

(19)  
(12)(KR)  
(A)(51) 。 Int. Cl. <sup>7</sup>  
H01L 27/118(11)  
(43)2002 - 0005956  
2002 01 18(21) 10 - 2001 - 0025384  
(22) 2001 05 10

(30) 2000 - 207911 2000 07 10 (JP)

(71) 가 가  
,  
2 2 3

(72) 2 2 3 가 가

(74)

:

(54)

, 1 (1 4),  
2 (19, 20) ,  
1 (1 4) 2 (19, 20) 가, 가  
가 가 가

1

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|    |    |       |
|----|----|-------|
| 1  | 1  | ,     |
| 2  | 2  | ,     |
| 3  | 3  | ,     |
| 4  | 3  | ,     |
| 5  | 4  | ,     |
| 6  | 5  | ,     |
| 7  | 6  | ,     |
| 8  | 7  | ,     |
| 9  | 8  | ,     |
| 10 | 9  | ,     |
| 11 | 10 | LSI , |
| 12 | 11 | LSI , |
| 13 |    | .     |

\*

\*

1, 2, 3, 4, 1A, 1B, 3A, 3B :

5, 6, 7, 50, 51, 52, 53, 54, 55, 111, 112, 113, 114 :

8, 9, 10, 11, 12, 13, 14 : /

15, 16, 17, 18, 43, 44, 45, 46, 47, 48, 49, 56, 57 :

19, 20, 21 : 22, 23, 24 :

31, 32, 34, 36, 37, 38, 40, 42 : 1

33, 35, 39, 41 : 2

58 : 1

71, 72, 73, 74, 75, 76, 77, 78, 81, 82, 83, 84, 85 : 2

91 : LSI 92 95 :

96 : 101, 102, 103 :

가 , AND , NAND 가 ,

가 가

13 가

13 , (21) 2 (1, 2, 3, 4) , (5, 6, 7)

(1 4) (5 7) , (1 4) (15, 16, 17, 18)가

(5 7) (1 4) , / (8 14) , 1 가 , / (8, 9) , 2 가 , / (9, 10) 가 2 , / (9) , 3 가 , / (11, 12) , 4 가 , / (13, 14)

(15 18) , (1 4) , (1 4) ( ) (1 4) , / (8 14) , 가 ,

/ 가 , (5 7) (1 4)

LSI 가



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



(1 4) 2 (19, 20) ,  
 , 가 .

1 (1 4) , (5, 6, 7) , 가  
 , (5) , 2 가 , 1 (1) , 가

1 (1 4) (5 7) , ,  
(101) (15, 16, 17, 18) , 가 ,  
 (15, 16, 17, 18) ,  
 가 .

( . )

, 1 (1 4) 2 (19, 20)  
 ,  
 , 가 .  
 가 , .

, , , p MOS n MOS 가 .  
 , 1 (1 4) 2 (19, 20)  
 , 1 , 가 .

( 2)

( )

, 2 ,  
 , (21) (102) (103)

( (102))

(102) , 1 (31, 32, 34, 36)  
 2 (33, 35) . 1 (31, 32, 34, 36) 2  
(33, 35) , , ,

, 1 (31, 32, 34, 36) 2 (33, 35) 가, 가  
 (33, 35) , 1 (31, 32, 34, 36) 2 .

1 (31, 32, 34, 36) , (50, 51, 52) ,  
 가 , (50) , 2 가 , 1 ( 31) , 가 .

1 (31, 32, 34, 36) (51 52) (43, 44, 45, 48) , 가 , (43, 44, 45, 48)  
 (102) 가  
 (103))  
 (103) , 1 (37, 38, 40, 42)  
 2 (39, 41) . 1 (37, 38, 40, 42) 2  
 (39, 41) , ,  
 , 1 (37, 38, 40, 42) 2 (39, 41) 가, 가  
 1 (37, 38, 40, 42) 2  
 (39, 41) ,  
 , (102) 1 (31, 32, 34, 36) 2 (33, 35)  
 (103) 1 (37, 38, 40, 42) 2 (39, 41)  
 .  
 1 (37, 38, 40, 42) , (53, 54, 55)  
 가 (53) , 2 가 , 1  
 (37) , 가  
 , (53 55)  
 , 1 (37, 38, 40) (46, 47, 48, 49) , 가 ,  
 (103) (46, 47, 48, 49)  
 , 가 , (48) , 1 (  
 34) 1 (40) .  
 ( )  
 , (21) 102  
 (103) , 1 가 .  
 .  
 OS , nMOS , 2 , pM  
 , 2  
 34  
 40 가 가 ,  
 가 가 .  
 , 가  
 , 2 , 3

, 102 103 , 가  
 .  
 ( 3)  
 ( )  
 3 (21) 3 , ,  
 (102) (103) 1 (58) .  
 102 103  
 ( (102, 103))  
 102 103 2  
 1 , 40 102 1 34 56 , 103  
 57 , 102 103  
 가 (56, 57) ,  
 .  
 ( 1 (58))  
 102 103 , 1 (58) (102, 103)  
 , 1 (58) 가 ( 3 , 2 )  
 .  
 , 1 (58) , (102, 103)  
 .  
 ( . )  
 , (21) 102  
 103 1 (58) ,  
 1 가 .  
 , 2 , 4  
 pMOS nMOS , 2 , 3  
 가 , 2 , 3  
 , 2 , 가 , 가 .

$(58)$  가  $(102, 103)$  , 가  
 $(4)$   
 $( )$   
 $5$  ,  $1$   $1$   $5$  ,  $1$  ,  $2$   $(71, 72)$   
 $2$   $(71, 72)$  ,  $(101)$   $(71, 72)$  ,  
가  $(4)$  ,  $(101)$   $2$  )가  
 $( )$   
, ,  
, ,  
,  $1$  가  
 $(5)$   
 $( )$   
 $6$   $2$   $5$   $4$   $6$  ,  $2$  ,  
 $(73, 74)$   $(102)$   $1$   $(43, 52)$  ,  $2$   
 $(73, 74)$   $2$   $(73, 74)$  ,  $(102)$   $(73, 74)$   
, 가  $(6)$  ,  $(102)$   $2$  )가  
,  $(103)$   $1$   $(37, 42)$  ,  $2$   
 $(75, 76)$   $2$   $(75, 76)$  ,  $(103)$   $(75, 76)$   
, 가  $(6)$  ,  $(103)$   $2$   
)가  
 $( )$

4 가 , 2  
( 6)  
( )  
7 3 5 4 7 , 4 ,  
(102) 1 (31) , 2 (77)  
(77) , (102)  
(77) 2 (102) 2 )가  
(103) 1 (42) , 2  
(78) 2 (78) , (103)  
(78) 2 (78)  
(103) 2 )가  
( )  
( )  
4 가 , 3  
( 7)  
( )  
8  
8 , 1 1  
가 , 2 (19, 20)  
1 ,  
( )  
1 , 가 가

, 가 2 (19, 20)

, 가 .

