

$$\frac{(19)}{(12)} = \frac{(KR)}{(A)}$$

(51) 。 Int. Cl. ⁷
G02F 1/136

(11)
(43)

2001 - 0097215
2001 11 08

(21) 10 - 2000 - 0021083
(22) 2000 04 20

(71)

3 416

(72)

5 8 506

87 115 802

$$(74) \quad \left(\begin{array}{c} \text{[...]} \\ \text{[...]} \end{array} \right)$$

• •

(54)

가 Ti, Ta, Zr Cu Nd Y IZO
1at% 10at%, 1at% 6at% IZO

, , , IZO,

1 1 ,

2 1 - ,

3a 1 ,

3b 3a b - b ,

4a 3a ,

4b 4a b - b ,

5a 4a ,

5b 5a b - b ,

6a 5a ,

6b 6a b - b ,

7 2 ,

8 7 - ,

9 2 ,

10a 9 ,

10b 10a b - b ,

11a 10a ,

11b 11a X b - X b ,

12a ,

12b 12a ,

13 가

.

가

가

가

가

가

가

(Al alloy)

(Al)

TO(indium tin oxide)

IZO(indium zinc oxide)

ITO

ITO

, IZO

(Cr)

가

10at%,

1at%

6at%

가

1at%

, , 1 ,
 , 1 , 1 ,
 at% , IZO , 1at% 10
 , 가 1at% 6at% , 가 Ti, Ta, Zr Cu Nd
 Y
 2at% - 2at% 6at% ,
 2at% 6at%
 , 320 370 , 200 280
 , 2
 가 , 1at% 10at% ,
 가 1at% 6at% , 가 Ti, Ta, Zr Cu Nd Y
 2at% - 2at% 6at% ,
 2at% 6at%
 , , 2 3 가
 , 2 3
 IZO ,
 ,
 ,
 가 1at% 10at%, 1at%
 6at% IZO ,
 ,
 가 가
 , 1 2
 1 1 , 2 1
 -

1 2 , (10) (21, 22, 23)
 . 가 (21), (21) (22),
 (21) 가 (21) (23)
 , 가 (Ti), (Ta), (Zr) (
 Cu) (Nd) (Y)
 . 가 1at% 10at% , 1at% 6at% 2at% , 6at% , 2at%
 6at% .
 , (21, 22, 23) , (Mo) - (MoW),
 (Cr), .
 (21, 22, 23) (SiN_x) (30) .
 (22) (30) (41)
 , (41) (P) n
 (52, 53) (22) .
 (52, 53) (30) ,
 (65) (66) (61, 62, 6
 3, 64) .
 (62), (21) (62) (61), (61)
 가 (61) (64) .
 , (65) (52, 53) (66)
 . , - (66) 2at% 6at%
 , -
 , ,
 가 1at% 10at%, 1at% 6at% . , 2at%
 6at% .
 (61, 62, 63, 64), (52, 53) (30)
 (70) . (70) (30) (23)
 (73) 가 , (64) (74) (63)
 (72) 가 .
 (70) IZO (80), (83)
 (84)가 .
 (80) (72) (63) . (8
 3) (84) (73, 74) (23) (64)
 , (23, 64) (23, 64) .

3, 64) (21, 22, 23) (61, 62, 6
(30), (41)
(51) (70)
(72, 73, 74) IZO (80), (83)
(84) 1at% 6at% , 1at% 10at%,
,
2 , 3a 6b, 1
2 , 3a 3b (10) -
1000 3000
(21, 22, 23)
, 4a 4b (30), n
1500 5000 , 500 1500 , 300 600
, (22) (41) (51)
(30) 320 370 , (41) (5
1)
, 5a 5b (65) -
(66) 500 2,000 2,500
(65, 66) (61, 62, 63, 64) , (6
2) (63) (51) (52, 53) (41)
, 6a 6b (70) (72, 73, 74)
(70) 200 280 , (61, 62, 63, 64)
(66) Al₄Nd 12a 13
, 1 2 IZO 5
(80), (83) (84)
, - (66) Al₄Nd
12a , 12b 12a ,
13 가
, 12a (66) (grain)(100)
(100) (grain boundary)(110)가 (66)
(70) 200 280 12b 12b (101)
, 가 (111) 가 (111) - (120)
Al₄Nd (66)
- (66) 13

13 가 - (66)
a, b, c, d, e 100, 200, 300, 400
13 (a) 100 (c, d, e)
b) 200 (1at% 10at% 200
280 Al₄Nd가 Al₄Nd가 Al₄Nd
(66) (66) IZO
, Nd 1at% 10at%, 2
at% 6at%
(21, 22, 23) 1at% 10at%, 2at% 6at%
- 320 370 (30) IZO
(41) (51) Al₄Nd
11b 7
7 8
(61, 62, 63, 64) (52, 53) (41) (52, 53)
(61, 62, 63, 64) (41)
(62) (63) (61, 62, 63, 64)
7 8 9a 11b,
(10) (21, 22, 23) 1
1 3a 3b
9 (21, 22, 23) (30) (40), n
(50) (50)
가 (65) - (66) 2
(112, 114) (112, 114) (62) (63)
(C) (114) (61, 62, 63, 64) (A)
(112) 가 (B) 가
(112, 114) (B)
(65, 66) (50) (B)
(65, 66) (B)
(50) (40) (C) (114)
(C) (66) (B) (50) (40)
(30) (B) (30) (40) (40)

a, 10b, (40), (C), (65, 66), (50), (40), (52, 53), (41), 10
 (61, 62, 63, 64), (112), (70), 3, (72, 73, 74)
 7, 8, IZO, 4, (80), (83), (84), (

1at%, 6at%, IZO, 가, 1at%, 10at%,
 (57)

1.

1

가, 1at%, 10at%

2.

1, IZO

3.

1,

가 1at% 6at%

4.

1 3 ,

가

5.

4 ,

Ti, Ta, Zr Cu , Nd Y

6.

1 ,

- , 2at% 6at%

7.

1 ,

2at% 6at%

8.

1 ,

320 370

9.

1 ,

200 280

10.

1 ,

, , 2

11.

1 ,

12.

11 ,

가 1at% 10at%

13.

12 ,

가 1at% 6at%

14.

12 ,

가

15.

14 ,

Ti, Ta, Zr Cu , Nd Y

16.

12 ,

- , 2at% 6at%

17.

12 ,

2at% 6at%

18.

1 ,

2 3 가 ,

, 2 3

19.

18 ,

IZO

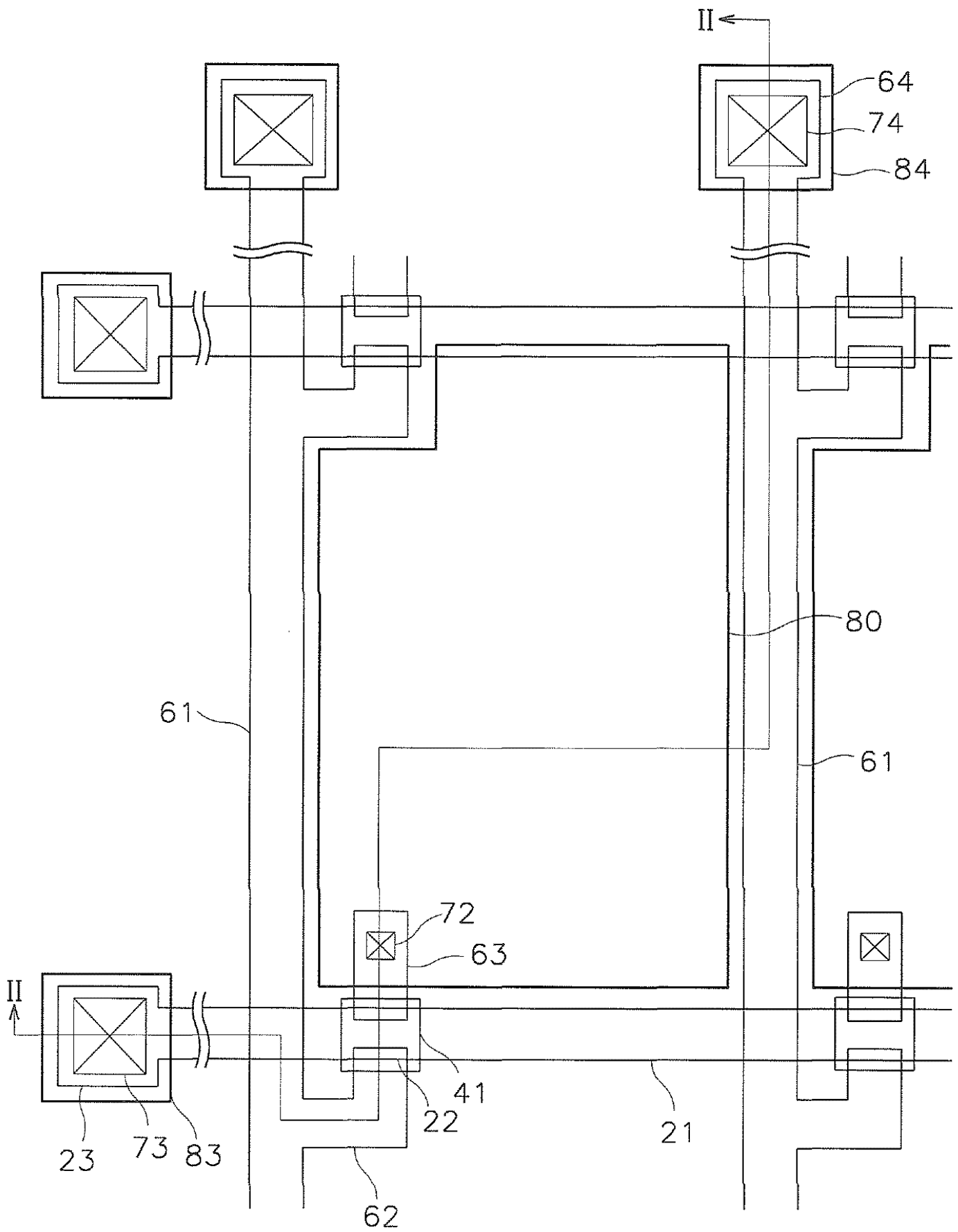
20.

