

(19)
(12)

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H01L 29/786

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2001 07 12
10 - 0290509
2001 03 02

(21) 10 - 1997 - 0065904
(22) 1997 12 04

(65) 1998 - 0063789
(43) 1998 10 07

(30) 96 - 344513 1996 12 10 (JP)

(73) 가 가 가
가 가

1 6 2

(72) 1 - 32 - 6 - 502

1 - 13 - 2 - 202

(74)
:

(54)

, ITO

1 TFT

2

3

4

5 4

6

7a

7b 7a K - K

8

9

10a

10b 10a L - L

11

12

13 12

14 TFT

15

16

17 TFT

18

19

20
21
22
23
24
25

101: 107:

109: 108, 110, 115:

116: (intrinsic)

117: 120, 123S, 123D:

120: 121, 126, 127, 173:

123S, 123D: n + 137S:

137D: 138:

(TFT)가 TFT (AI)
17 25 (201)
17 (202) (203)가 (203A) (204)
(204) (203) 가 (203A) (202)
(205) (203) 18 (206) 1
9 (208), (209) (207), (209)
(210) (B - HF) (202) (209A)

11B) (209) n + , 20 n +
(island) (208A) (islands) (211A, 2
21 ITO(indium tin oxide) (island) (208A)
(220) ITO (212)
22 (213A) (213)
가 (203) (207) (207A) (213)
203) (215), (214) (216) TFT 24 23
) (217) (218) (219)
TFT ()
acid) (209A) (hot phosphoric
(209) 가 25 (218) 19
(208) () 1000 (208)
(207) (203) (207)
(4) (203A)
25 (2A) (219) (203)
가
19 21 (212) ITO
(203A) (207) (207)
250 가 (203) (hillock) 가
TFT

가

가

TFT

1 10b

TFT

TFT

1

(101)

(102)

(103)

(101)

(102) , 1

(103)

(延在)

(101)

(103

)

(103)

가

(103)

(106)

(105)

)

가 120nm 180nm
0nm

(109)

(108)

2
가 100nm 200nm

(103)

(107)

(102

00nm 200nm

가 120nm 180nm

(111)

(109)

(110)

가 100nm 200nm

(105)

가 100nm 200nm

(106)

가 1

가 100nm 200nm

가 100nm 200nm

가 120nm 180nm

(113)

가 120nm 180nm

(114)

2

(105)

3 가 200nm 300nm (116) (117) CVD (107) (117) (107) (116) 가 100nm (118) (109) (118) (116) (107) (119) (110) (106) (110) (118, 119) (117) (122) (109) (106) (115), (116) (119) (119) (121) (116) (115) (109)가 (112) 4 20nm 30nm CVD (118, 119) n + (107) (islands)(123S, 123D) (124) 가 (124) (122) (island)(120) (116) (island)(120) (107) 가 (islands)(123S, 123D) (116) 가 , (CCI₄) (115) (122) (122) (O₂) 가 (109) (116) (121) (117) (125) (127) (126) (127) (125), (127) (121) (127) (121) 6 (127) 4 5 6 (121) (124) (128) (124, 125) ITO 6 (island) (123S) 30nm 100nm (129) 가 , ITO (115)

) (109) (106) 가
 . (109) (115) (126)
 (121)
 (109)가

(128) 7a 7b 7a
 , 7b 7a K - K . 7a

(109) (130) (131) (130)
 (109) (126) (121) .
 , (109) (109) (121) , (109)
 (106) W_{CN1} (126) (121) W_{PR} , W_{PR}
 (130) W_{CN2} 가 (131) (131) (13)
 0) (126) (121) , (110)
 가 , (131) ,
 가 (SF₆) (CF₄) 가

8 (109) (121), (126)
 (115) (109) (106) .

(131) , 9 (Cr) 가 10nm
 30nm 1 (139) 1 가 330nm 400nm 2
 (140) () (136) . () (1)
 36) . (109) (134) (135)
 , (134, 135) , (137S), (137D),
 (137D) (145) (138) .

10a 10b 10a L - L 10b
 (129) (142) (138) (143) .
 , 가 100nm 300nm (141) , (138)
 (137D) (144) .

(106) W_{CN1} , (130) (115) W_{CN2} (143)
 W_{CN3} (138) W_{PD} ,

W_{CN1} W_{CN2} W_{CN3} W_{PD}

가 TFT (109)가 , 가
 가 TFT

(151) (101) (129) (152)가
 (152) (141) (145) (111)
 (153)가
 (154) (154) ITO (153)
 (155) (156) (155)
 (seal) (157)가 (156) (144)
 156) (157) (158) (101) (151) (144,
 , 151) (144, 156) (101)
 (159, 160) (138)
 () (111) (161)
 (162) (161) (163)가 (101)

12 7a 7b (121) (126)
 (130) (131) (121) (126) (
 132) (121) (126) (133)
 (121) (126) (132)
 (133) 가 , 13 (121) (121)
 A), (126) (126A) (115A)가 (121)

(121A, 126A) (138) (138)가 (115A)
 (109) (138)

14 16 TFT

(107) 14 (116) (122)
 16) (109) (109) (122) (1
 lands) (123S, 123D) (171, 172) (122) (is
 (116) (126) (173)
 (109) (172) (island) (120) (126) (126)
 (173) (106) (106) (126)

15 (171, 172) ITO
 (174) ITO (175)
 9) 가 - (175)
 (173) (126) (115) (10
 (109)가

16 (176) (176)

177)가 , (173) (126) ((176) (islands)(123S, 123D), (115) 8 (1 (109)가 가 . (175)

, TFT , , 가 . , (109) (island) (island)

(57)

1.

2.

1 ,

3.

2 ,

4.

2 ,

5.

2 ,

indium tin oxide

6.

1 ,

7.

1 ,

8.

1 ,

9.

1 ,

n +

10.

1 ,

(intrinsic)

11.

1 ,

(intrinsic)

, n +

12.

1 ,

(intrinsic) n +

13.

1 ,

(intrinsic) (island) n + (islands) ,
(island) (intrinsic) (island) (intrinsic)
(island) n + (island)

14.

1 ,

(a) (intrinsic)

(b) ,

(c) ,

(d) (intrinsic)
n + (island) ,

(e) (intrinsic)
(intrinsic) (island) ,

(f) (intrinsic)

15.

1 ,

16.

1 ,

17.

1 ,

,

,

18.

1 ,

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19.

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20.

19 ,

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21.

19 ,

n +

.

22.

19 ,

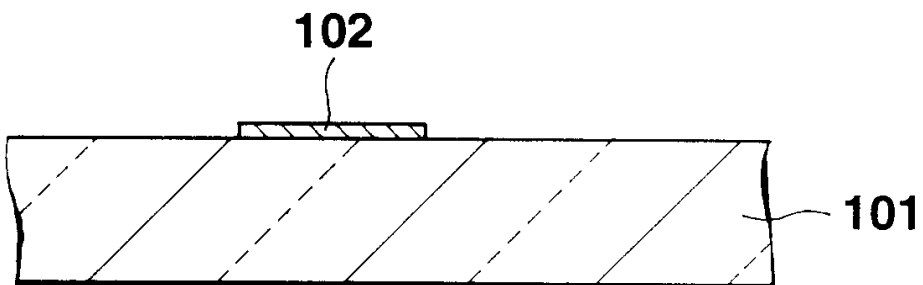
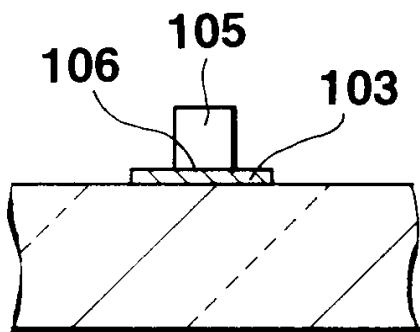
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23.