, 1  
 , 1 . ,

, 1 , 2 6  
 , 가 .

( 8)

( )

9 . 9 , 1  
 1 , 1 (15, 17) (5, 6)  
 2 , (1A, 1B) (3A, 3B)  
 , 1 , ,

( . )

, (1A, 3A) ,  
 , 가

, (101)  
 , 가

, 1 , 2 7  
 , 가 .

( 9)

( )

10 , 10 ,  
 8 111 , 2 (19) 112가 1 (1B)  
 3B) 113 , 2 (20) (114) ,  
 1 , ,

(     )

가 , 8 , 가 , 가 , 가 .  
가 , 가 .

(     10)

(     )

11     11  
1     가     LSI     LSI (91) ,  
(92 95),     (96) 가 .  
(96) ,     1     가     (22 24)  
,     2     (81 85) .

2     (81 85) ,     (22 24)  
(81 85) ,     가     (22 24) ,     2

2     (81 85) ,     (22 24)  
,     ,     8     2     (19, 20) ,  
,     (22 24) .  
,     2     (81 85) ,     2     (81 85) 가,     (22 24)  
가     가 .

(     )

1     가

(     11)

(     )

12     12  
4     가     LSI     ,  
10     LSI .  
4     ,     5     ,     2     71 7  
2가 ,     10     2     (81 85) .

[illegible]

( . )

, 4 가

10 11 , 1 4 , 가 .

가

가

(57)

1.

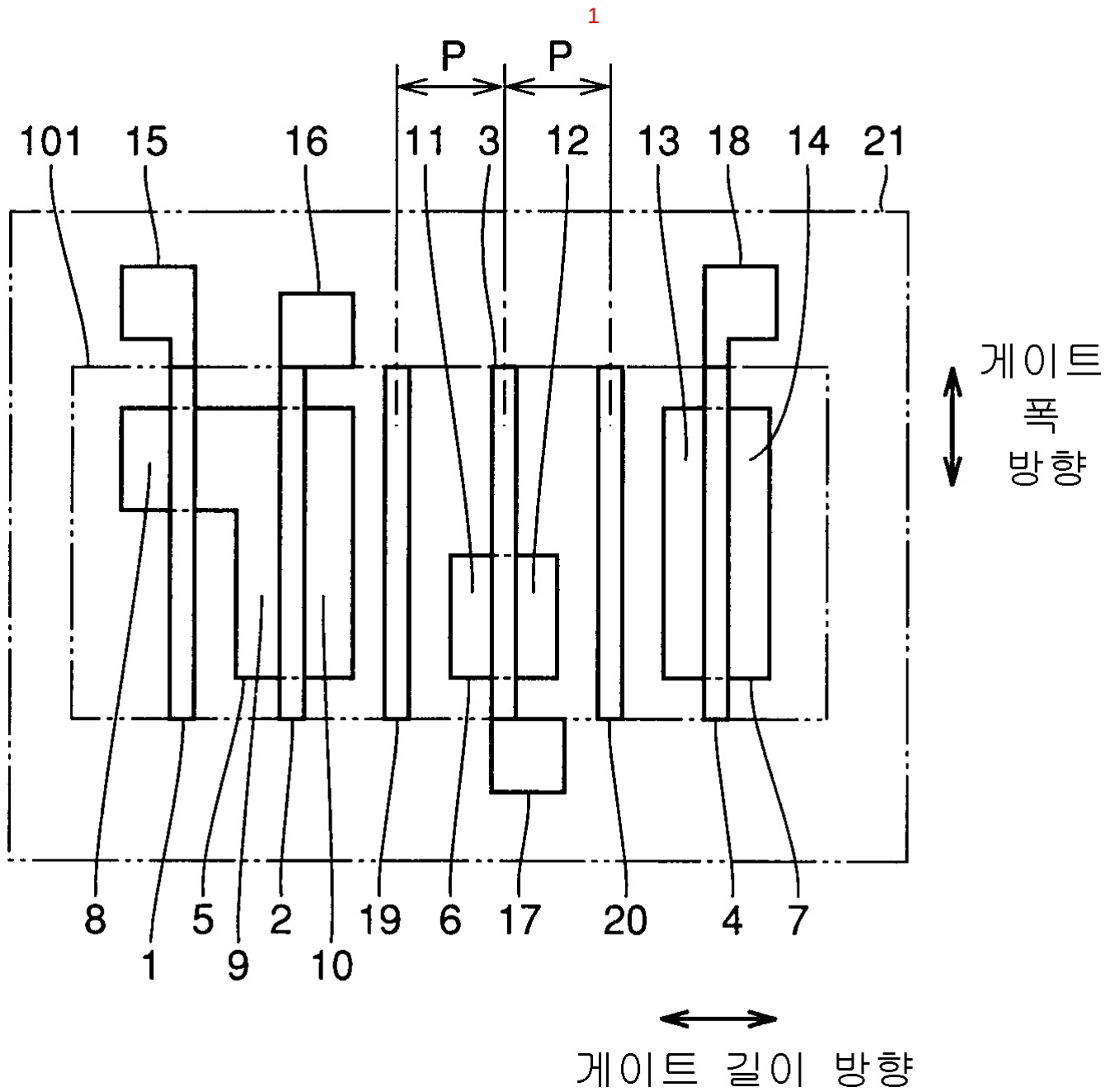
[illegible]

$\frac{(8 \ 14)}{(1 \ 4)} \cdot 2$  ,  $\frac{(5 \ 7)}{(1 \ 4)} \cdot 2$  , 가 .