1 ,

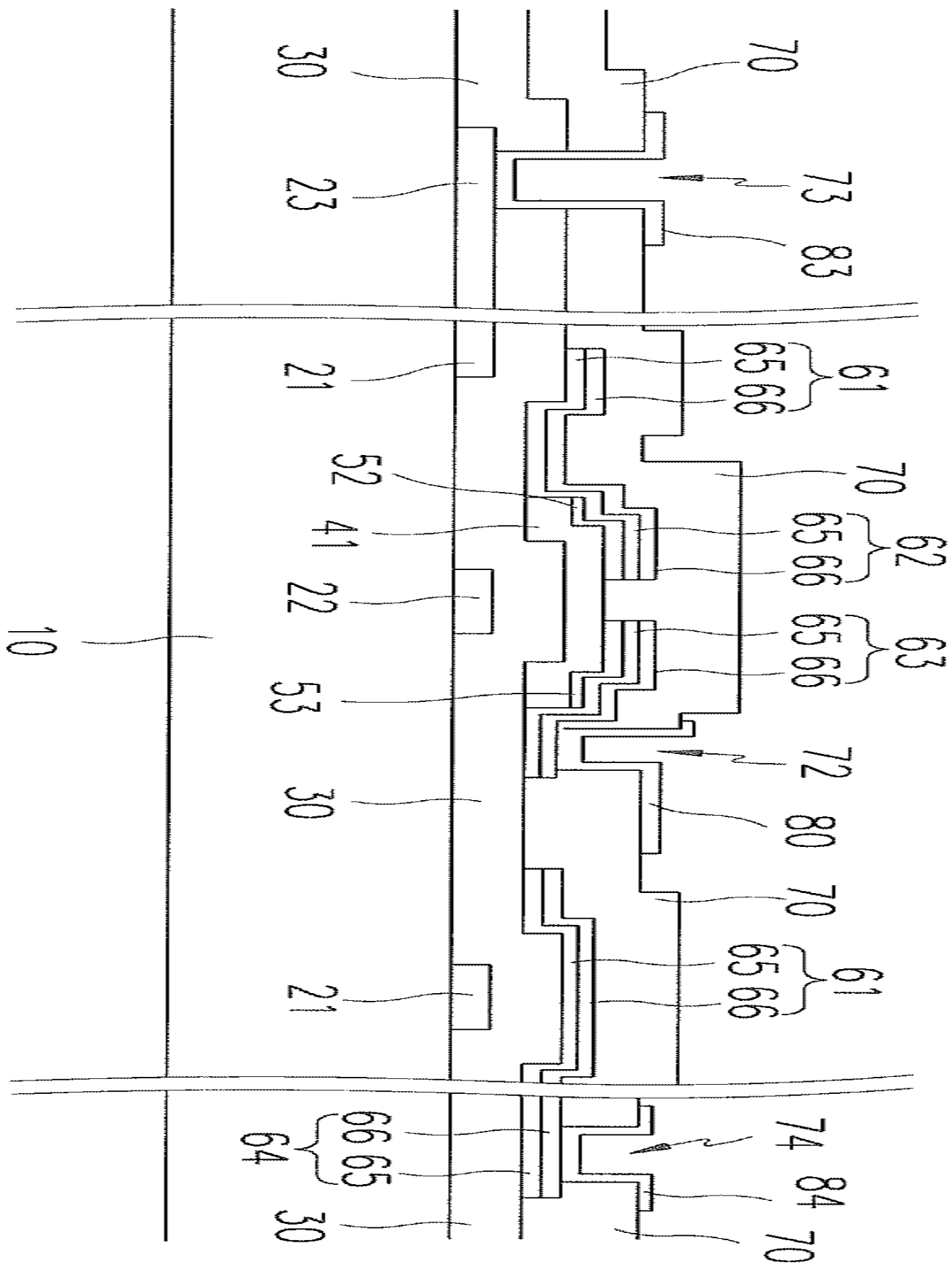
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20 ,

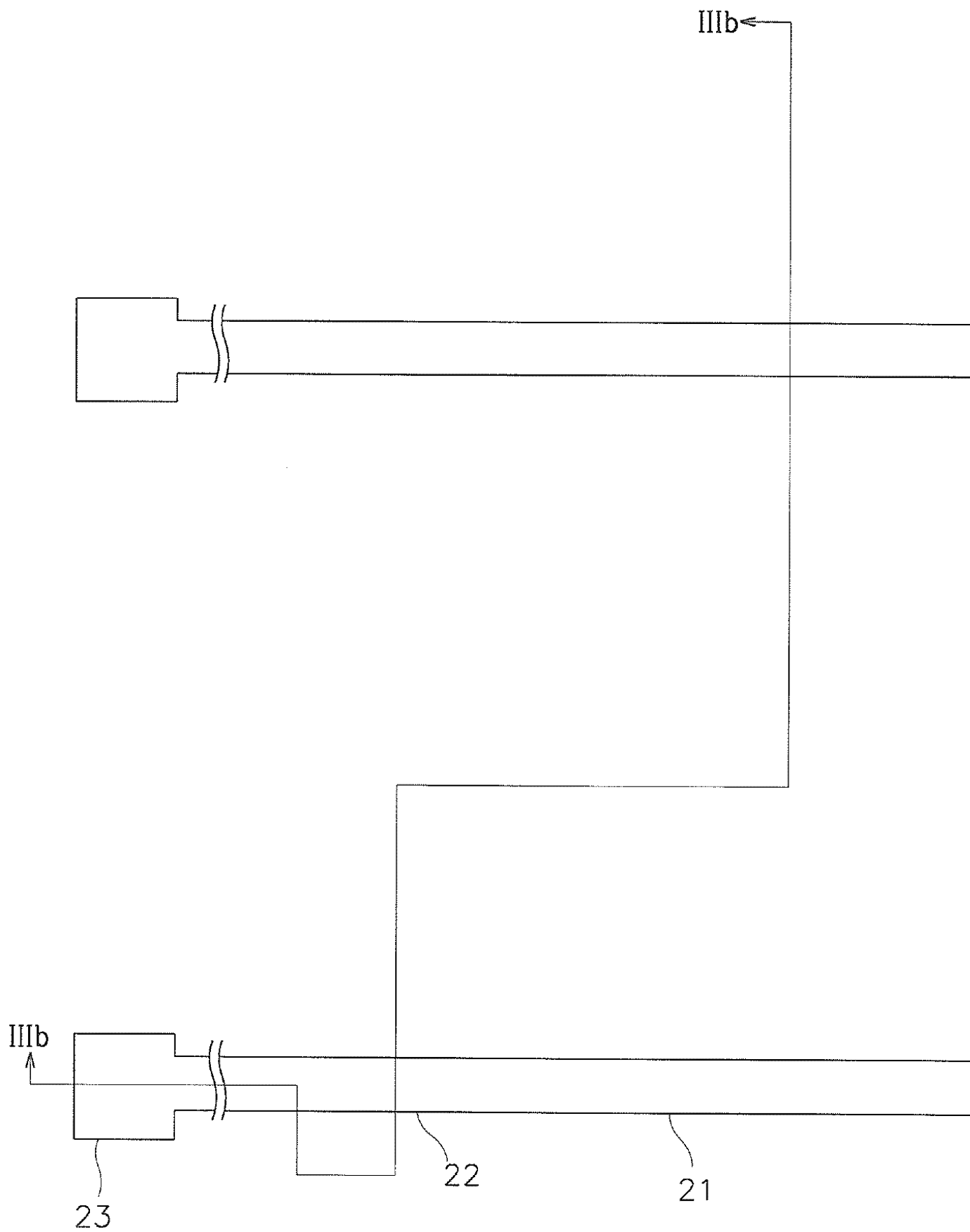
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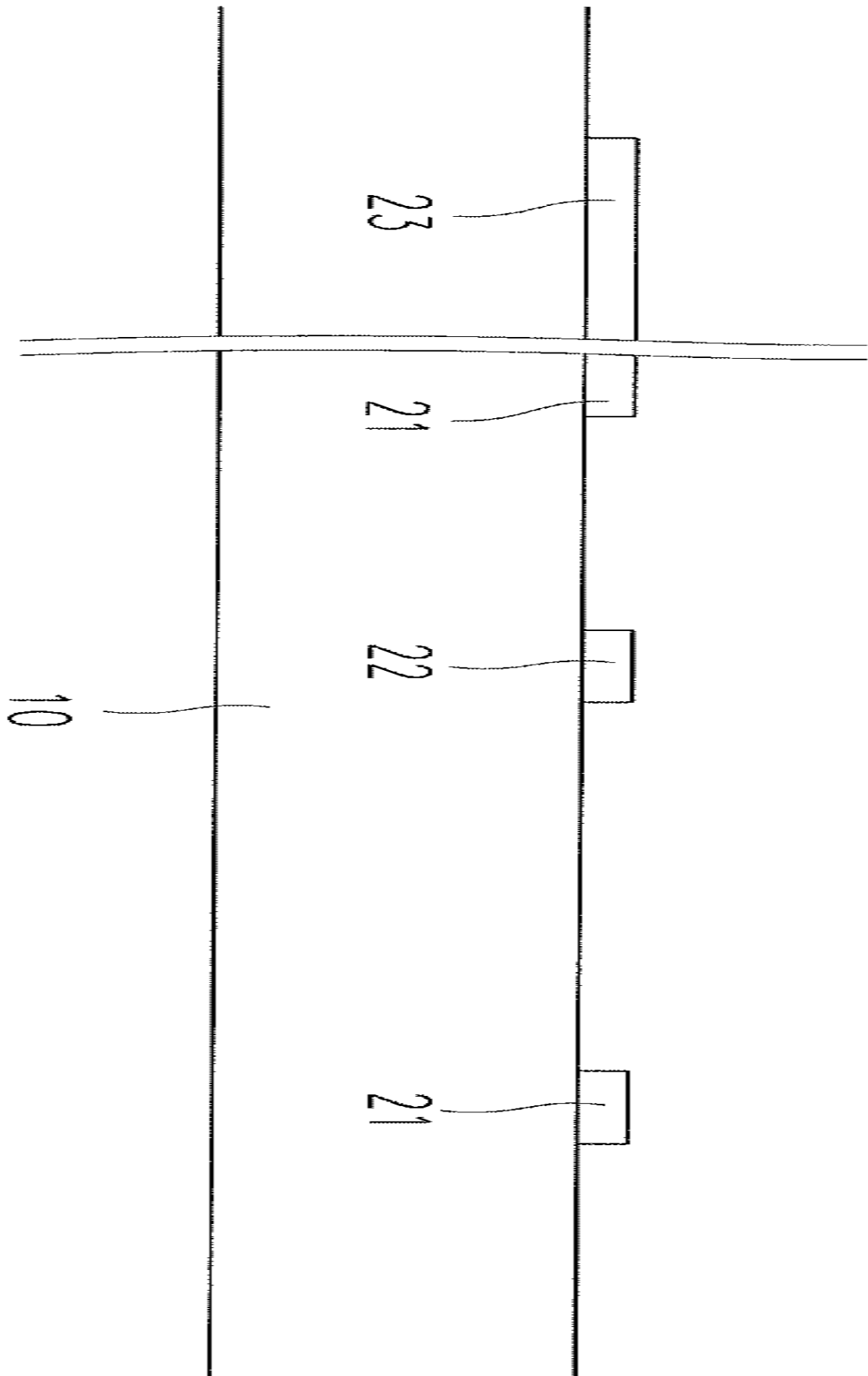
2