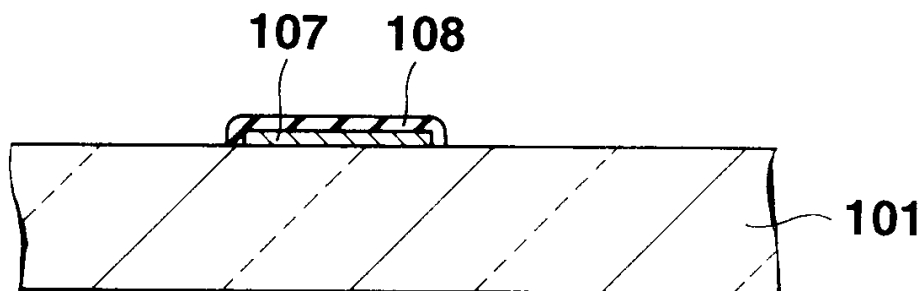
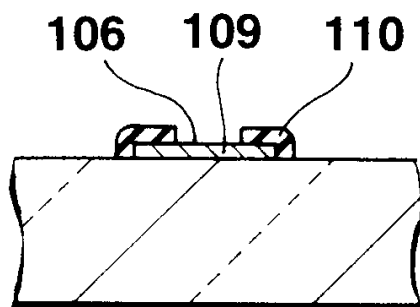
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n +

