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(24)

2002 01 17  
10 - 0320661  
2002 01 02

(21)  
(22)

10 - 1999 - 0013462  
1999 04 16

(65)  
(43)

1999 - 0083238  
1999 11 25

(30)  
(73)

10 - 107896  
가 가

1998 04 17

(JP)

1 1 1

(72)

가

가 50가 가

가 50가 가

가 50가 가

가 50가 가

가 50가 가

가 50가 가

가 50가 가

(74)

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(54)

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6), (33), 1 (28), 2 (29), (41), (1) (2)  
(42),

(44) Mo/Al/Mo (47) , (48),  
 (9), (33), (39), (40) , (48),  
 (49), (39), (30) (34) (35) , (48),  
 (40) (39) (49), (40)  
 (39) , ,

1

1 1 ,  
 2 1 A - A ,  
 3 1 B - B ,  
 4 1 ,  
 5 4 ,  
 6 2 ,  
 7 2 ,  
 8 2 3 ,  
 9 4 ,  
 10 5 ,  
 11 6 ,  
 12 6 ,  
 13 ,  
 14 ,  
 15 14 .

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1: 2:

3: 4:

5: 6:

7: n<sup>+</sup> a - Si 21:

22: 23:

24: 25:

26: 27:

28: 1 29: 2

30: 33:

34: 35:

36: 37:

38: 39:

40: 41:

42: 43:

44: 45, 46:

47: 48:

49:

26a', 30a, 48a, 49a: 1

26a'', 30b, 48b, 49b: 2

26A, 30c: 3

,  
 , CRT (Cathode Ray Tube) 가  
 ,  
 , 가  
 ,

, TFT (Thin Film Transistor) , TFT (a - Si:H)

TFT Indium Tin Oxide) , ITO (

ITO 가

13 , 14, 15

14, 15 TFT

, 14 (a) (1) (2) (2) (端部)  
(2) (3) , 14 (b)  
(4) a - Si:H (5)  
(5) (6) (6)

, 14 (c) , n<sup>+</sup> a - Si:H (7) (5)  
(7) 14 (d) (8)

, 15 (a) (3) (4) (9)  
, 15 (b) (10) (11) , 15 (c)  
(12)

14, 15 , 7

가 , 가가

5 - 190571

TFT( , TFT )

61 - 161764

TFT( , TFT )

TFT



1 2 , 1

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(撮像)

( 1 )

1 1 , 2 1 A - A , 3 1 B - B

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2 (21) (22) , (24)

(23) (23)

(24) 가 . , (21) (22)

(25) .

(21) 1, 2 , (1) (26) , (26)

(SiO<sub>2</sub>) 1 (28) , 1 (28)

(SiN<sub>x</sub>) 2 (29) . 1 (28)

(SiO<sub>2</sub>) , 2 (29)

(SiN<sub>x</sub>) .

(26) (1) 800 . (26) (26a)

(1) (一端) (邊側) (26b) , (26b) 1

(30)가 .

(26) (27) . , (26a) 3

1 (26a'), 2 (26a') 3 (26A) . , (30) 1 (30a),

2 (30b) 3 (30c) . 1 (26a', 30a) Mo/Al/Mo

, 2 (26a', 30b) ( , ITO ) . 3 (26A, 30

c) (26) .

, (21) (1) (26) (33) .

(33) (1) , 1024 × 3 . (33) (33a)

(1) (33b) , (33b) (34)가

.

(33), (33a) (34) (30) 1 , 2 3

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, (26) (33) TFT(20)가 . TFT(20)

(26) , (35) .

, (21) (22) 2 (100)  
 (36) (36) TFT(20) (33) (2)  
 6) (35) (35) (R), (G)  
 (B) (37)가 (37) ITO  
 (38)

(34) (33)  
 (39) (40) 0.5 2 $\mu$ m (33) (端面)  
 (39) 가

(33) , TFT(20) (35) 2  
 (23) (33) 1 1 Mo  
 2 2 1 1 20%  
 (35) 1  
 2

4, 5 (21) , 4, 5  
 (21)

(1) Al - Nd , Mo Al - Nd Mo  
 200nm, 30nm Al - Nd Al Mo  
 Al Al 가 Al Mo  
 0nm , 1 , 10 10  
 (a) 800 (26), (26a) (3)  
 3a) 1 (30, 34) 1

(b) CVD 300nm  
 1 (28), 50nm 2 (29), 50nm  
 a - Si:H (41) 200nm (42)  
 1 (28) 2  
 CVD 가 ,  
 Si, (微結晶) Si 가  
 (41) a - Si:H

(c) (26)  
 2 (42)  
 TFT(20) (43)

(d) (ohmic contact) (41)  
 Si:H (44) CVD 30nm n<sup>+</sup> a -

, 5 (a) 3 1  
 (26) (26b) (33) (33b)  
 2 (28, 29), (41) (44) (45, 46)  
 (41) (44) CDE(Chemical Dry Etching) PE(P  
 lasma Etching) 1 2 (28, 29) BHF(  
 ) (45, 46)

5 (b) 25nm Mo( ) 350nm Al( )  
 50nm Mo (47) Mo  
 (44) Al Al Mo Al  
 Al Al - Nd Al

5 (c) 4  
 Mo/Al/Mo (47) 2 (29) (43)  
 (44) (41) PE  
 TFT(20) (39) 1 (48a, 49a) (30) (40) (34)  
 (48) (49) (30a, 34a)

5 (d) H<sub>2</sub>O, H<sub>2</sub> O<sub>2</sub>가 가 Ar가 , 5  
 H<sub>2</sub>O 가 Ar 40nm ITO  
 ( 羥酸) ITO Al  
 HI가 CH<sub>4</sub>/H<sub>2</sub>가 RIE(Reactive Ion Etching)

(26), (26a) (33a)  
 1 (30, 34) 1 ITO IZO(Indium Zinc Oxide)

(26) (33) (35) ITO (33),  
 (48) (49) 2 5 (d) (30)  
 (34) 2 “ 30b ”, “ 34b ” (48) (49)  
 2 “ 48b ”, “ 49b ”

2 가 50nm  
 (24) (24) (22) (  
 (25) (23)



4, 5 1 (21) 14, 15 (21)  
 33) (30a, 34a) ITO (45, 46) (35) (30) (21)  
 (47) (39) (48) 가 Mo/Al/Mo  
 (49) (33) 1 (40) (48),  
 20) (48) (49) , 1 , (33) TFT(  
 (33) 2  
 (39) (48), (40) (39) , (49), (40)  
 (39), (40) (段差) 2  
 1 a - Si:H (39) Si  
 (39) (21)  
 , (26) Al Al ( Al - Nd Al - Y ) ,  
 ,  
 , 5 (d) (35) 2 ITO , In Zn O  
 IZO (35) 2 IZO Al ,  
 (電蝕)  
 , (30) (34) (35) ITO  
 , Al  
 , 1 , , 가  
 , (48) (49) 2 ITO  
 (48) (49) (48) 1 Mo  
 (48) (49)  
 ( 2 )  
 2 (26) (33) (26b, 33b) (45, 46) 가 1  
 6 (21) 2 , 1 TFT  
 (21) 7 (21) 2 , 7  
 (21) 2  
 , , (1) 300nm Al Al

, Nd 2% Al ,  
 , 7 (a) 1 Al  
 , ( ), Al  
 (26b) (26) , (26)  
 Al .

7 (b) , CVD 300nm  
 (51), 50nm a - Si: H (41) 200nm (51)  
 ( 300nm ) , 50nm  
 1 2 .

, ( ) 2  
 (43) , (前) (48, 49)  
 30nm n<sup>+</sup> a - Si:H CVD ,  
 Mo/Al/Mo 3 .

, 7 (c) 3  
 (33), (48) (49) 1 (48a, 49a) ,  
 PE (41) ( )  
 39) (40) (33), (48), (49),  
 (26a) (33a) .

, 7 (d) 4 (30)가  
 (51) 가 PE (45) .

, 7 (e) H<sub>2</sub>O, H<sub>2</sub> O<sub>2</sub>가 가 Ar가 , H<sub>2</sub>O 가 Ar  
 ITO 50nm  
 5 (35) , (33), (48)  
 (49) 2 (48b, 49b) , (33) (26)  
 . ITO Al HI 가 CH<sub>4</sub>/H<sub>2</sub>가 RIE (35)  
 2 .

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2 (48), (49), (40) (39)  
 , (30) (34) ,  
 가 1 1 , 1  
 , (35) 2 ITO  
 IZO , (33) Al  
 1 .

