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(71) 가 가

2 4 - 1

(72) 가 3 3 - 5 가 가

(74)

:

(54) ,

(30) (31) , (31) (32) , (31)
(32) (34) (32) (34) (70)
(72) 2 (32) (72) (70)

1

2 1

3 1

4 1

5 4 1

6a 5 F - F , 6b 5 G - G

7a 7e

8a 8c , 8c 8a , 8b

9 4 1

10 9 G - G

11

12

13 12

14 12 1 TFD

15 12

16 12

17

18 17

19 17

20 17 1H

21 TFT

22

* *

1: 2a, 2b: ()

3: 6a, 6b:

10: 14:

20, 30, 80: ()

21, 31: 22, 32, 82:

24, 34, 36: 63:

70: 72:

74: 1 76: 2

82: 84:

88: () 92: ()

96: () L:

가 2

(Thin Film Diode: TFD)

TFD , TFD

가

가 가

STN(Super Twisted Nematic)

가 ,

ITO(Indium Tin Oxide)

가

가

가

가

1

()

(1) 가

가

가

가
가

(2) (1)

가

가

(3) (2)

(4) (1)

(2)
가

가

가 가

(5) (1) (4) 가 가

(6) (5) 가 (1)

가 가 가

(7) (4) 가 가

가 가 가

(8) (6) (7) 가 가

(9) (1) (5)

1

(10) , (1) (5) ,
 , 1 , 1
 2 2 , 2
 2 .

2 , 1 , 2 1
 , 2 , 2
 , .
 , 1 ,
 , 가 2 , .
 , 1 .

(11) (10) ,
 2 , .

(12) (10) ,
 2 , (4) .

(13) , 2
 , 가 , 가 ,
 , 가 ,
 , 2

TFD(Thin Film Diode)

(14) , 3
 , 가 , 가 ,
 , 가 ,
 , 3

TFT(Thin Film Transistor)

()

(1)

1 (10) , 2 1
 (10) (10) (14) , (14) (44)
 (40) (10) (14) (40)

2 (14) 1 (20) 2 (30)
 (20) (21)
 (22)

2 (30) (31)
 (32) 1 (20) (2)
 2) 2 (30) (32)

(20 30) 가 (19)가 2 A
 (26)가 (20 30) (19) (19)
 (22) (24) (30) (36) (26) 1 (2)
 (22) 가 (39)

(19) 1 (20) 2 (30) (19)
 () , STN (18)

1 (20) 1 (16) , 2 (30) 2 (17)
 (17) 2 (16) 1 (20) (12) (12)
 2 (30) 1 (20) 2 (30)

(14) 2 (30) 1 (20) (38) (39)
 (39) 1 (64), 가 가
 (64) (14) (22, 32)(2) IC()
 가 , IC (64) , 2 (30) (39)가
 (22, 32) 가

(14) 1 (20) (22) , 2 (30)
 (32) 가 (18) 가 , 가

IC 1 (20) 2 (20) (30) IC , IC 1
 (20) 2 (30) COG(Chip On Glass) ,가

2 (20, 30)
 (20, 30) μm μm , 1 (16)
 (12) 1 (20) , 2 (17) 2 (30)
 (30) , (12) 1 (20) , 2 (17) 2
 (16) (12)
 (22, 32)

1 (40) (50), (44), (42),
 (56) (60) (50) (51) ()
 가 (50) 가

(44) (45)
 (50) (45) (44) 가 ,
 (14) (14) (44)
 (14) (38) (14)
 (44) (50) 가 (44)
 (44) (14) (50)
 (50)

(42) (44) (44)
 (14) (60) (50) (44)
 (50) (44) , 1 (50) (60)
 (50) (60) 가

(40) (50)
 5V 250V, 100kHz (50)
 (50) LED (44) LED

(56) (57) (40)
 (56) (57) (58) (58)
 (44) (46, 47) 가 , 가 (44) (46, 47)
 (44) (57)

(58) (44) (50) (46, 47)
 (58) (57) (44)
 (50)
 (56) (60)가 가

3 1 (20) (22)
 , 4 2 (30)
 1 (14) 3 1 (20) 4

1 2 (30) , 2 (30) (38)
 4 (20) S-S . , 2 3

3 , 1 (20) (21) (22) , (2
 2) (24) (24) . (22) . ,
 (24) (26)(2)가 (25) .

4 , 2 (30) (32), (34) (36) . (32)
 (31) (34) (32) , (31) 가
 , 2 (30) (38) (39) . (38)
 , 1 (20) .

(36) (37) (26) , 1 ((26)
 20) (24) (25) (37)가 (26) . , (3
 6) (26) 2 (19) . , (3
 (38) (39) .

(39) (34, 36) (22, 32) , 1
 0) (20) (22) 1 (20) (24) , (26) , 2 (3
 (36) (39) .

3 , (22) (21) (22)
 () , . , 4 ,
 (32) (31) (32)
 () , .

5 2 (30) (32) , (32) (34)
 , 6a 5 F-F (34)
 , 6b 5 G-G (32) .

5 , (32) (34) (72)
 (32) , (70)
 ITO(Indium Tin Oxide) .

6a 6b , (34) (32) ITO (70) ,
 (70) (72) . , (32) ,
 가 (70) (32) , (72) (70)
 (70)
 , (34) , (70) (72) (34) ,
 . , (32) 가 (34)
 , 2 (30) (36) 6
 a (34) , (70) (72)

, 4 (22) 2 (30) 3 1 (20) (24)
 5 6a 6b (34) (32) 가 , ITO
 (70) (72)

, 1 (20) 2 (30), 3
 (24) 4 (34) (36) (70) (72)
 (24, 34, 36) (70) (24, 34, 36)
 , (20, 30) (10) (24, 34, 36)
 가

, (22, 23) (70) 가
 (22, 32) (22, 32) (70)
 (22) (72) (70)
 , (72) (22, 32)
 (22, 32)

, 3 1 (20) (24) 가 (24) (22) ITO
 (70) , 4 (36) , 가 , ITO
 (70)

, 3 가 (22) (70) (24) (70)
 가 , 4 (32) (70) (34) (3
 6) (70) 가 (24, 34, 36) ((70)
 70) (72) 2 (24, 34, 36) ((70)
 70) (70) , 가 (24) (70) (22)
 (34) (36) (70) (32)
 , 3 (22) 4 (32) (24, 34, 36)

, (34, 36) (70) 3 (24) 4 (7
 0) , 4 3 (22) (24)
 , (32) (34, 36) (70)
 , (20, 30)

, 3 1 (20) 4 2 (30)

1 (20) 2 (30) , 1 , 1 , 2
 , 2

, 2 (30) 7a 7e 7a가
 , 7b가 1 , 7c가

1 , 7a , 7e , 7d가 2 , 7e가 2
 . , (32) , (34) 1 , (34) 가
 .

31) , 7a , ITO , (70) , (70) , (72) 7a
 . , (70) , (72)

7b 1 , ,
 , (32) (34) 1 (74) .

7c 1 , 1 (74) , (70)
 (72) , (32) (34)

7d 2 , (32) , (72)
 1 (74) , (70)
 2 (76) . 2 (76) ,
 (34)

7e 2 , 2 (76) (32)
 (72) . 1
 , (70) , (72) .

2 (76) , 6a 6b (34)
 (32) .

7d 1 (74) , 7c 1 ,
 2 (32) , 2 (76) ,
 (76) , (70) 가 (72) (72) , 2
 (32)

1 , 가 (72)
 (70) (72)

가 2 , .
 (70) (72) , 1

(34) .

2 (30) (32) (34)
 , (36) (34)
 . , 3 , 1 (20) (22) (24)
 , 2 (30) .

, 2) (70) 6b (32) (70) (7
(72) (70) , 가 , .

(2)

1 1 2 (30) ,
1 1 , 1

9 10 9 2 (80) , 1 5
가 1 G-G 2 (30) , 2 (80) 6b .

2 (80) (82) (70) (72) 2
가 , (84) (72) , (72)
(82) (84) , (70) , (84)
(84) , 가 .

(80) 2 (80) (72) 2
(18) , 2 (80) (18) 1 (20)
(72) , (84) , (18) (72)
가 , (84) , (72)
(70) , (72) (18) .

(80) (10) (34) (82) (82) (70) (72)
가 , (34) (70) 가 (70) (70)
(34) (70) , 가 (82) (70)
가 (82) .

, (70) , (80) .

, , (82) 7a 7e 가
, 2 , 1 , 1 , 2
, (74)

(70) (72) , 1 (74) 2 (7
6) , (72) (84) .

(3)

2 , TN , TFD .

D , TFD , TF .

가
TFD

TFD

12

TFD

(1)

2

15
TFD(Thin Film Diode)

IC

COG(C

hip On Glass)

(1) 15 , 1 (2a) 2 (2b) (3) , ,
1 (2a), 2 (2b) (3)
IC(4a 4b)가 (2a) (2b) (38)
(2a) 2 (2b) TFD가 , 1

2 (2b) (3) , , 1 (2a) (3) (XX) (YY)
(2b)

1 (2a) , 가 2 (2b) 1
1 (V) (3) IC(4a 4b)

가 (V)

12 (1) (V)

13 1

12 (2a) (6a) (6a)

(61) (61) (62) (62)

(63) (63) 13 (71a)

(71a) 가 (63) ITO(Indium

Tin Oxide)

1 (2a) 2 (2b) (6b) (6b)

TFD(Thin Film Diode)(67) TFD(67)

(69) TFD(67) (69) 13 (71b)

(71b) 가 (69) ITO(Indium Tin Ox

ide)

1 (2a) (62) 2 (2b) (69) R(), G(

), B() C(), M(), Y() (62a) 가 (69)

(62b)

13 (2a) 2 (2b) (L)

(54) 가 (L)

TFD(67) 13 14 (65) 1 (65) (6

6) (66) 2 (68) TFD(67) 1 / /

2 MIM(Metal Insulator Metal)

1 (65) 1 (65)

6 8 가 가

1 (65) (79) 1 (79a) (79) (69)

(69) (69)

(66) 1 (65) 1 (65) (Ta₂O₃)

가 (79) 1 (79a)

2 (79b)

2 (68) Cr (69) 가 2 (68)

(6b) (6b) 가 1 (65) 1 (79a)

가 2 (68)

1 (65) , 1 (65)

12 (52a) , (6a) (52a) , (53a) (52b) , (6b) (52b) , (53b)

STN(Super Twisted Nematic)

가 (52a 52b)

(53a 53b)

TAC(3)

(53a 53b)

(61)

(69)

2

(49)가

(2b)

12

(63)

15

(YY)

16

(24)

(25)

(38)

(38)

IC(4b)

(25)가

(24)

6a

(70)

(72)

2

(63)

6b

(70)

(72)

2

12

(1)

(1)가

(61)

2

(2b)

(1)

(L)

(61)

(61)

(L)

(L)

(69)

(63)

가

(L)

(1)가

1

(2a)

(59)가

(53a),

(52a),

(6a),

(61)

(49),

(62),

(63)

(71a)

(L)

가

(2a)

(63)

(24)

(70)

(72)

(24)

(70)

(24)

(1)

(24)

가

(24)

(70)

가

(24)

(70)

가

(63)

(70)

가

(70)

(24)

(63)

(24) (70) (24) (63)

(24) (70) (2a)

(4)

3 (TFT:Thin Film Transistor)

TN(Twisted Nematic) , TFT가

가 TFT , TFT 가

가 1H 1

TFT

TFT

17 (

110) N x M TFT(108)가 N

M(=m x n) M TFT(20 - 1

1 20 - nm)가

TFT m 1 n TFT(20 - 11,

20 - 12 20 - 1m)가 1 , (20 - 21, 20 - 22 20 - 2m) 2 , (20 - n1, 20 -

n2 20 - nm) n , TFT(20 - 11,

20 - 12 20 - 1m) 1 (22 - 1) 가 , (20 - 21, 2

0 - 22 20 - 2m) (20 - n1, 20 - n2 20 - nm) TFT , 1

(22 - 2,, 22 - n)

TFT(20 - 11, 20 - 21, , 20 - n1)

2 (24 - 1) 가 , TFT(20 - 12, 20 - 22, , 20 - n2) ...

... .. (20 - 1m, 20 - 2m, , 20 - nm) 2 (24 - 2, 24 - m)

TFT m n 1 가 TFT

1/n , TFT가 M

m(=M/n) , m 2 (24 - 1 24 - m)

2 (24 - 1 24 - m) (TFT20 - 11 20 - nm)

5V , T

FT

22 TFT (Vg)=20V (C) C=10pF (f) 320kHz

n (TFT) 1/n (f) TFT "G" 5V (, Vd=10V) 가 "H" 가

Vd=10V 200 1V TFT 5V , Vd=5V 10000 1V

1V , 가 TFT TFT가 1V 가

1000 1V 1000 Vd=10V 22 1V 2V TFT 5V 10000 , DC 가 5V

22 Vd=10V , Vd=5V 5V , Vd=5V Vg=20V Vg=15V , Vd=10V Vg=20V 22 "H" Vd=3V 22 "I" , Vd=5V 32kHz

TFT TFT , TFT 가가 TFT 가 TFT n TFT TFT, TFT

가

TFT , TFT TFT 가
 가 , TFT , TFT , TFT ,
 , 18 , TFT TFT (132) (130) (134)
 130) , (130) (134) (134) (134)
 가 , (136)
 , (138)
 , (SiO₂)(140) , (Al) , (142) ,
 ITO (144) , (146) , TFT
 TFT (135) μm , (L) , 가
 (135) (L) 3 , (22) ,
 6a (22) , (24) (25) , 가 , (24)
 (72) (22) 6b (70) (72) 2 , (70)
 17 (101) 19 , 19 ,
 (164) , (166) (160) TFT (162) TFT
 (172) (170) TAB(Tape Automated Bonding) (168) ,
 (174) TAB (168)
 (176) (170, 172) (174)
 19 , 17 M TFT (160)
 , (162) TFT (164)
 , (L3)

(101) TFT TFT 5V
 가 .
 21 가 ,
 가 (V_S) (V_C) TN ±5V 가 21 가 ,
 , V_S 10V , V_S (V_C) V (V_{com}) TFT가 가 가 ,
 =V_C - V_{com} 가 ,
 21 가 , V_S 10V 가 . , TFT
 가 , 5V . TFT
 20
 (, 1H). 1
 21 V_S V_C 1 , 1H V_{com}
 1 , V_S TFT 가 , V_S 가 ,
 , 5V 가 ,
 ,
 1H TFT ,
 가 , 20 , V =V_S - V_{com}

18 (135) 3
 (22) (22) (24) 6a
 (70) (72) , (24) (70)
 (24) , (24)

(24) (70) 가 (70) (63) 가 (24) 가
 (70) (63)
 (70) (24)
 (24) (70) (24) (63)
 (24) (70) (2a)

(5)

8a 8c 1 (10), 15 (1) 17
 (101) (10) 8b (92) 8a (88) ,
 . 8c (96) , (10) (10)

(98)

(87), (10), 11, (86),
 (89), (93), 8c, (91), (96)
 (98), (93)

(10)

, POS , IC ,

()

ITO

가

, STN

, TN(Twisted Nematic) ,

TN(Bi - stable Twisted Nematic) ,

1

가가

가

가

가
가

(57)

1.

