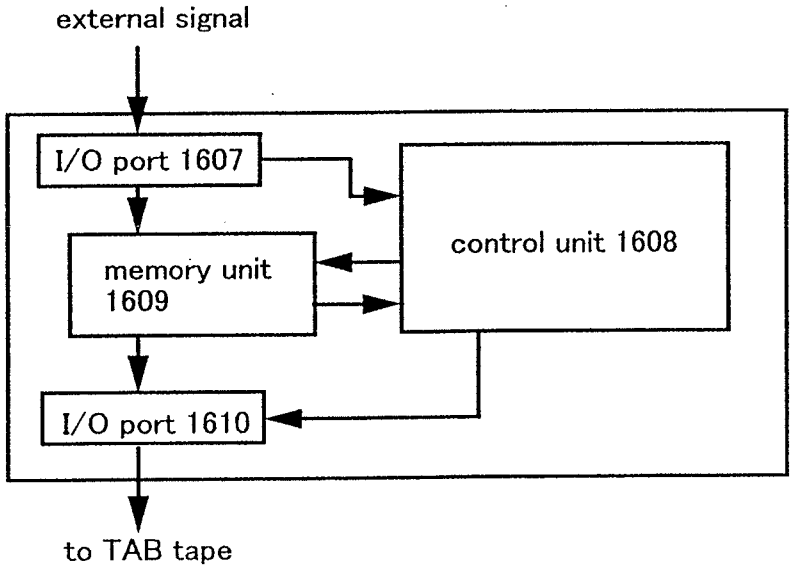


Fig. 16B



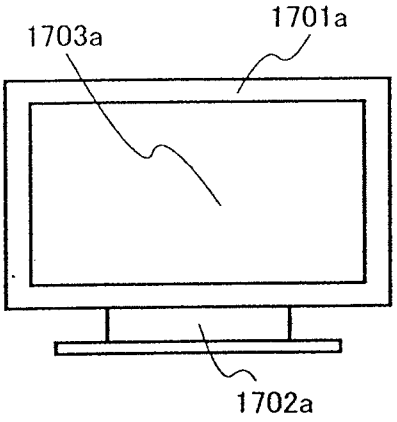


Fig. 17A

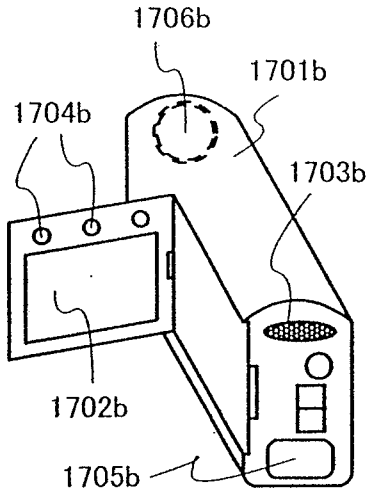


Fig. 17B

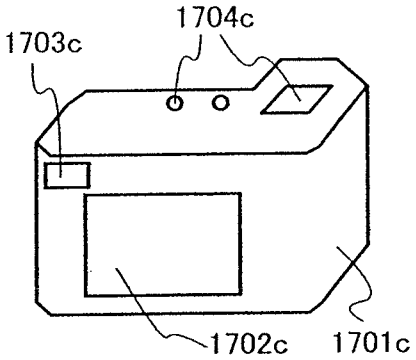


Fig. 17C

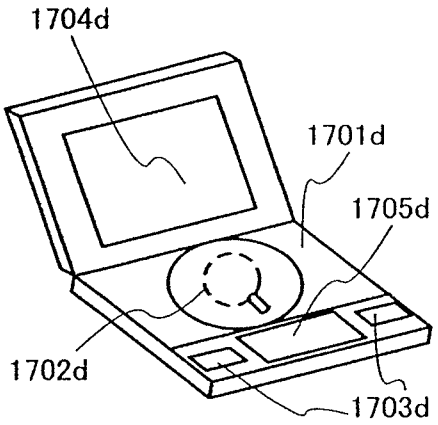


Fig. 17D

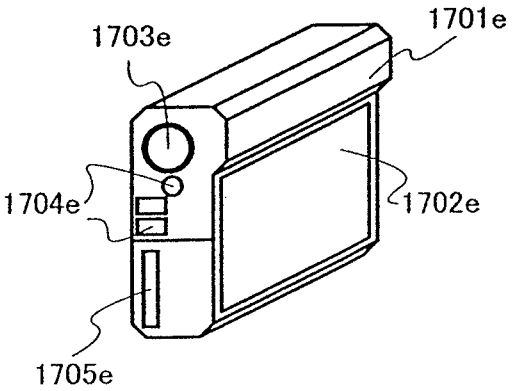


Fig. 17E

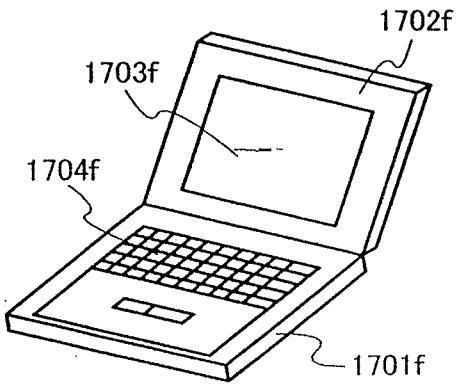


Fig. 17F

Fig. 18A

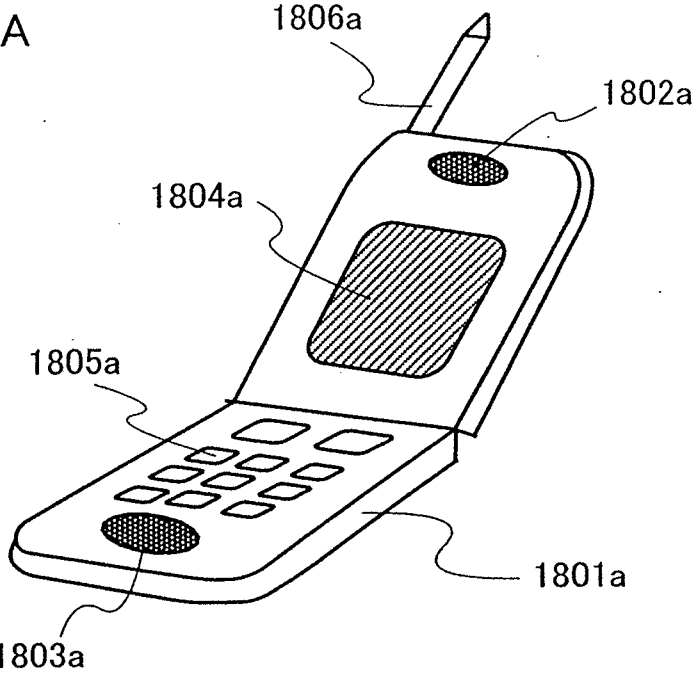
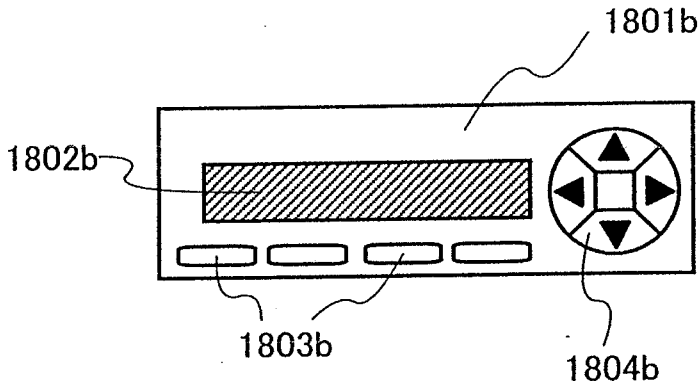