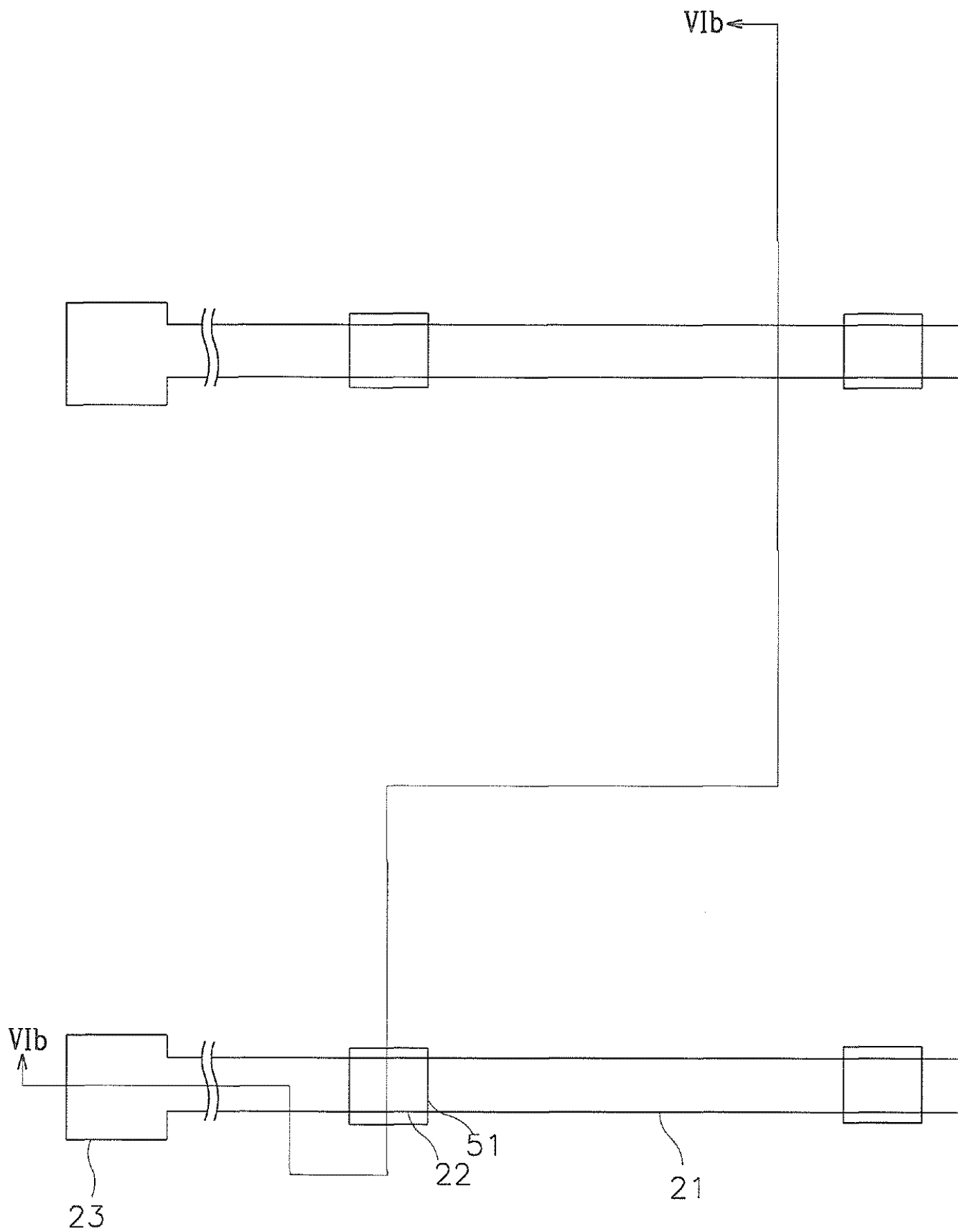
3a



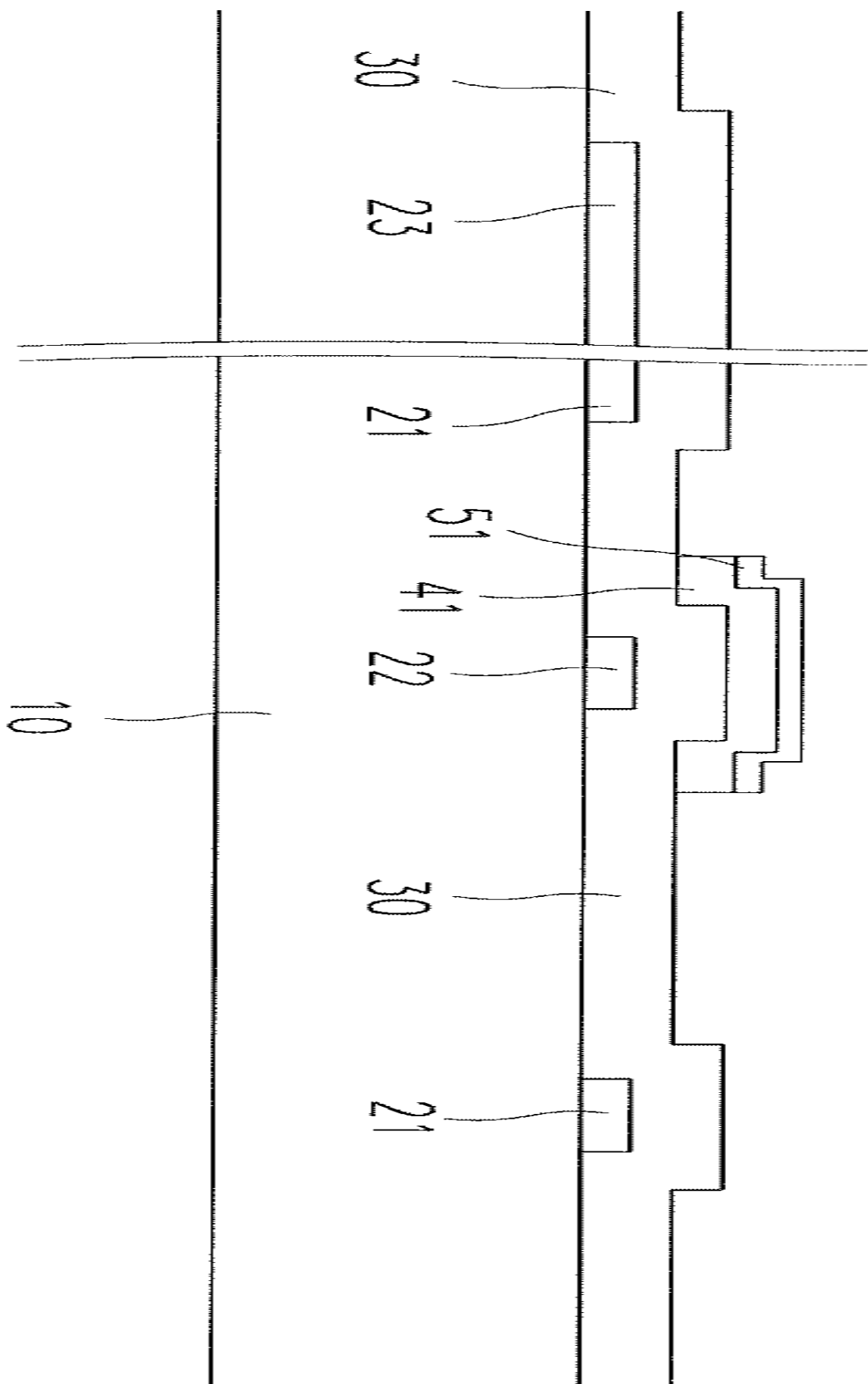
3b



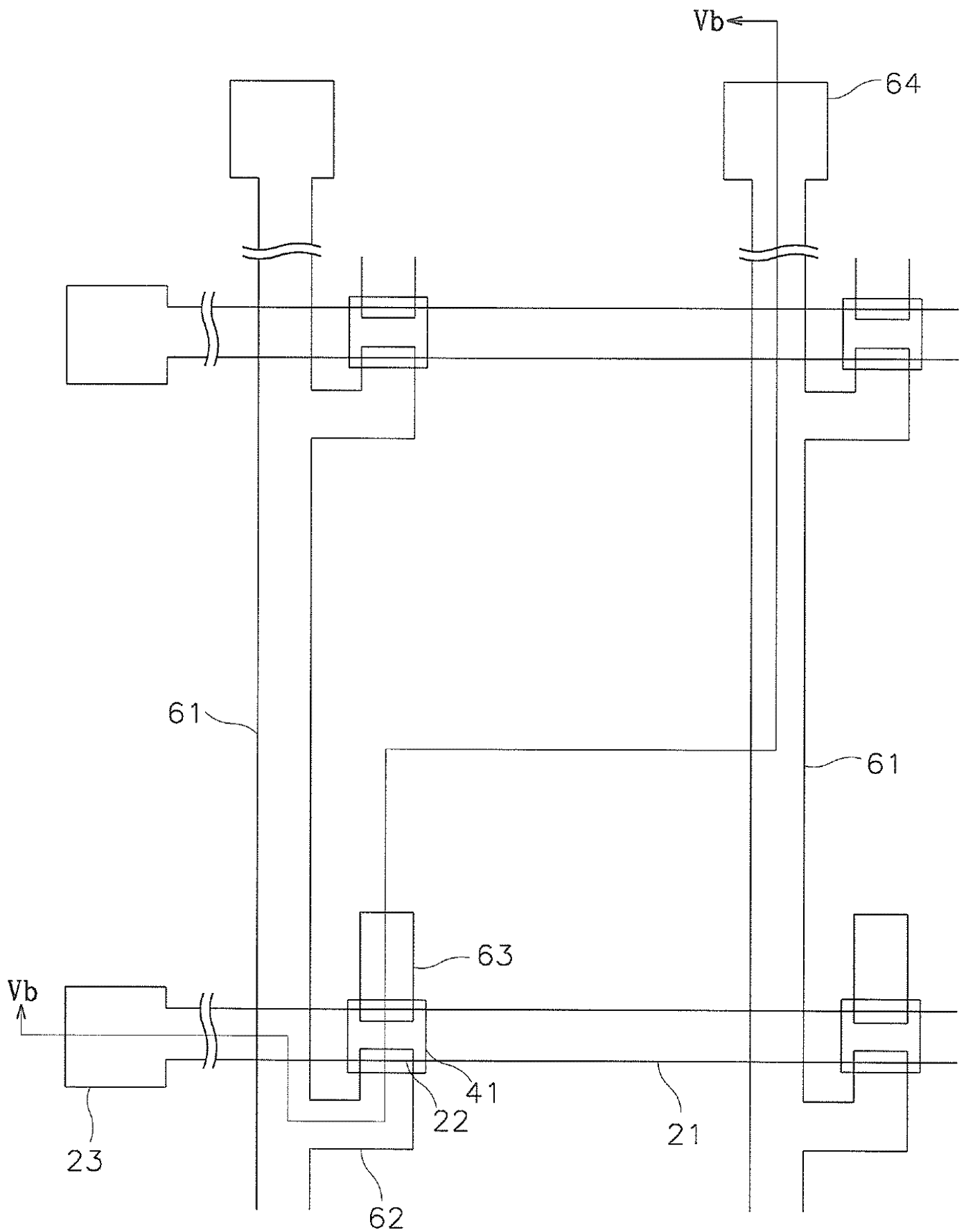
4a