, 7 (e) ITO (48) (49) 8 (a) ITO (35) (32)  
 3) Mo/Al/Mo 3 ( 1 ) 5 $\mu$ m , 2  
 2 $\mu$ m 1 (33) 2  
 2 . , 2  
 .  
 , ITO (49b) (33)( 1 ) (33)  
 .  
 ( 3 )  
 (相違) . , 8 (b) 3 가 2  
 , 9  
 .  
 3 7 (a) 7 (b) ( 9 (a) 9 (b)) , n + a-Si:H  
 CDE , 50nm CVD , CF<sub>4</sub> O<sub>2</sub> TFT 가  
 (41) (41) (44) 3  
 .  
 , ITO In<sub>2</sub>O<sub>3</sub> SnO<sub>2</sub> % 90:10 (燒結)  
 ITO Ar 0.4Pa , Ar Kr  
 , H<sub>2</sub>O 3.4 × 10<sup>-3</sup> Pa , H<sub>2</sub>O O<sub>2</sub>  
 ( ) 60 .  
 가 200 ITO .  
 ITO 7.0W/cm<sup>2</sup> , 가 가  
 60 가 1 , ITO 80nm , 20  
 ITO  
 4 , (HCOOH)<sub>2</sub> ITO 1% 3.4 %  
 , ( 9 (c)).  
 , ITO (35) 230 , 5 , 80%  
 가 .  
 , , 5 (51) 가 PE  
 (45) ( 9 (d)).  
 , Mo 25nm , 2.0 %  
 Ar가 Kr가 , 가 1.3Pa , 40kW Al - Nd 350nm  
 . Mo 50nm , Al - Nd  
 Al, Al - Y, Al - Gd . 가

6, (43), (48), (49) 가, (49) ITO, (48) (35), (4) TFT, (48) (49) Mo/Al/Mo (47) Mo, MoO<sub>2</sub>, 88 μ·cm 가, (49) Mo, (48) (49) 가, (4) TFT, (48) (49) V( ) (48) (47) (49) 3, 4, 9, CVD, SiO<sub>2</sub>, (1) MoW, 300nm, CDE( ) , 35, 가, MoW 가 (26), (51) CVD, 300nm, SiH<sub>4</sub> 가, 50nm, 50nm a-Si:H (41), 300nm (裏面) 2 (26) (43) ( 9 (b)). SiH<sub>4</sub> 가, PH<sub>3</sub>, CVD 가, n<sup>+</sup> a-Si:H, CF<sub>4</sub> O<sub>2</sub> 가, CDE (44), ITO, In<sub>2</sub>O<sub>3</sub>, SnO<sub>2</sub>, % 90:10, ITO, Ar, 0.4Pa, H<sub>2</sub>O, 3.4 × 10<sup>-3</sup> Pa, Ar, H<sub>2</sub>O, O<sub>2</sub>, 60, 가, 200, ITO, ITO, 7.0W/cm<sup>2</sup>, 가, 가, 가, 20, 가, 60, ITO, 800, ITO.

ITO (35) , (HCOOH)<sub>2</sub> 3.4 % , ITO (35) , ITO (35) , (9 (c)).

ITO (35) , 230 , 5 , 80% .

(51) (45) (9 (d)).

Mo 25nm , 2.0 % , Ar가 Kr가 , 가 1.3Pa , 40kW , Al - Nd 350nm , Ar가 Kr가 , 가 1.3P , 15kW , 50nm , Al - Nd , Al, Al - Y, Al - Gd , Mo V .

(43) , (48) (49) (48, 49) 가 PE (9 (e)).

(48) TFT (48) (49) ( ) , TFT (23) .

(5 )

5 ITO (35) 가 4 , TFT (48) (49) ITO (35) .

10 5 , , 10 5

SiO<sub>2</sub> (1) MoW , 1 MoW (26) (10 (a)). , (51) (10 (b)).

(51) (41) , (43) (10 (c)).

4 5 , Mo/Al - Nd/V (41) (10 (d)).

4 (51) (45) (10 (e)), ITO , 5 (35) (10 (f)).

, 5 TFT (48) (49) ITO (35) , IT  
 O (35) , 4 (48) (49) ( )  
 가 (23) , (48)  
 (49) .  
 ( 6 )  
 1 5 . TFT가  
 , TFT  
 .  
 11 6 , 11 6  
 .  
 , (1) MoW 230nm , 1 480 (26)  
 , 1 (26') , ( 11 (a)).  
 , CVD 350nm 1 (28)  
 , 50nm 2 (29) ( 11 (b)). ,  
 250nm a - Si:H , 50nm n<sup>+</sup> a - Si:H  
 CVD , 25nm , 350nm  
 , 50nm Mo/Al/Mo (47a, 47b, 47c) .  
 , Mo/Al/Mo (47a, 47b, 47c), , 2  
 (29) 2 가 , TFT  
 ( 11 (c)). Mo/Al/Mo (47) ,  
 , SF<sub>6</sub>/O<sub>2</sub>/HCl 가 , (29)  
 (40) (39) .  
 , 3 , BHF 3 ,  
 (45) ( 11 (d)).  
 , 150 H<sub>2</sub>O , 40nm ITO  
 , 4 4 , TFT  
 (48) (49) , (35) , (48) (49)  
 , (50) ( 11 (e)).  
 ITO (35) 가 3% , TFT (50) ,  
 Mo/Al/Mo (47) , SF<sub>6</sub>/HCl  
 (48) (49) .  
 , 230 30 ITO (35) , TFT  
 . , (45) , (33) (35)  
 (34) .  
 , ITO (35) , ITO  
 , ITO Mo/Al/Mo (47) .

, ITO (35) (24) , 12 , 가

, 6 Mo/Al/Mo , 4 , TFT

, 가 , TF

T ( 7 )

7 6 TFT , TFT (4 8) (49) (47c)

, 7 4 5 TFT (48) (49) (47c) (48) (49)

, Mo V (Ta), (Ti), (W) Mo/A I/Ta (47) (48) (49) (47c) , CDE ,

CDE O<sub>2</sub> CF<sub>4</sub> 가 1:1 60 , 35 200

, (48) (49) (47c) , Mo/Al/Ti (47) , EDTA

EDTA 25 , 125 35 , 200

, (48) (49) (47c) , (48) (49) (49)