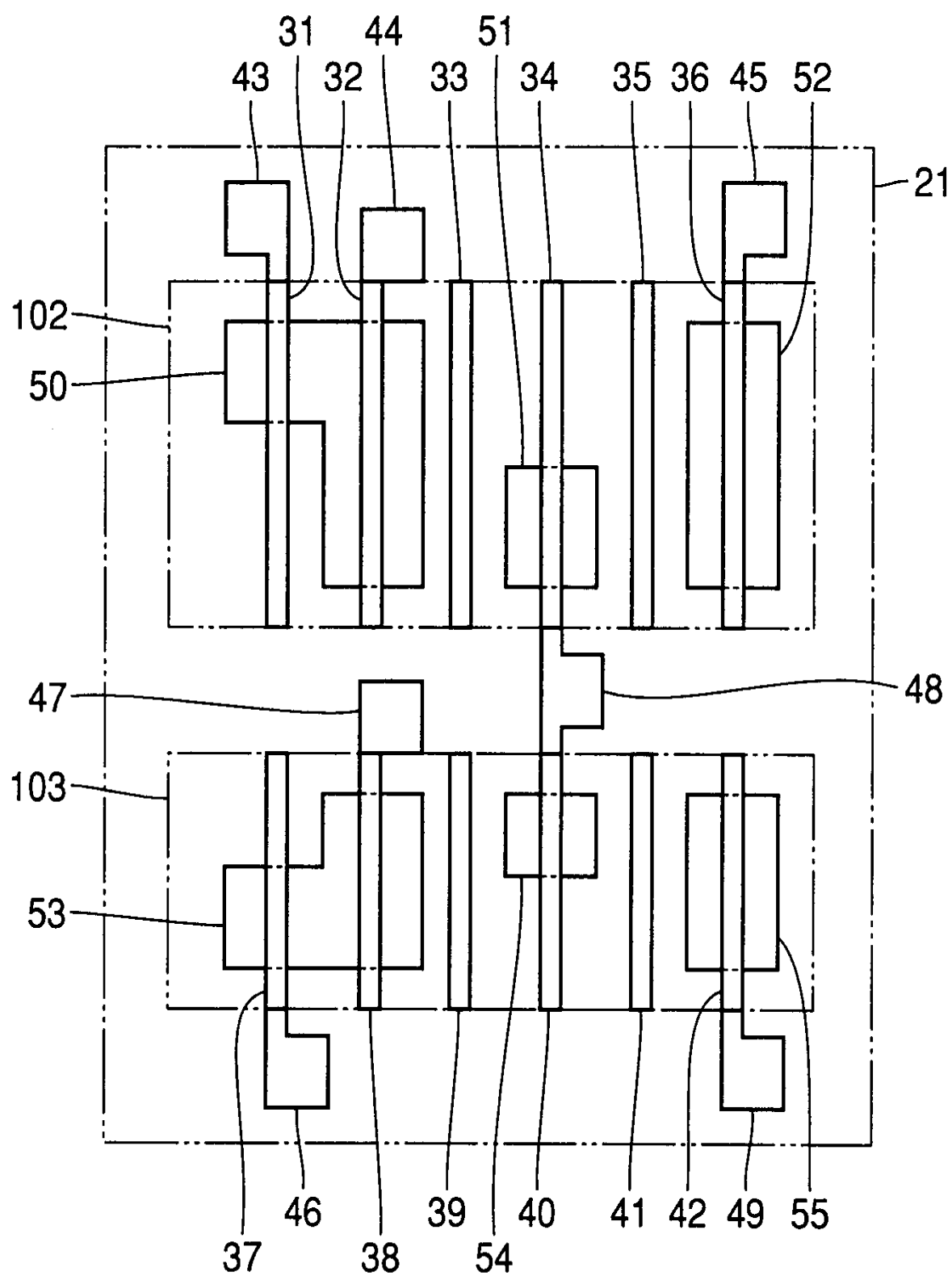
2.

$$1 \quad , \quad (1 \ 4) \quad , \quad (1 \ 4)$$

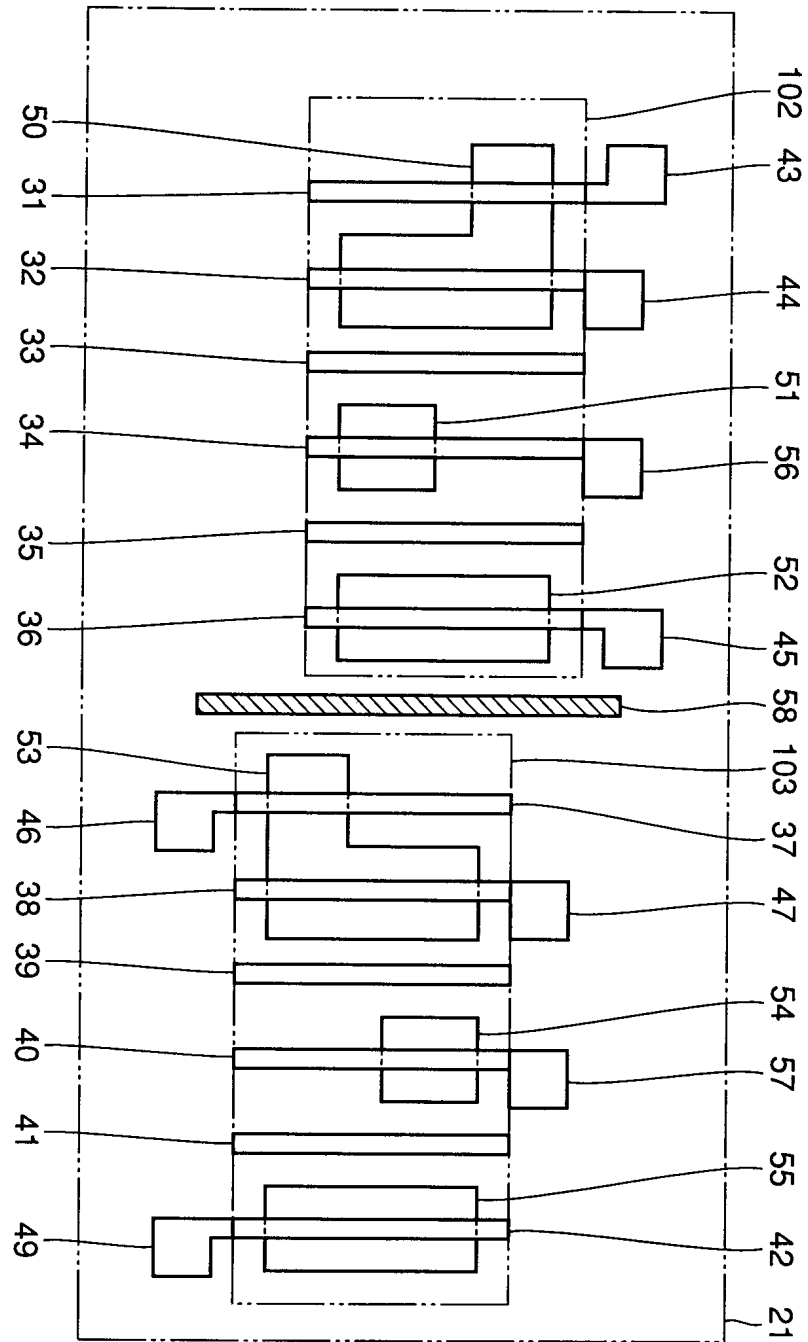
3.