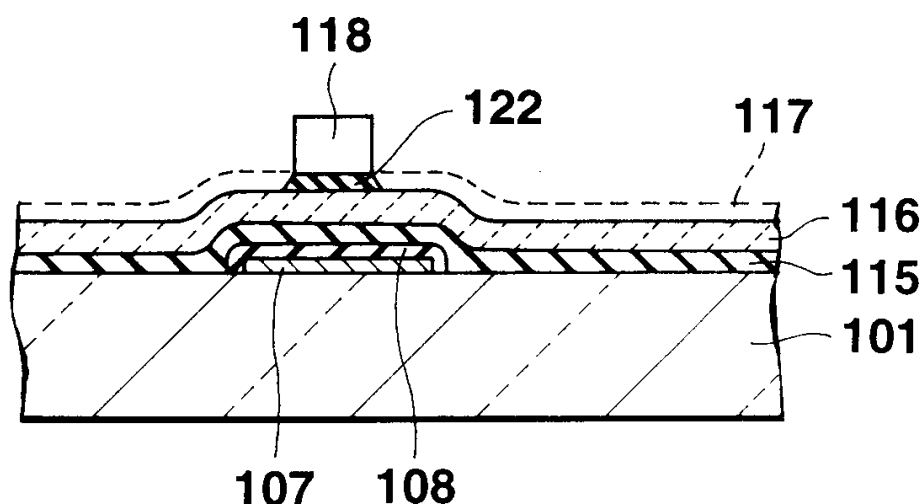
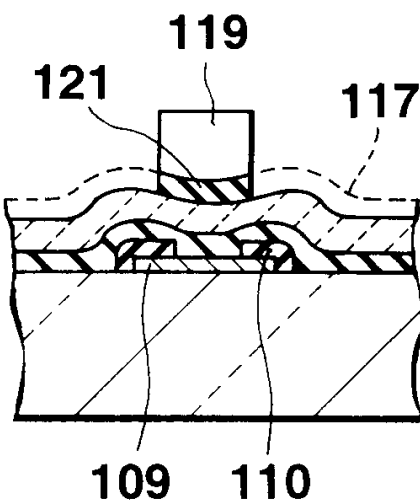
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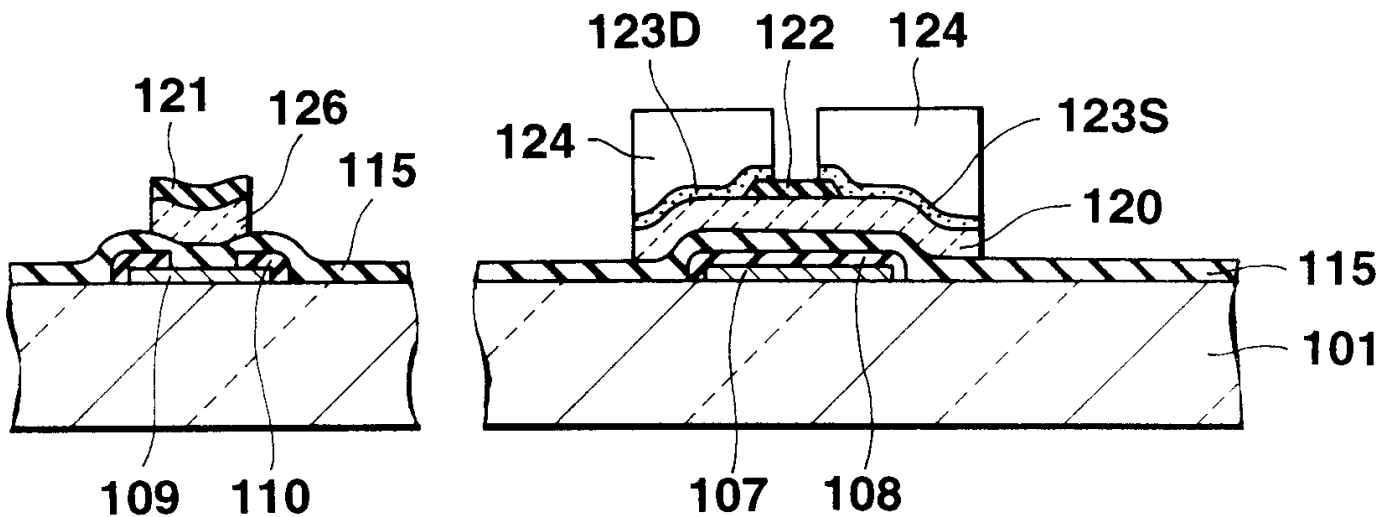
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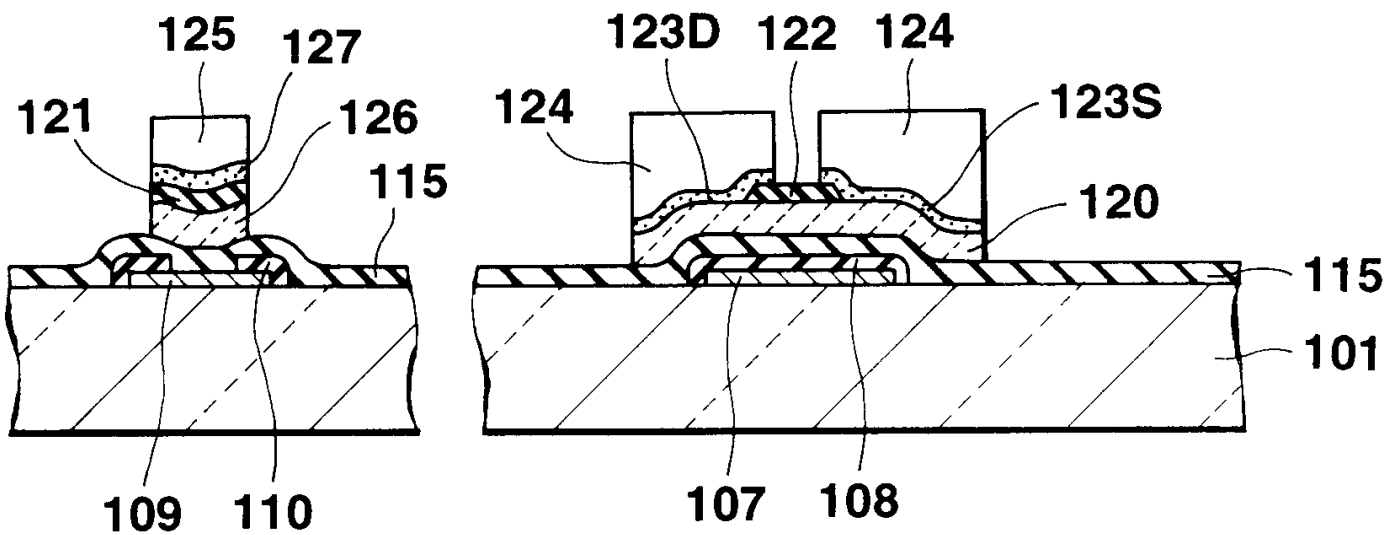
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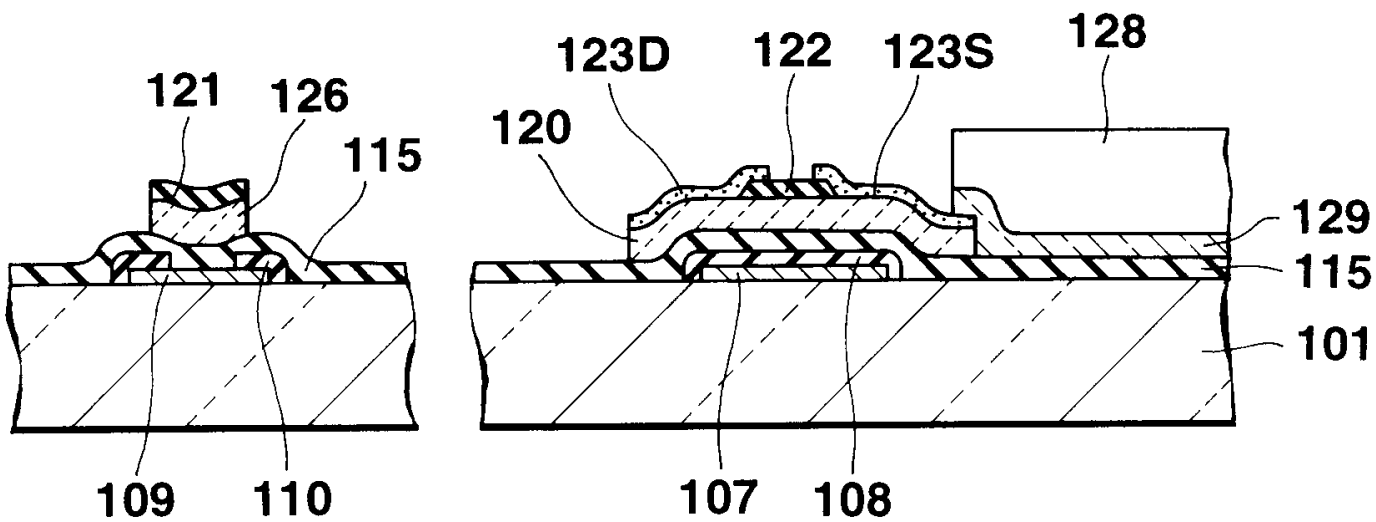
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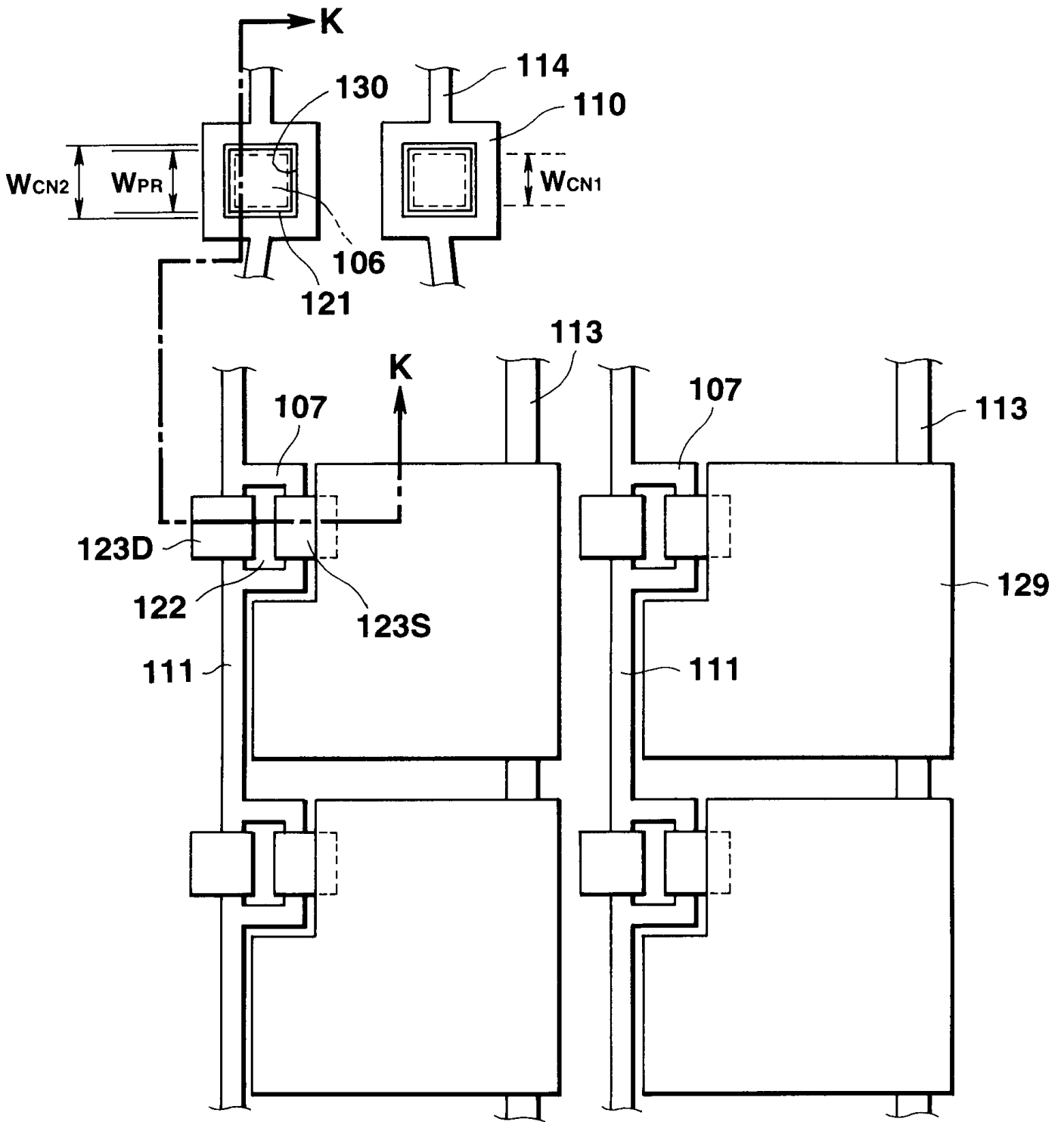
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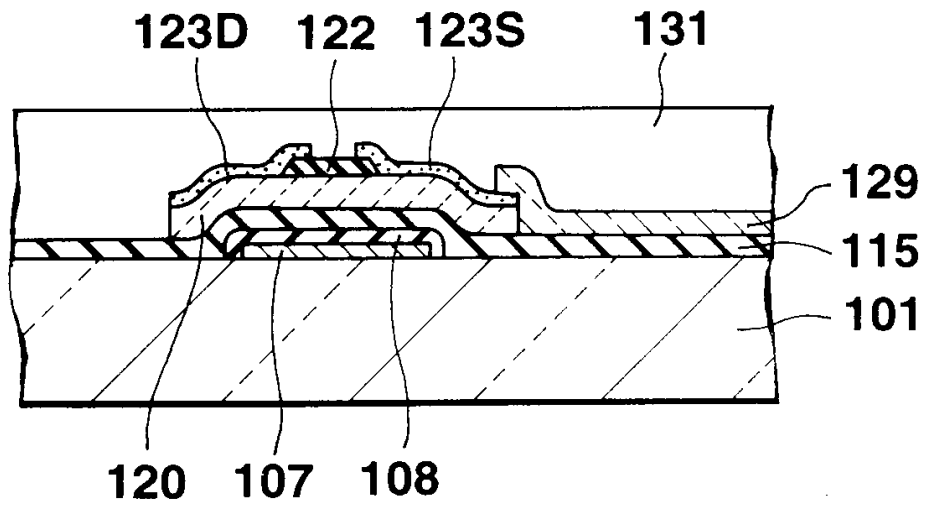
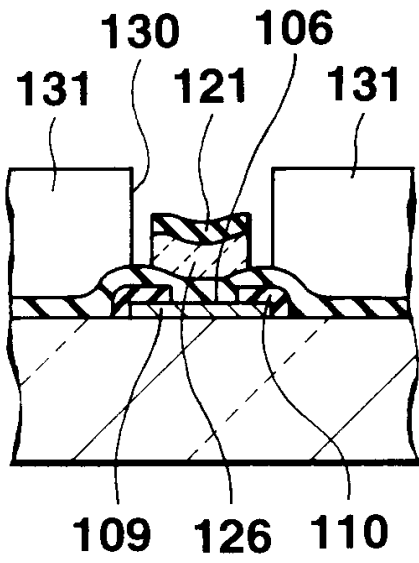
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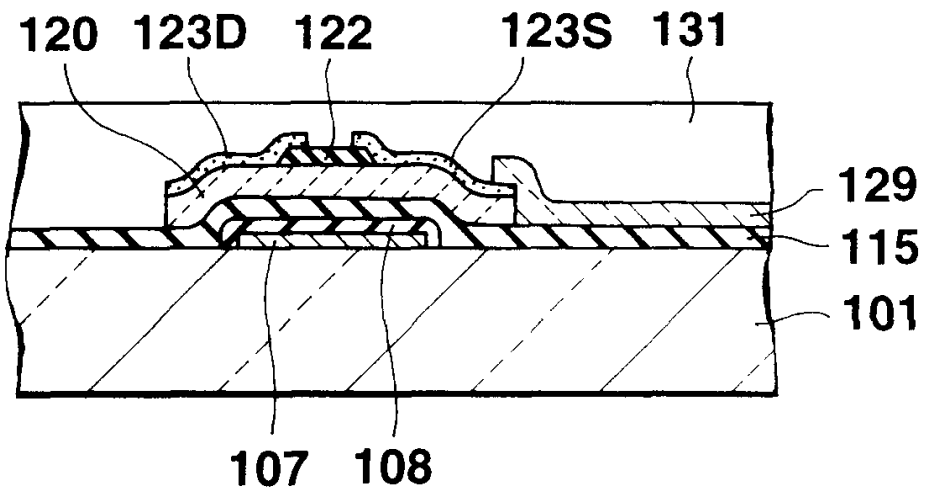
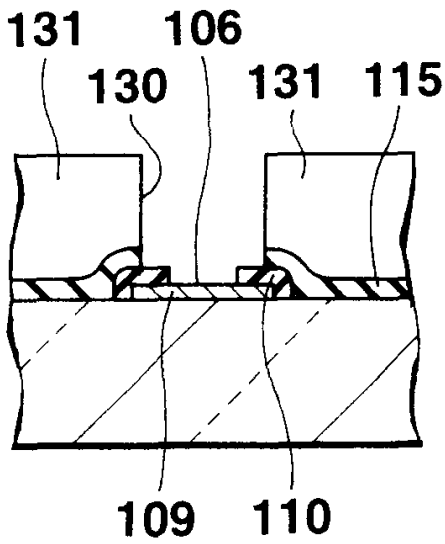
7a