, 가 , CVD ,

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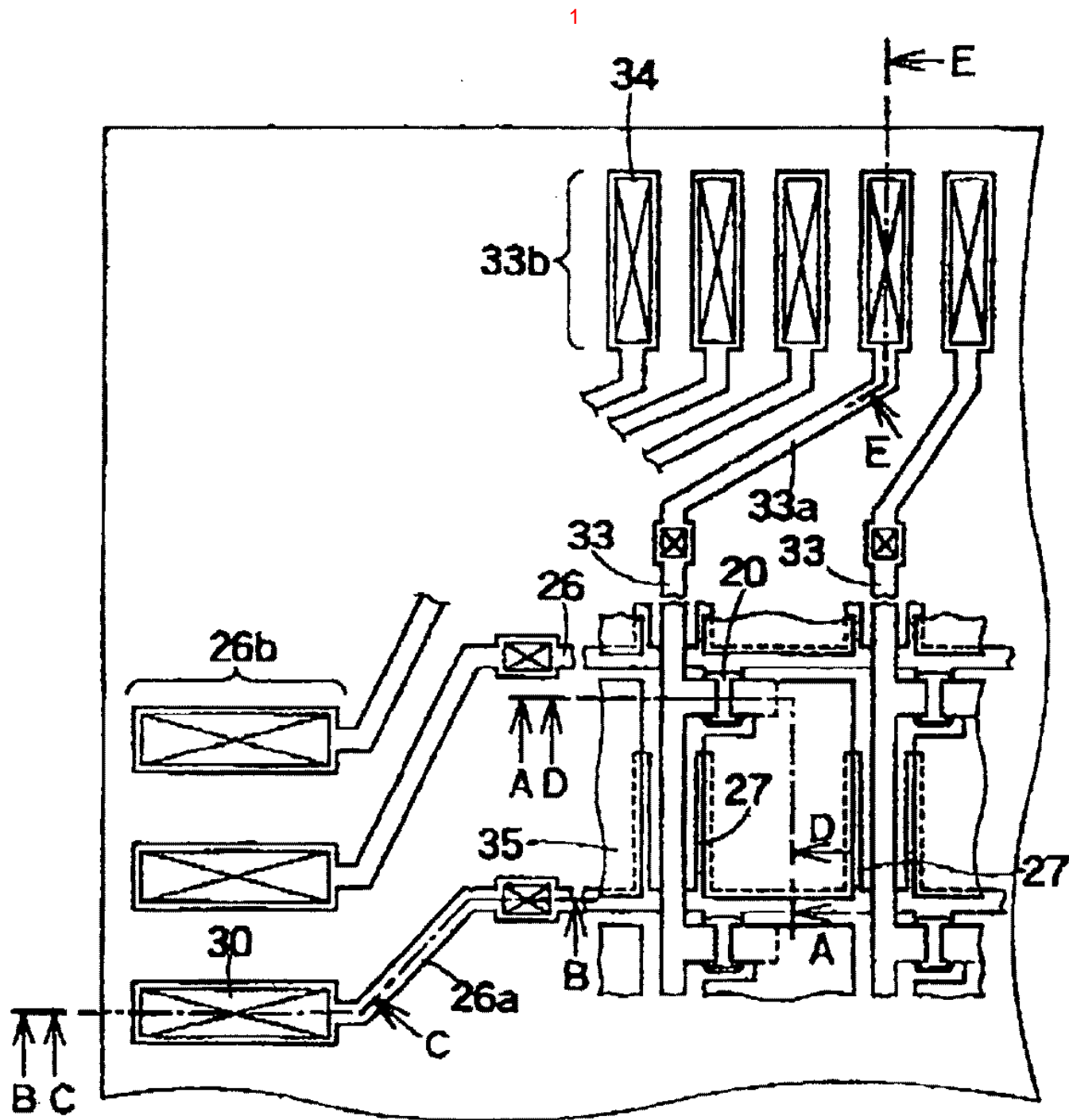
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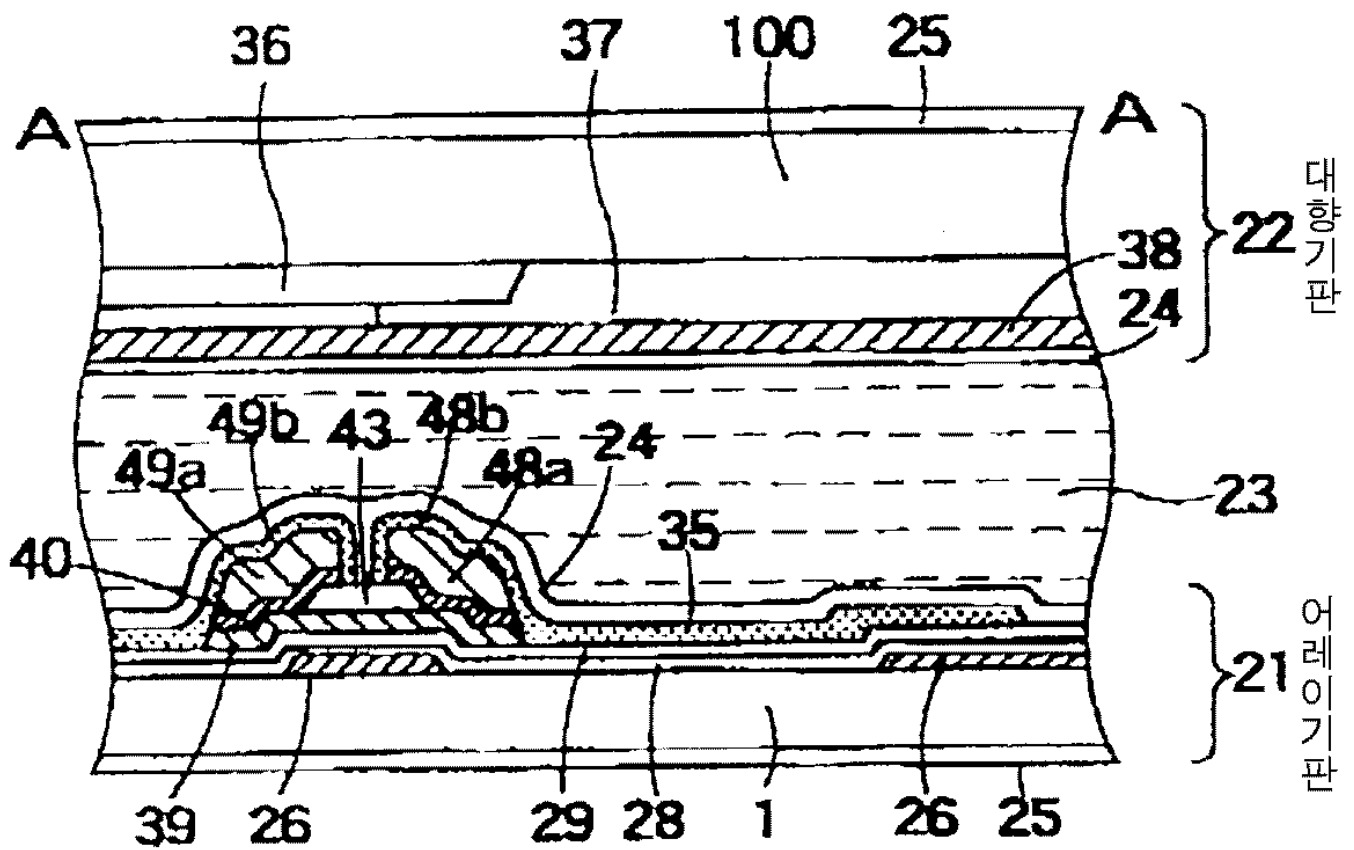
16.