가

(低)

2.

1

3.

2

4.

1

가

5.

1

4

가

가

6.

1

4

7.

4 , ,

8.

6 .

9.

1 4 ,

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,

.

10.

1 4 ,

,

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1 , 1 ,

1 , 2 2 , 2

,

11.

10 ,

2

.

12.

10 ,

2

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13.

,

2

가 ,

,

(stripe)

가 ,

14.

3

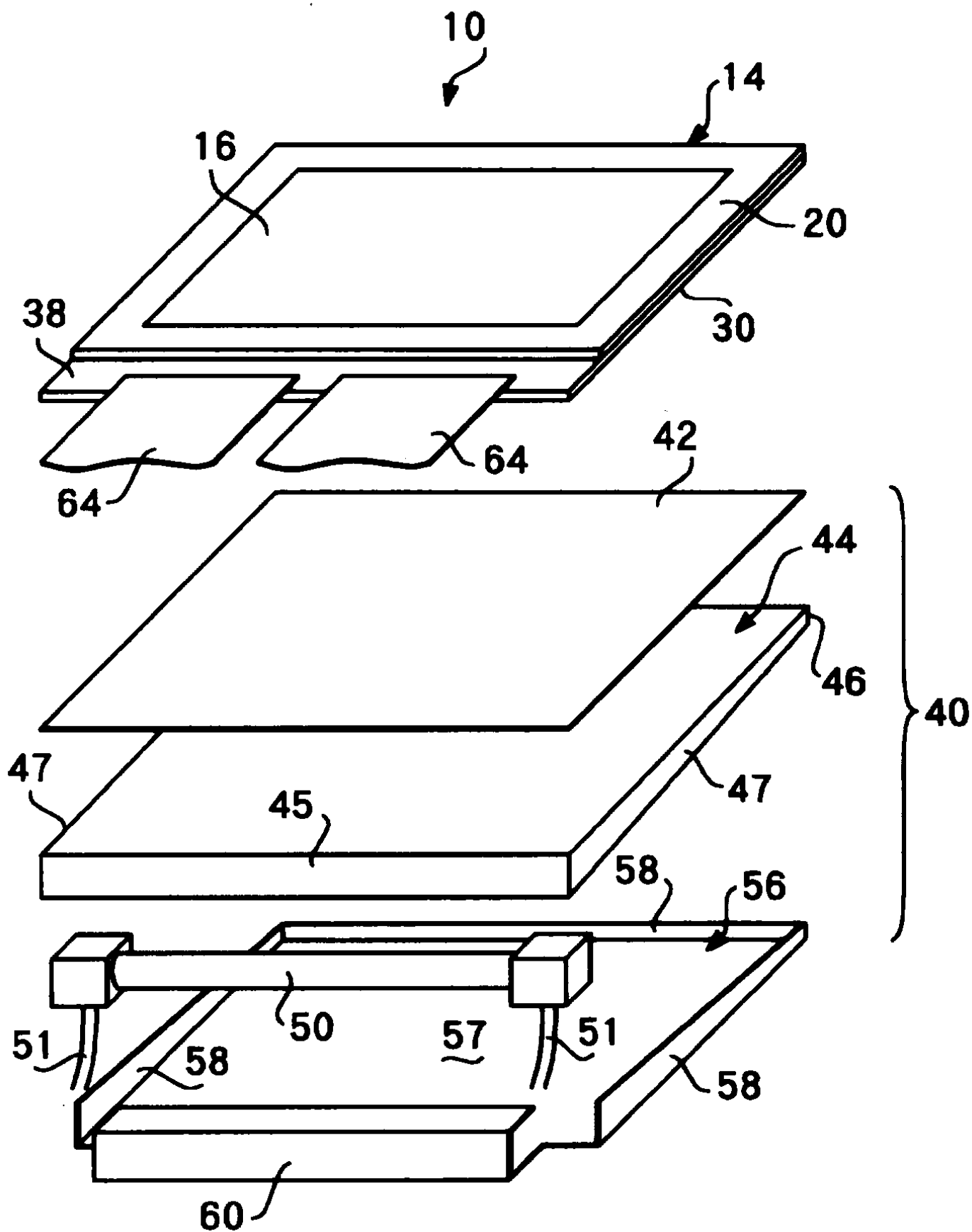
가 ,

,

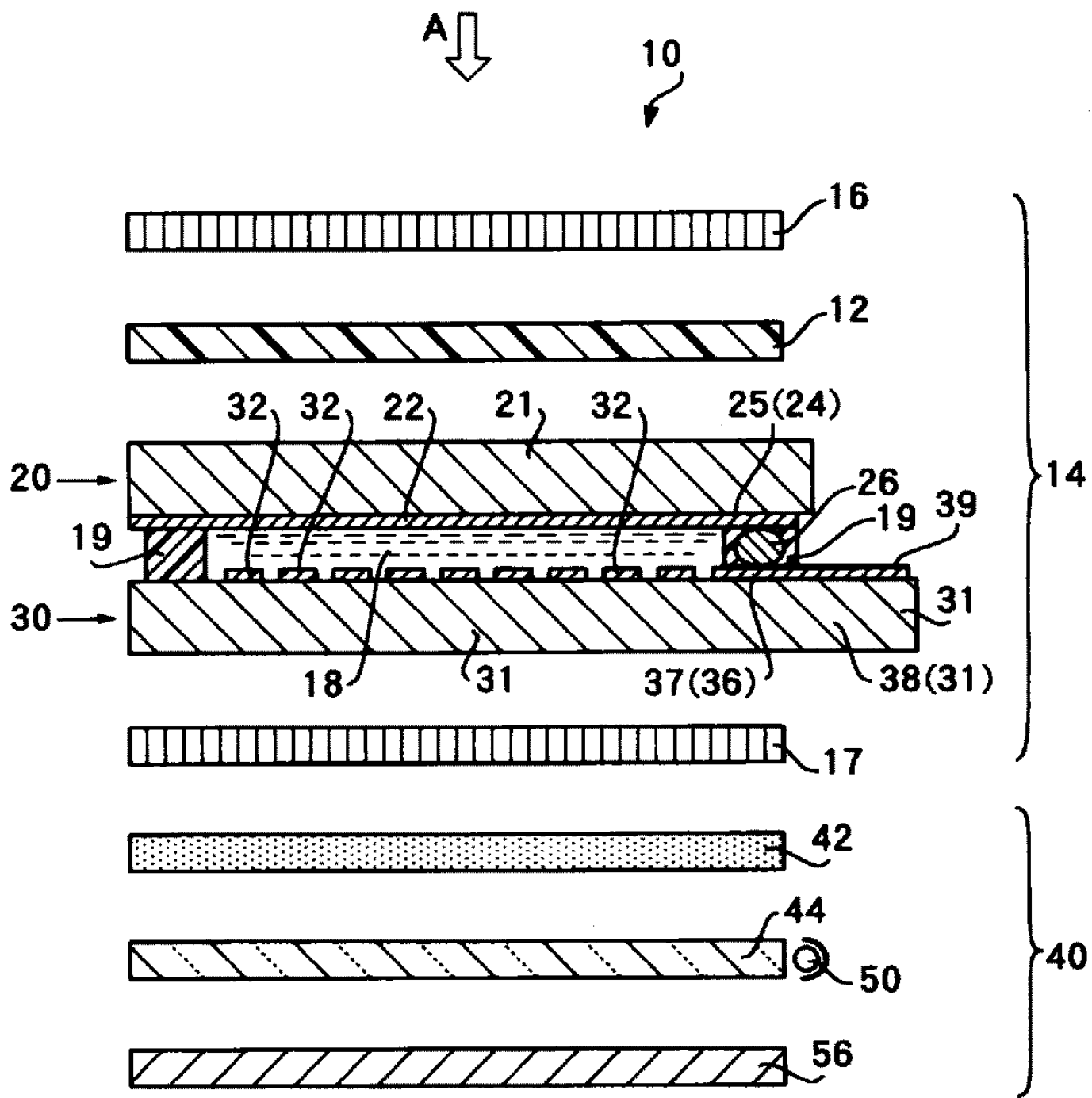
가 ,

,

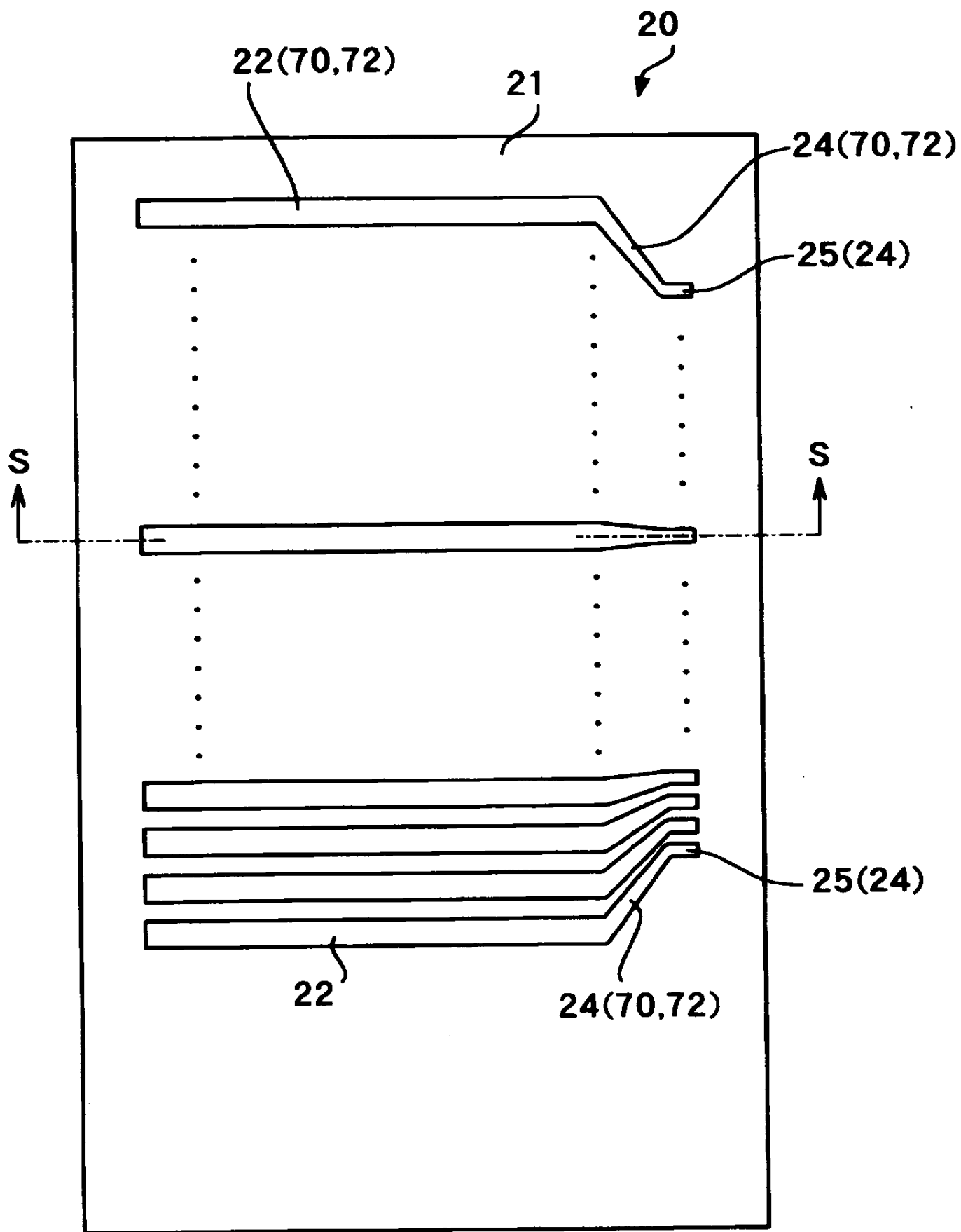