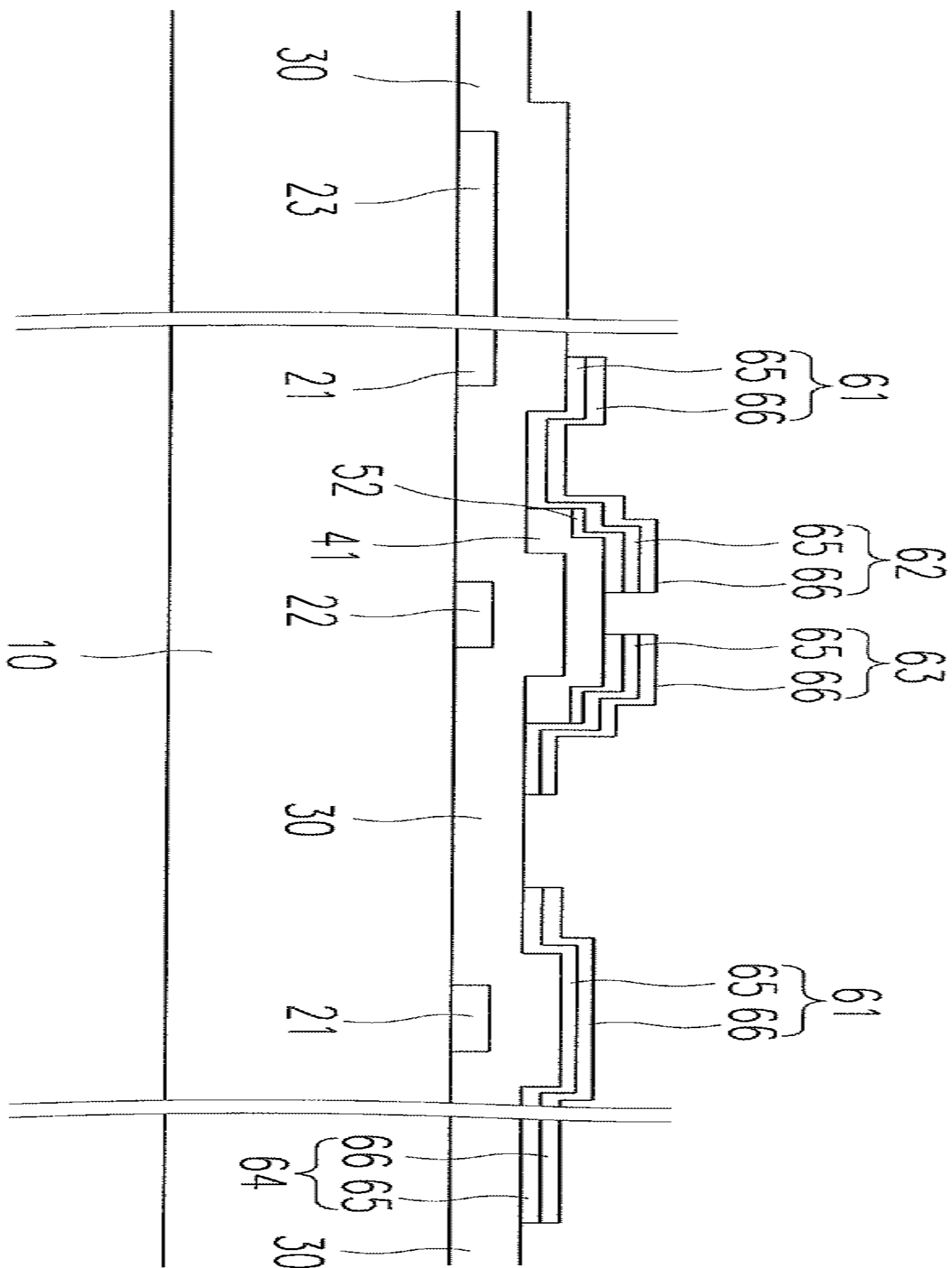
4b



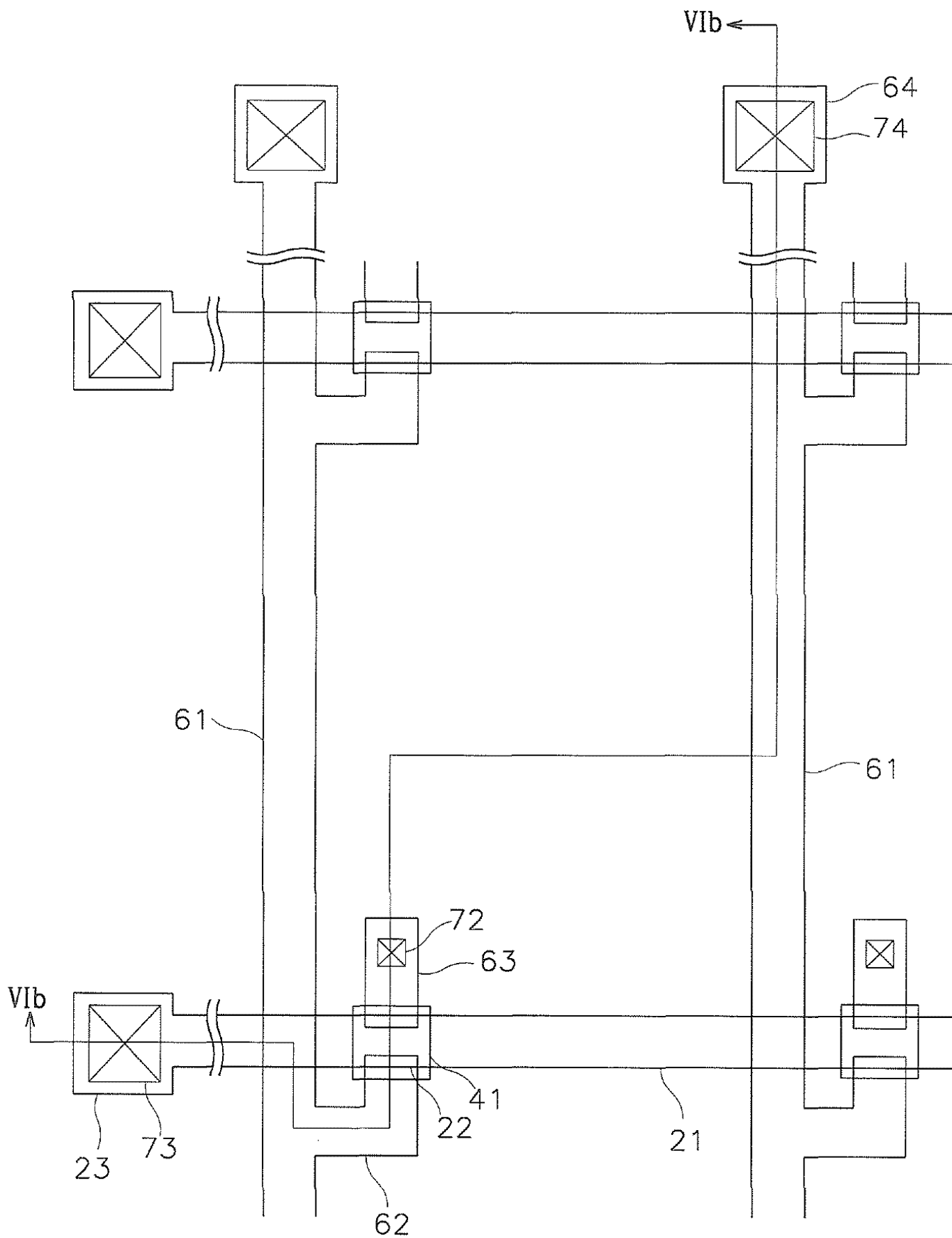
5a



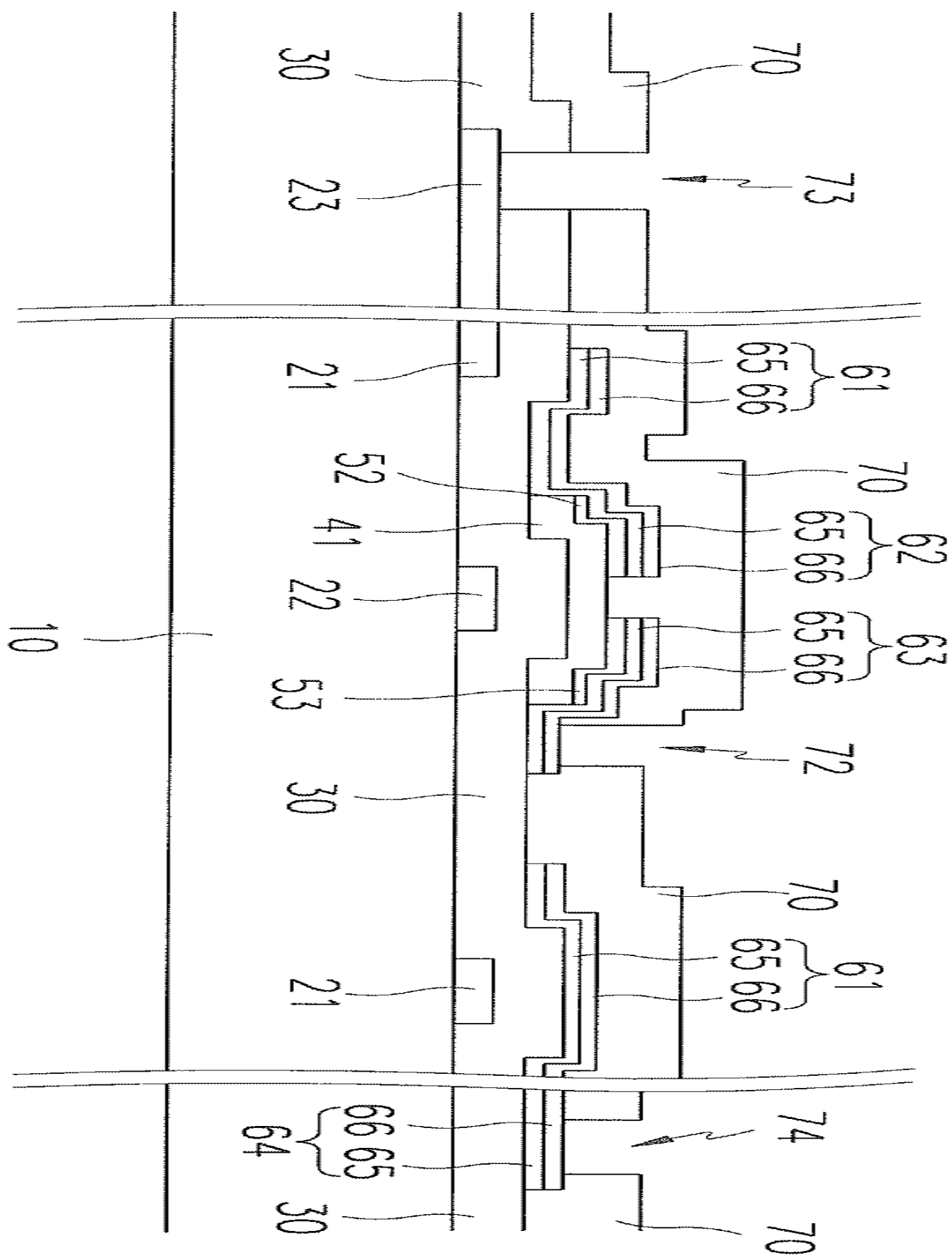
5b