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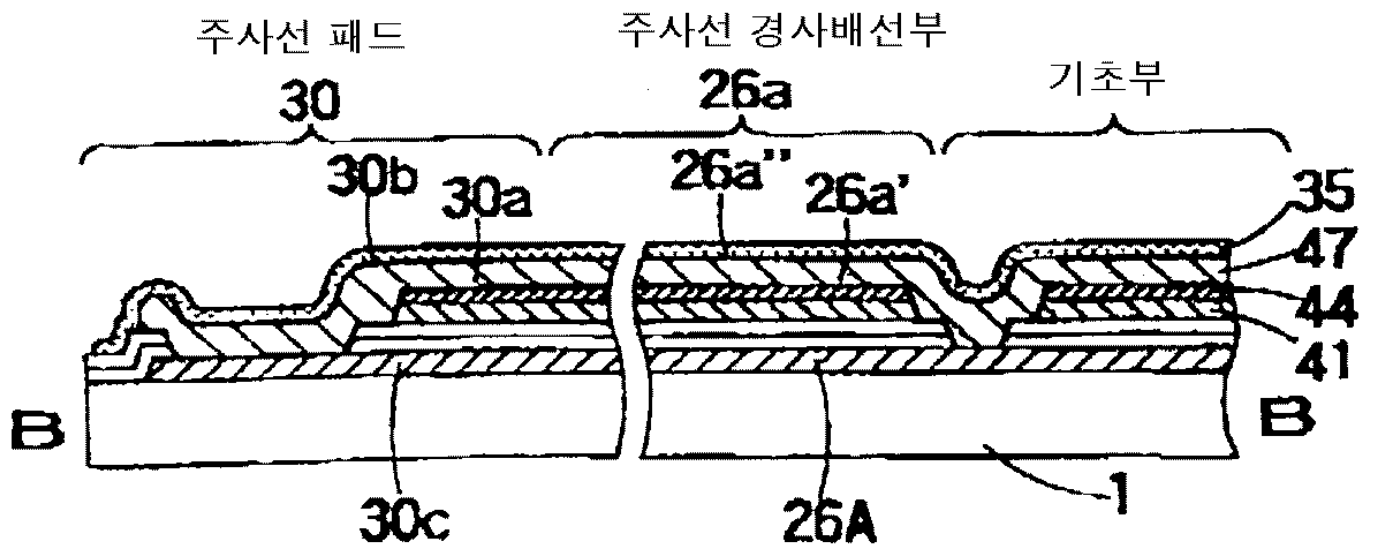
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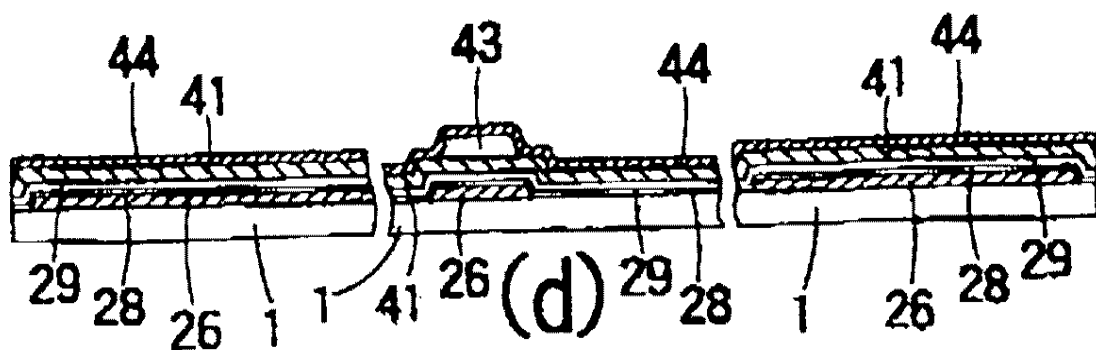
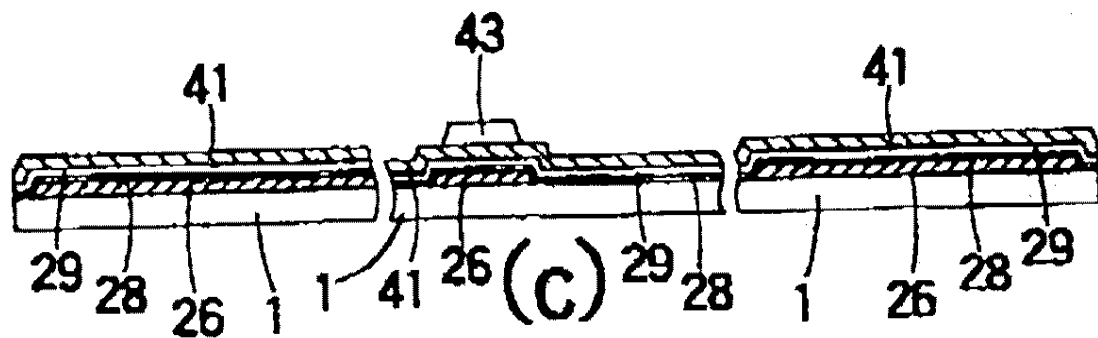
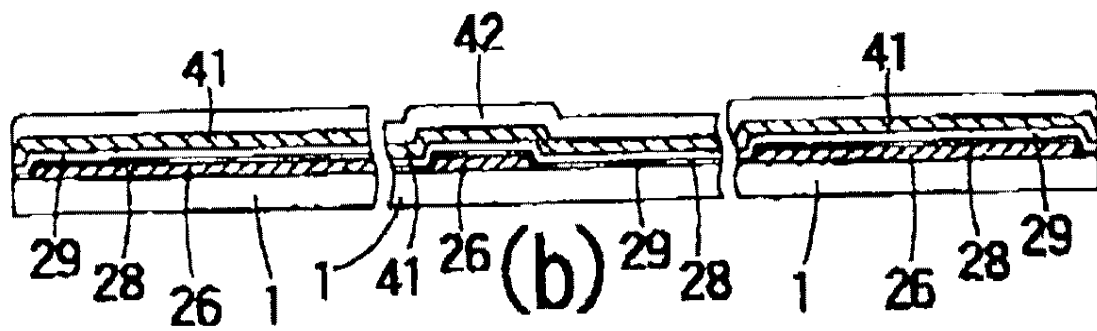
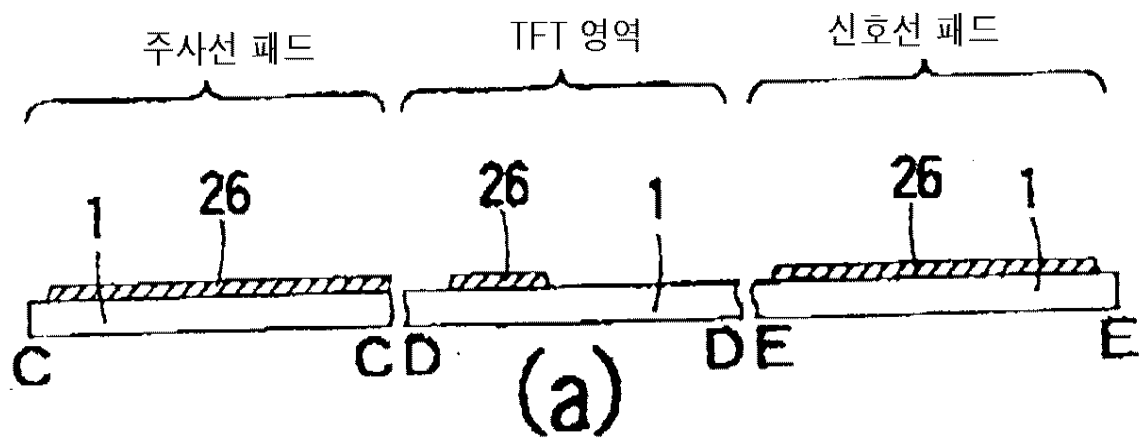


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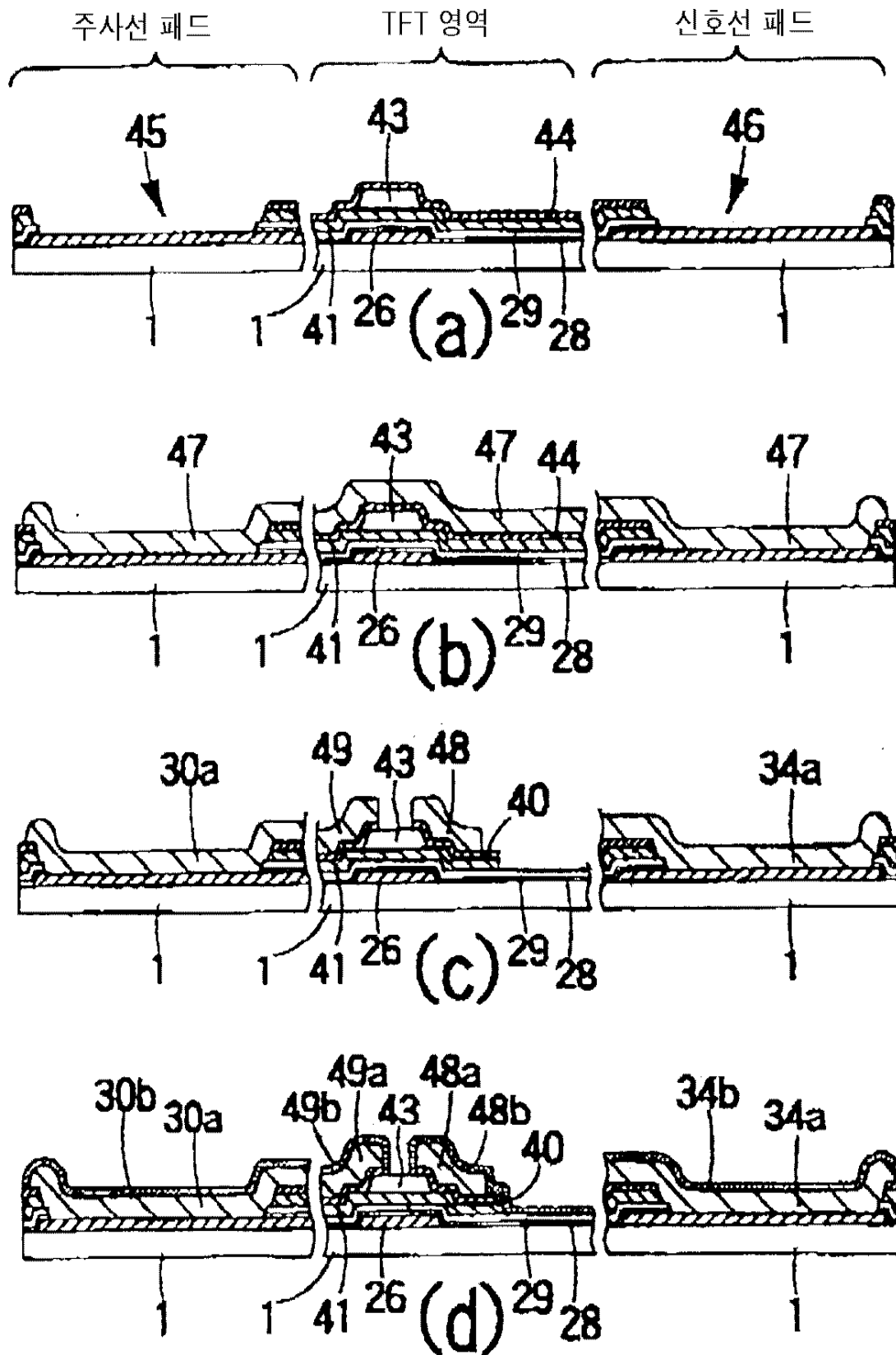