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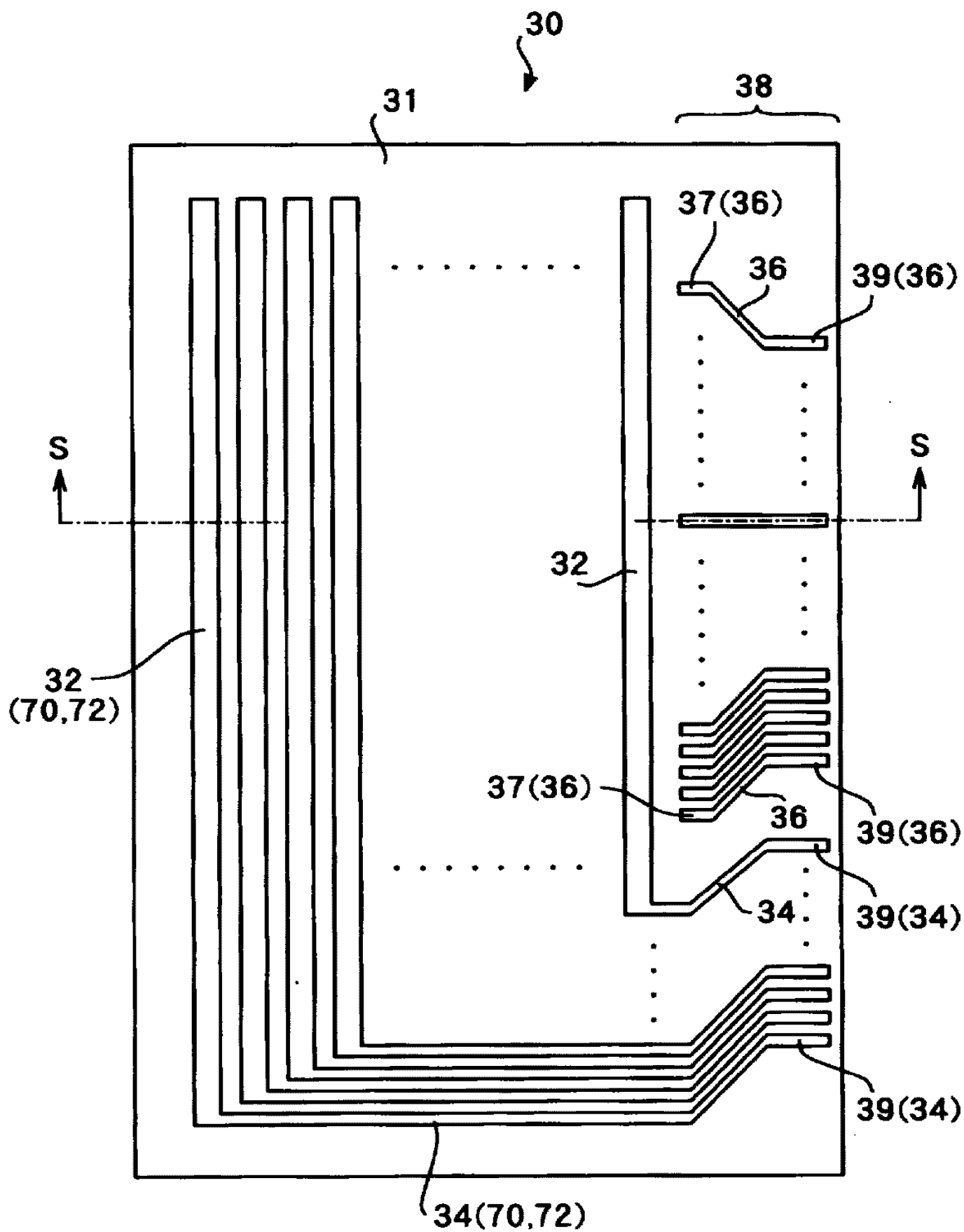
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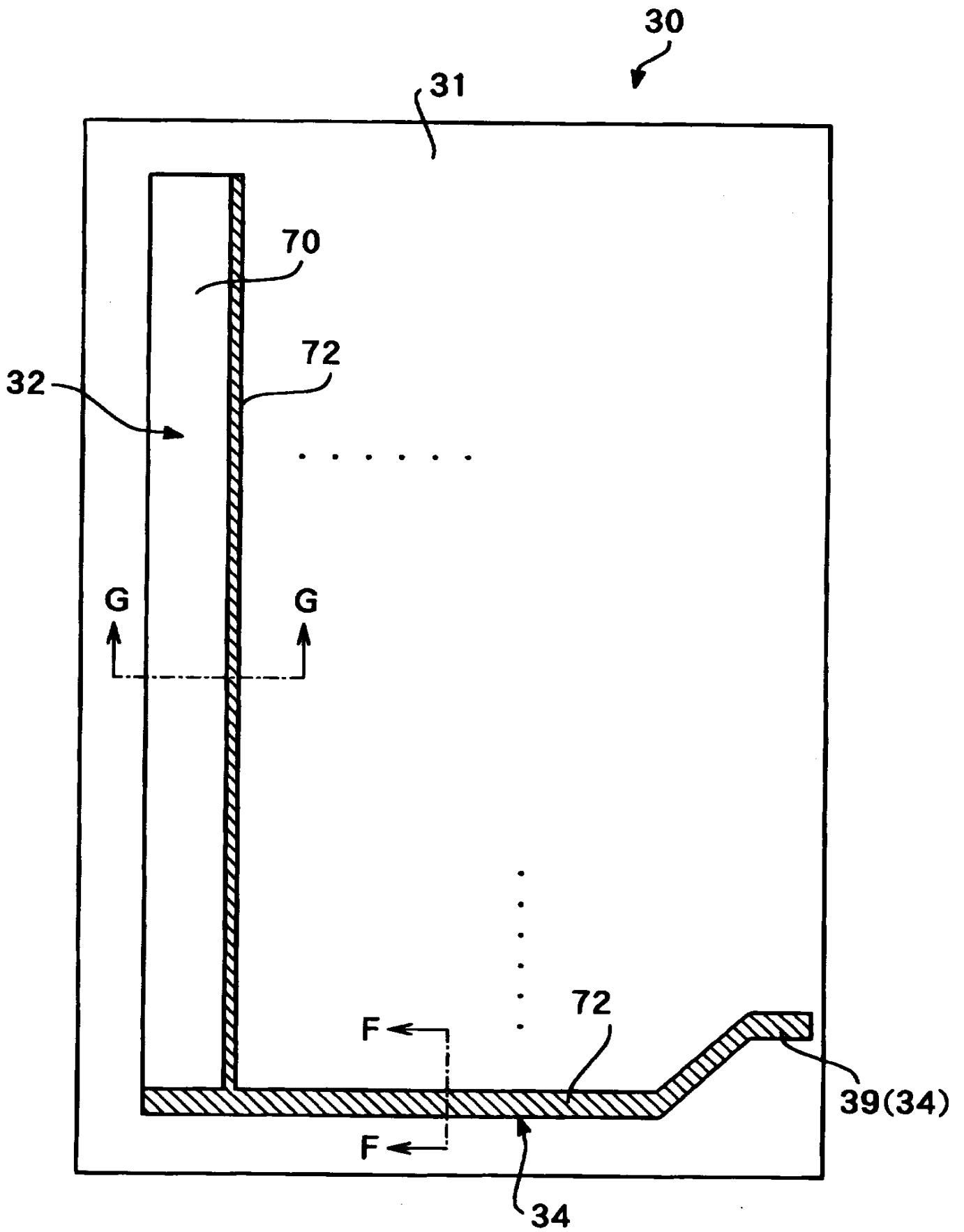
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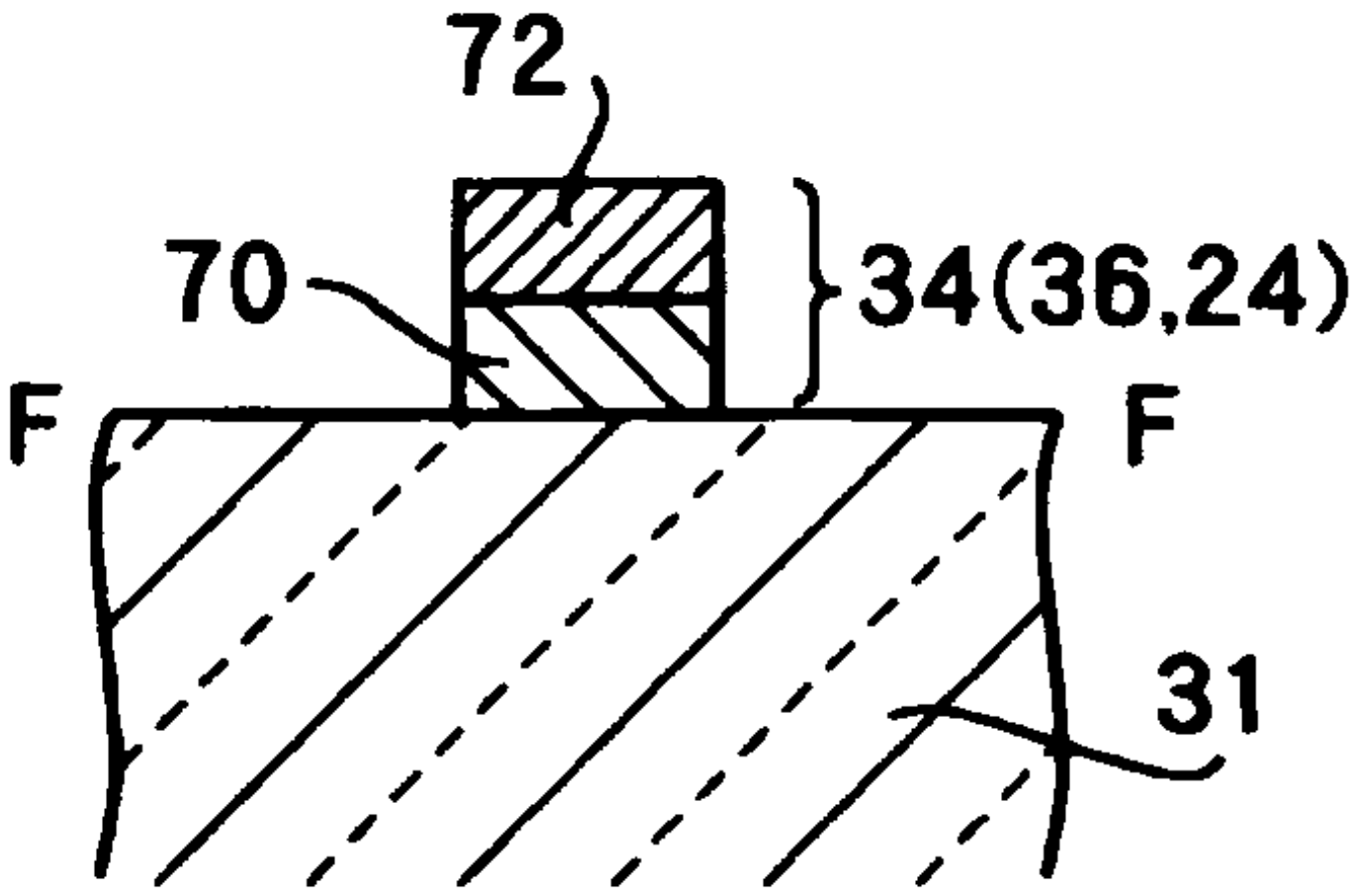
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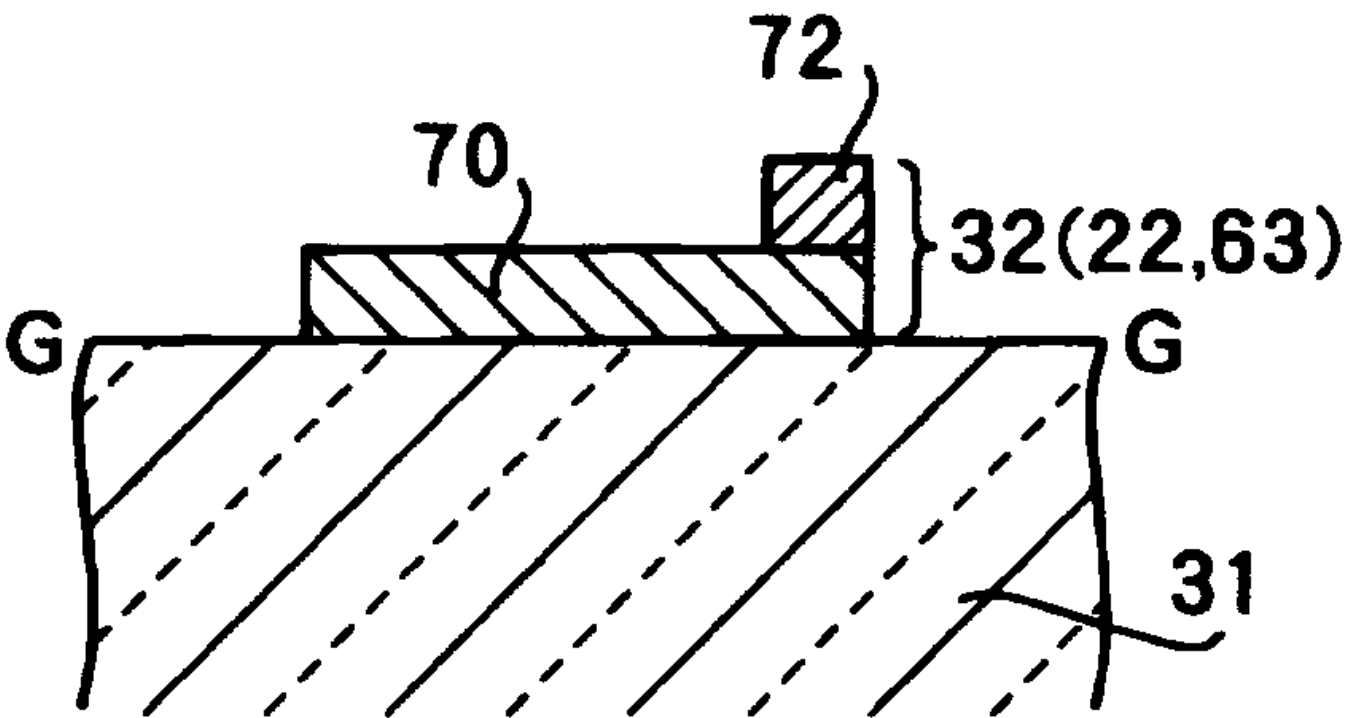
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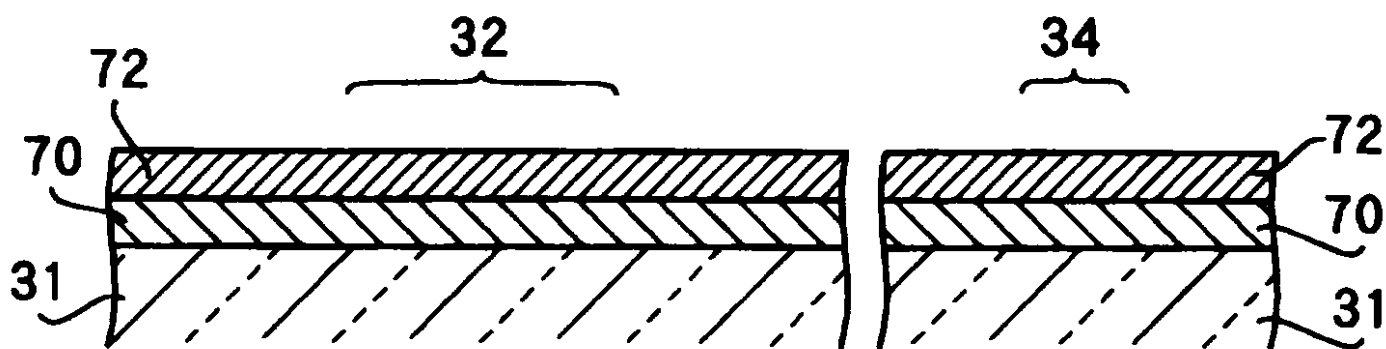
6a