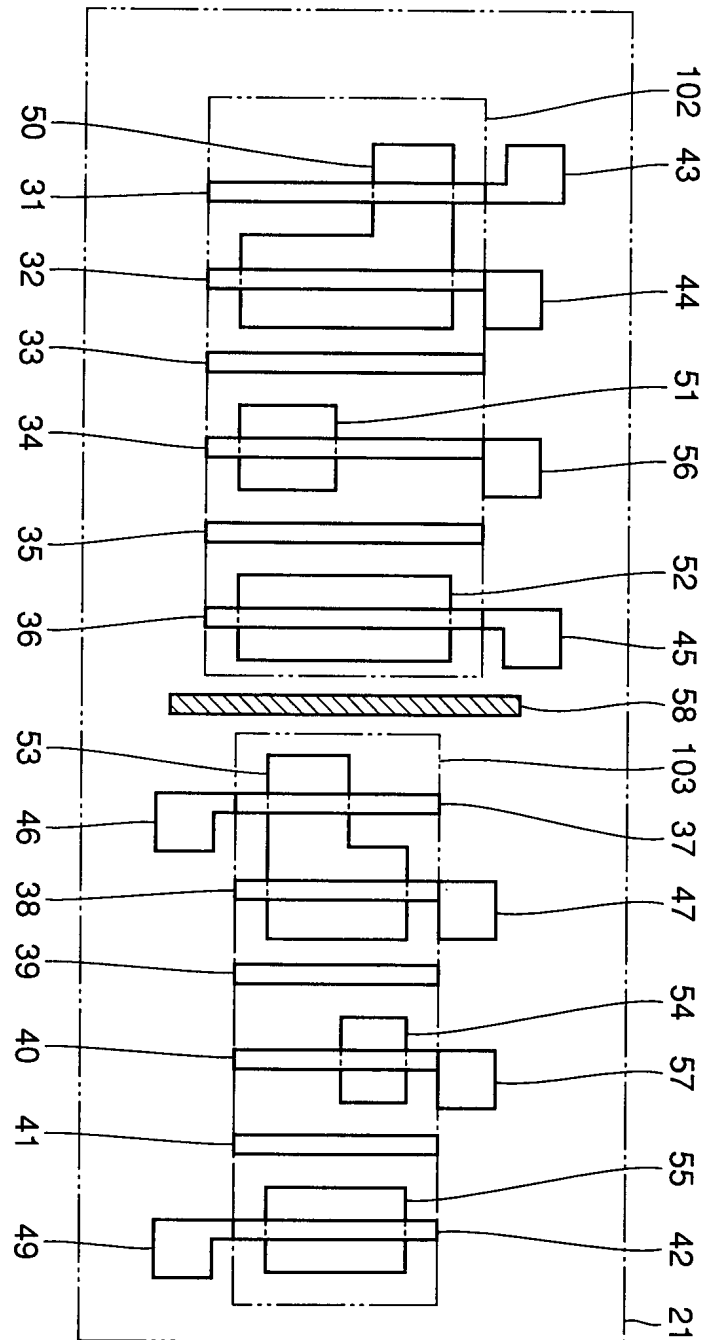
2



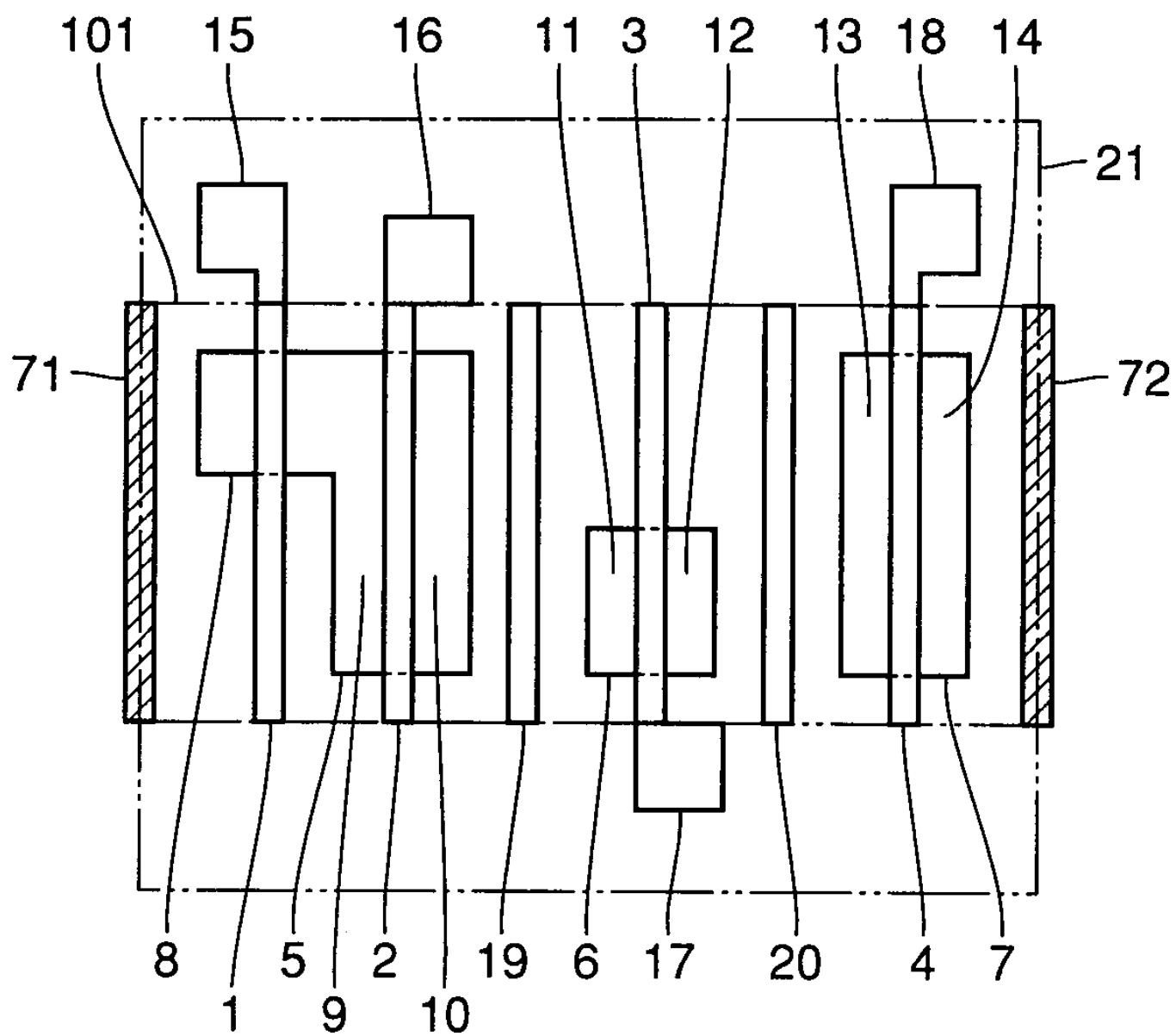