Fig. 18B



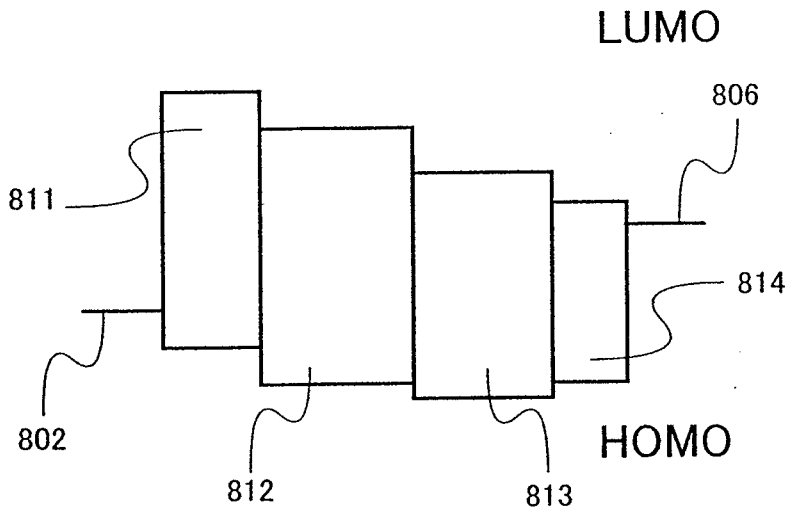


Fig. 19A

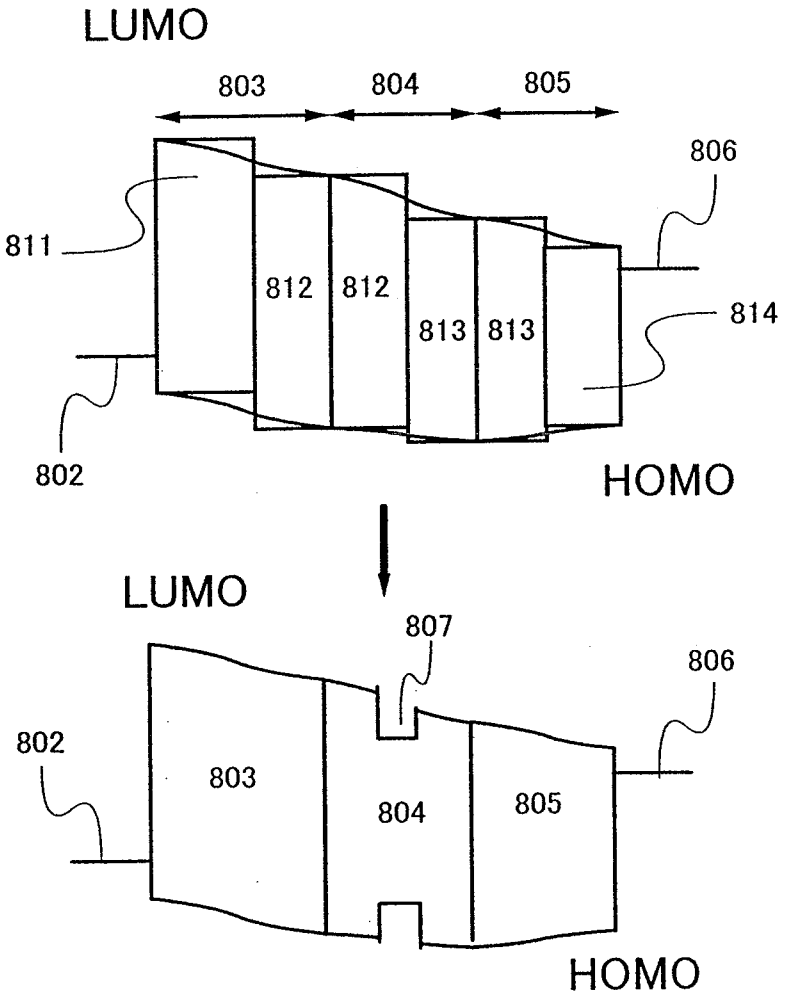


Fig. 19B

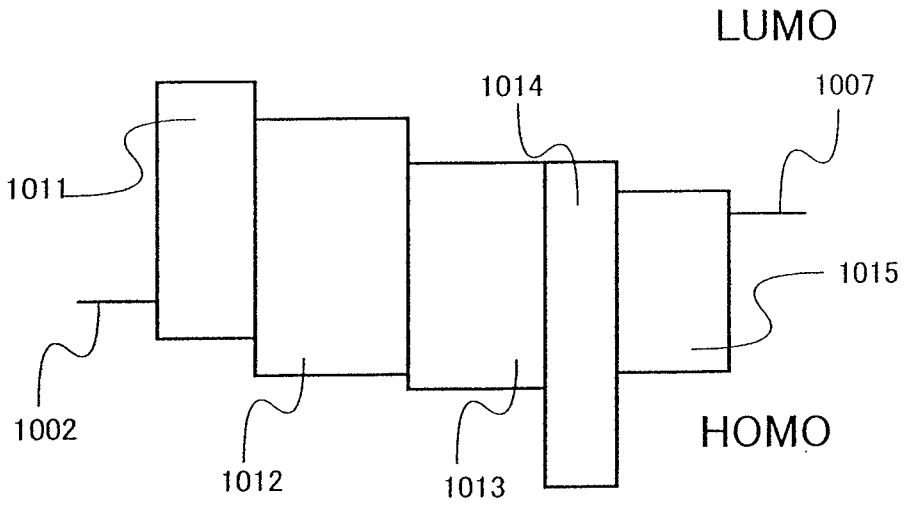


Fig. 20A

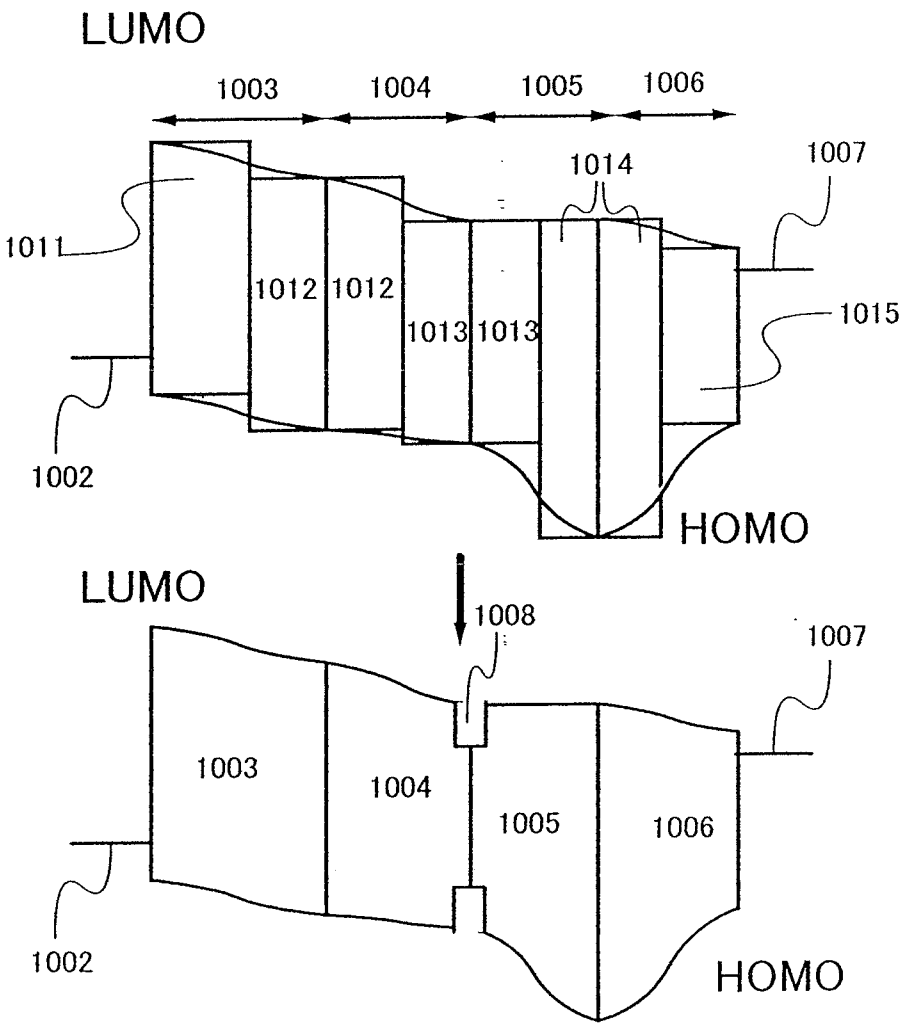


Fig. 20B

Fig. 21

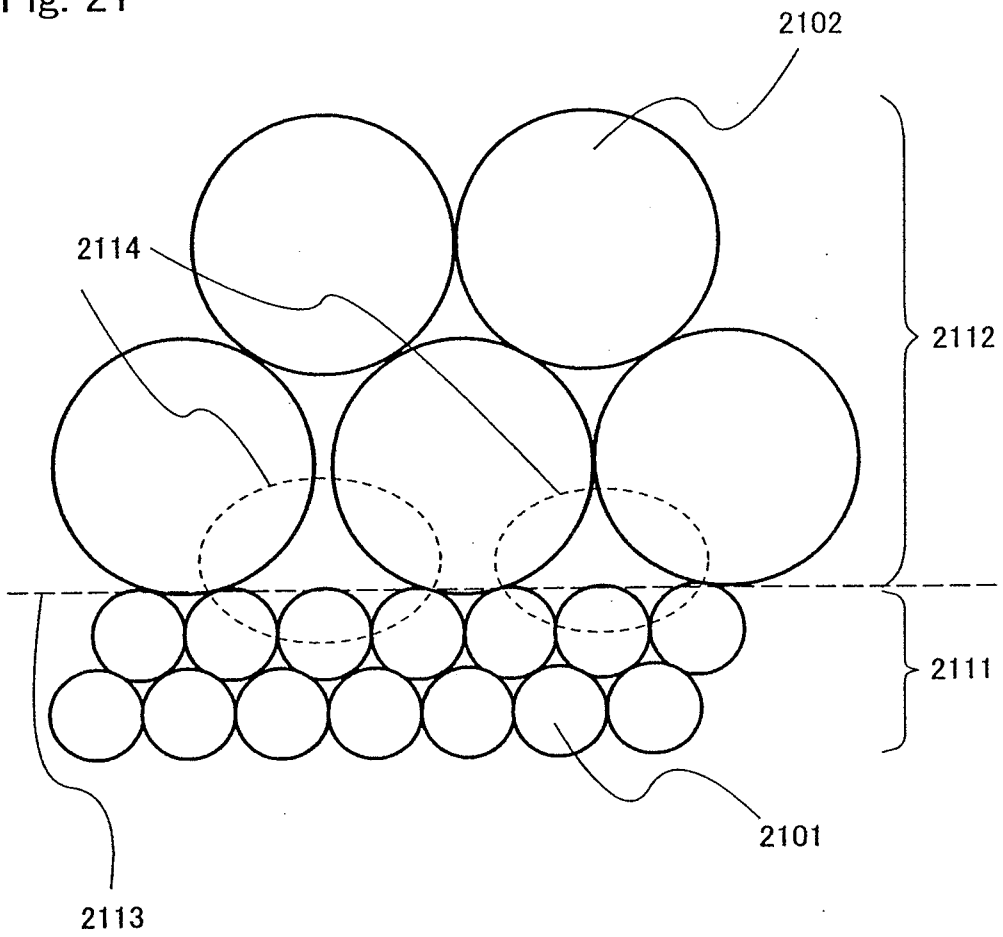


Fig. 22

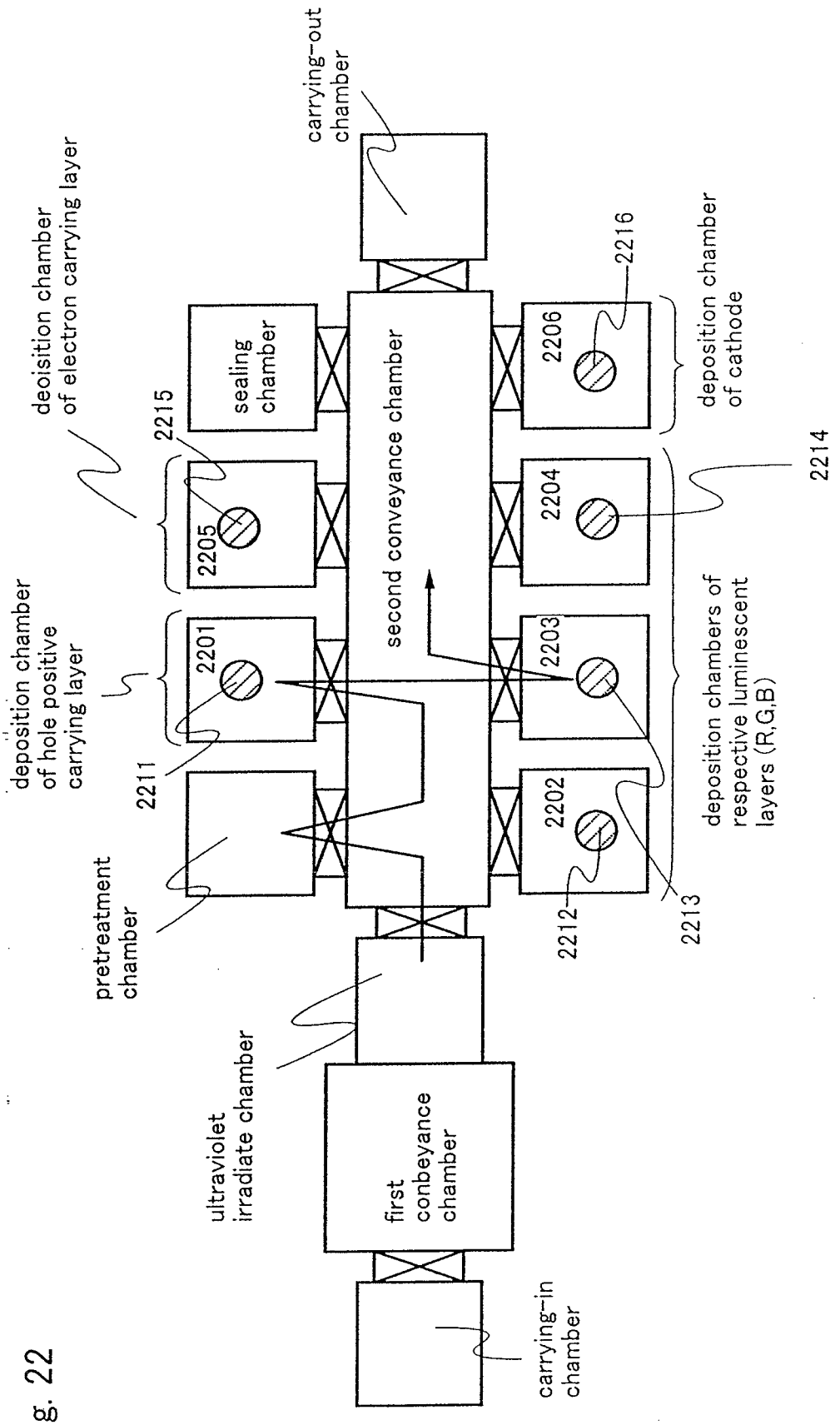

carrying-out chamber
deoisition chamber of electron carrying layer
sealing chamber
2215
2205
2216
2206
deposition chamber of cathode
second conveyance chamber
2204
2214
deposition chamber of hole positive carrying layer
2201
2203
deposition chamber of respective luminescent layers (R,G,B)
2211
pretreatment chamber
2202
2212
2213
ultraviolet irradiate chamber
first conbeyance chamber
carrying-in chamber