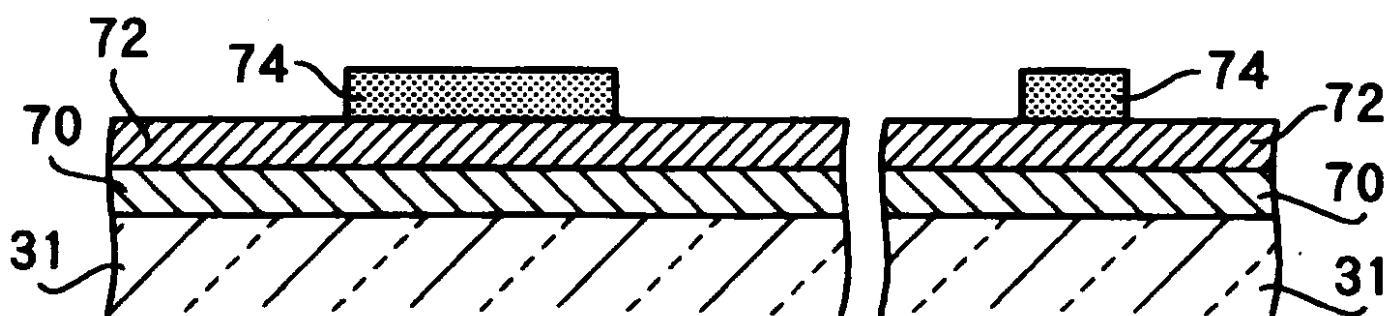
6b



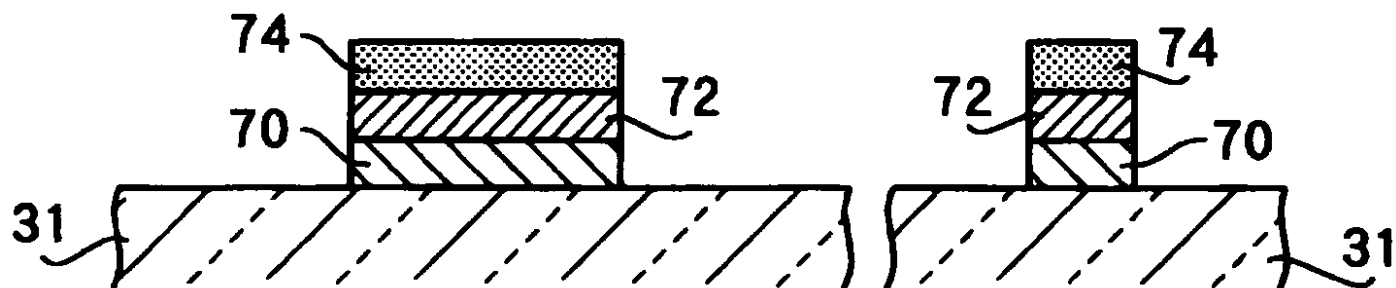
7a



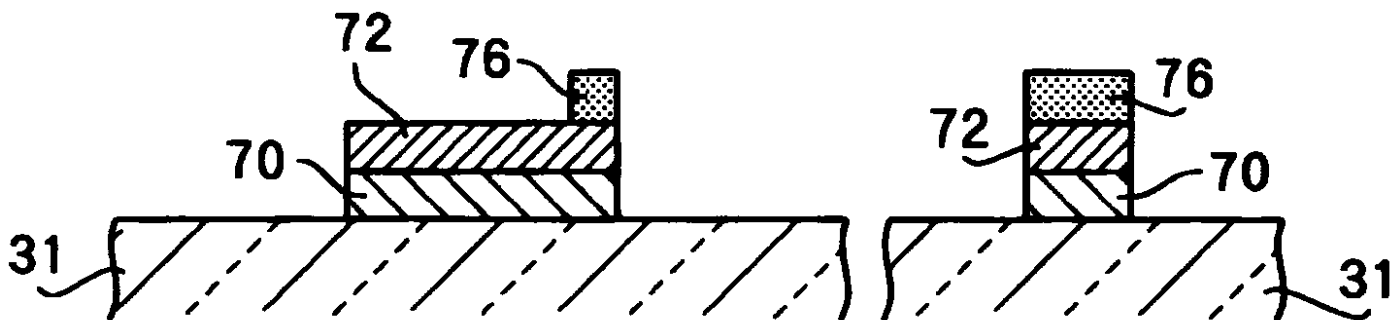
7b



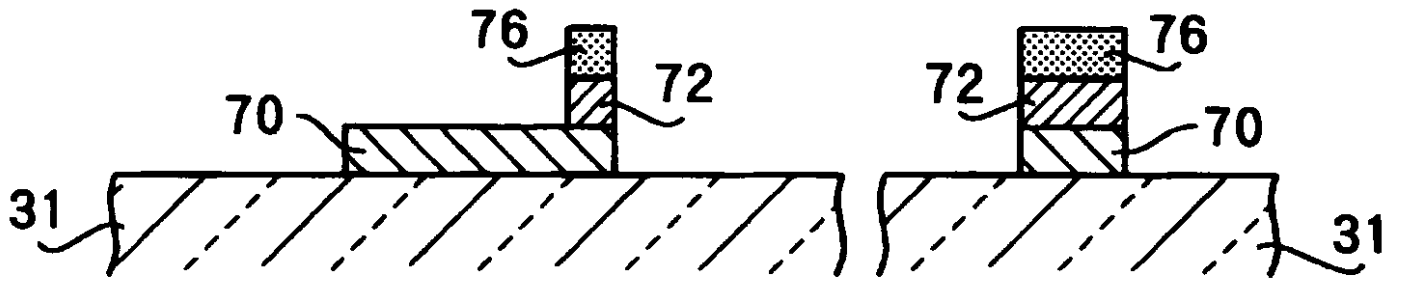
7c



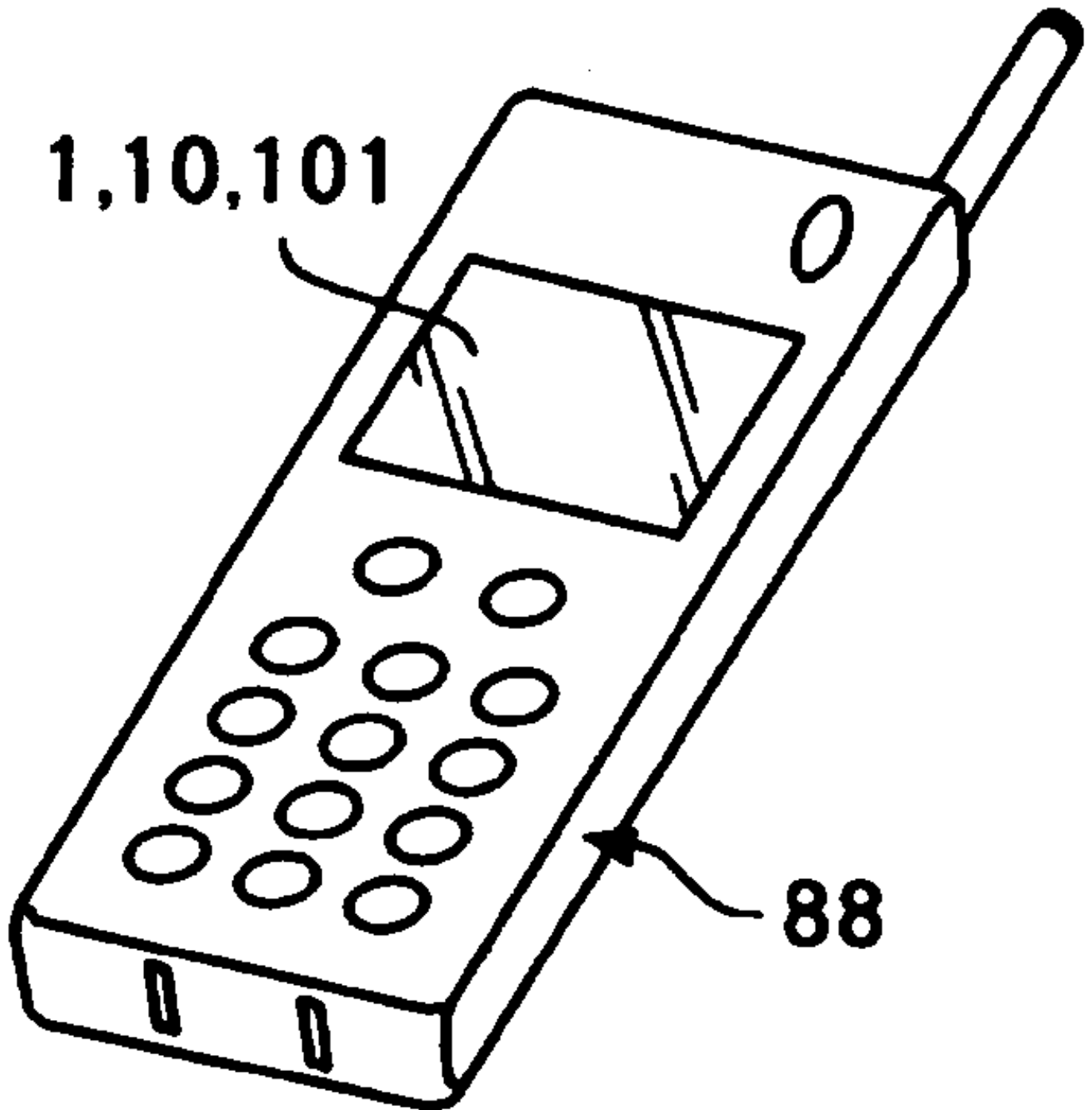
7d



7e

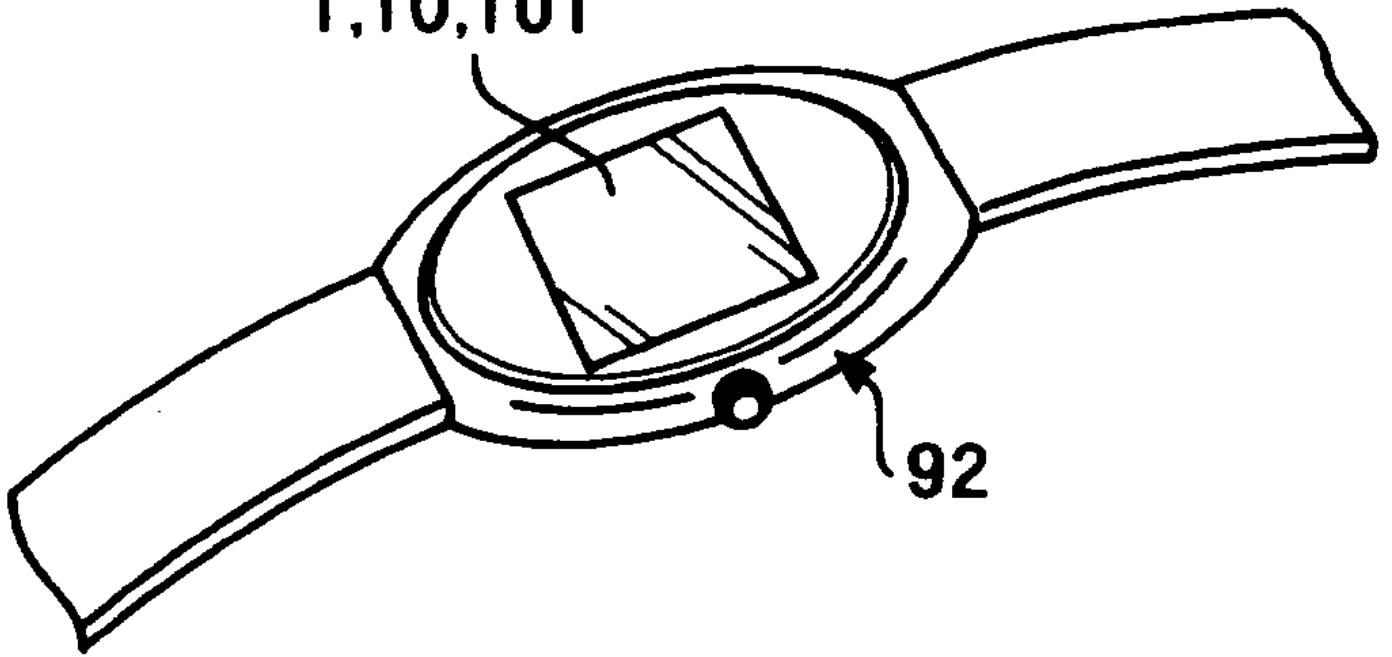