3



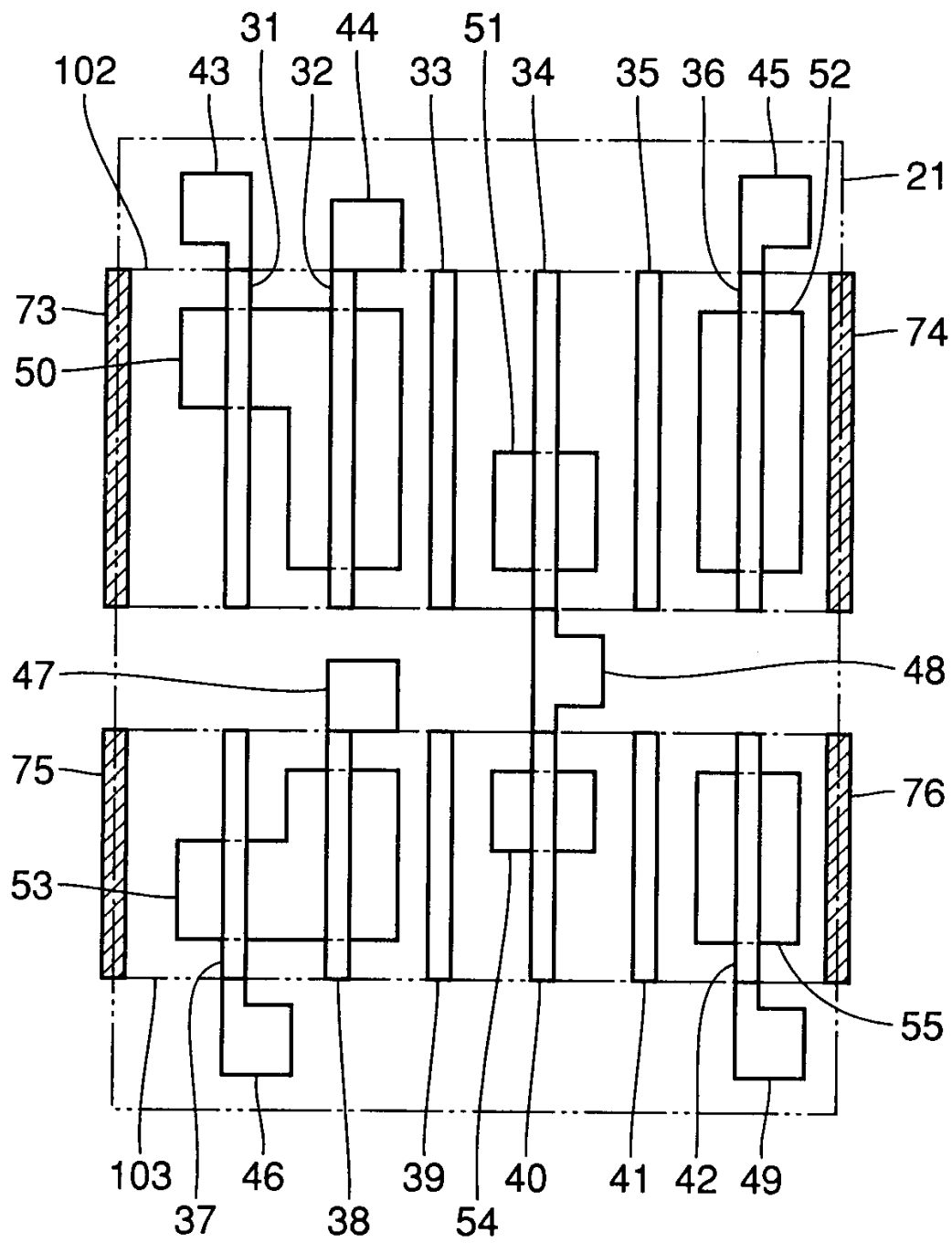
4

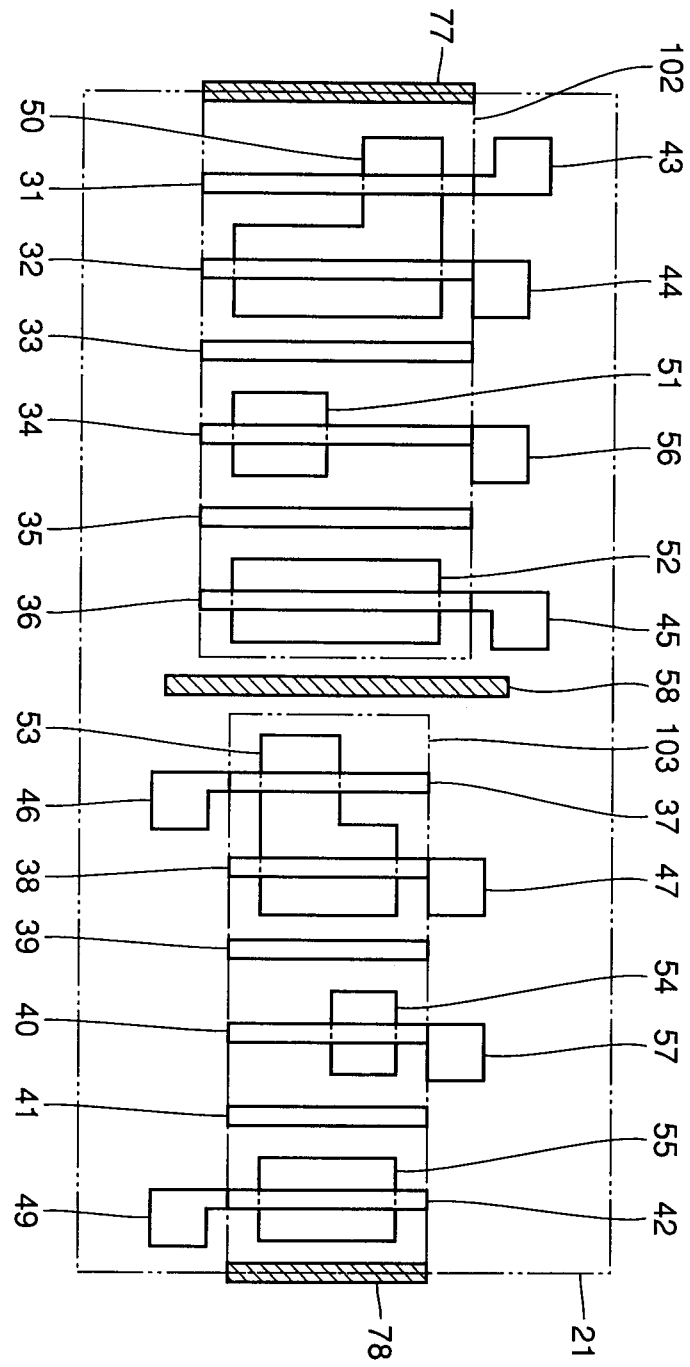