Fig. 23

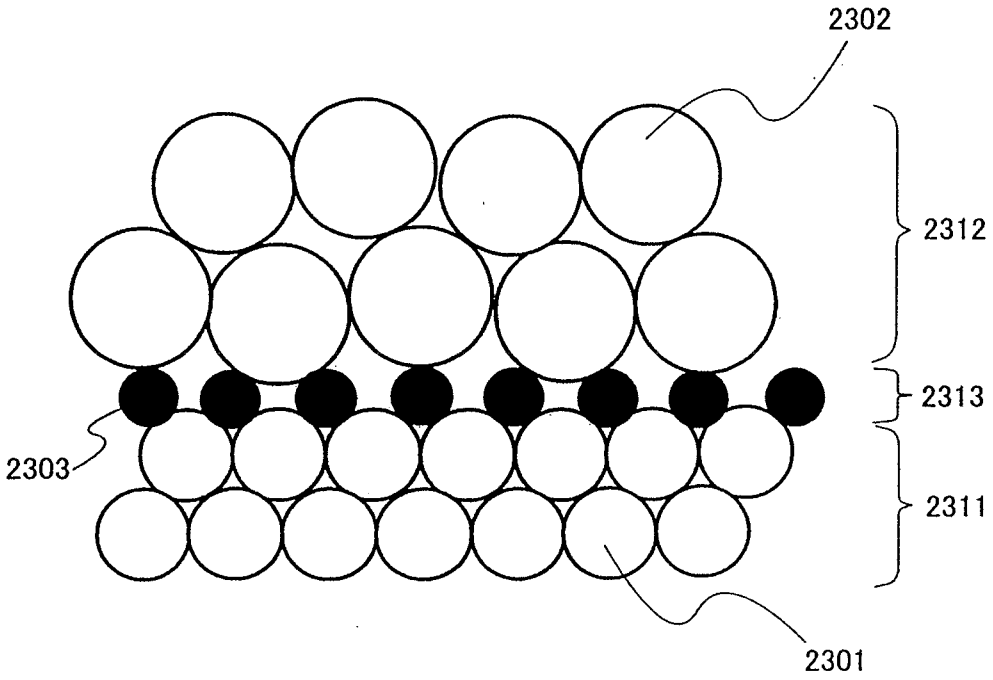


Fig. 24

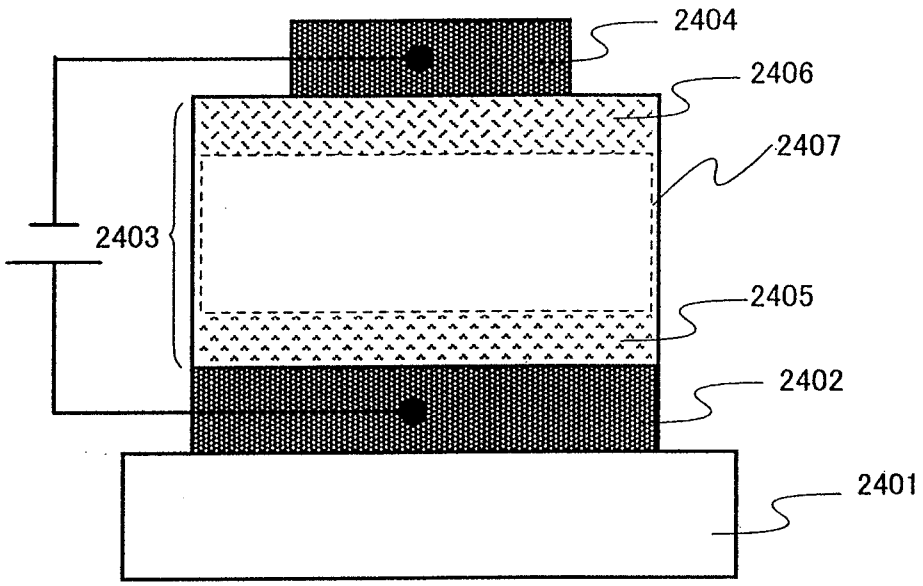


Fig. 25

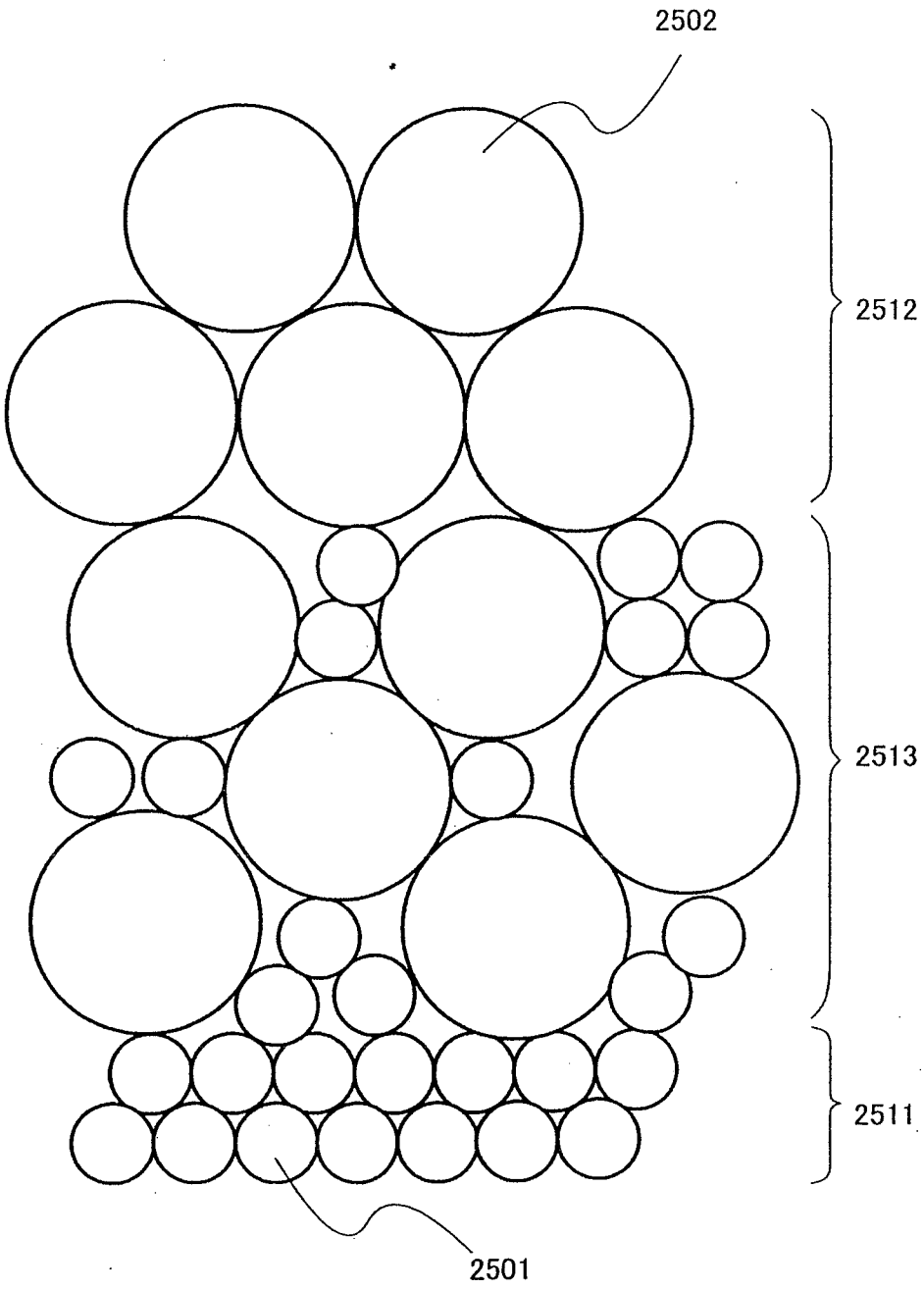


Fig. 26A

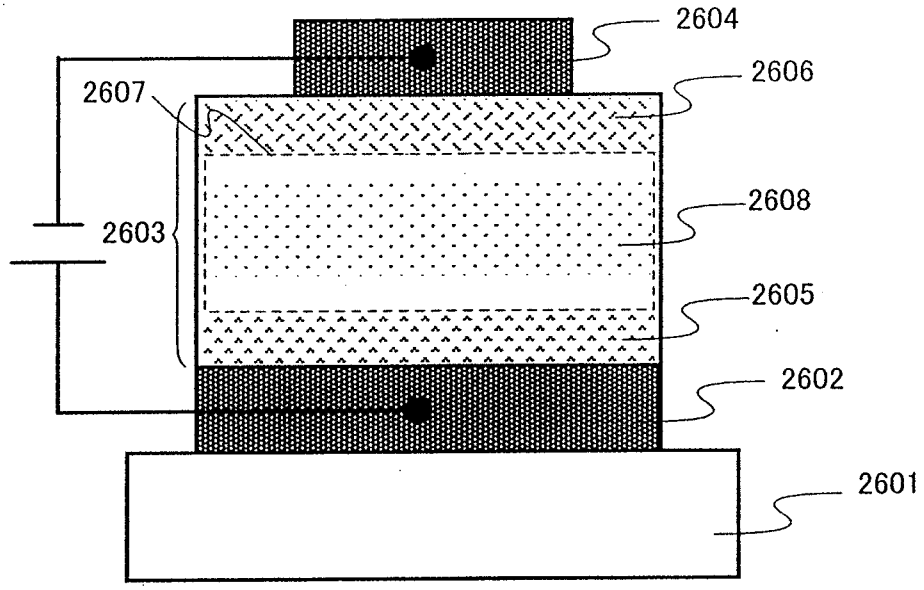


Fig. 26B

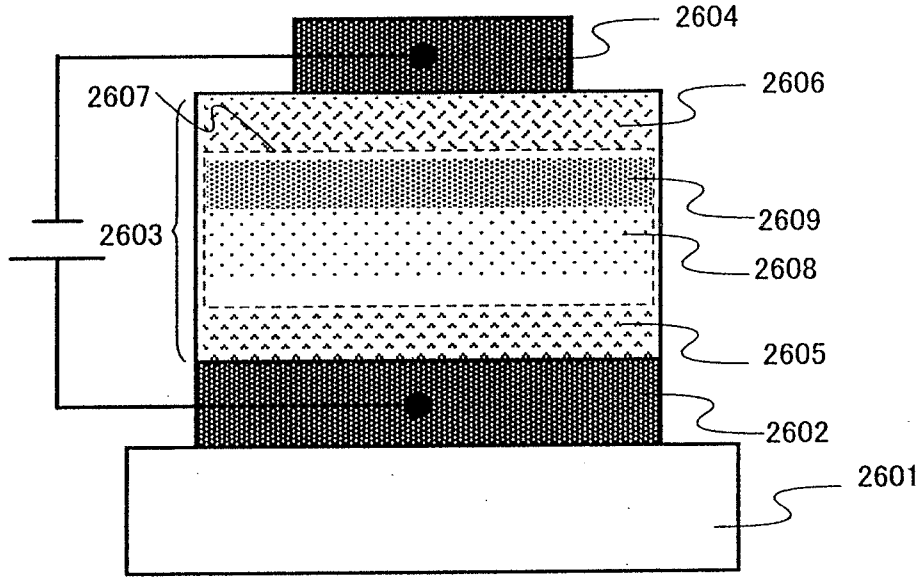


Fig. 27

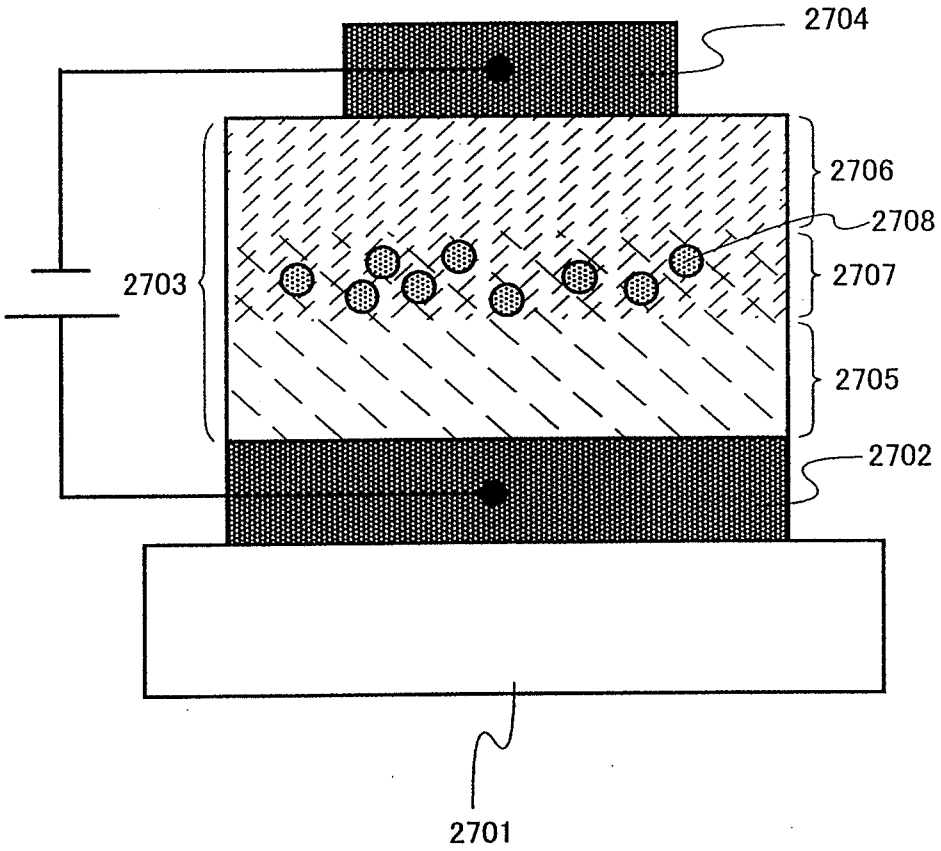