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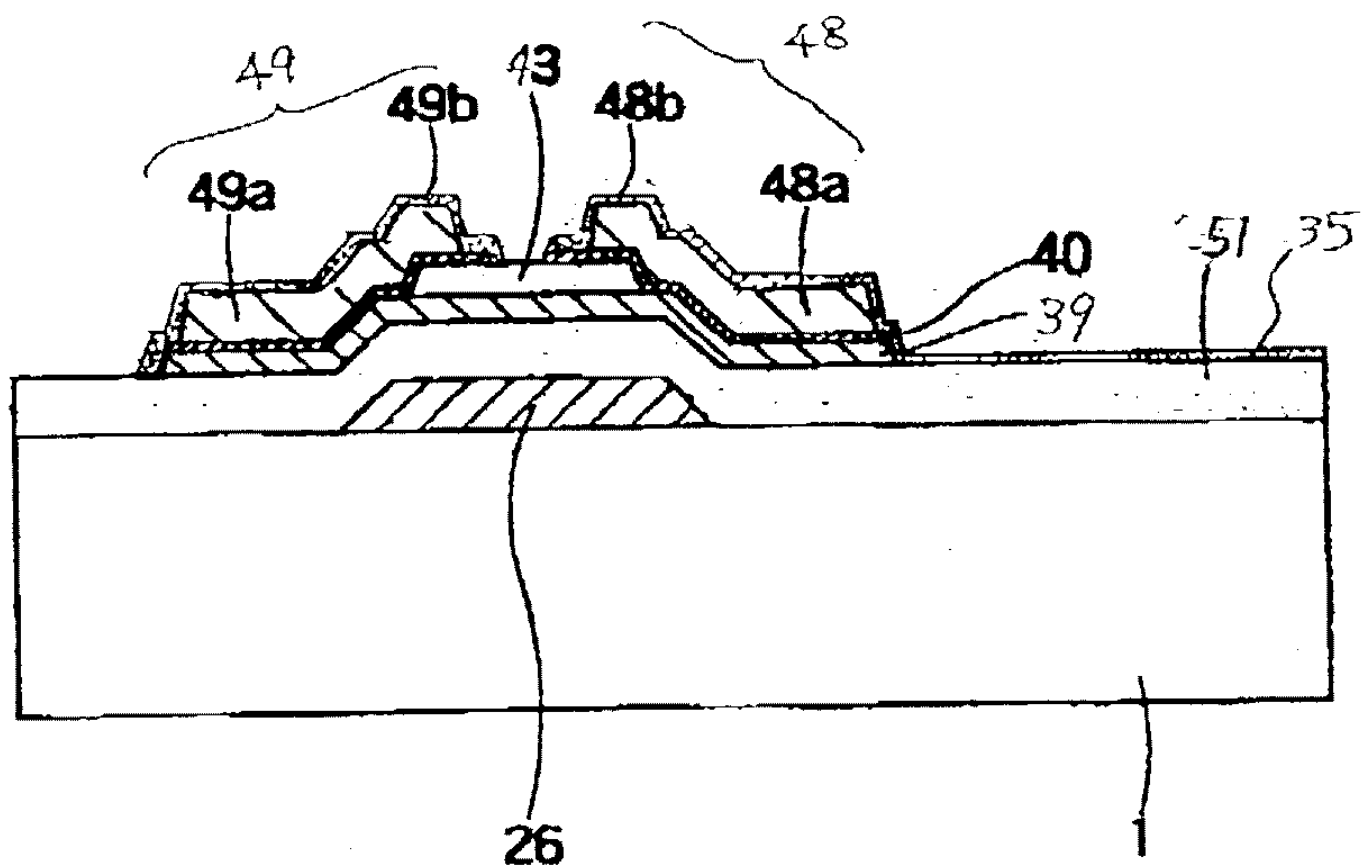