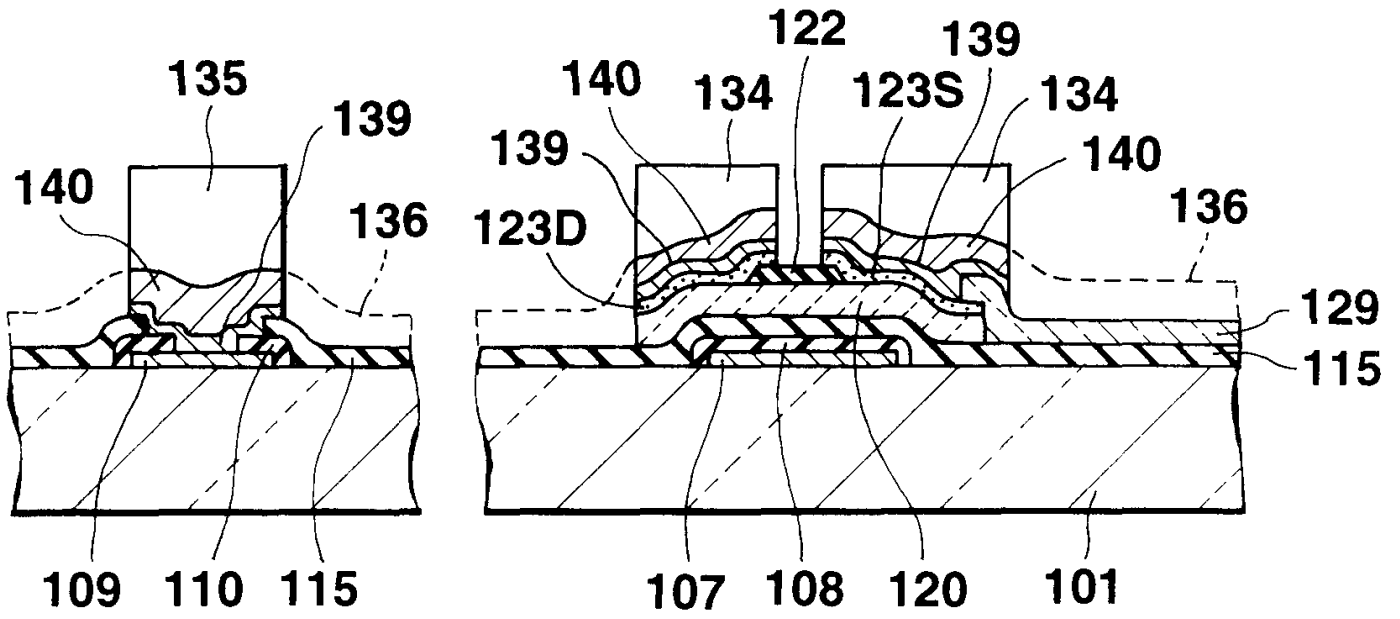
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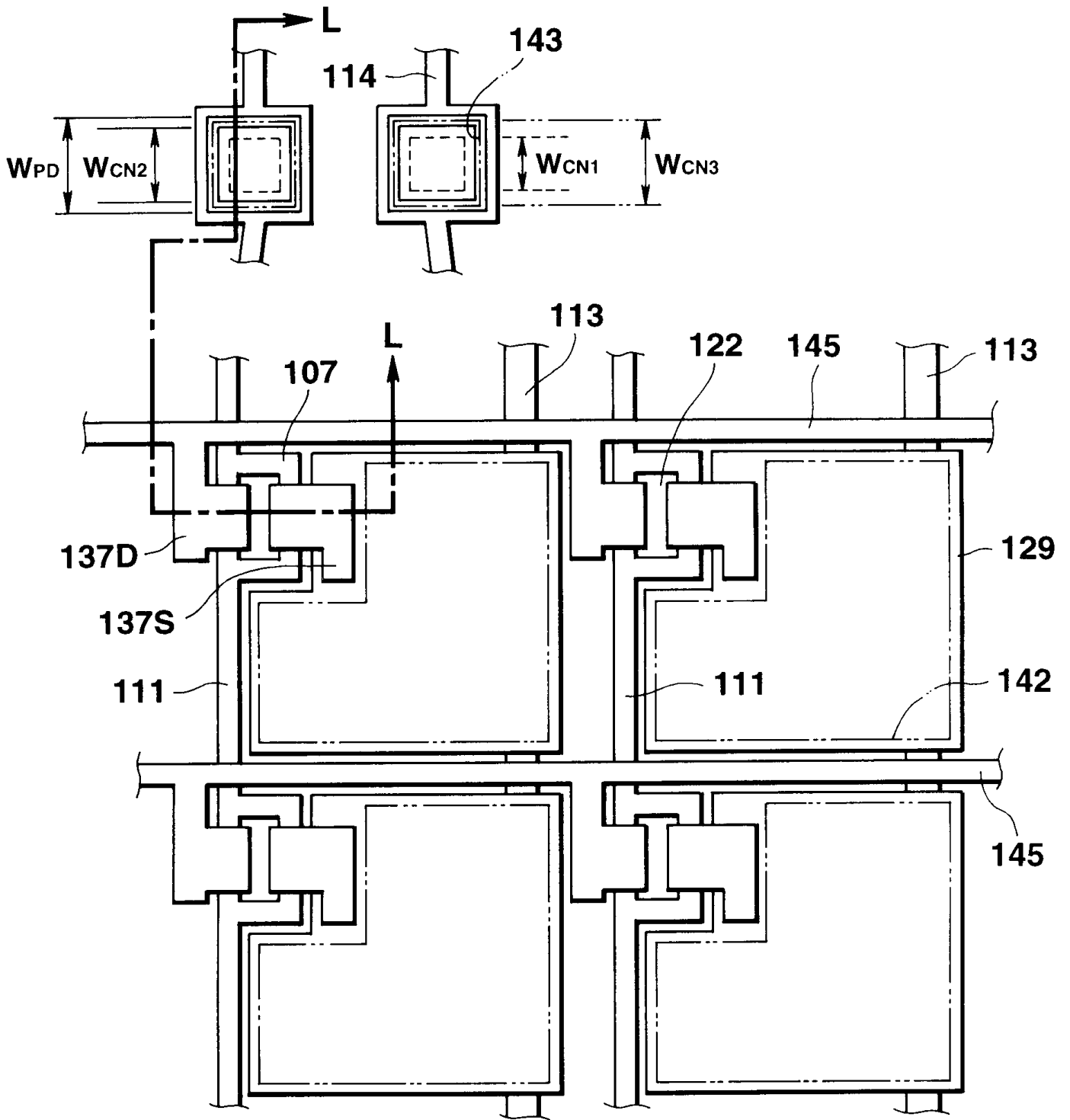
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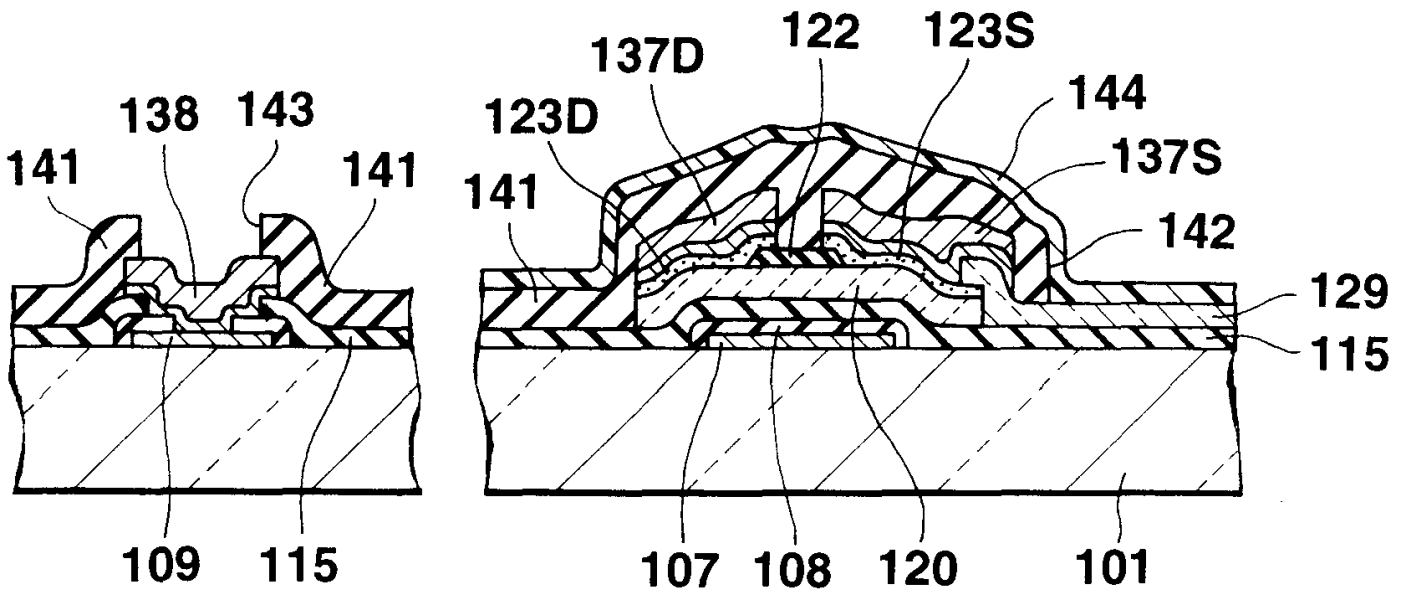
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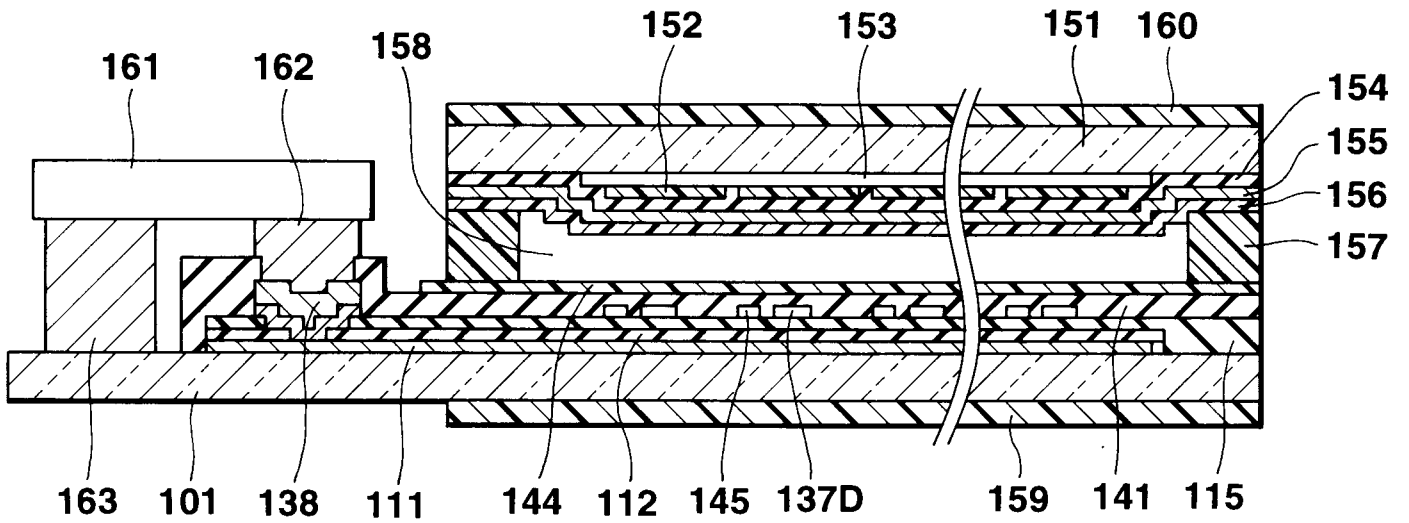
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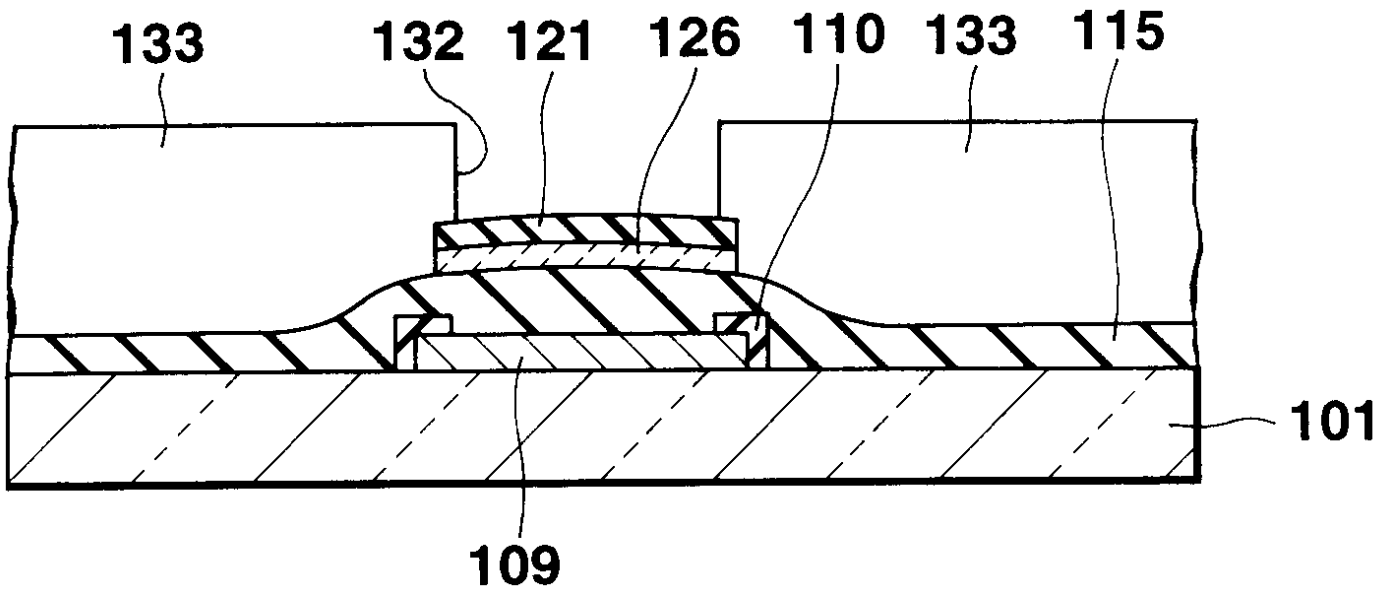
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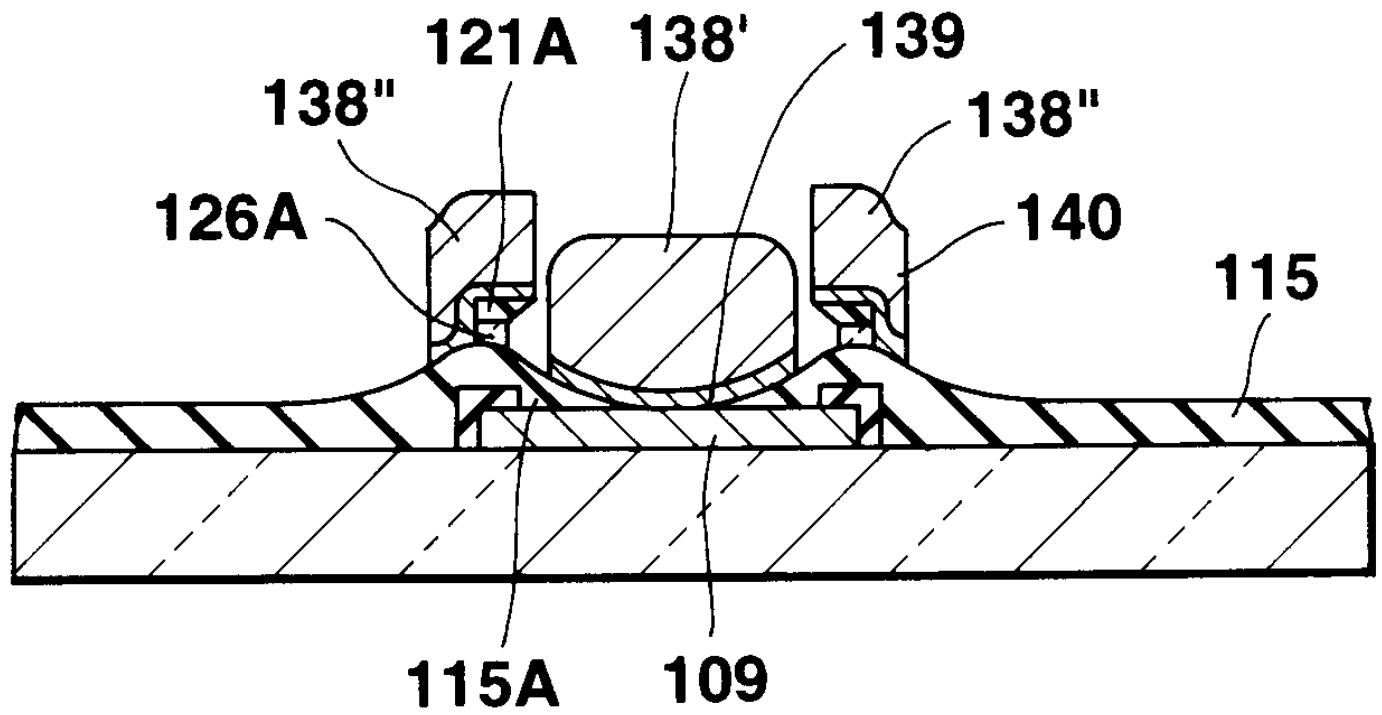