Fig. 28

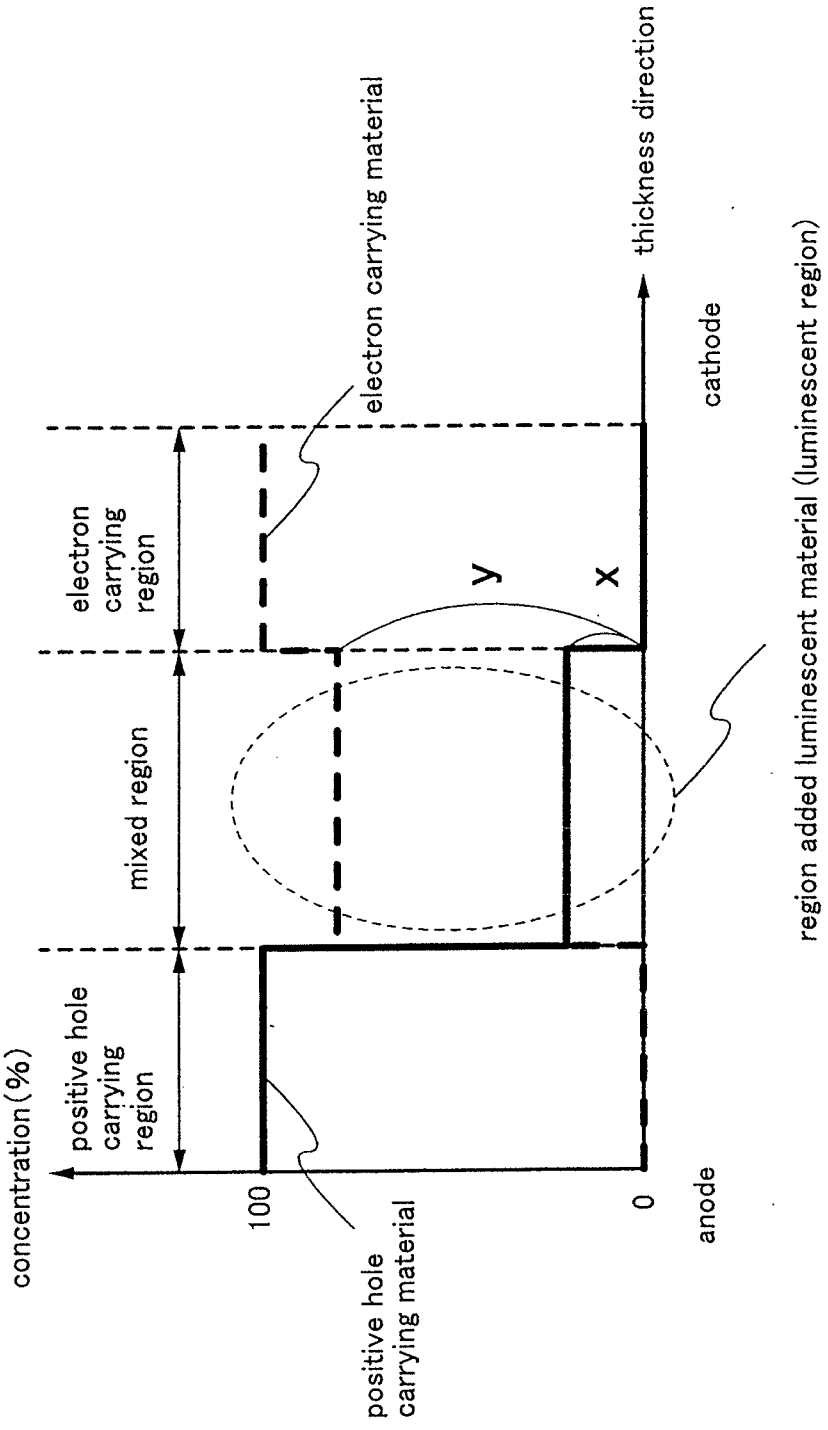

concentration (%)
positive hole carrying region
mixed region
electron carrying region
100
0
anode
cathode
thickness direction
electron carrying material
positive hole carrying material
region added luminescent material (luminescent region)
y
x