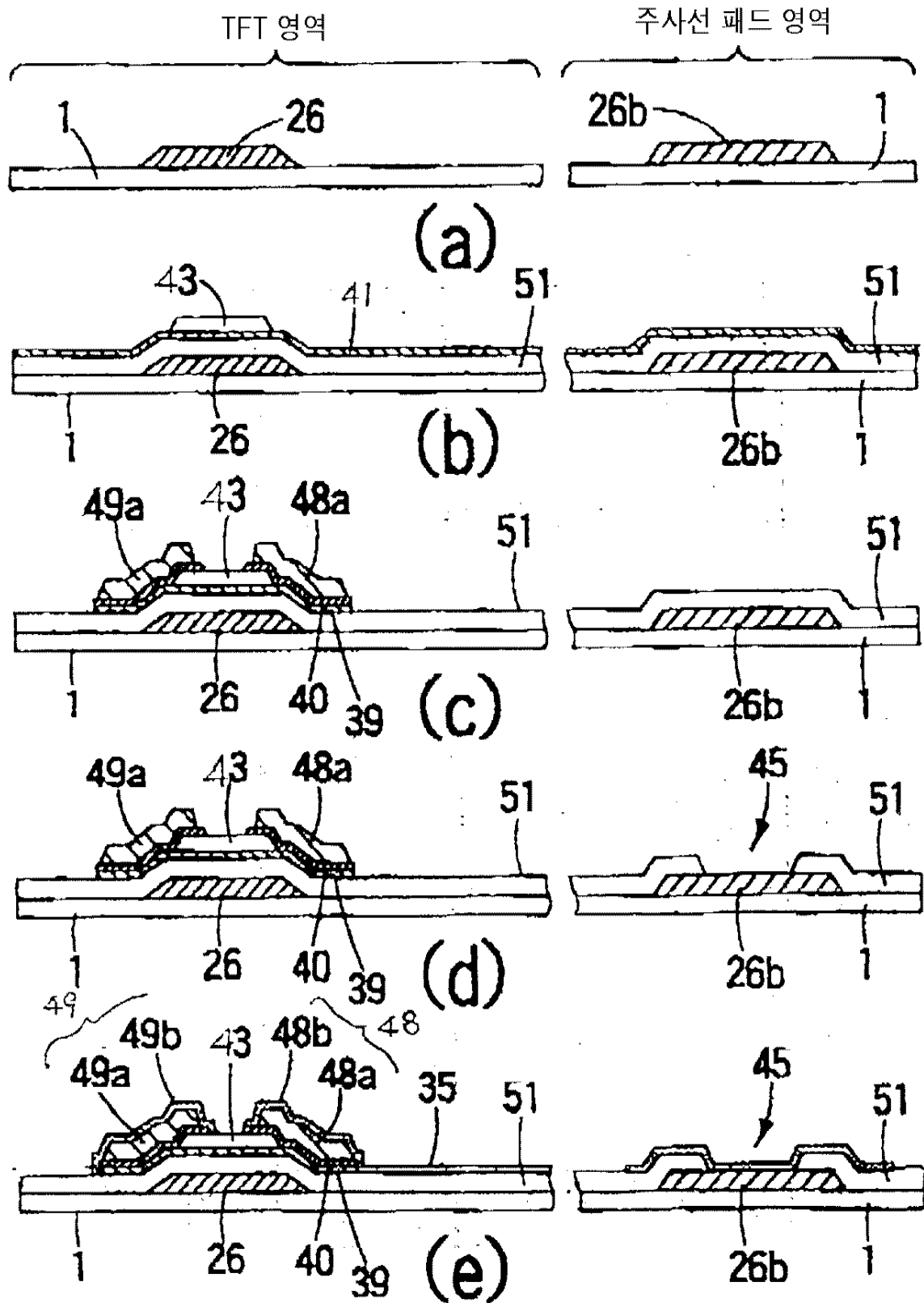
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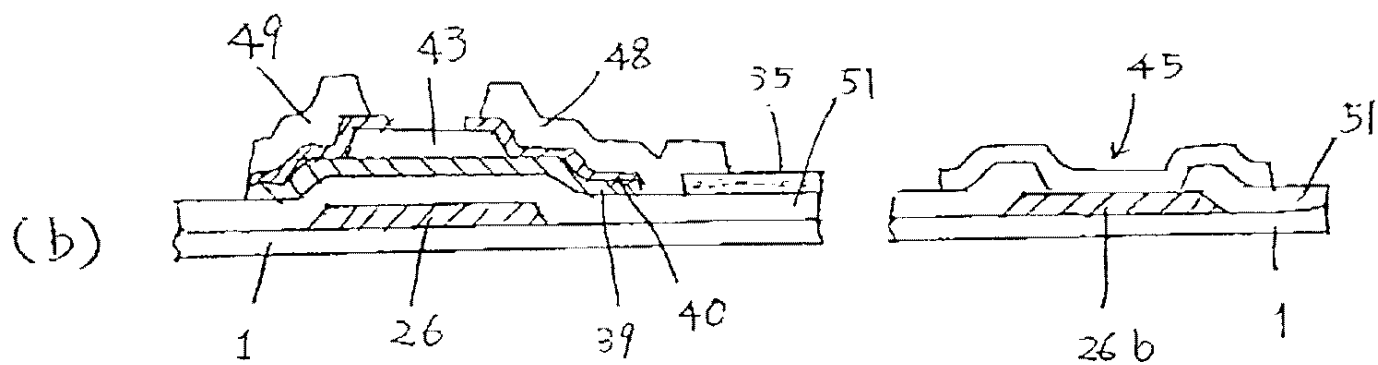
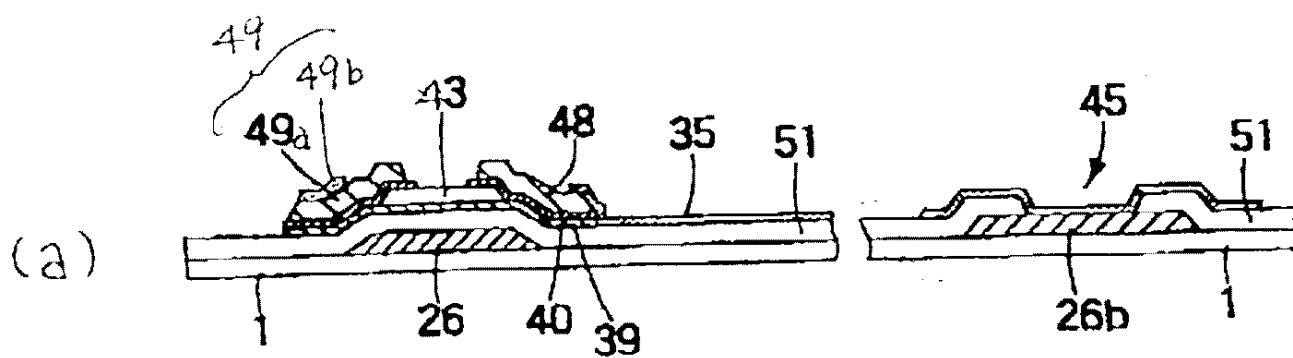
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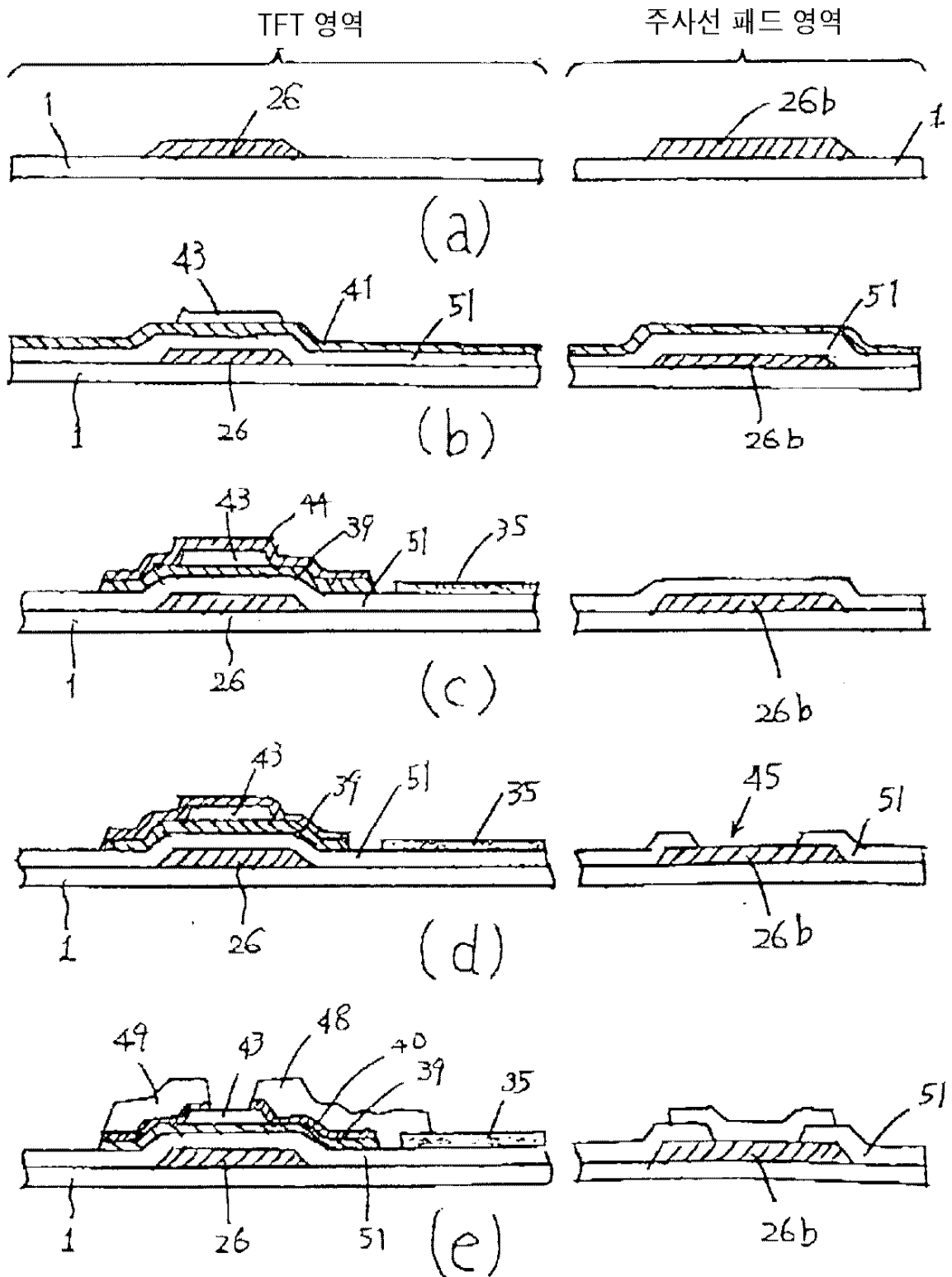