8a

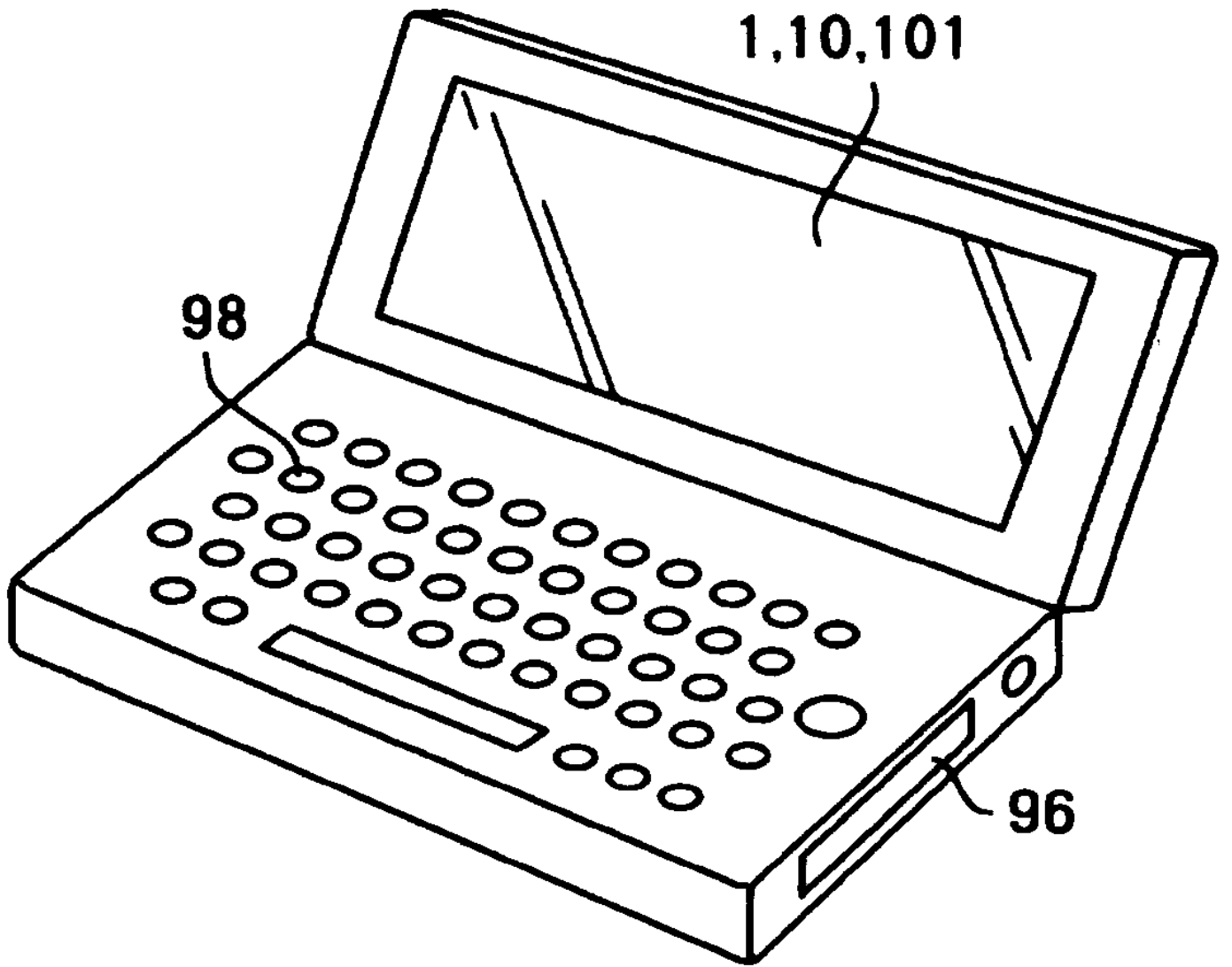


8b

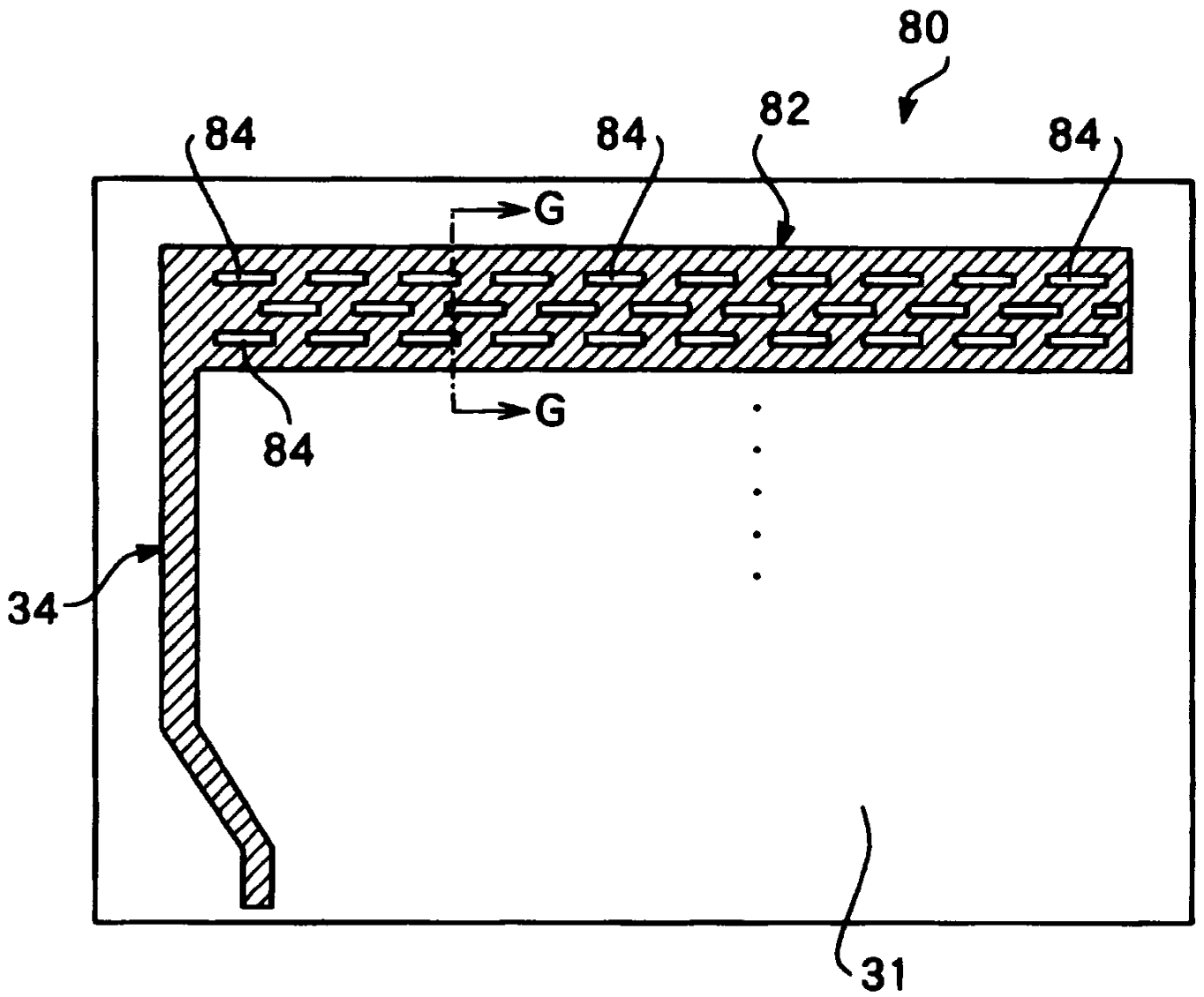
1,10,101



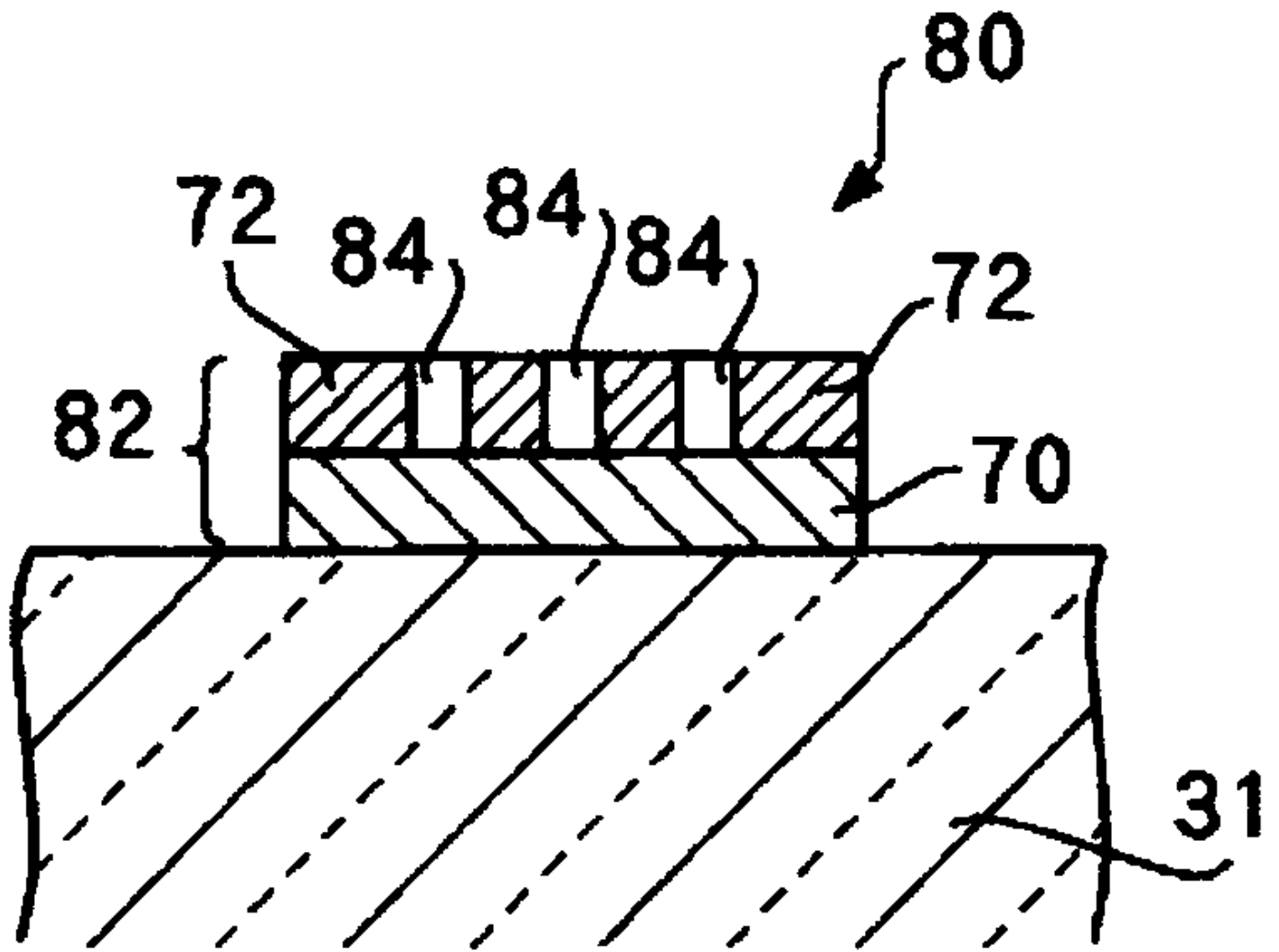
8c



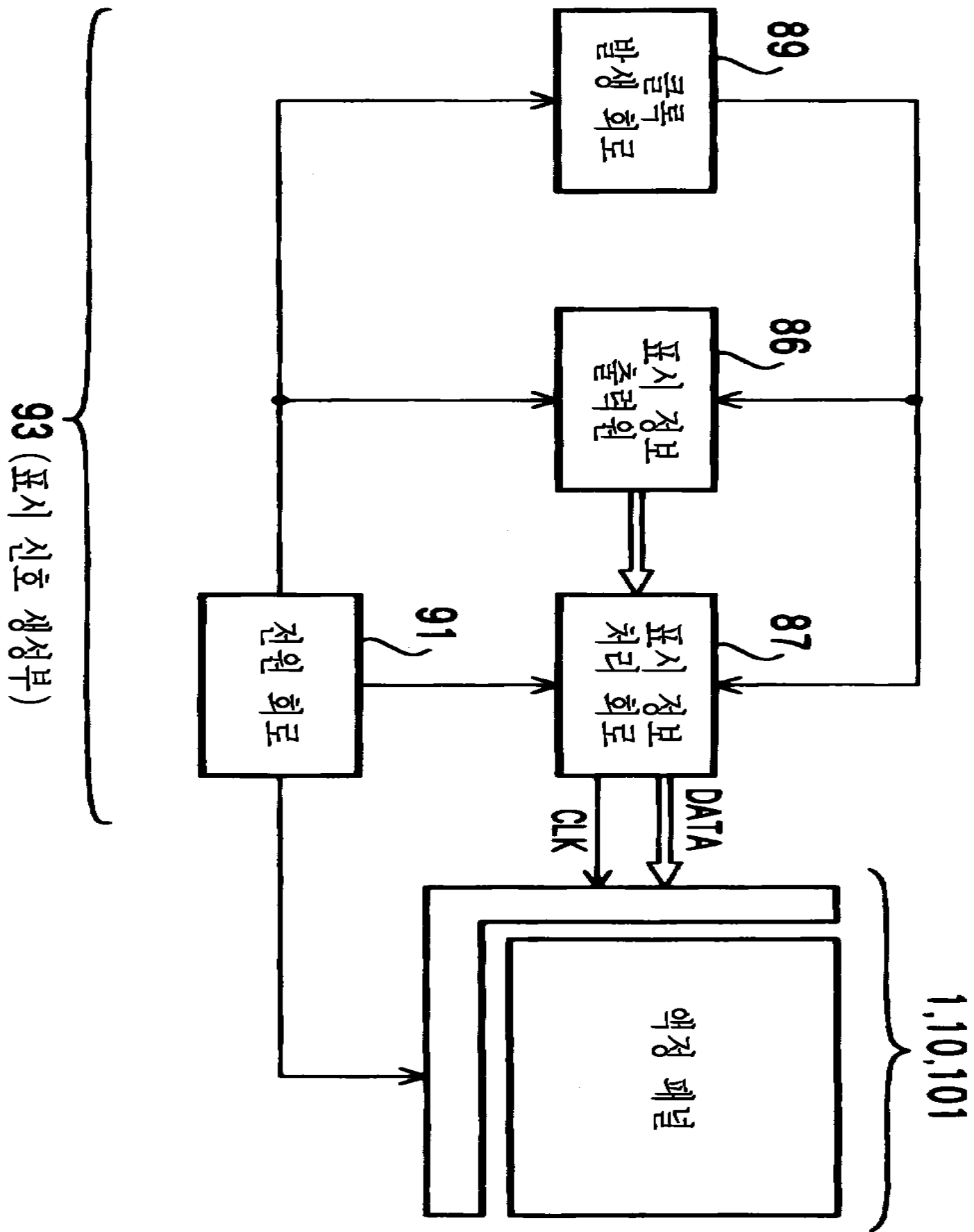
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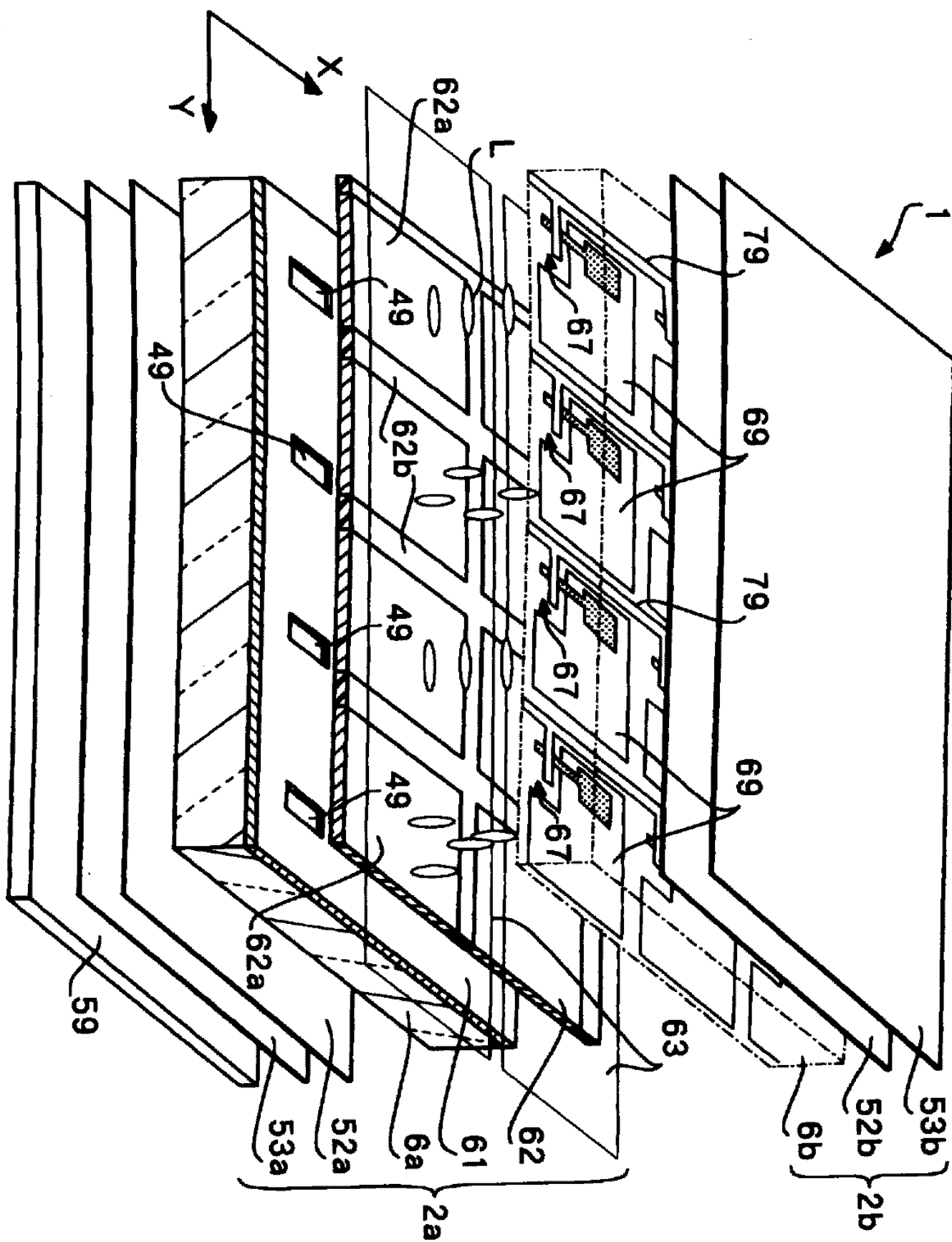