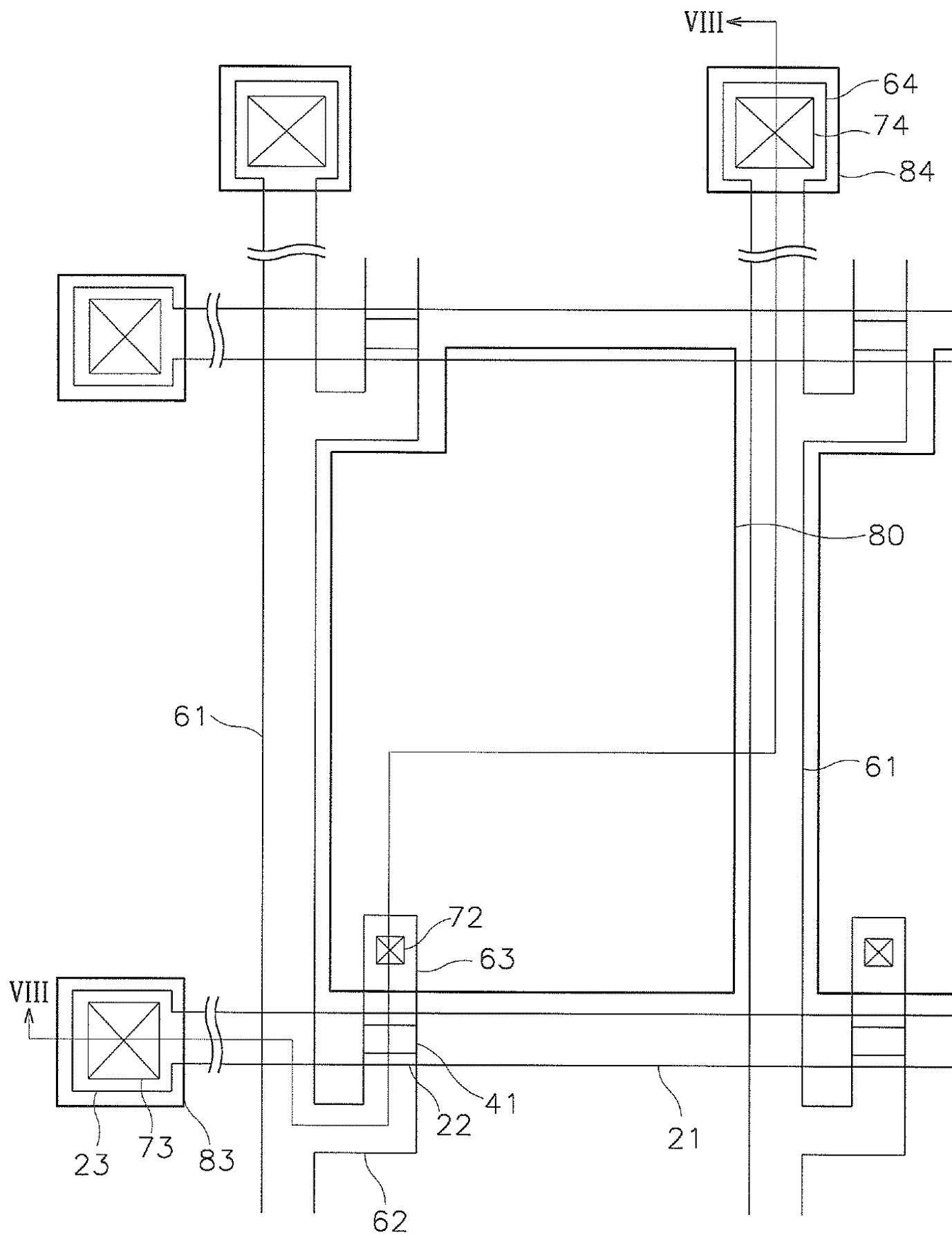
6a



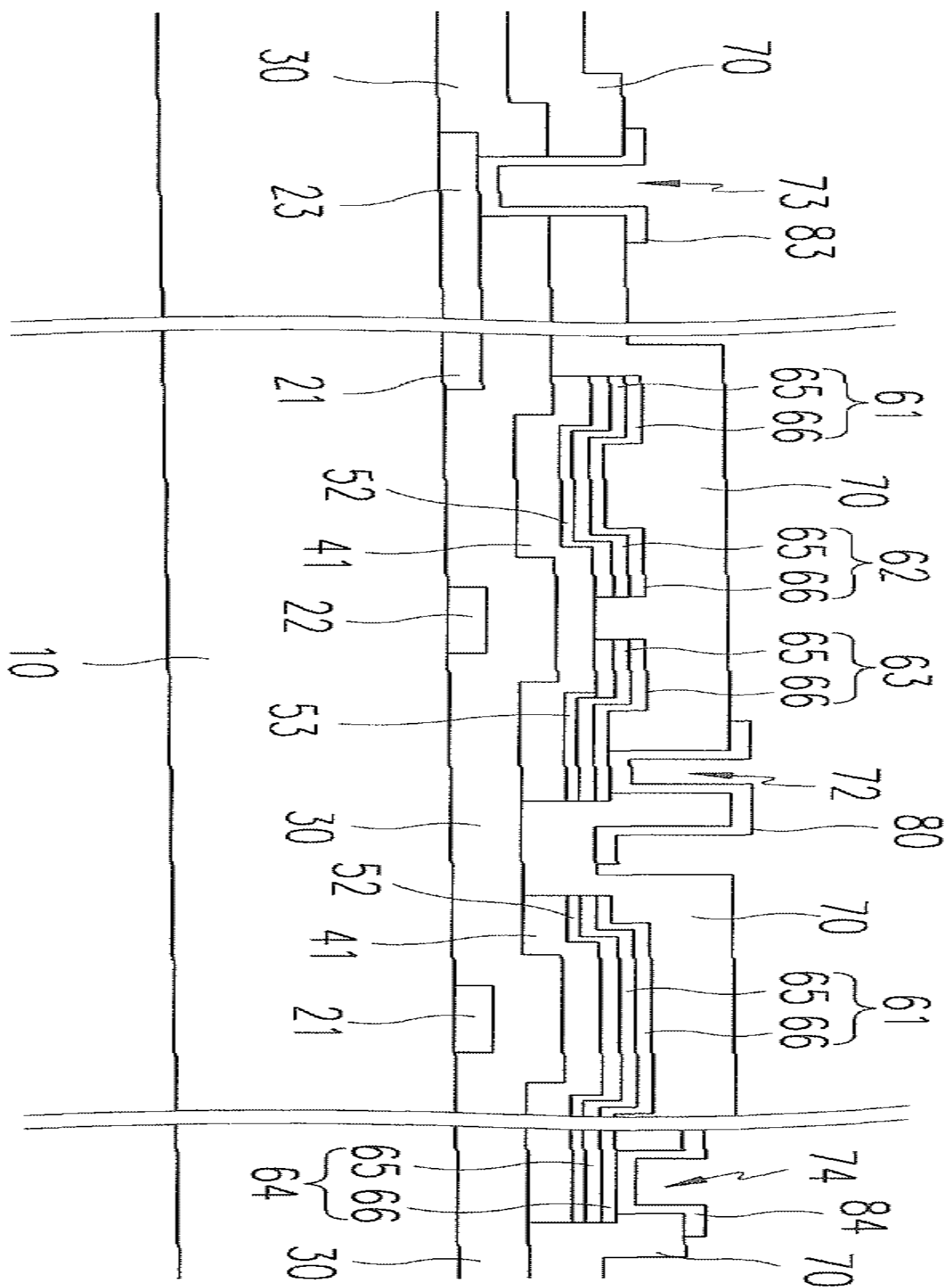
6b



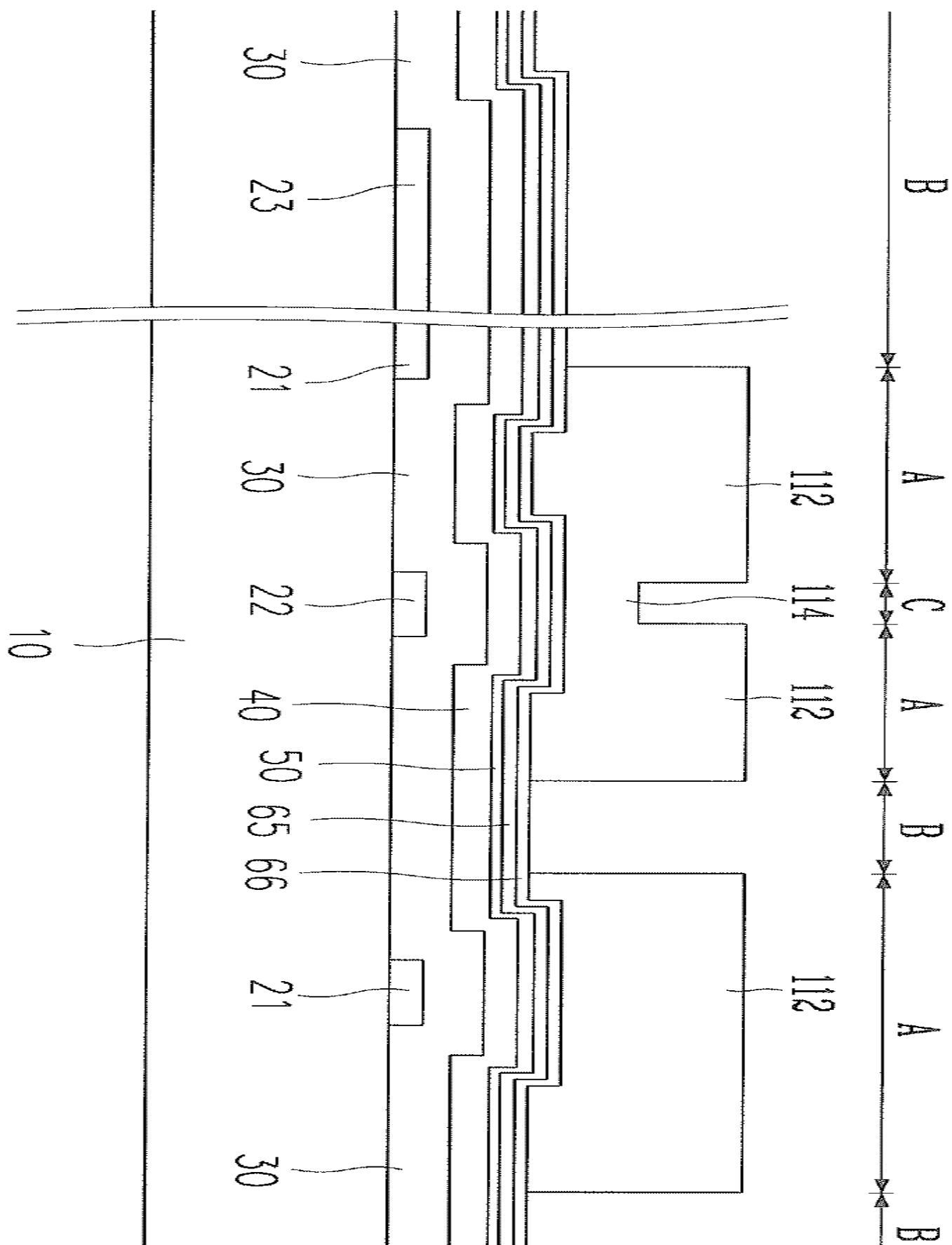