5

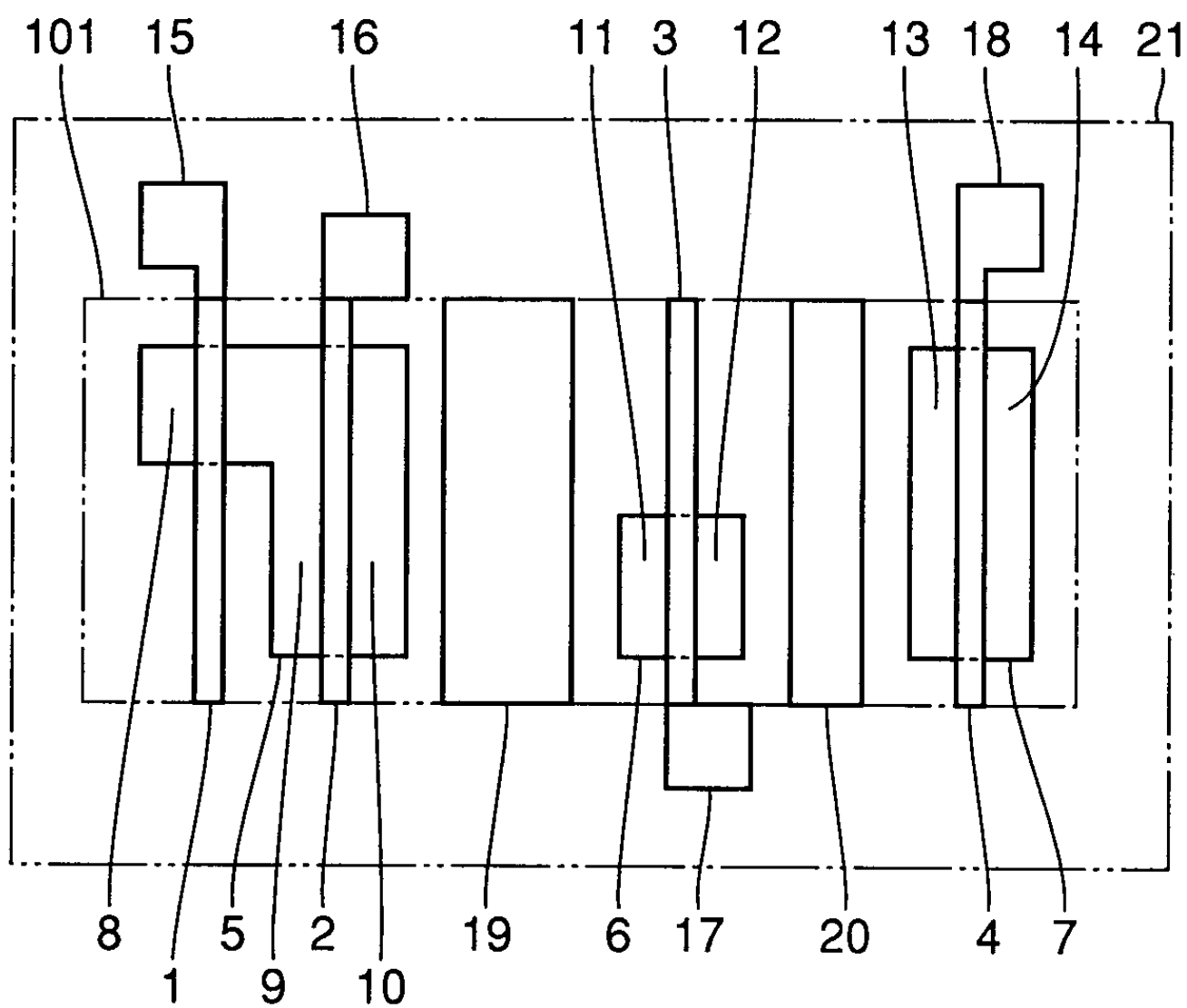


6

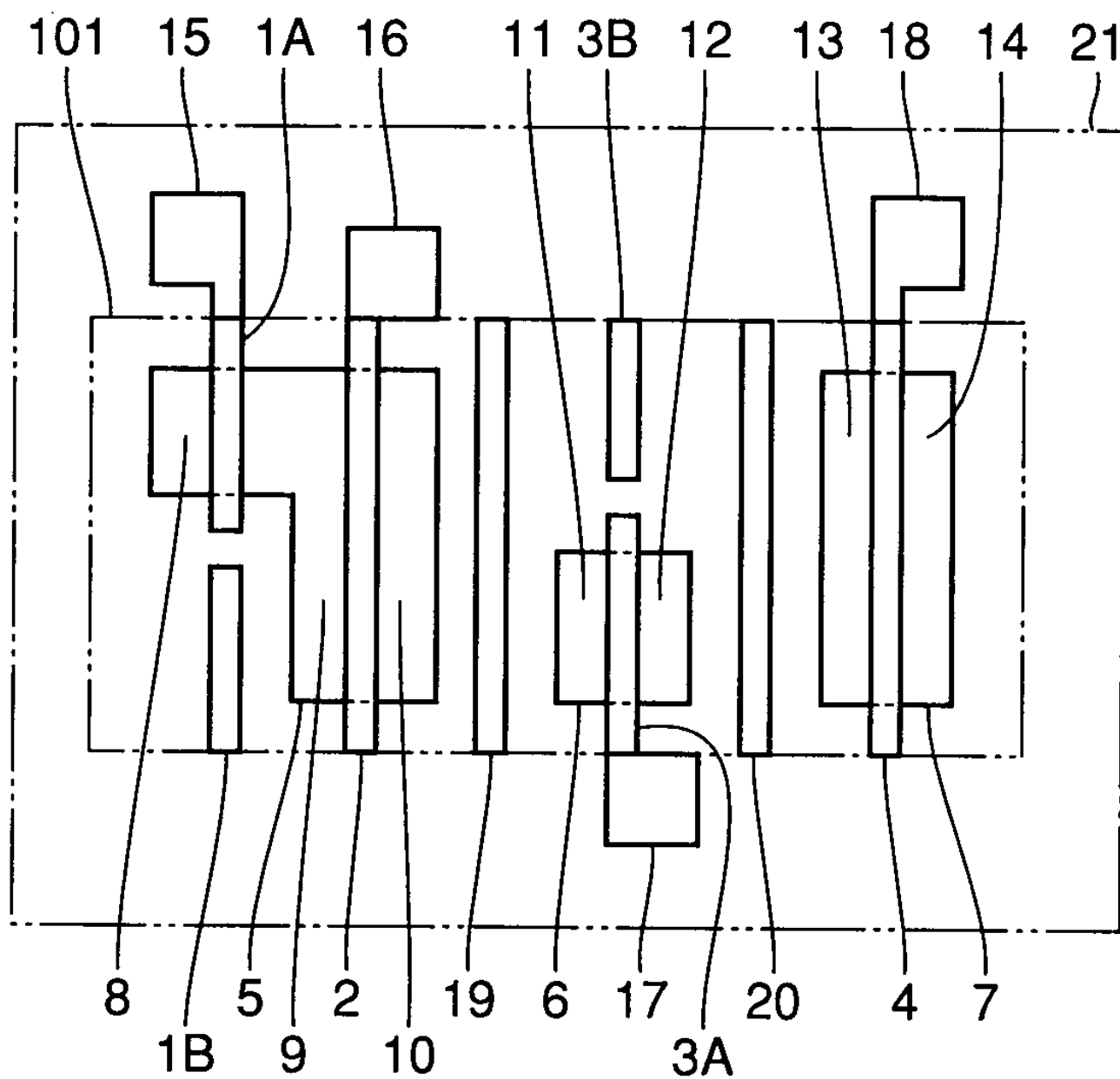