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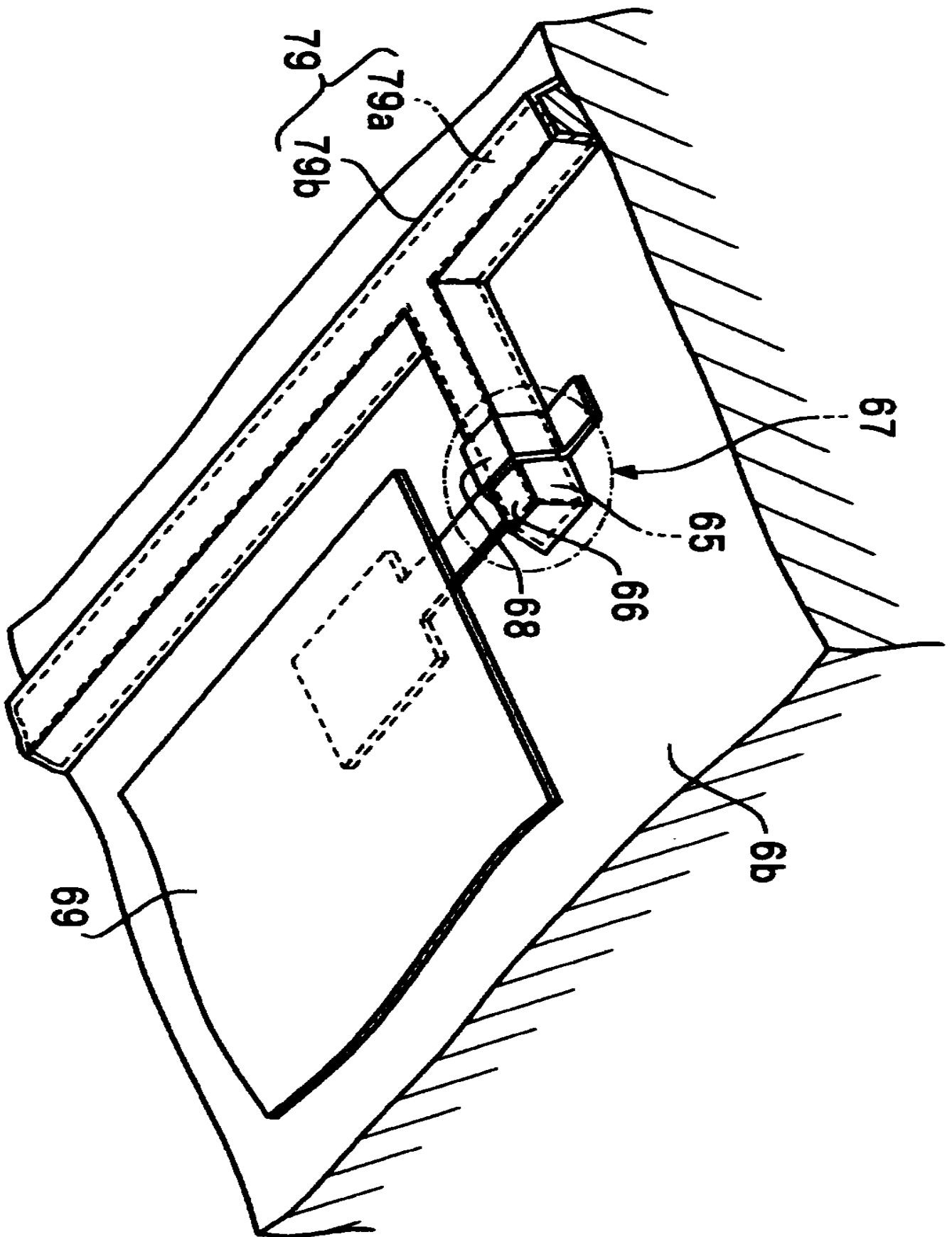


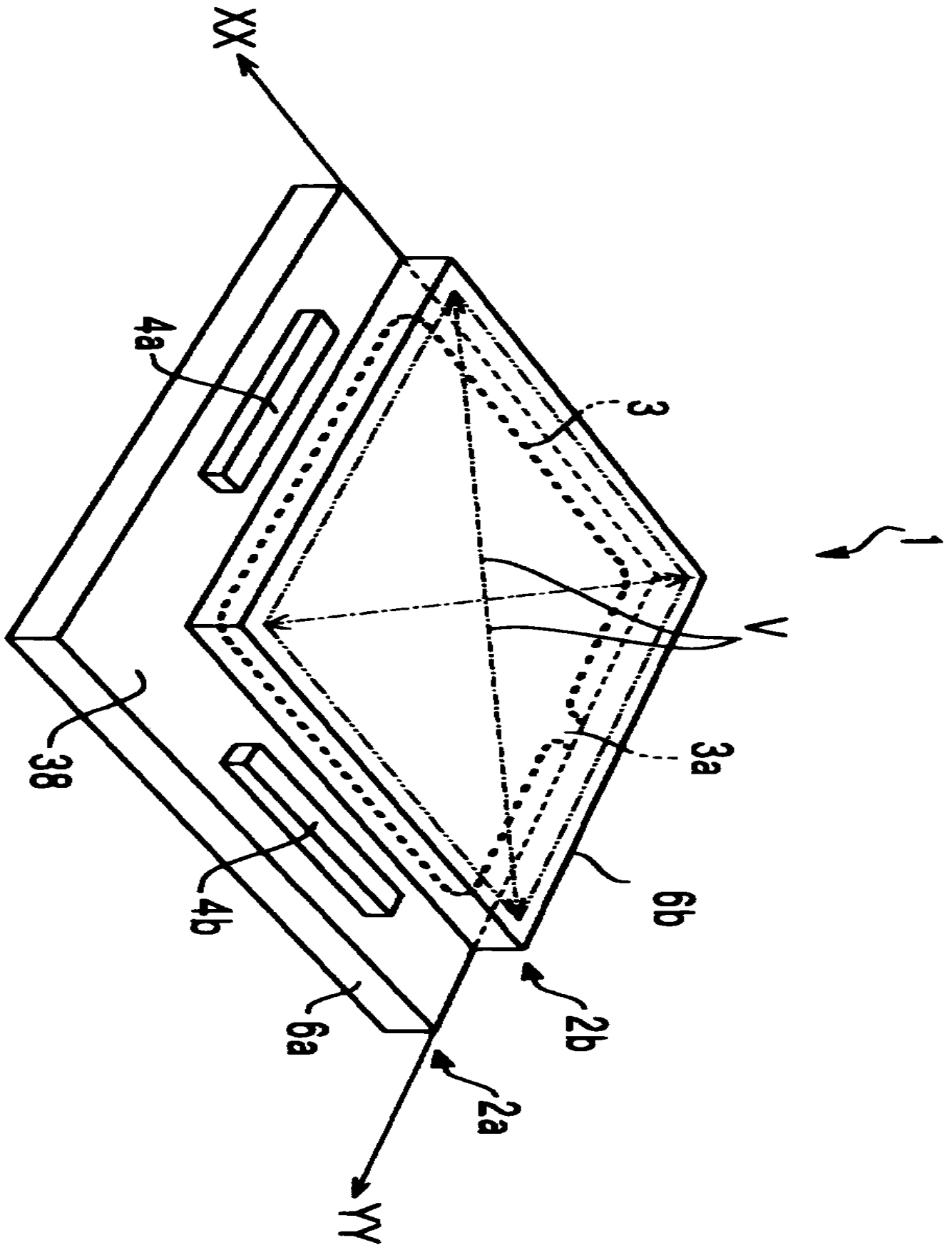
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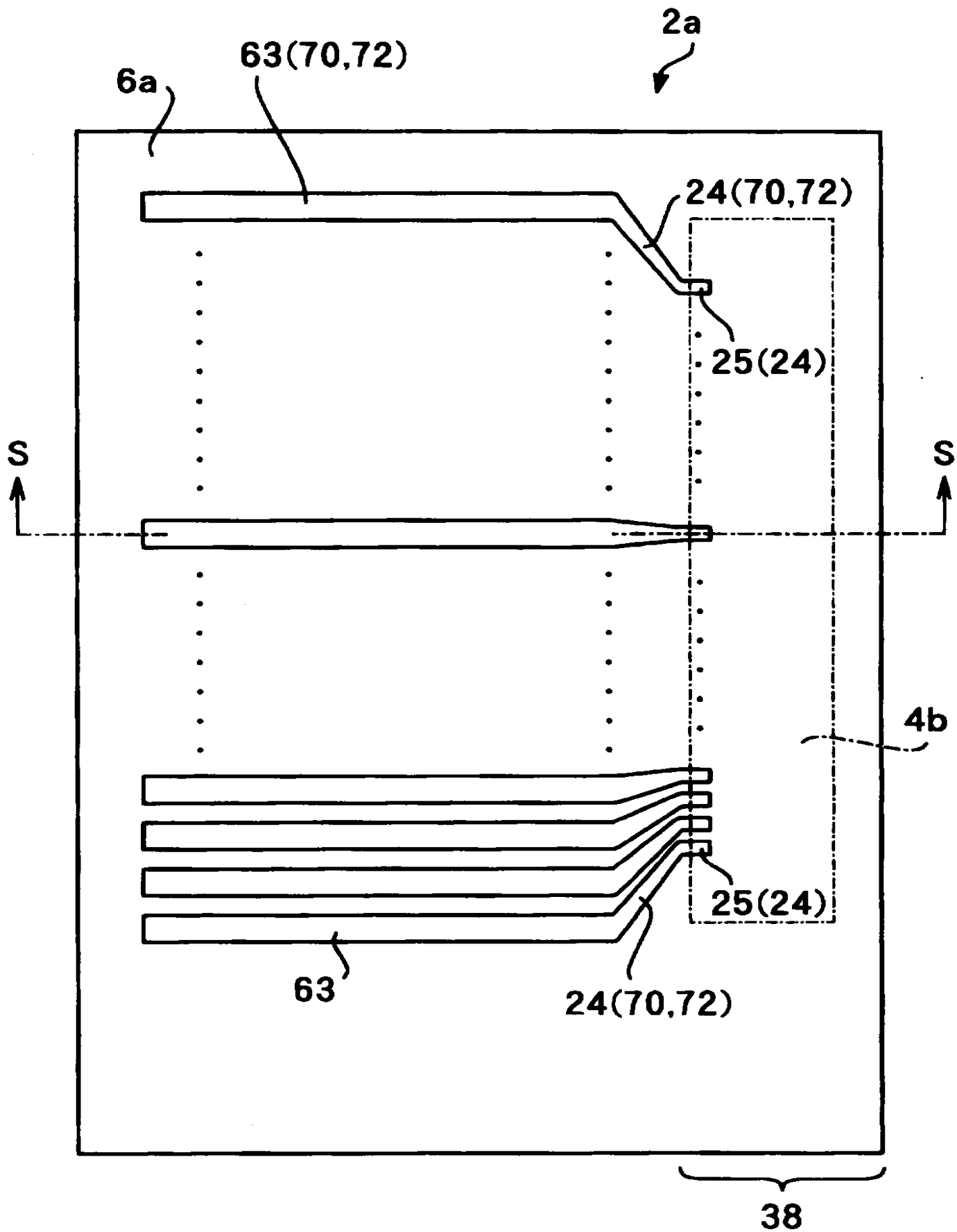