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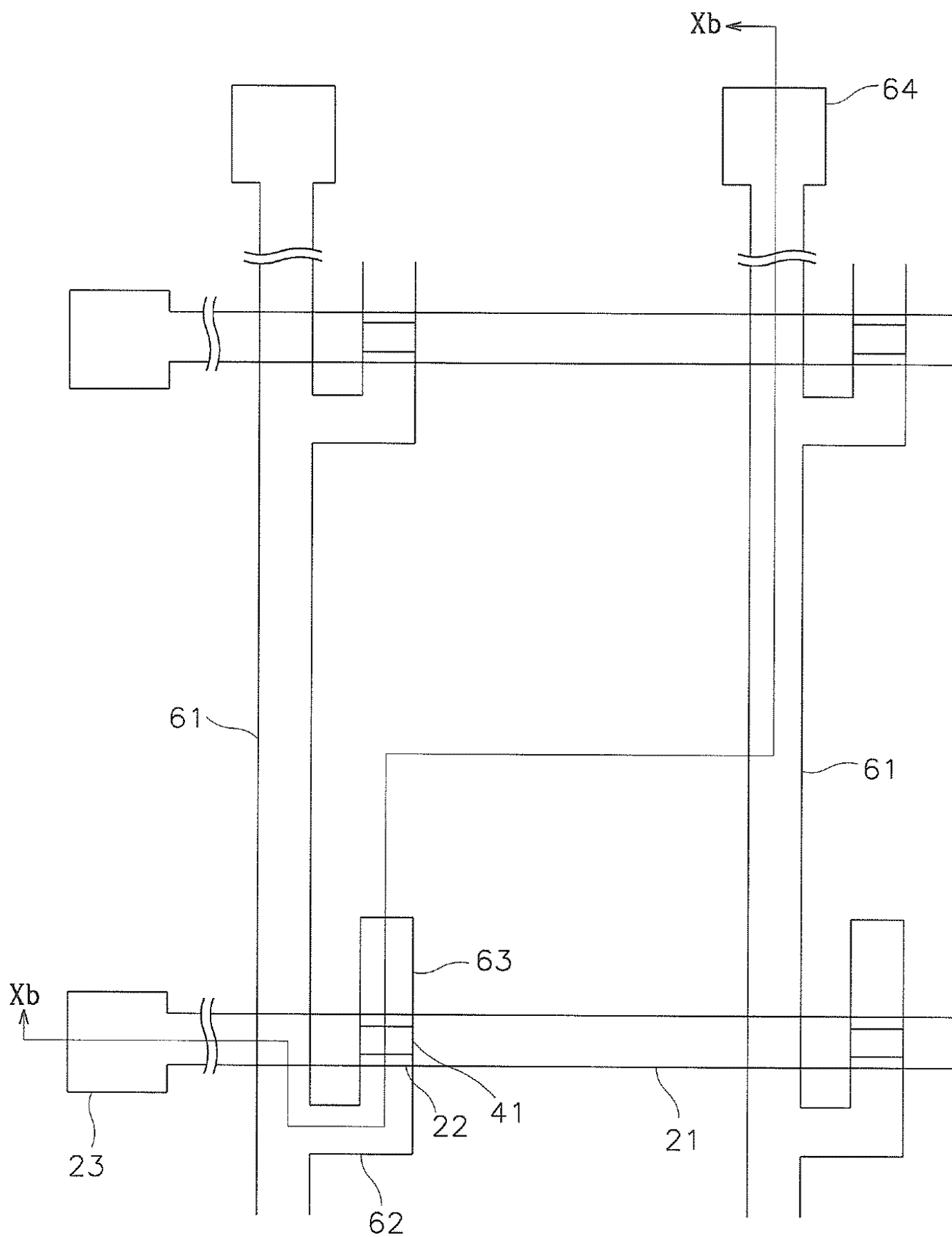
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