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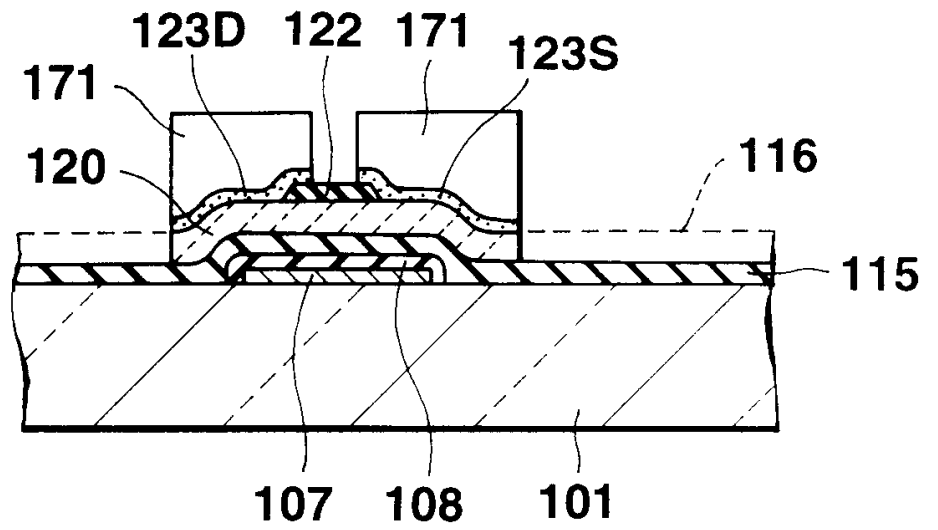
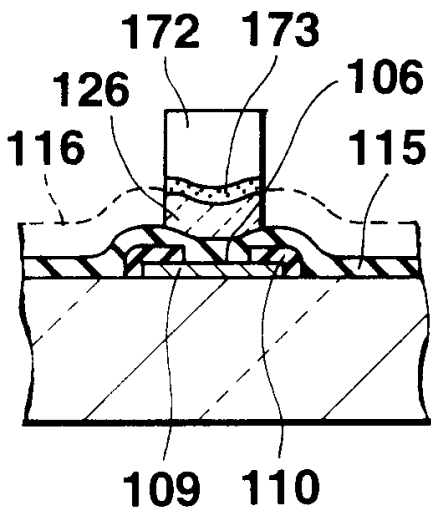
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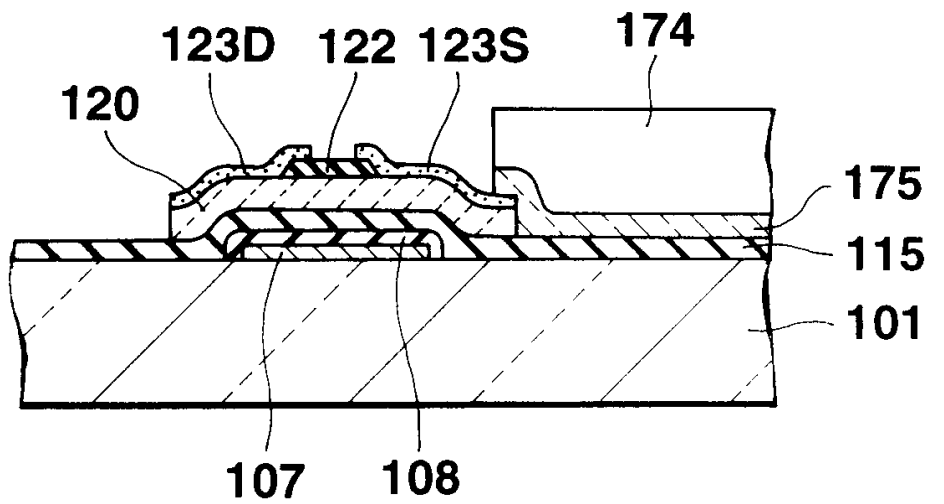
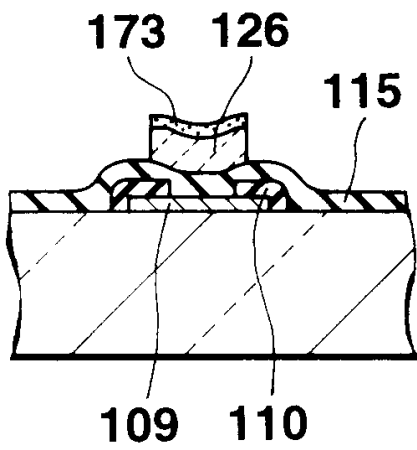
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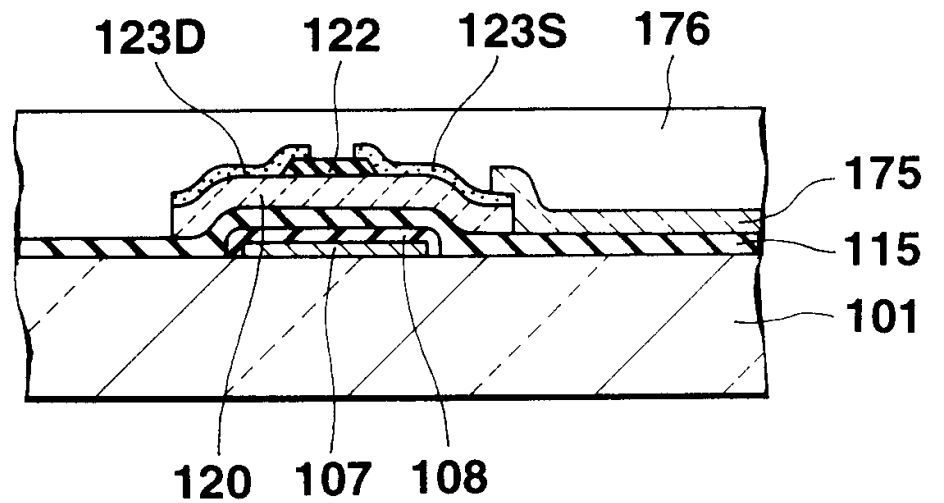
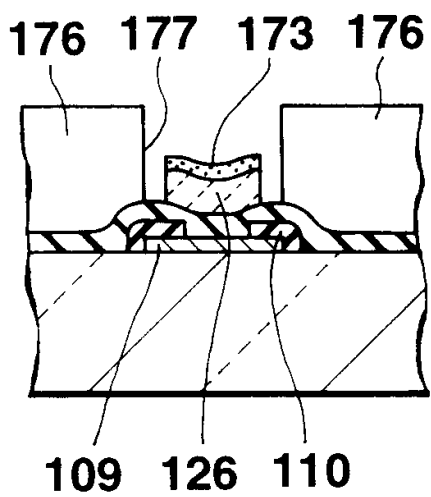
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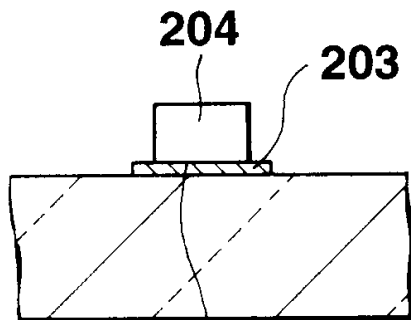
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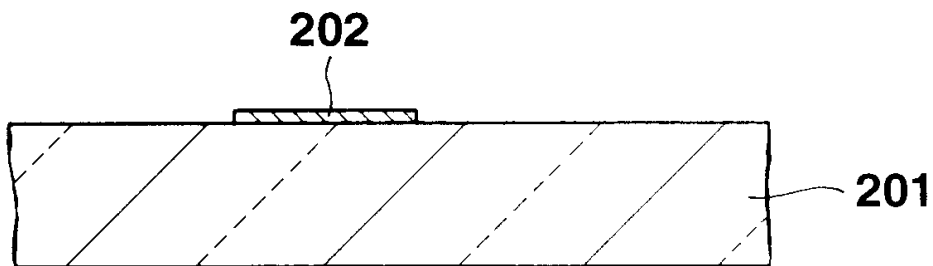