Fig. 29A

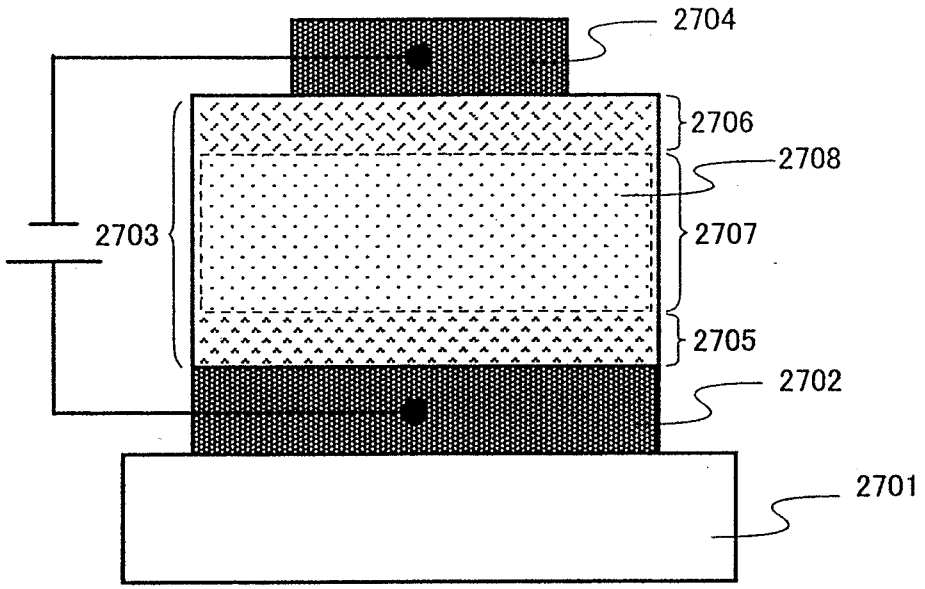


Fig. 29B

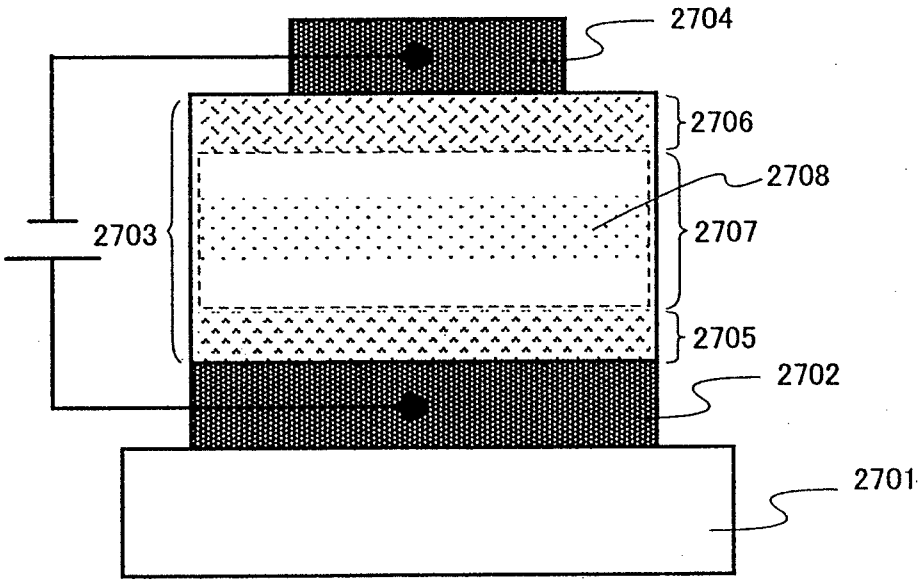


Fig. 30A

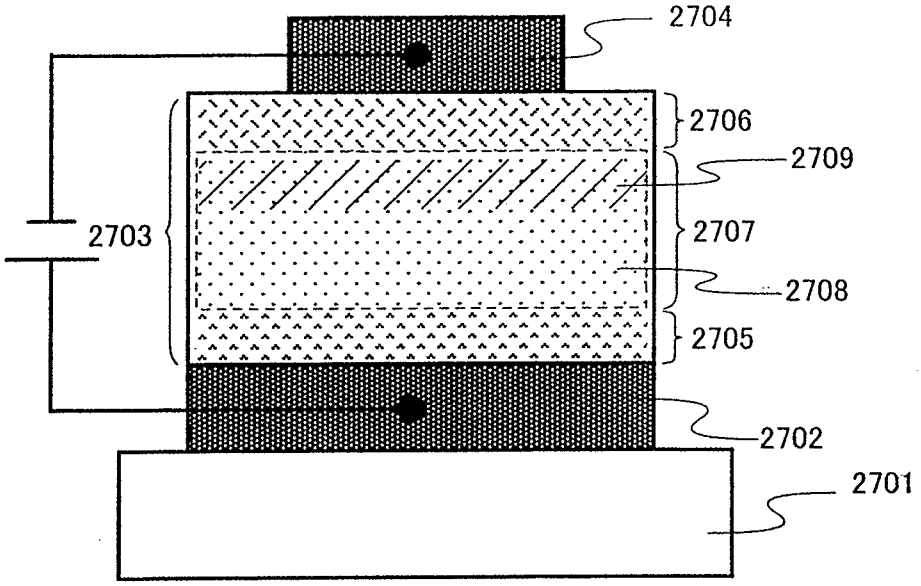


Fig. 30B

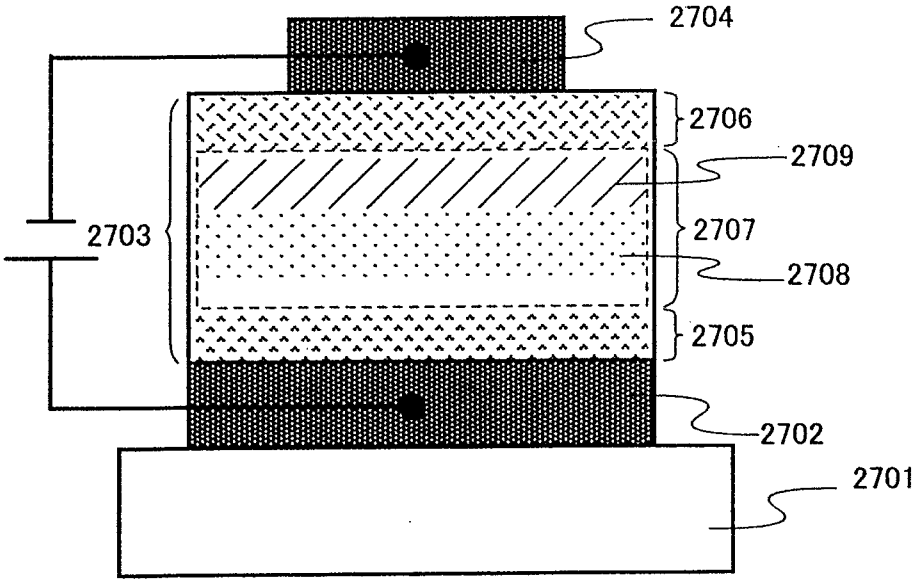


Fig. 31A

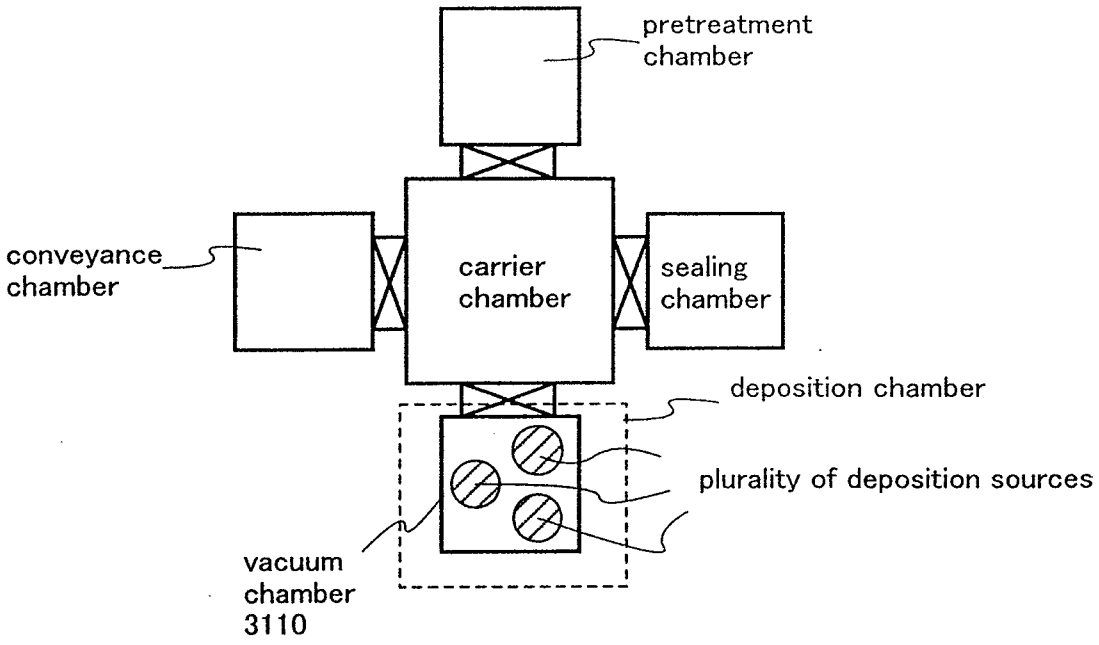


Fig. 31B

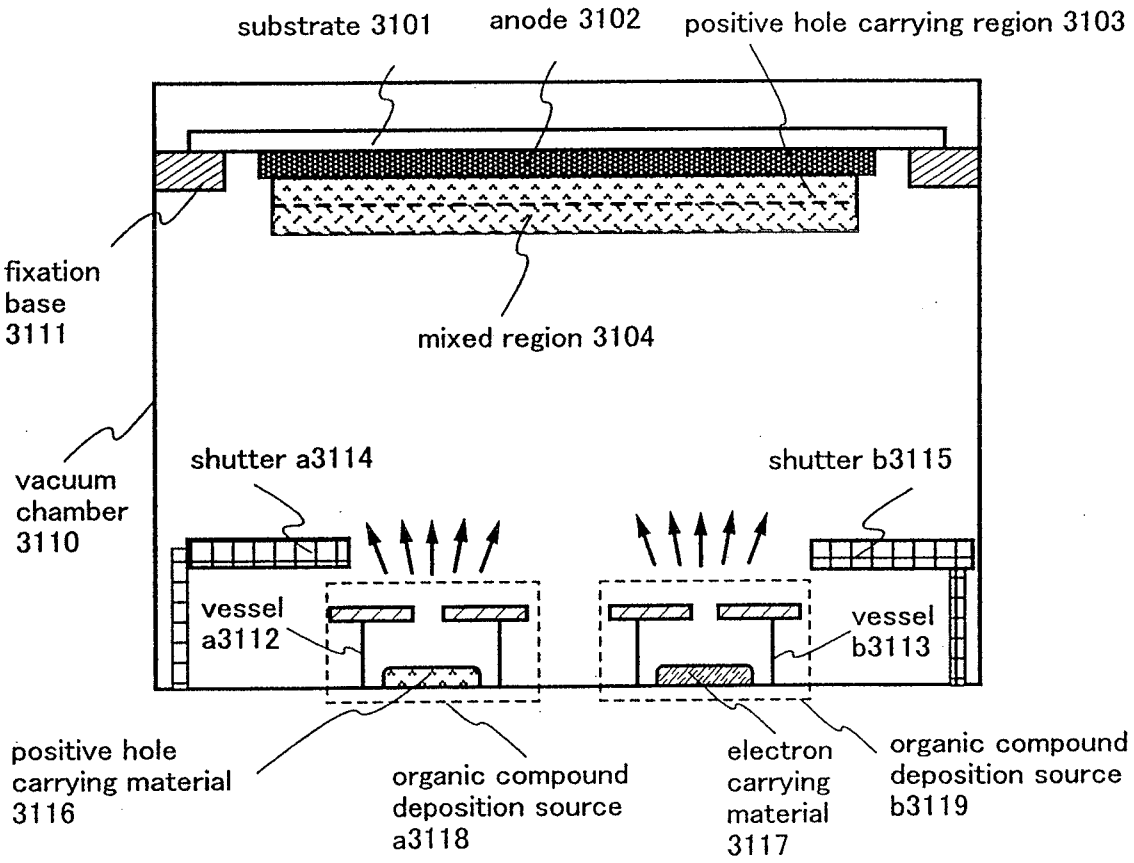


Fig. 32A

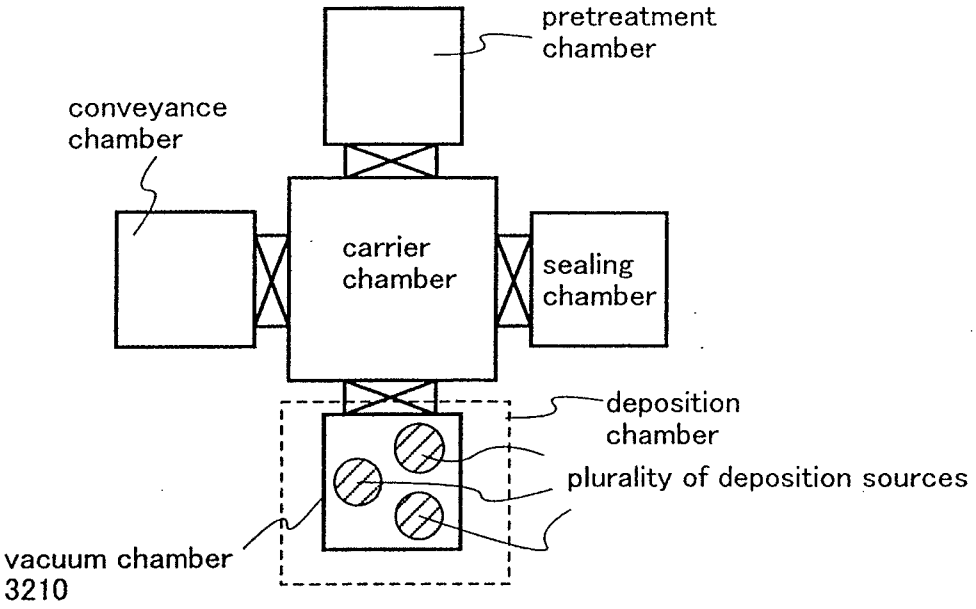


Fig. 32B

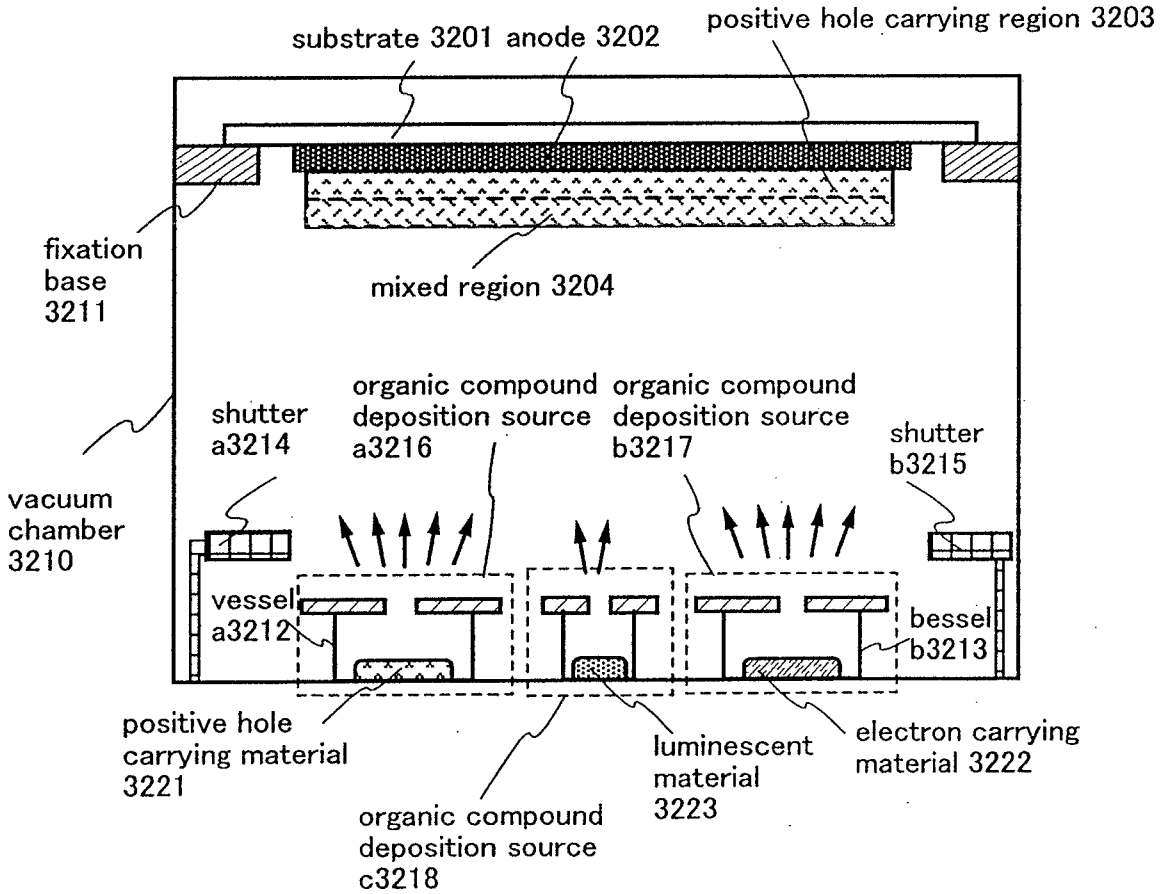