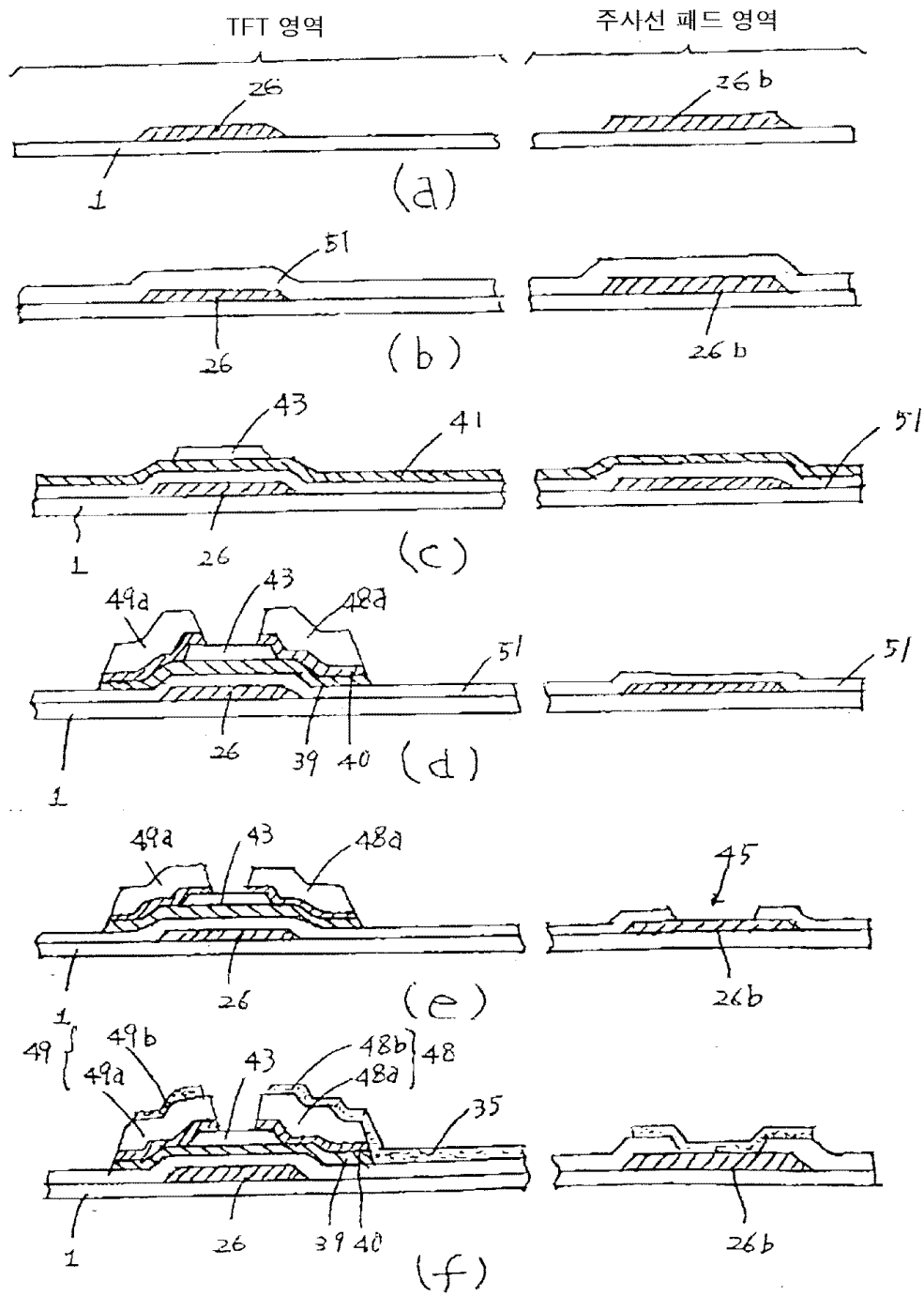


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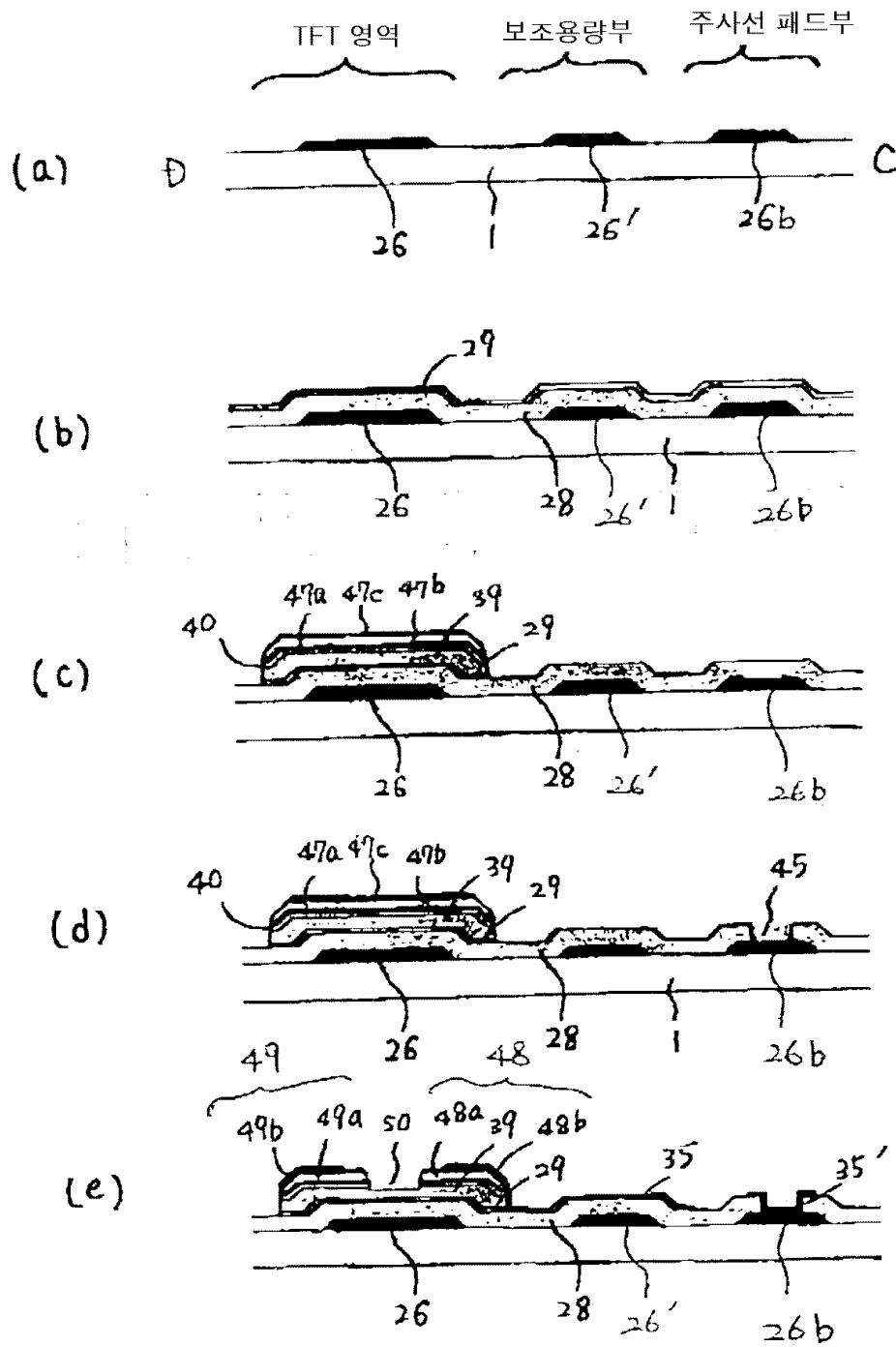