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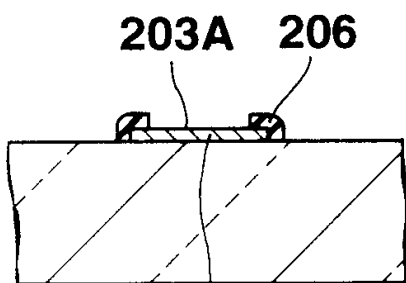
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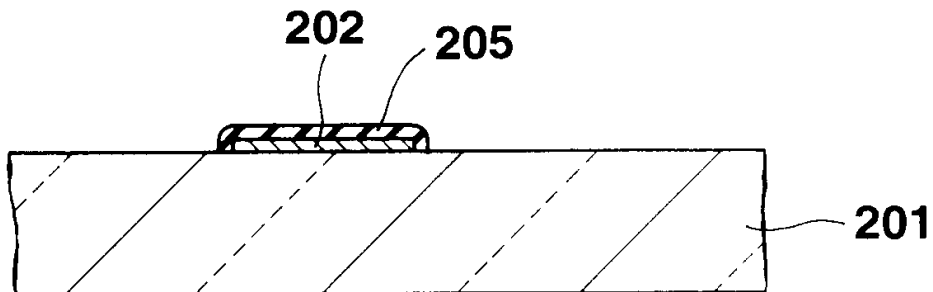
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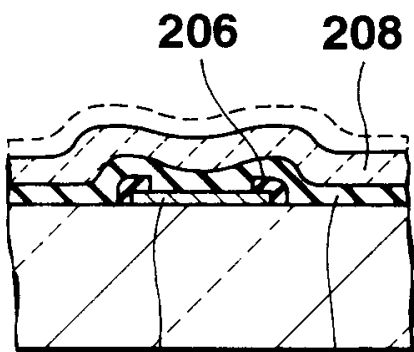
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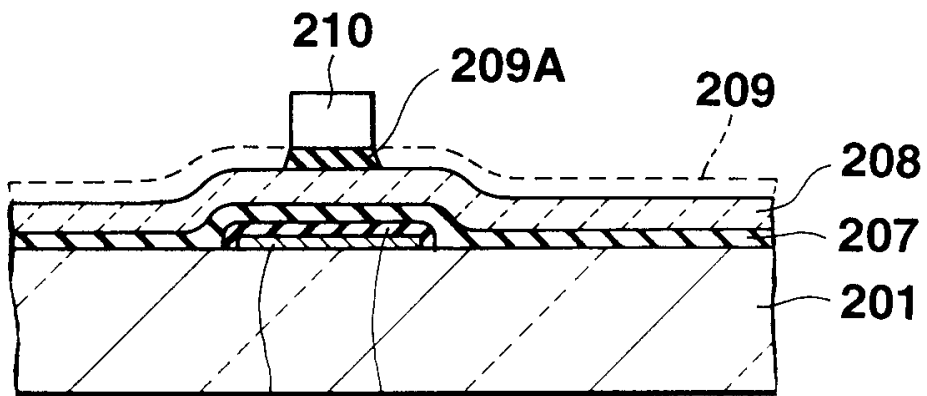
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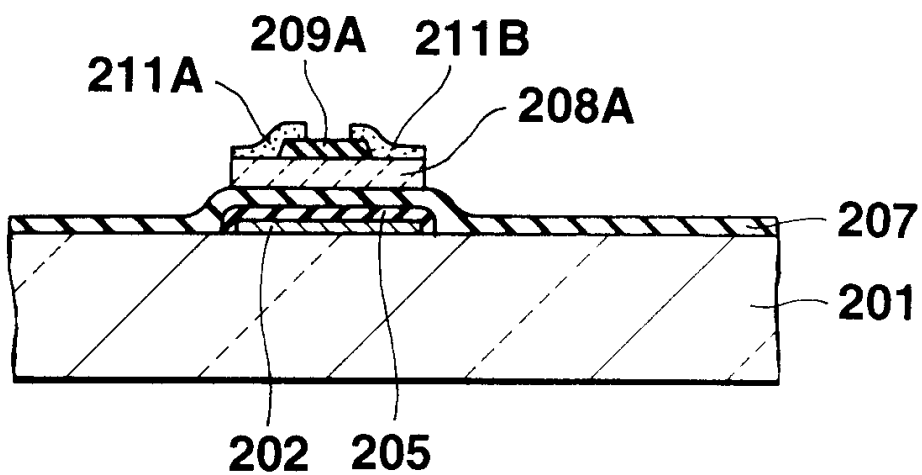
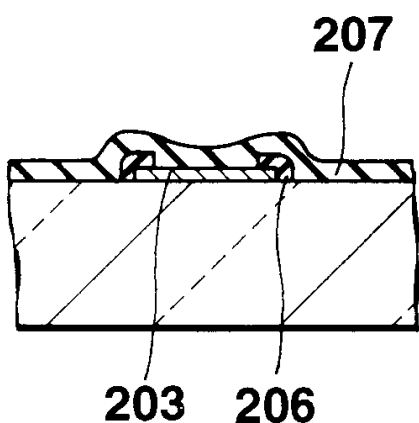