Fig. 33

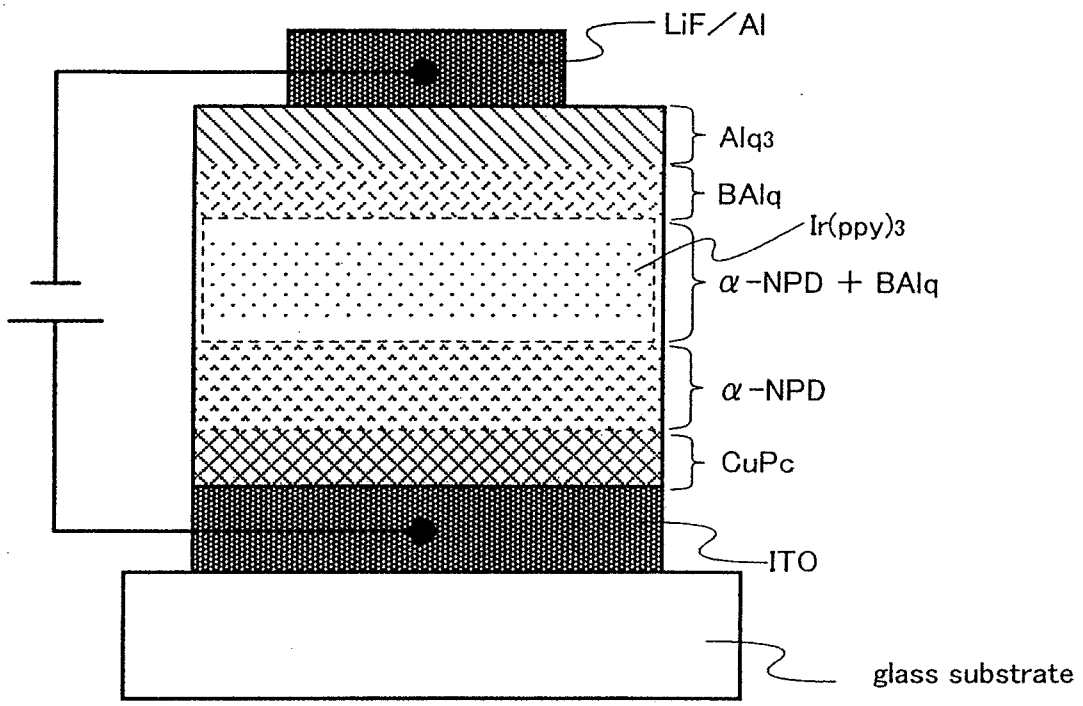

LiF／Al
Alq3
BAlq
Ir(ppy)3
α-NPD + BAlq
α-NPD
CuPc
ITO
glass substrate

Fig. 34

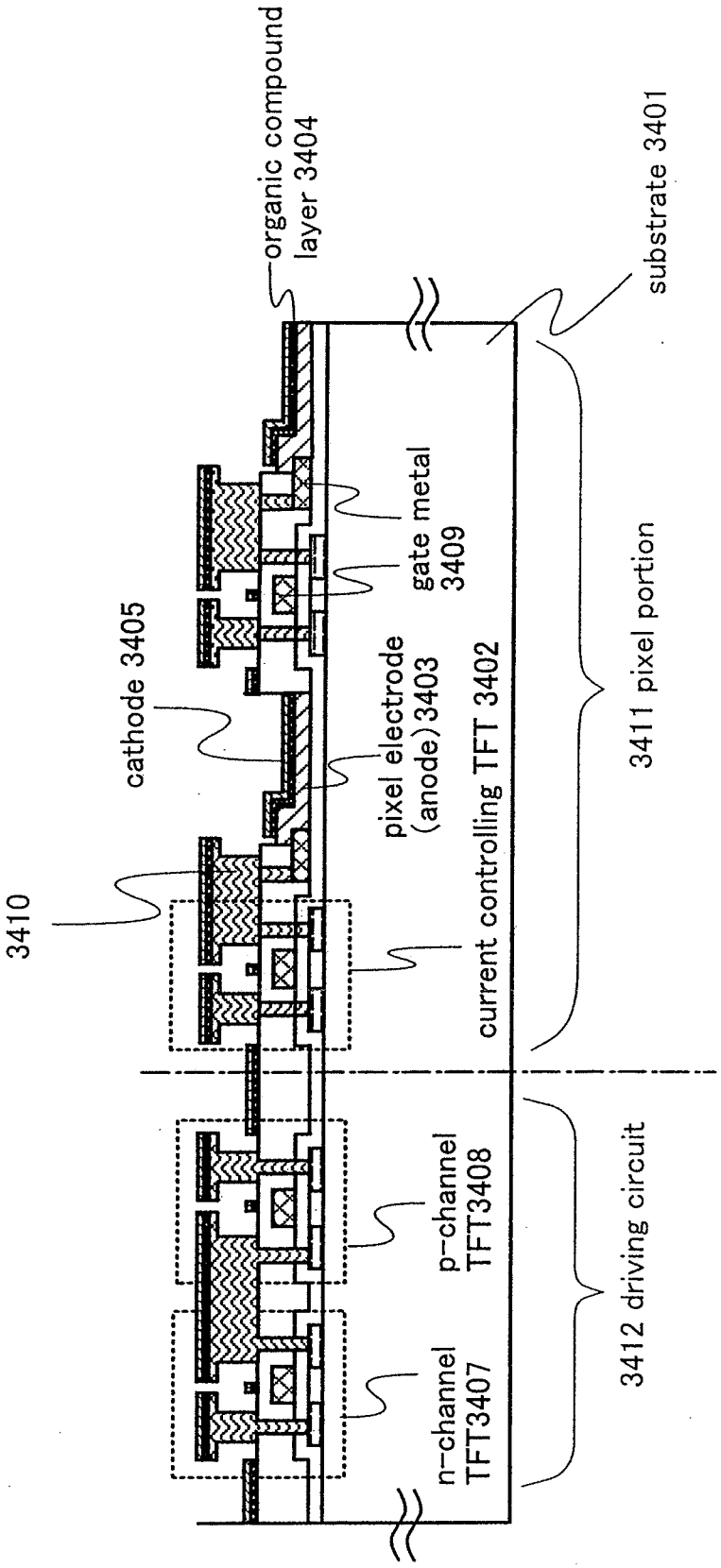
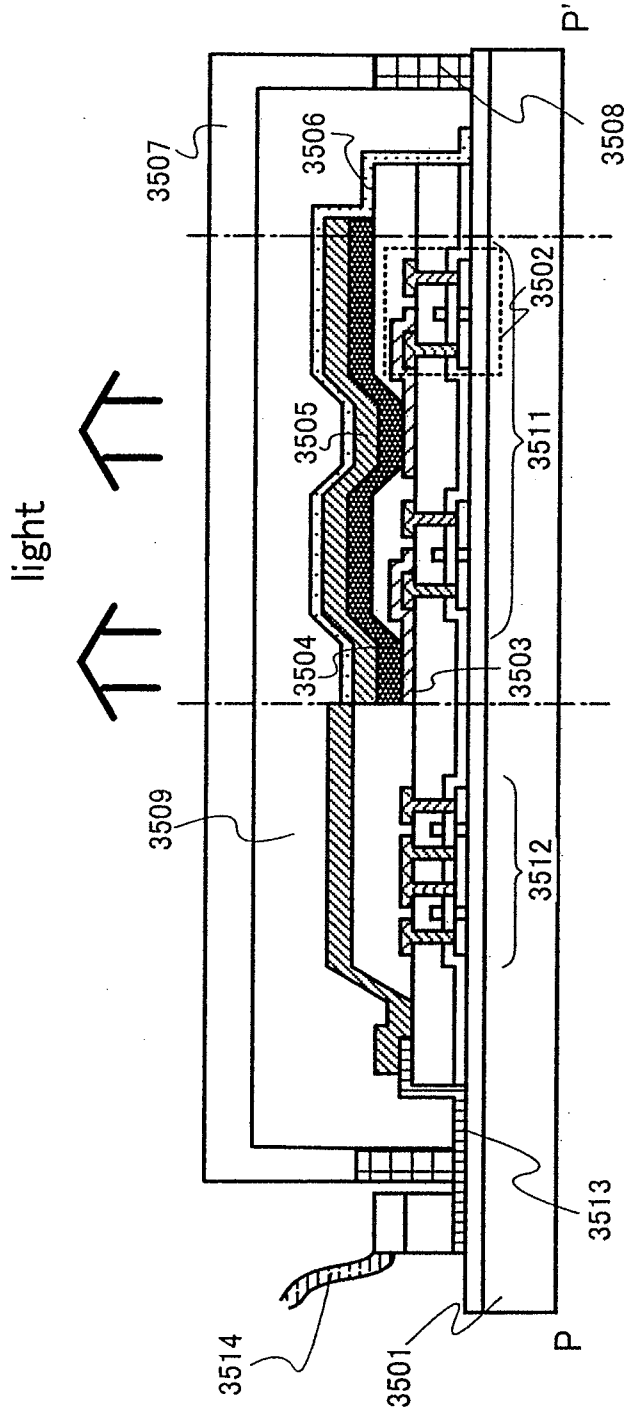

organic compound layer 3404
substrate 3401
gate metal 3409
cathode 3405
pixel electrode (anode) 3403
3410
current controlling TFT 3402
3411 pixel portion
p-channel TFT3408
n-channel TFT3407
3412 driving circuit