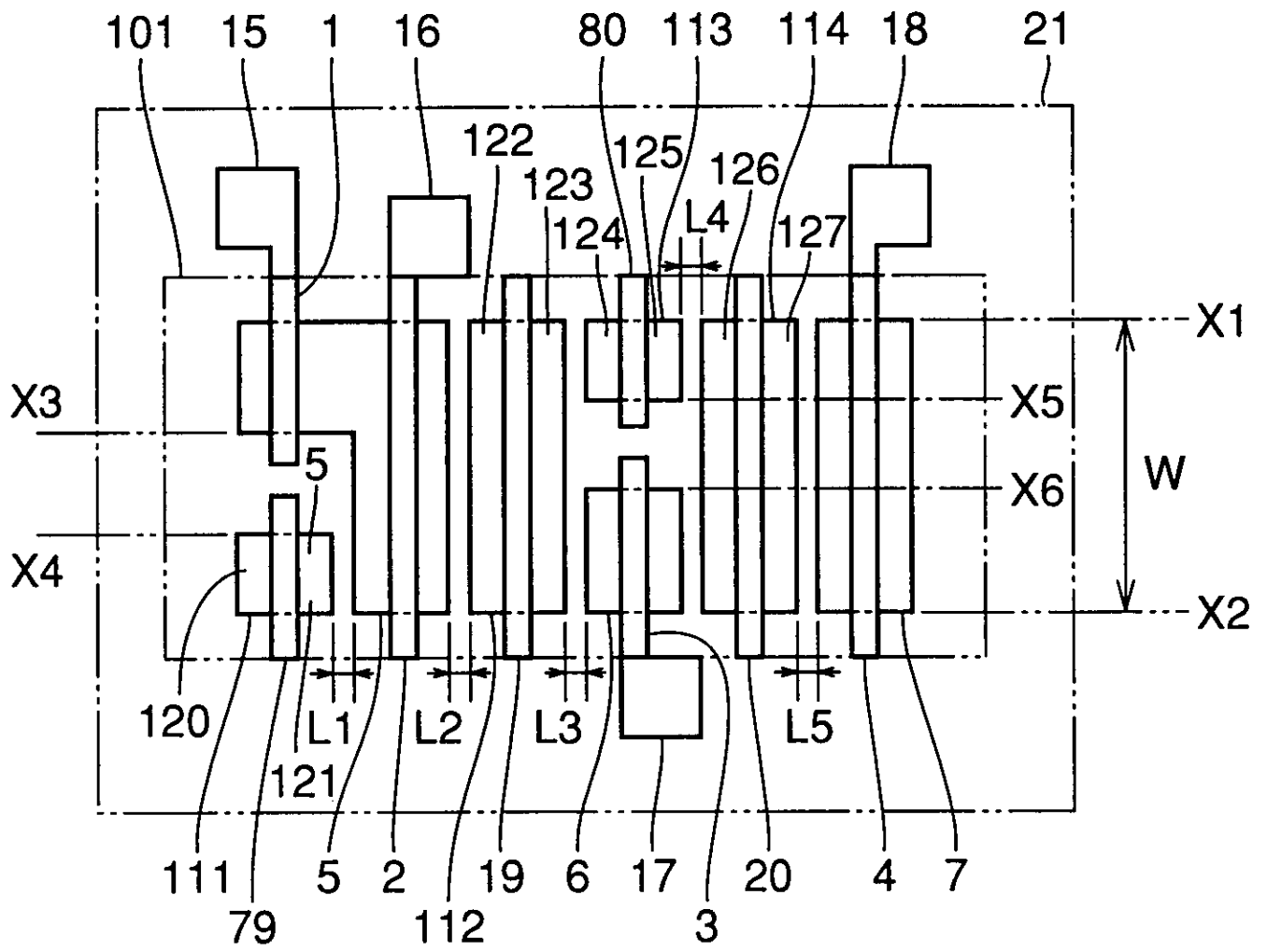
8



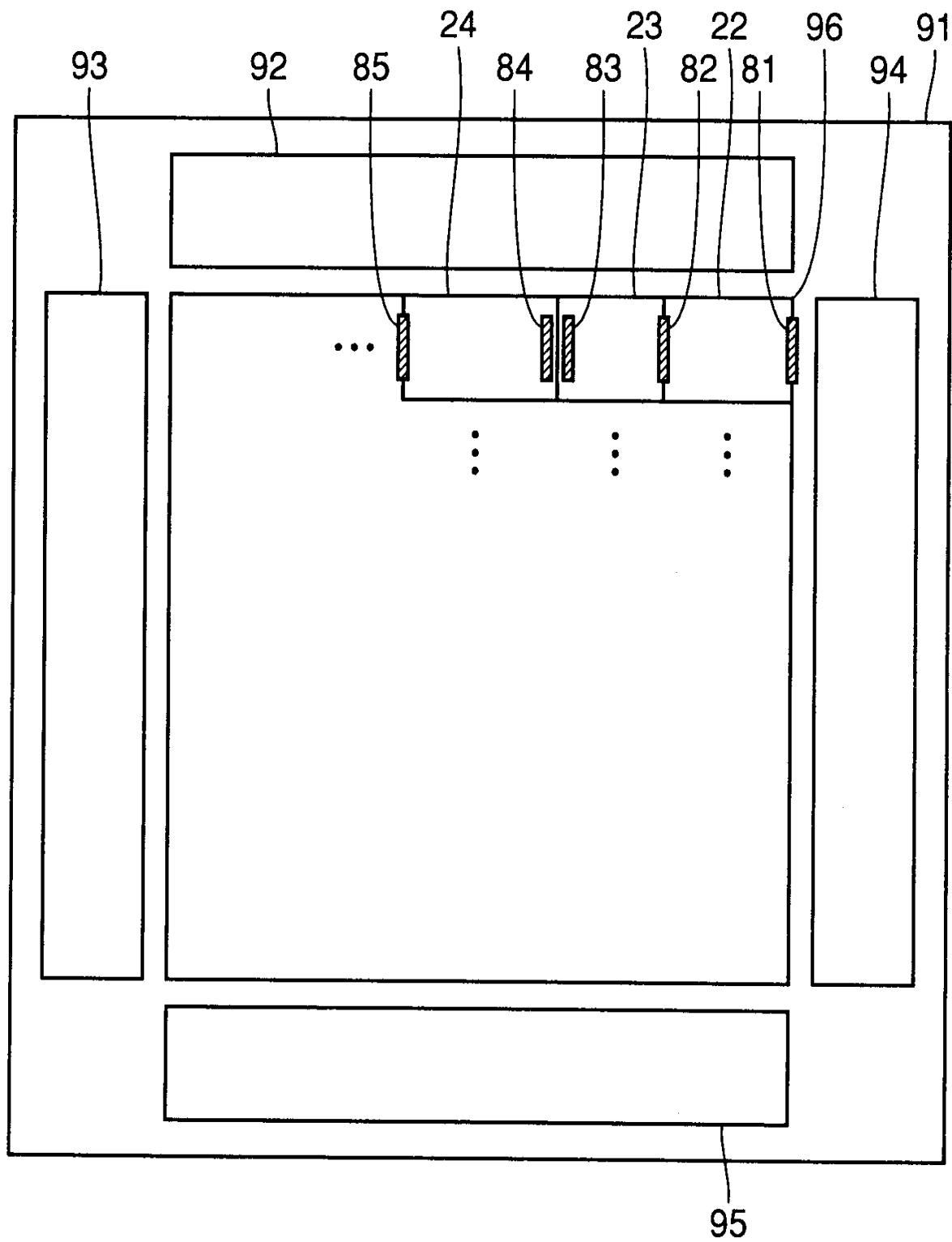
