

(19)
(12)

(KR)
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G11B 5/127

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(11)
(24)

2001 07 12
10 - 0291696
2001 03 15

(21) 10 - 1997 - 0008661
(22) 1997 03 14

(65) 1997 - 0067111
(43) 1997 10 13

(30) 96 - 060969 1996 03 18 (JP)

(73) 가 가
가 가 가 가 72

(72) 가 가 가 1, 가 가

(74)

:

(54)

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

< >

11:

12:

13:

14:

scattering) 가 (conduction electrons) 가 (spin - dependent scattering) (giant magnetoresistance effect)

가 (guide) (浮上量) 가

1 2 ()

가 가 가

(異方性)

MR (La - Sr - Mn - O)

(hetero - amorphous)
GMR (Co - Al - O)

MR

Ta, Si, Ti

가

GMR
, SiO₂

가

가

가

1 μm

가

가

가

가

2 3

- Zr - Nb

(非晶質)

Fe - Zr - N

Co

가
 ()
 가
 CoZrNb
 Co₉₀ Fe
 10 /Cu/Co₉₀ Fe₁₀ /FeMn
 가

1

1
 x (11) (1) , y
 () (12)
 2 (13)가 가 (12)
 (12) (13) " □ " 1
 (13)
 ()가 (13)
 ()가 (13)
 (14)가 (14) . 2 (13)가 (13)

(13) (13) 가 (12)
 (13)

15
 d bias source)(102) IC(100) (rea
 (101) (1) (read amplifier)(101)가 (102)
 (write current source) 1 IC(100) , IC(100)
 (102) (1) IC(100) 가
 (101) IC(110)
 (cording block)(111) I/O CPU(200)

2

2
 1
 (11) (12)
 , Co - Al - O (12) (13)가
 가 (12) (12)

가 , 1 , 2 (32) 가 ,
가 , (42) 가 ,
가 , (磁區)

6

6 1) , (52) , 7 (6 , 7) 가 (5
(52) Cu (53) 2 , (52) (54) ,
(52) 2 (55) (56)가 2 (56)
(55)가 . 2 (55)가

(52) (53)
(52) (55) (52)
(55) 가 (55) (52)

7

8 (61) , (62), 2 (63), 8 9 ,
(64) (61) (65) (64)
가 (65) , (65) Cu
(66) (63) (63)가 , 2
(段差)가 (64), (63)가 ,
63) (62)가 . (62) (63)가 (63)가 (

가 , 6 가 ,
가 , (65) (63)
가 , 6 가 .

8

10 (73)가 10 - 12 (71), (72), 11, 12, 2 (73) (74), (75), (71) (74) 3, Co (75) ZrNb/FeZrN/CoZrNb 가 12 (74) 3 가 가 (76) (76) (73) (77) 가 Cu (73) (74) (73)가 (73)가 2 (73) 가 (72)가 (72) (73)가 (73)가

(73) (77) 3 (73) (FeZrN) (75) 3 (73) (CoZrNb) (74) 가 가 가

가, (CoZrNb) (74) (FeZrN) (75) (自己) 가 가 9

13 (81) 14 (82) 13 (83) 14 2 (8) FeZrN/CoZrNb 2 가 가 (85) Cu 4) (87)가 (86)가 (83) 2 가 (86) 가 2 가

(87)가 (86)가 (83) 2 가 (86) 가 2 가 가 가 가 가 가

(86) (85) , 2 , 2
 (FeZrN) (82) ,
 (83) 2 (86) (CoZrNb)
 (86) 가 가

(57)

1.