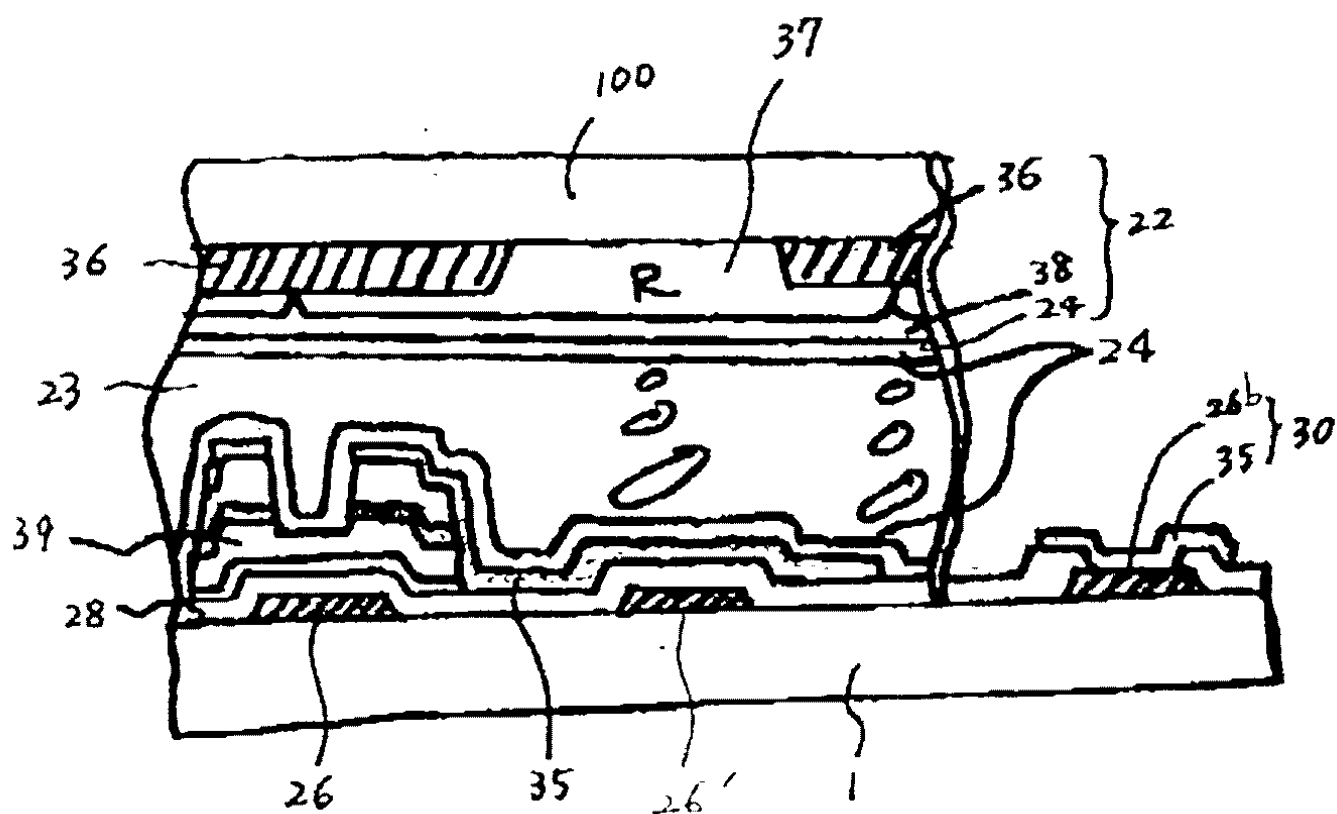
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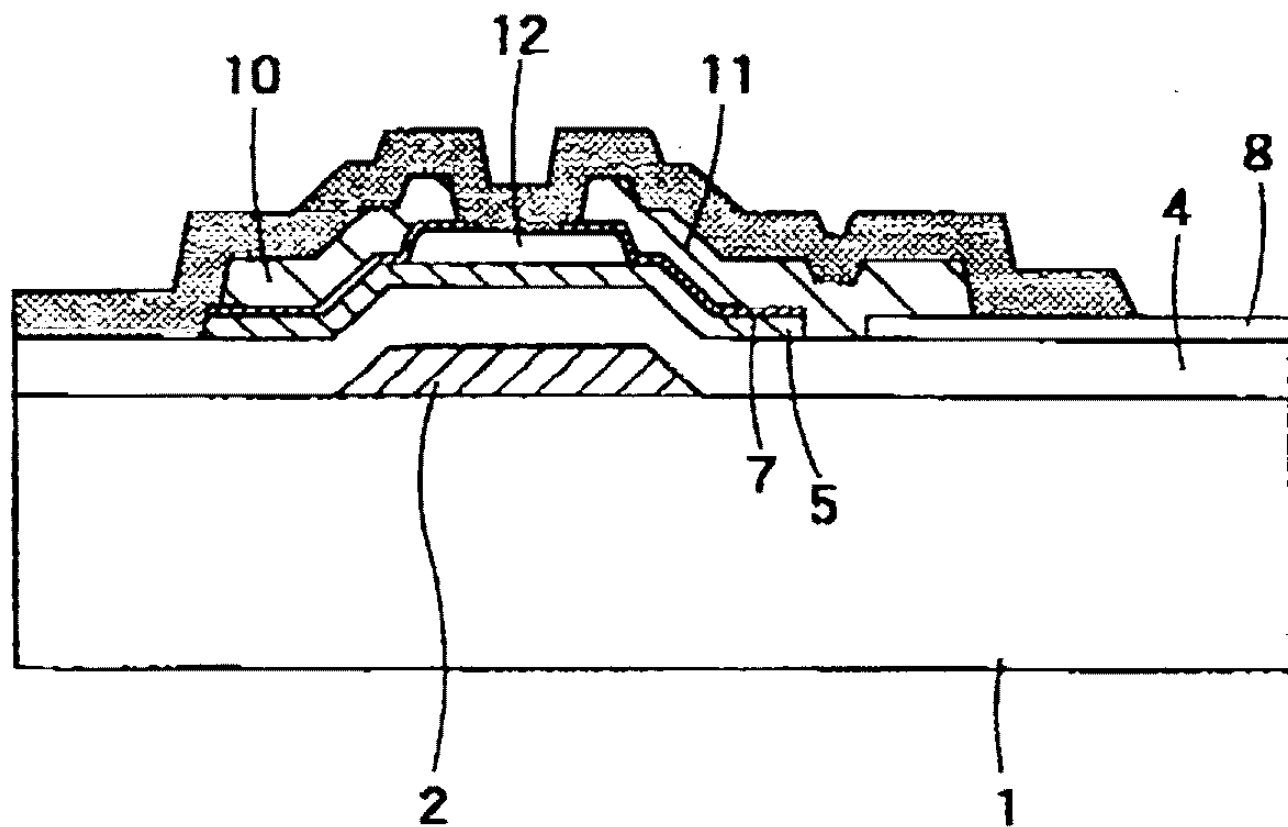
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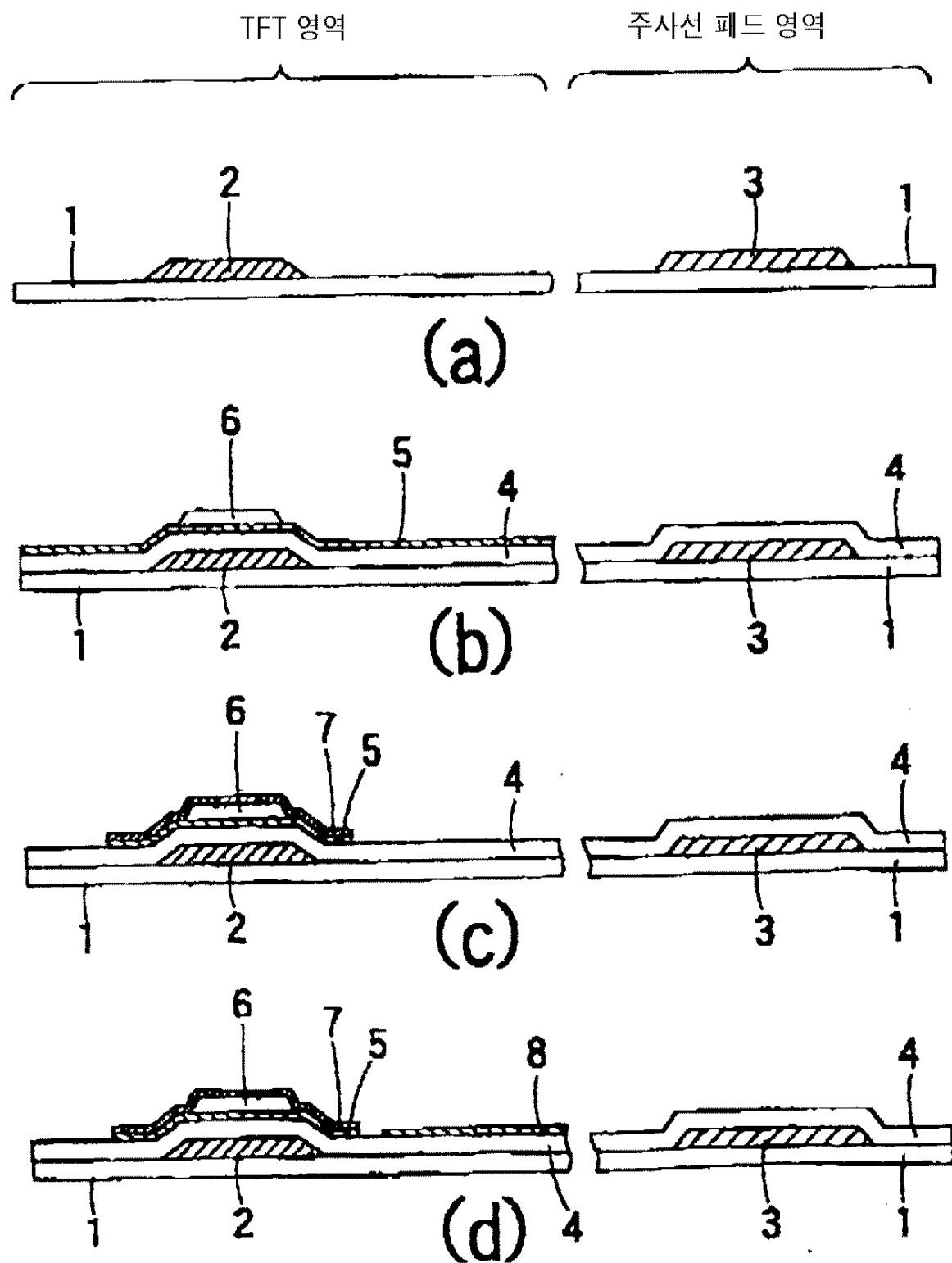


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