Fig. 35


light
3507
3506
3508
P'
3502
3505
3511
3504
3503
3509
3512
3513
3514
3501
P

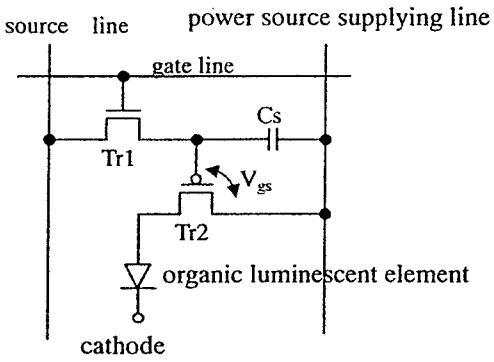


Fig. 36A

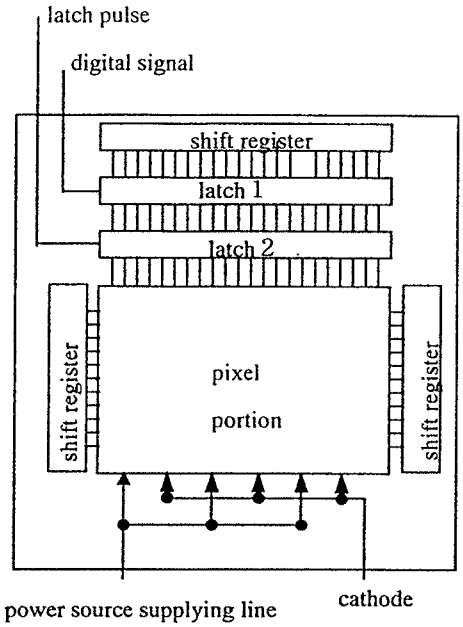
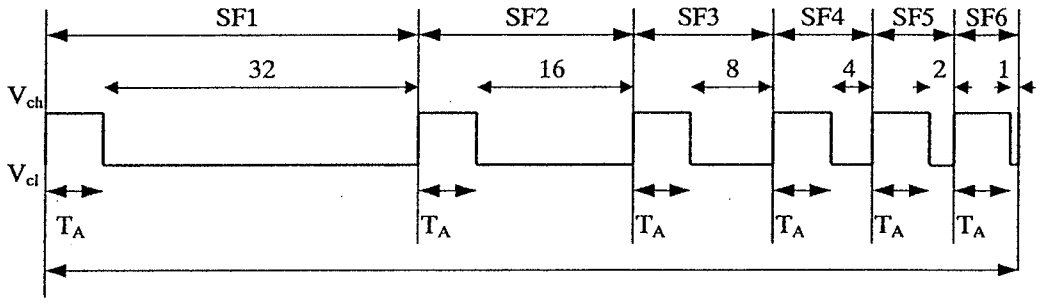


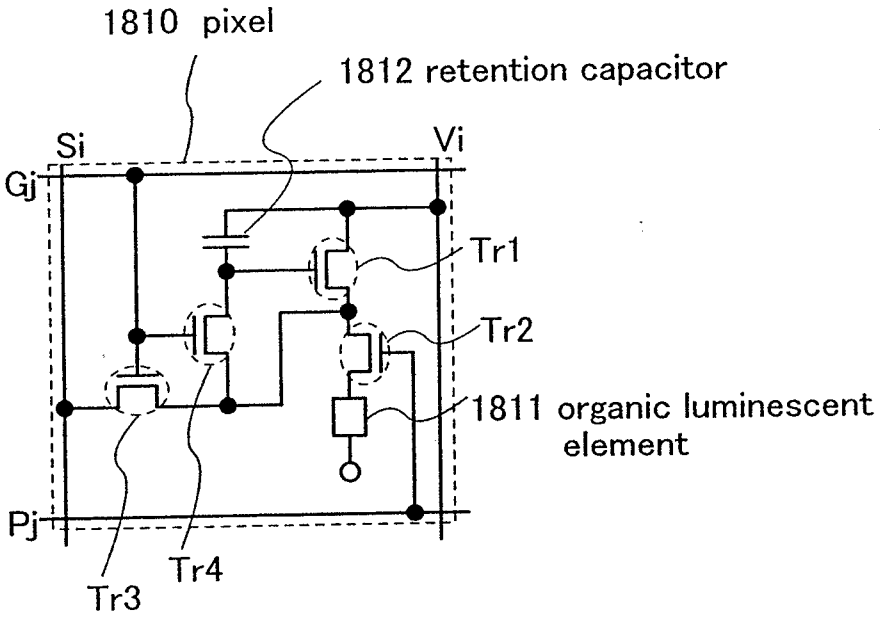
Fig. 36C



SF1-SF6:subframe, T_A: write in time

Fig. 36B

Fig. 37


1810 pixel
1812 retention capacitor
Si
Vi
Gj
Tr1
Tr2
1811 organic luminescent element
Pj
Tr3
Tr4