2

2

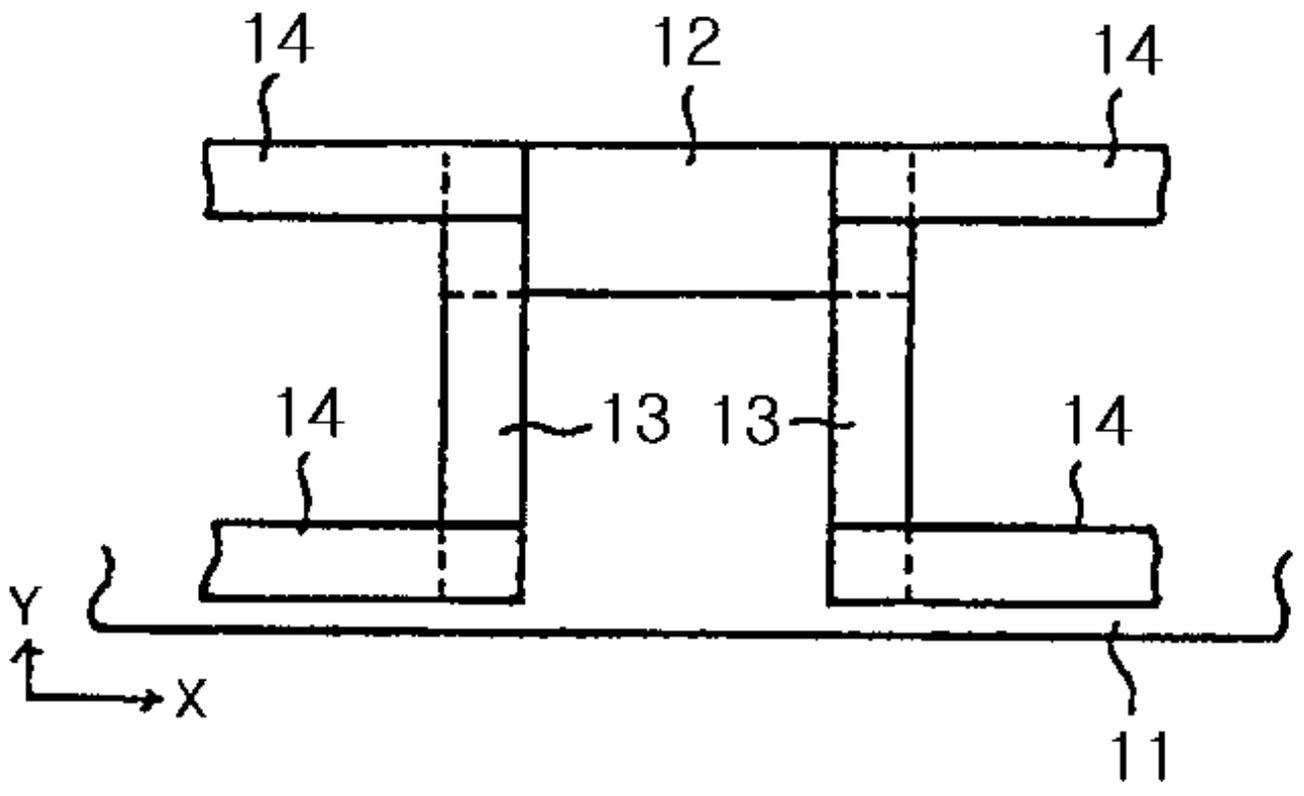
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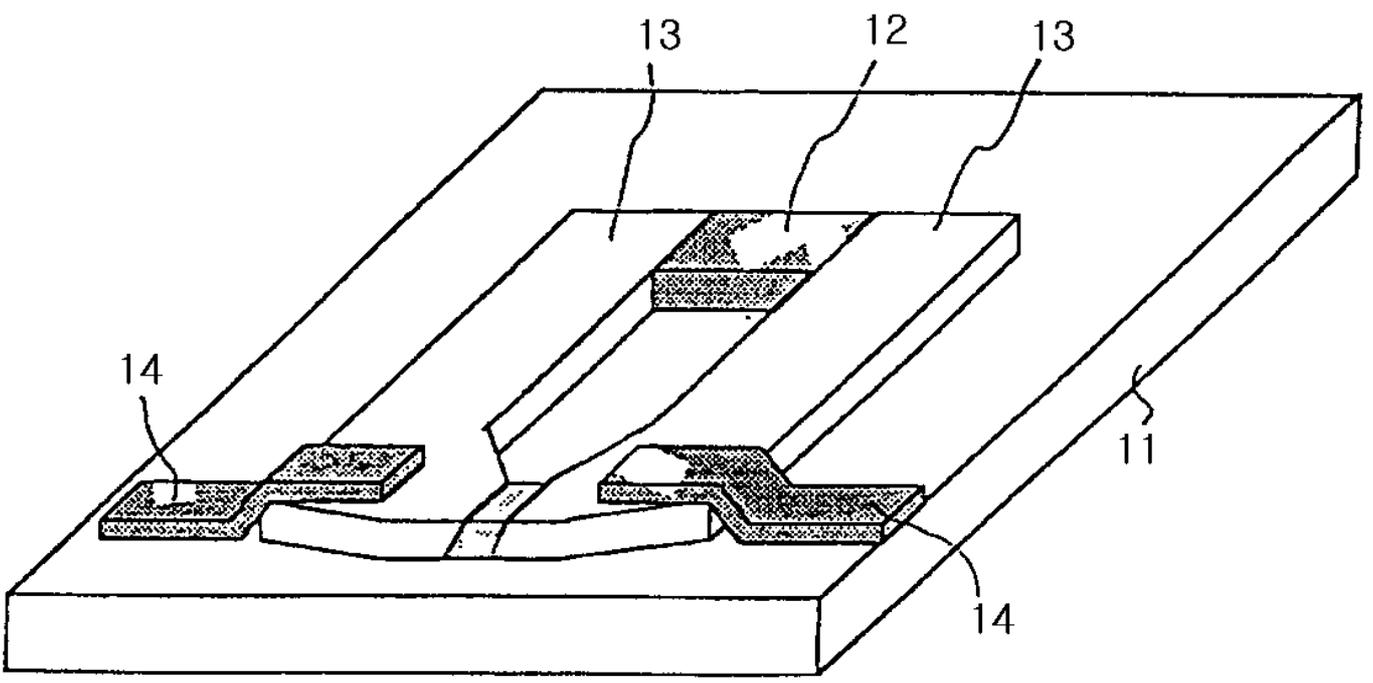