9



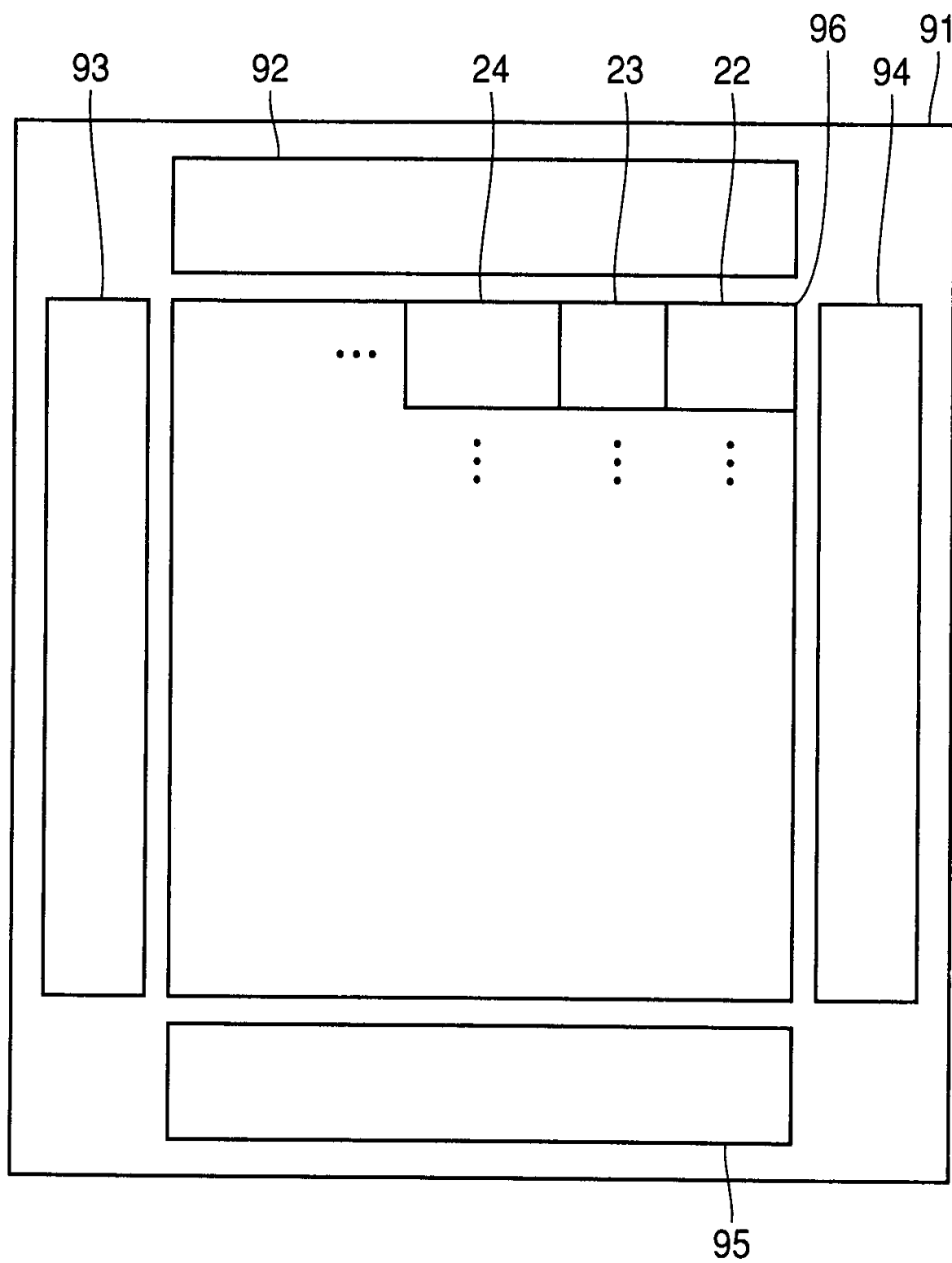
10



11



12



13