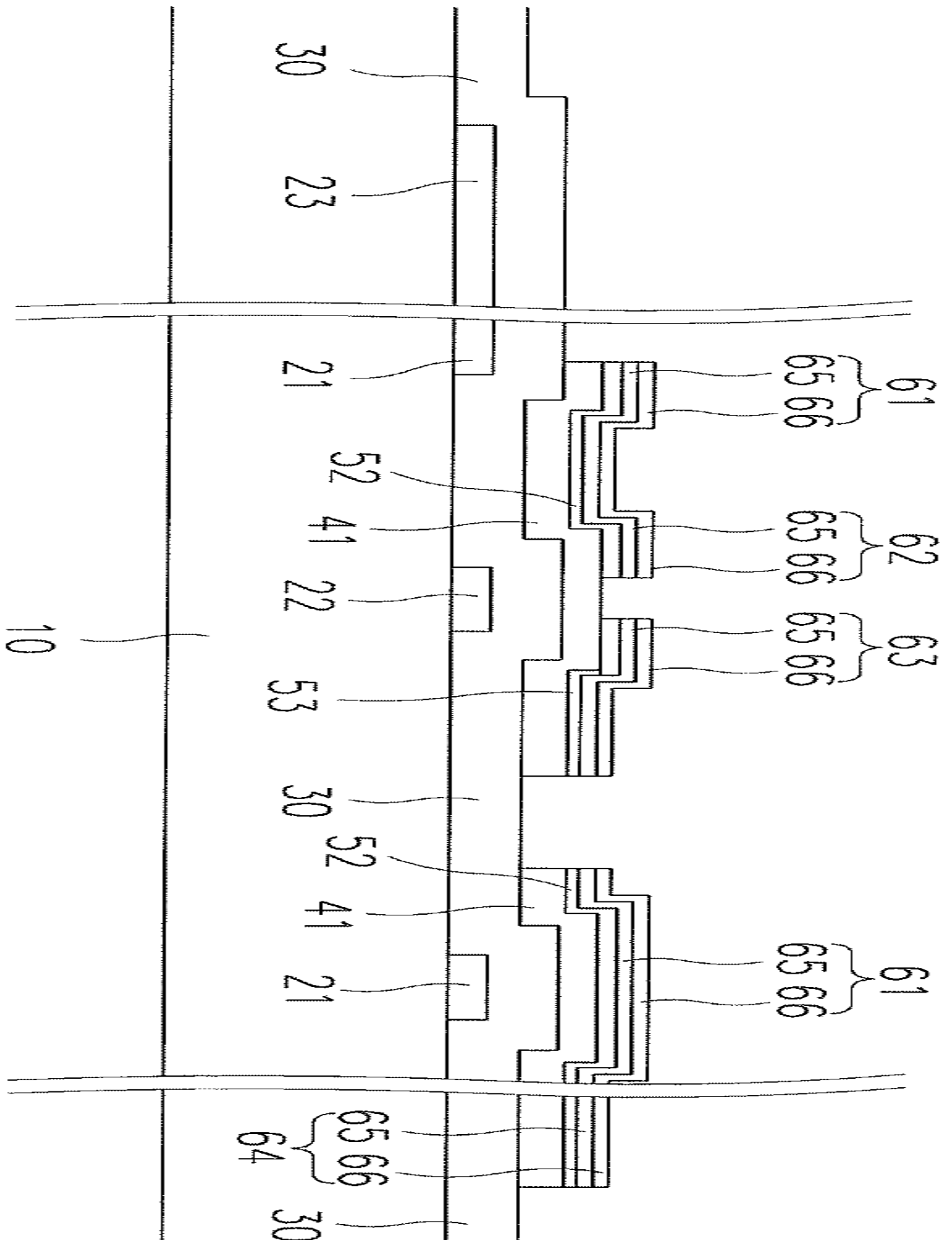
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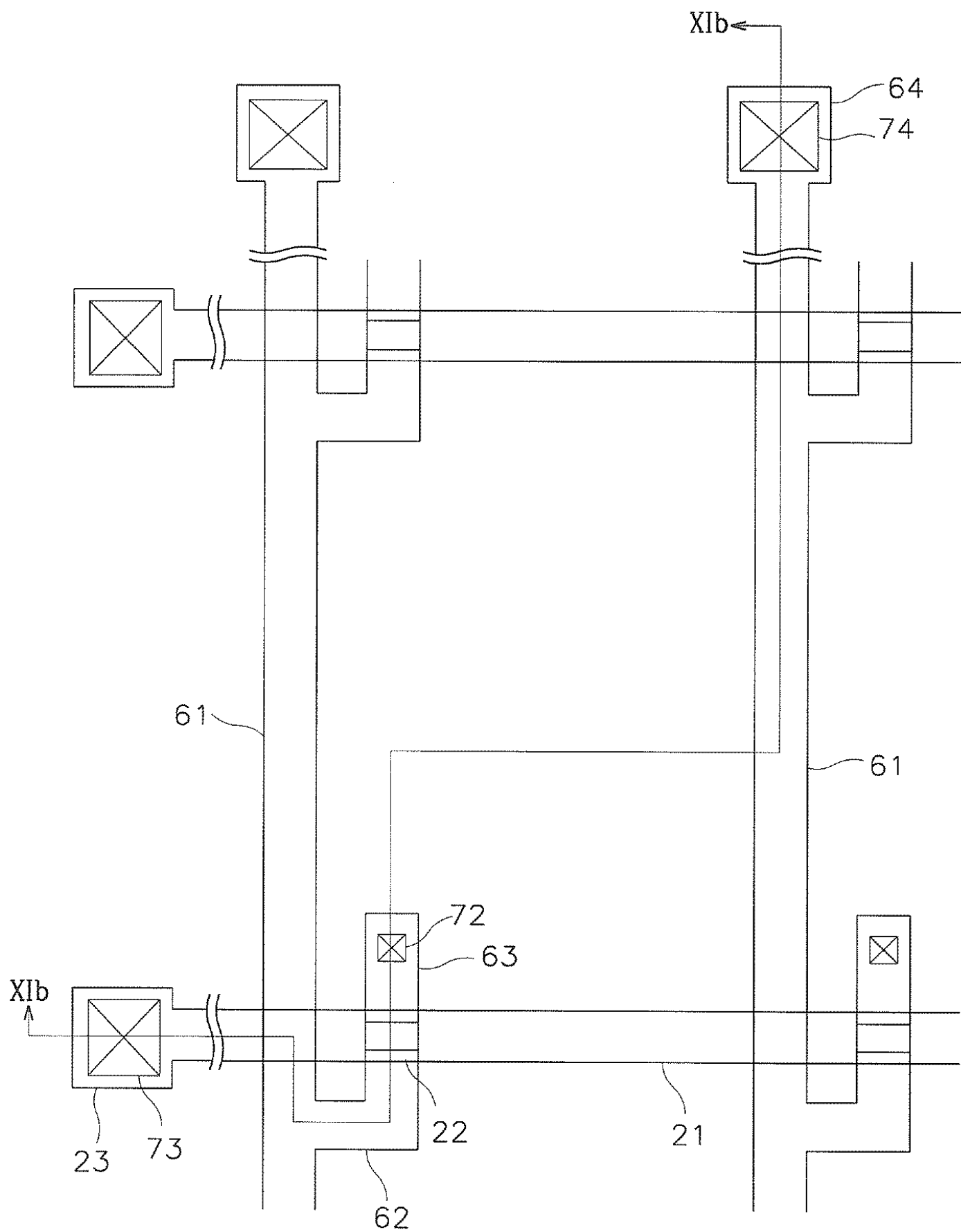
10a