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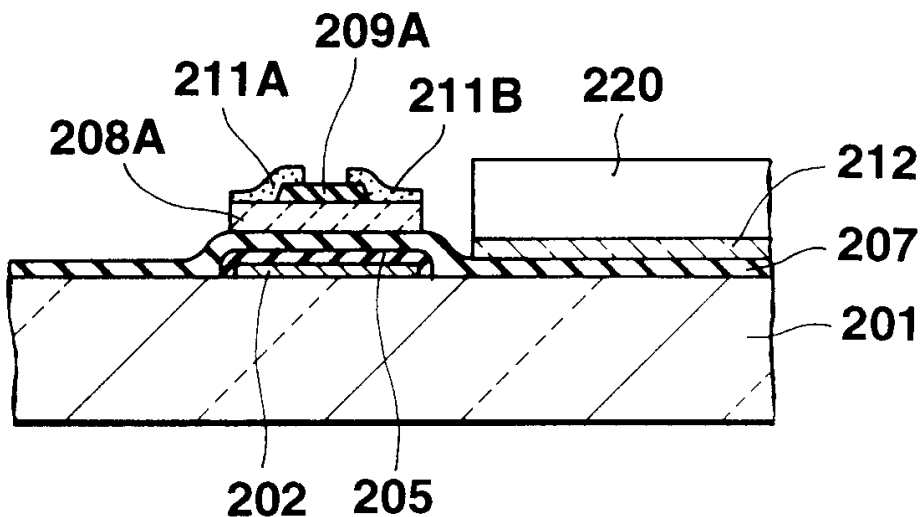
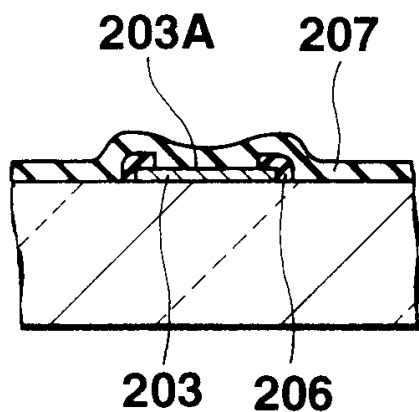