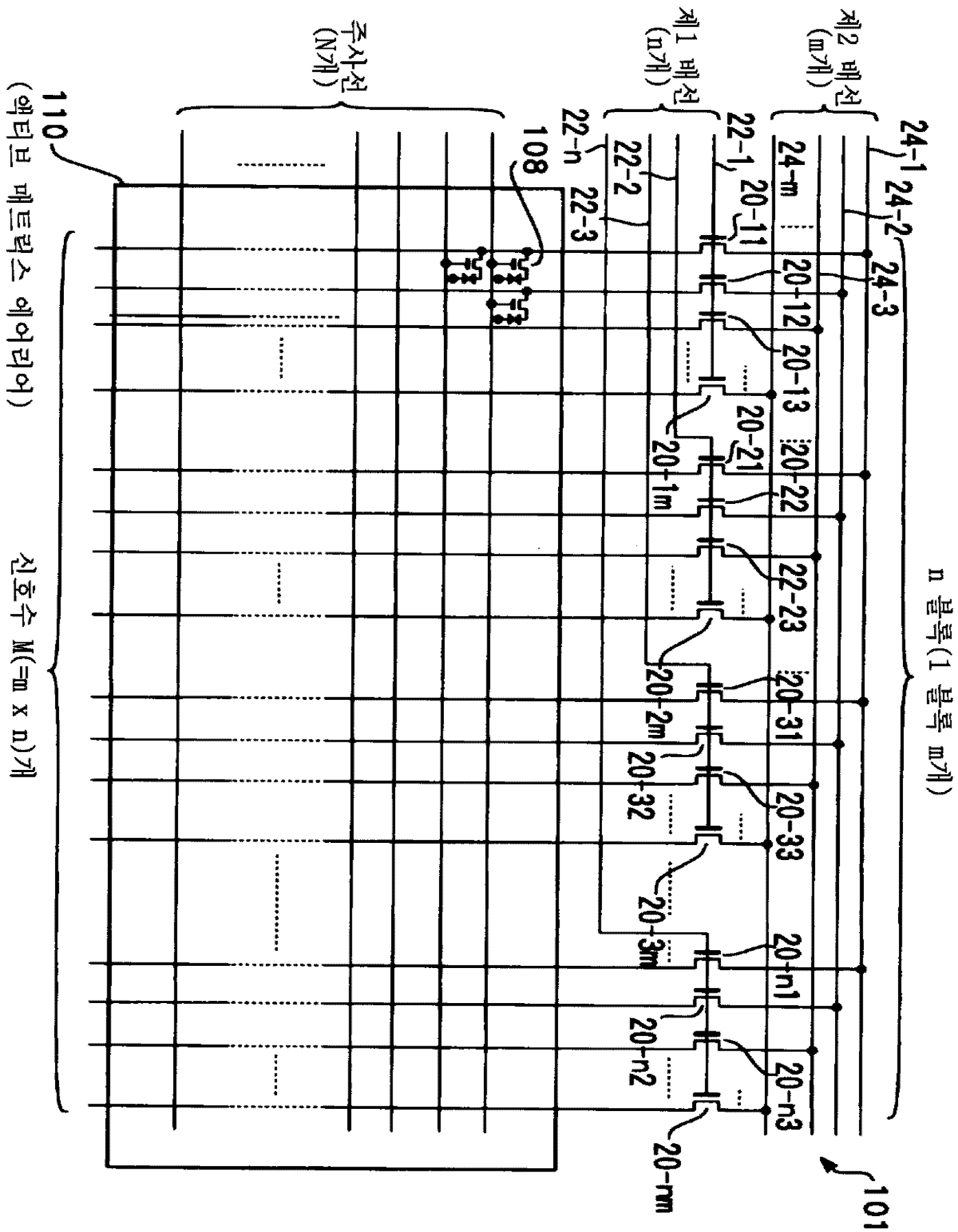


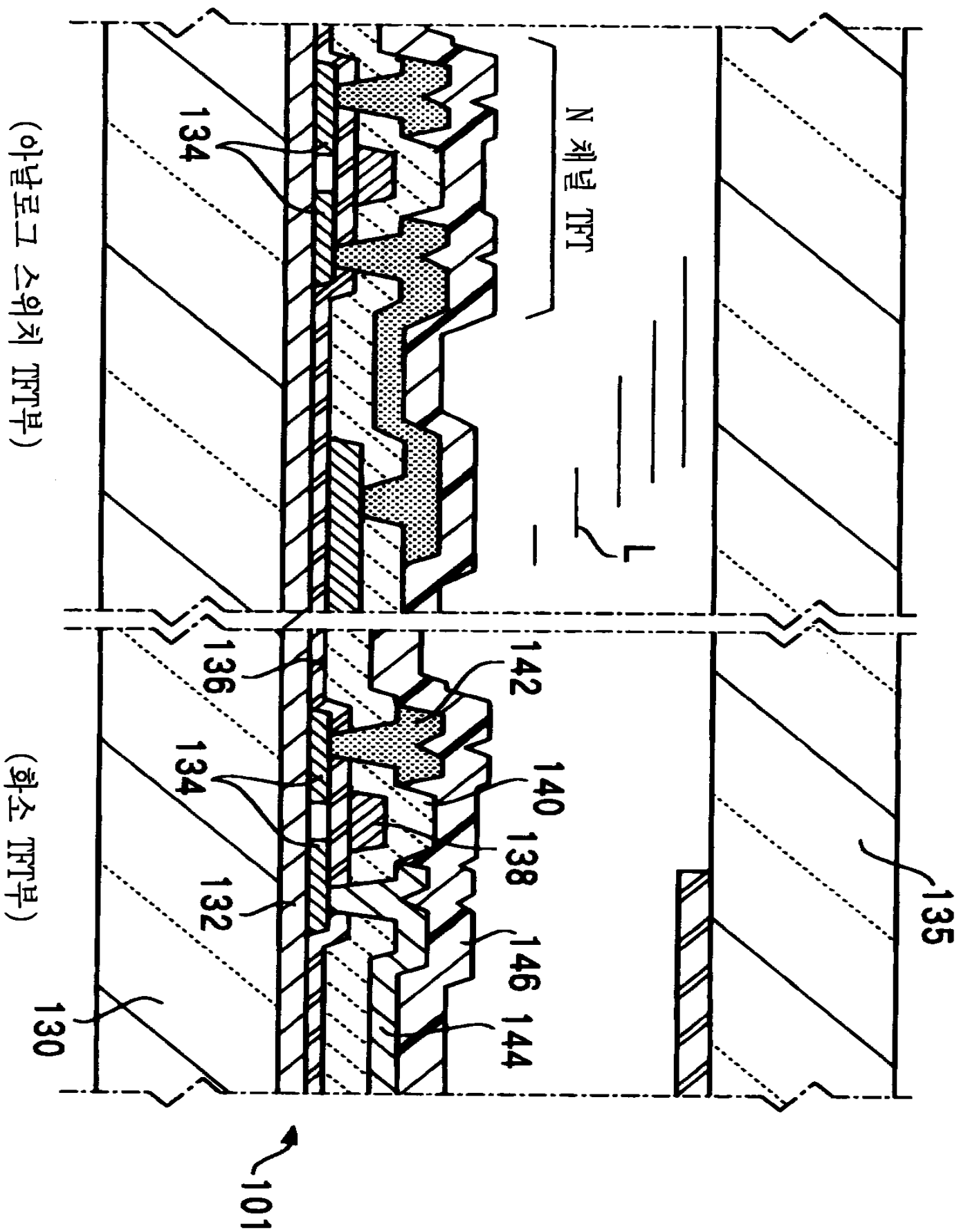
14



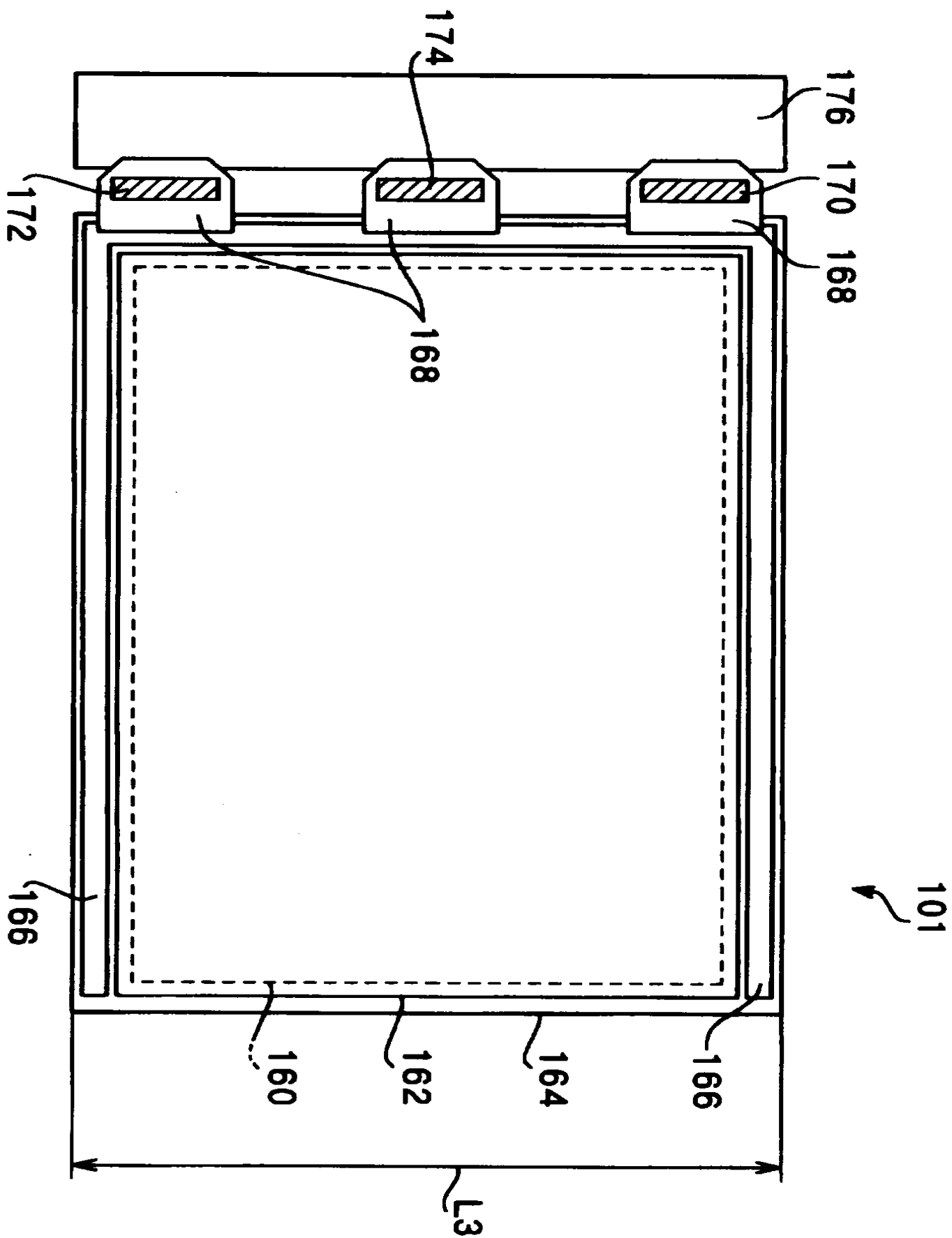


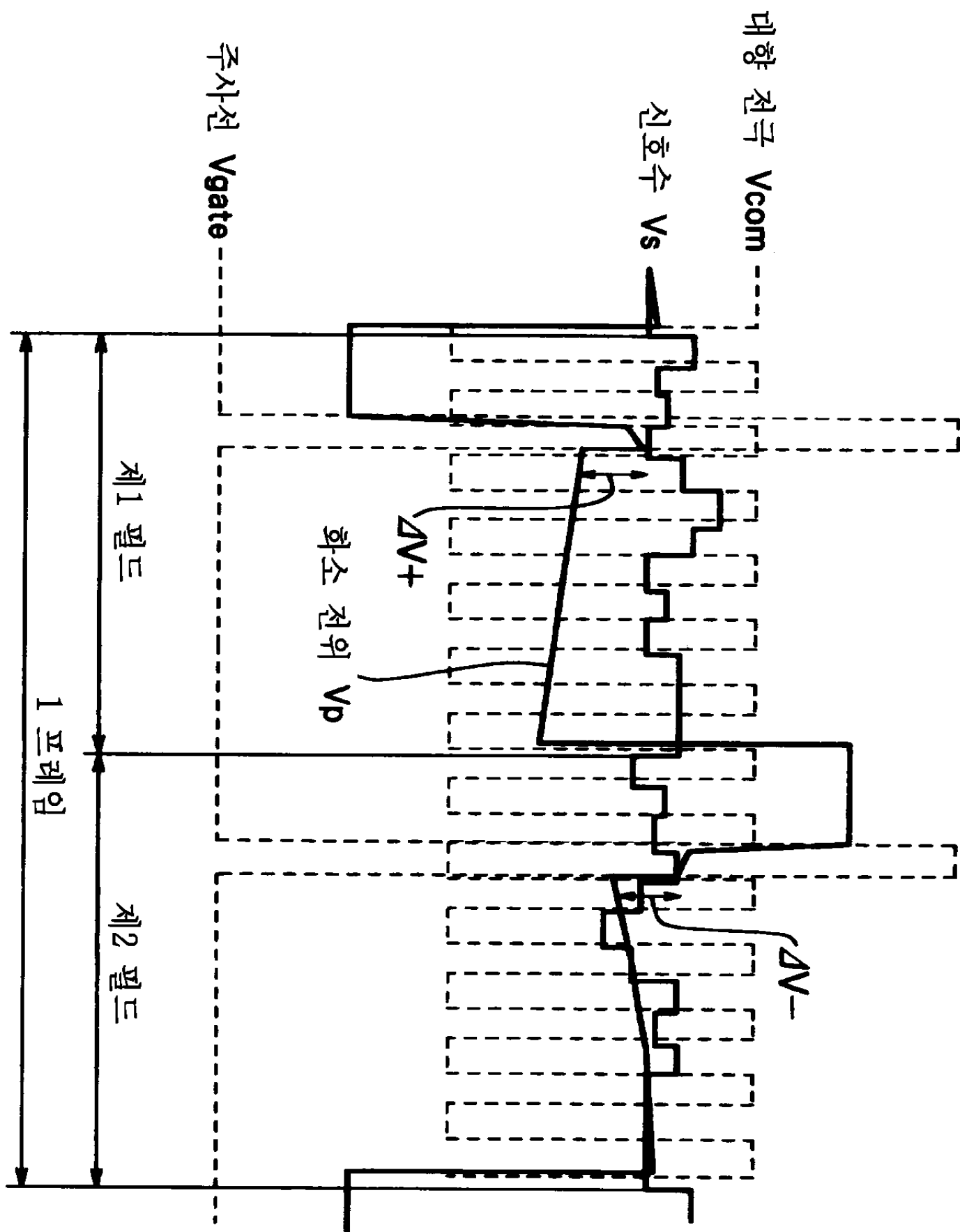


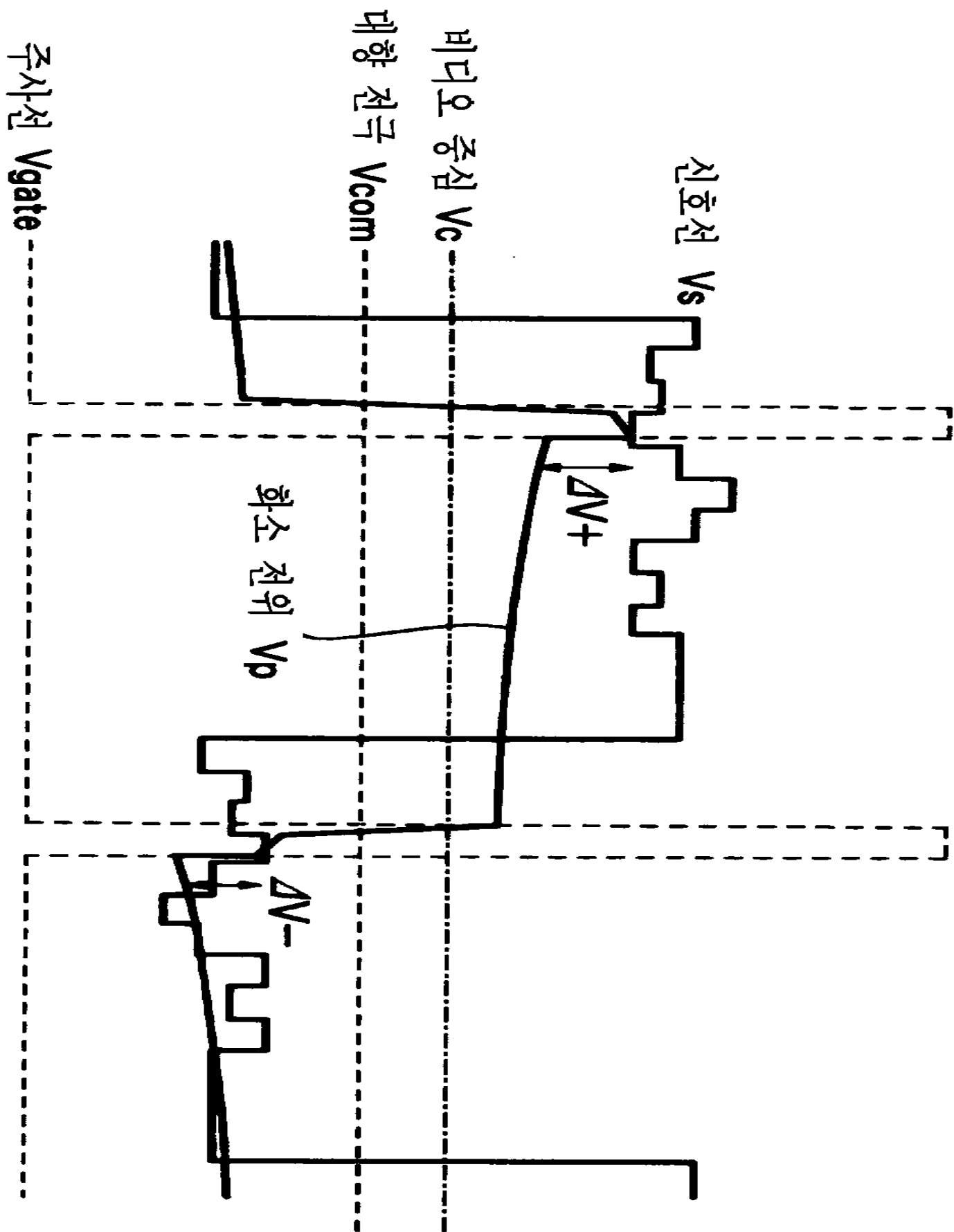


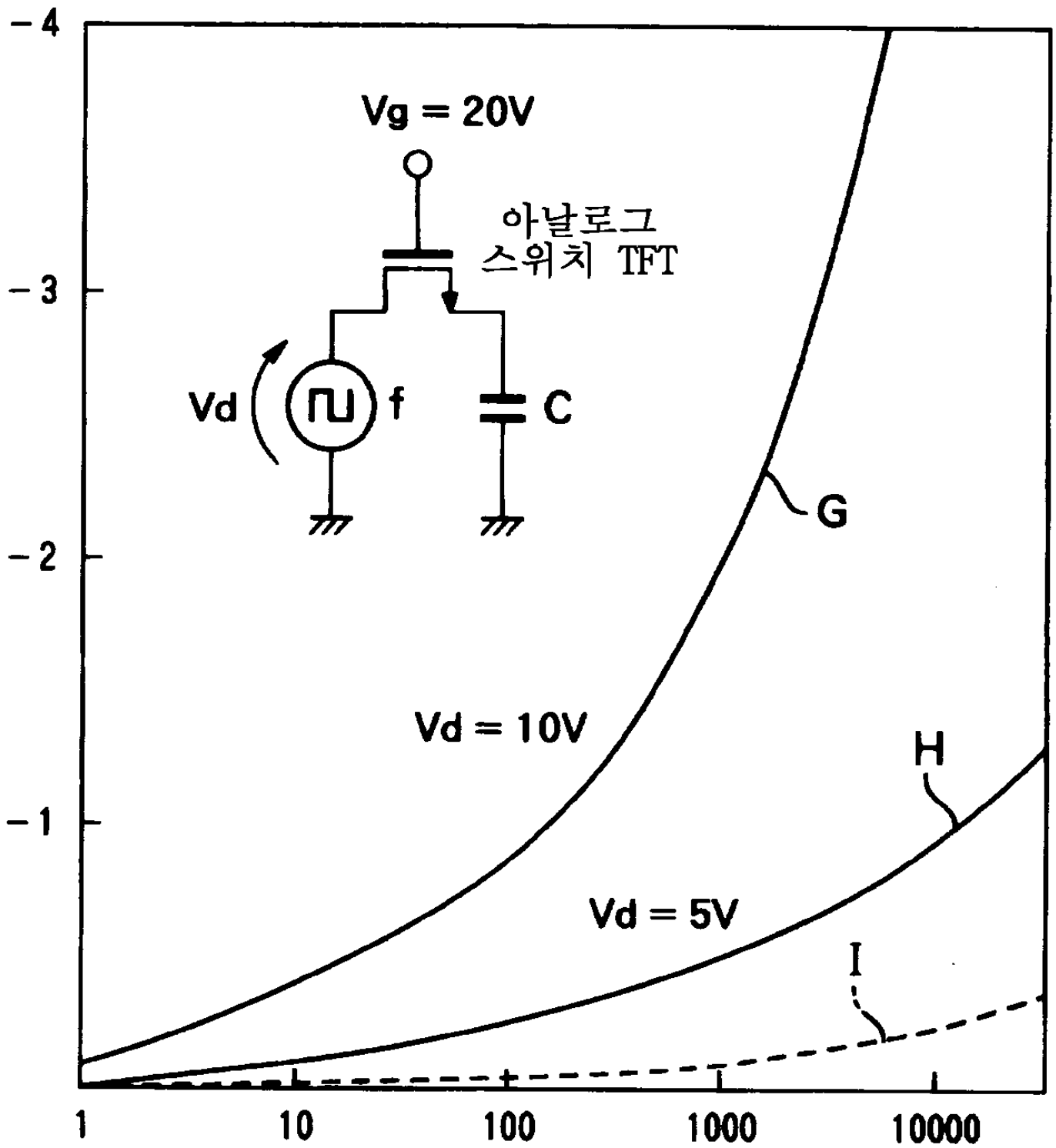


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专利名称(译)	显示装置用基板，其制造方法，液晶装置和电子设备		
公开(公告)号	KR1020010087191A	公开(公告)日	2001-09-15
申请号	KR1020010007975	申请日	2001-02-17
[标]申请(专利权)人(译)	精工爱普生株式会社		
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IPC分类号	G02F1/13 G02F1/1368 G09F G02F1/1362 G02F1/1365 H05K3/06 G09F9/30 H05K3/24 G02F1/1335 G02F G02F1/133 G02F1/1343		
CPC分类号	H05K2203/0361 G02F1/136286 H05K3/24 H05K3/244 H05K3/064 H05K2201/0326 G02F2001/13629 G02F1/133555		
代理人(译)	李，何炳		
优先权	2000041752 2000-02-18 JP 2001016182 2001-01-24 JP		
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外部链接	Espacenet		

摘要(译)

用于显示布线中的电阻的电极的高透光率的面板基板小，并且提供使用其的液晶显示器。面板基板(30)具有用于位移的多个电极(32)，其形成为在基板(31)上手拉手，以及基板(31)和形成在基板上的多个布线(34)(31)并继续显示电极(32)。显示器用电极(32)和布线(34)具有由透明导电层(70)和金属层(72)组成的双层结构。与透明导电层(70)的宽度相比，显示器用电极(32)的金属层(72)的宽度变得非常小。用于显示的电极，透明导电层，金属层，层压结构。