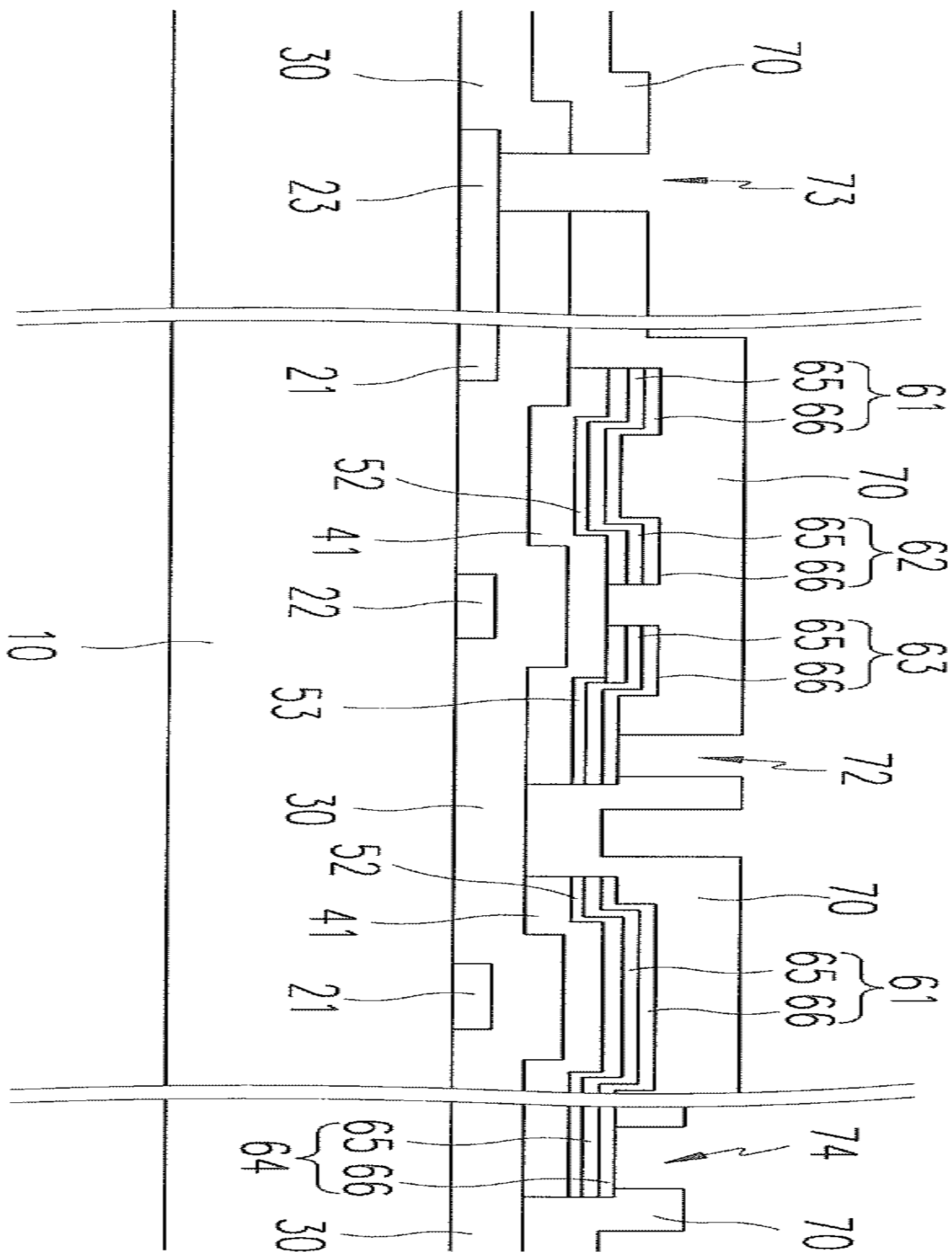
10b



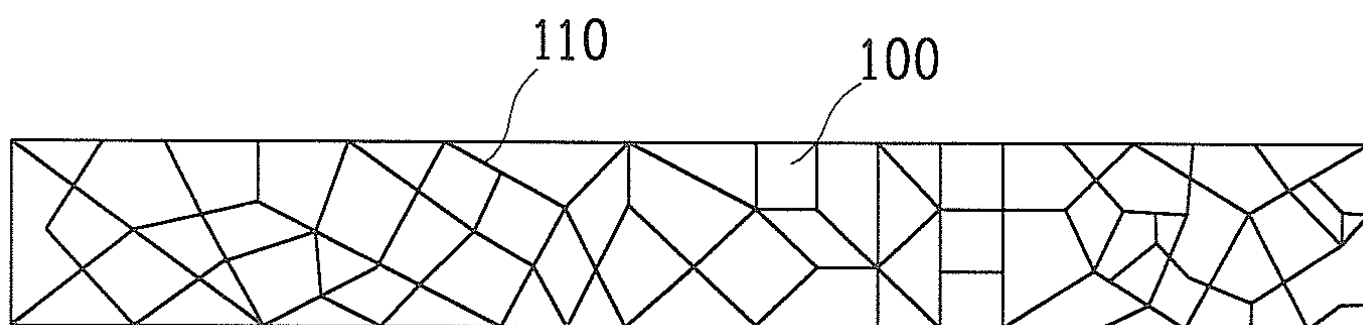
11a



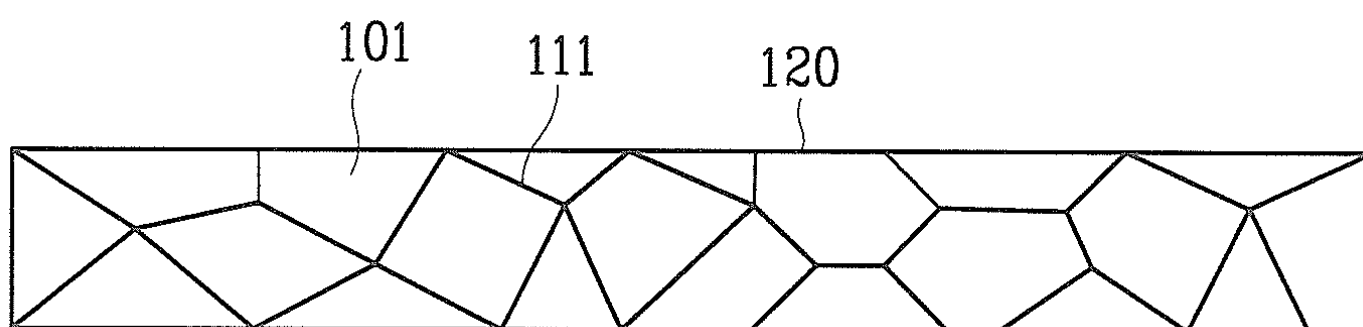
11b



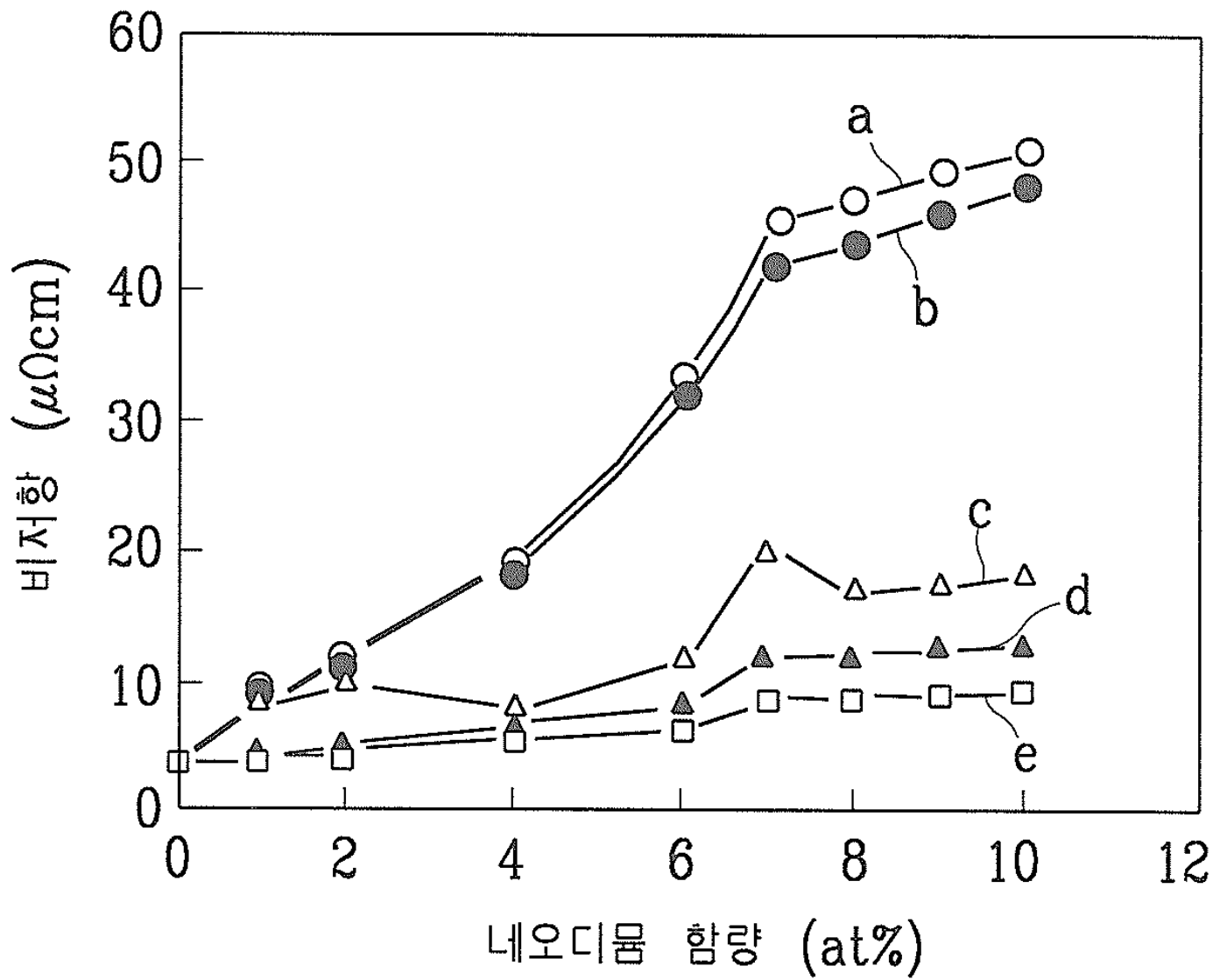
12a



12b



13



专利名称(译)	制造用于液晶显示器的薄膜晶体管基板的方法		
公开(公告)号	KR1020010097215A	公开(公告)日	2001-11-08
申请号	KR1020000021083	申请日	2000-04-20
[标]申请(专利权)人(译)	三星电子株式会社		
申请(专利权)人(译)	三星电子有限公司		
当前申请(专利权)人(译)	三星电子有限公司		
[标]发明人	JEONG CHANGOH 정창오 SAKONG DONGSIK 사공동식		
发明人	정창오 사공동식		
IPC分类号	G02F1/136		
CPC分类号	B41K1/006 B41K1/02 B41K1/36 B41K99/00		
代理人(译)	您是我的专利和法律公司 KIM , WON GUN		
其他公开文献	KR100670060B1		
外部链接	Espacenet		

摘要(译)

包括栅极线，栅电极和栅极焊盘的栅极布线形成在绝缘基板上。栅极绝缘层，半导体层和欧姆接触层形成在上部。形成包括欧姆接触层上的铬和栅极绝缘层中的任何一种以及钛或钼的底层和包括源电极，漏电极和数据焊盘的数据线。接触孔在上部沉积保护膜并显示漏电极，并形成栅极焊盘和数据焊盘。沉积像IZO的透明导电材料，并且在保护膜上形成图案和像素电极，以及辅助栅极焊盘和辅助数据焊盘。这里，在添加成分为Ti的同时，数据线和栅极布线的上部膜形成铝合金层，ta，以及像过渡金属那样的稀土金属中的一种或多种，如Zr和Cu或Nd和包括Y，更优选以1at%至6at%进行，并且使用IZO膜的恒定电阻的含量降低，简化了制造工艺。铝合金层，过渡金属，稀土金属，IZO，恒定电阻。