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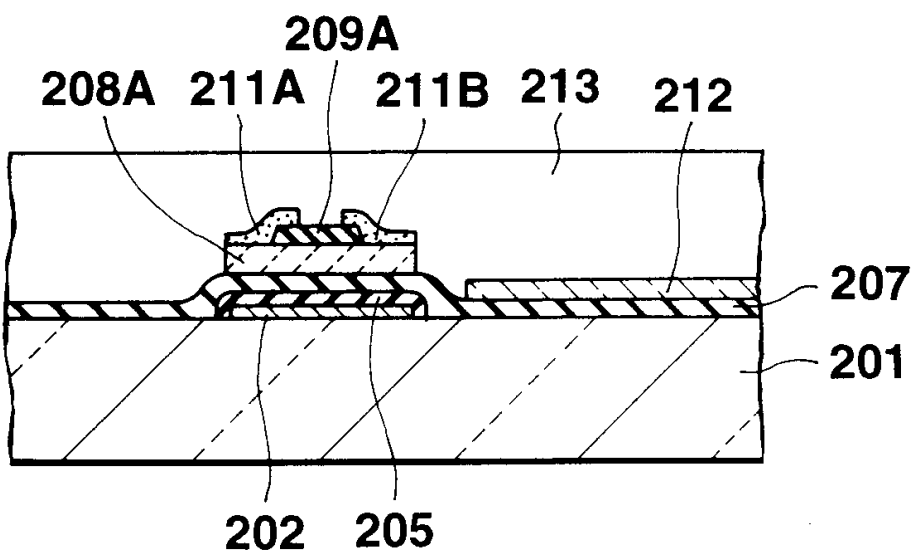
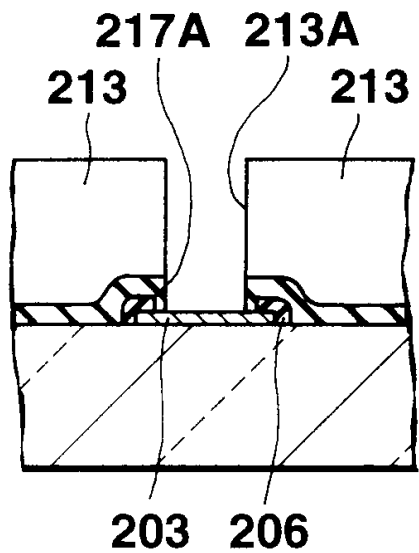
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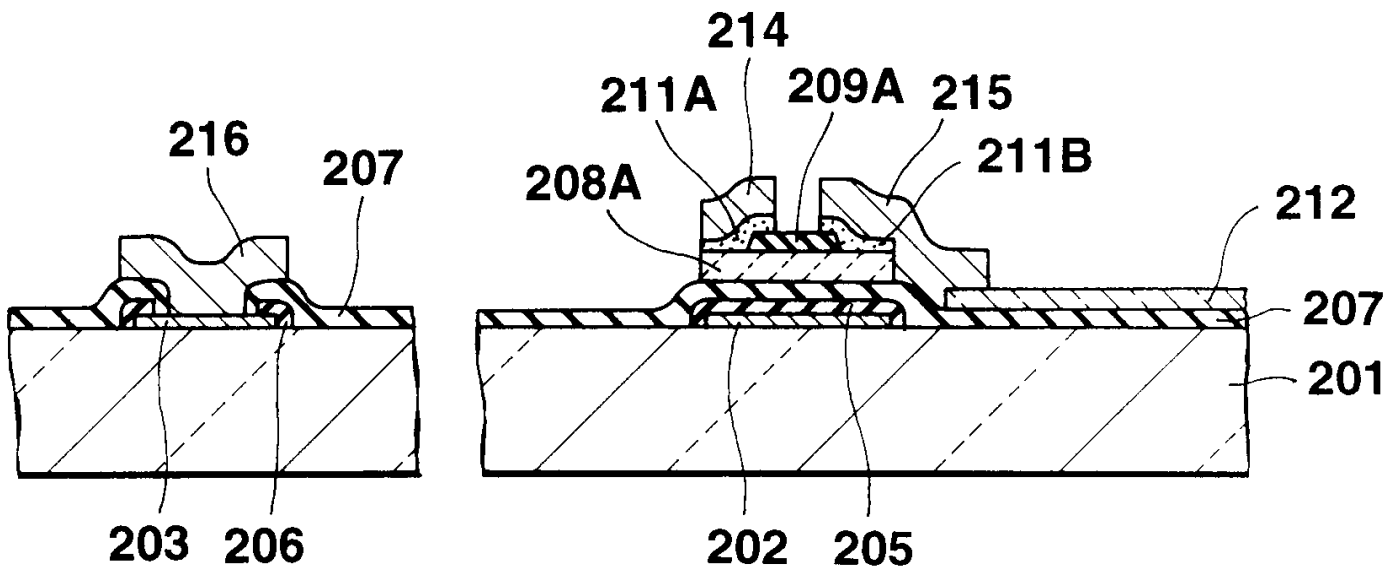
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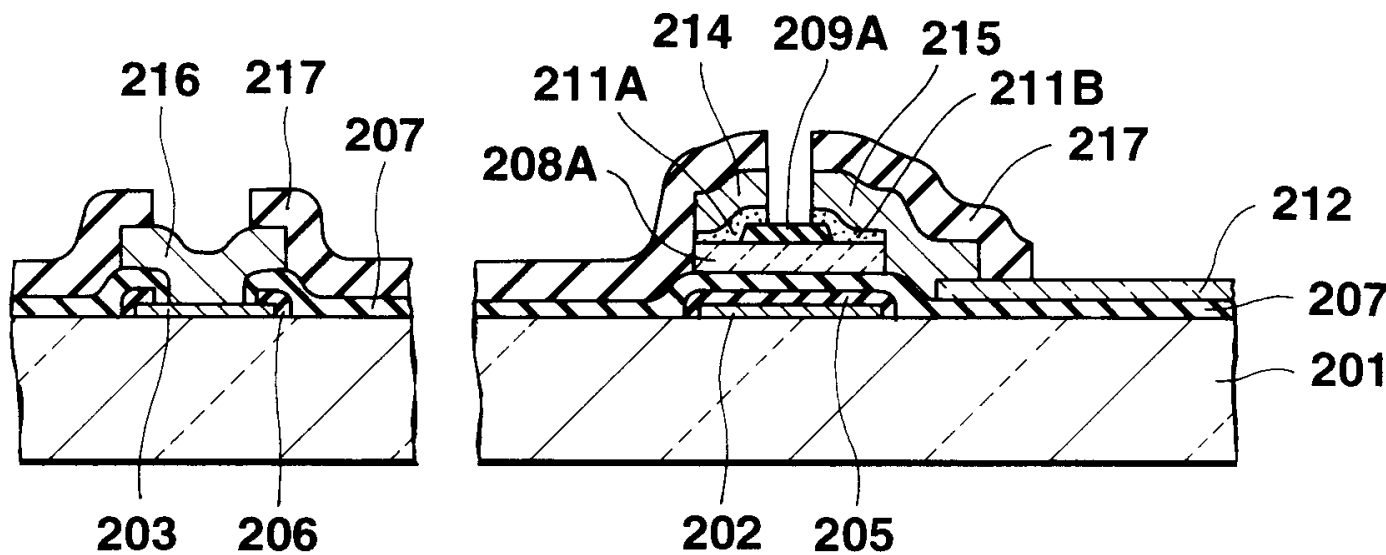
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