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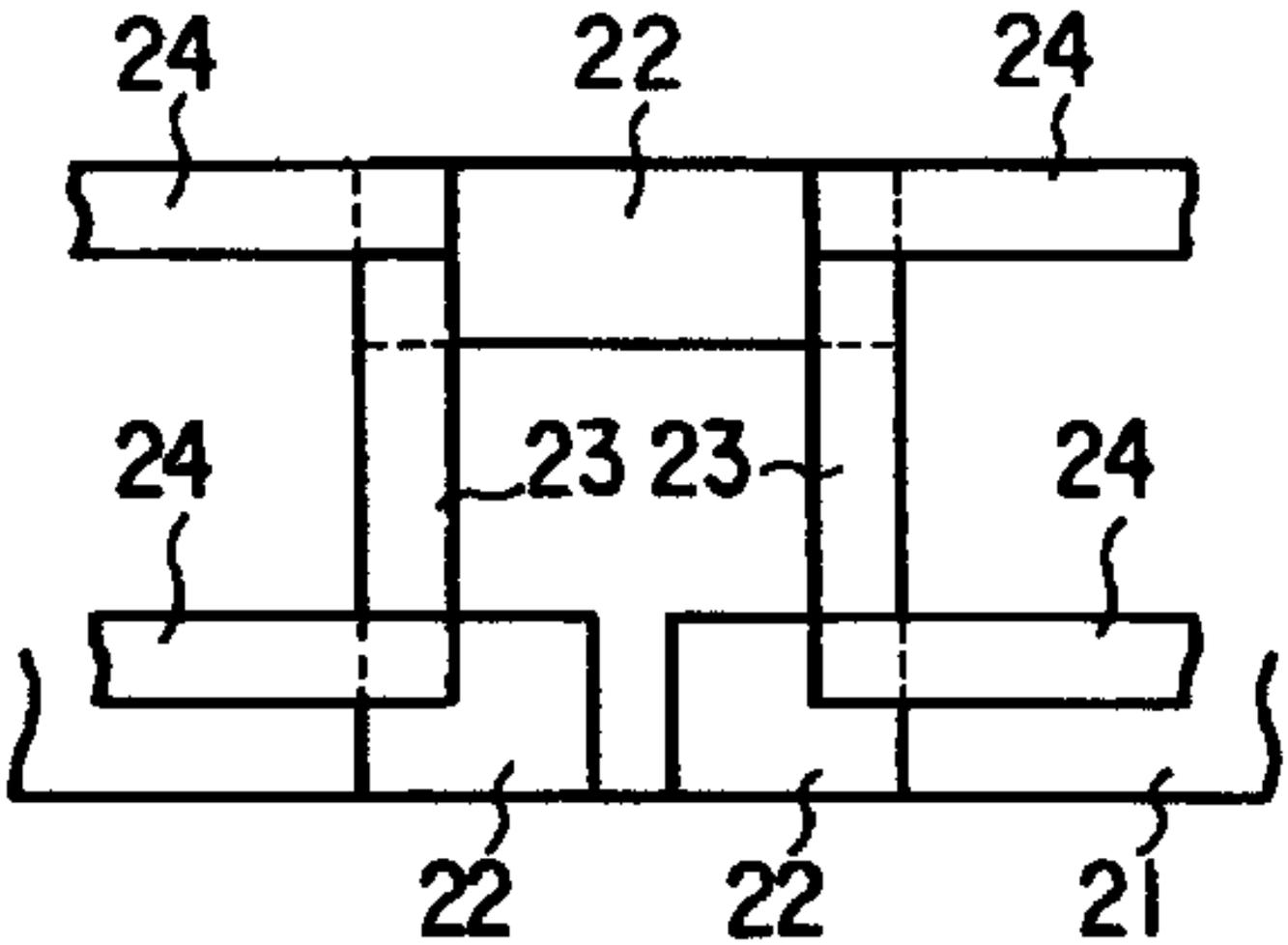
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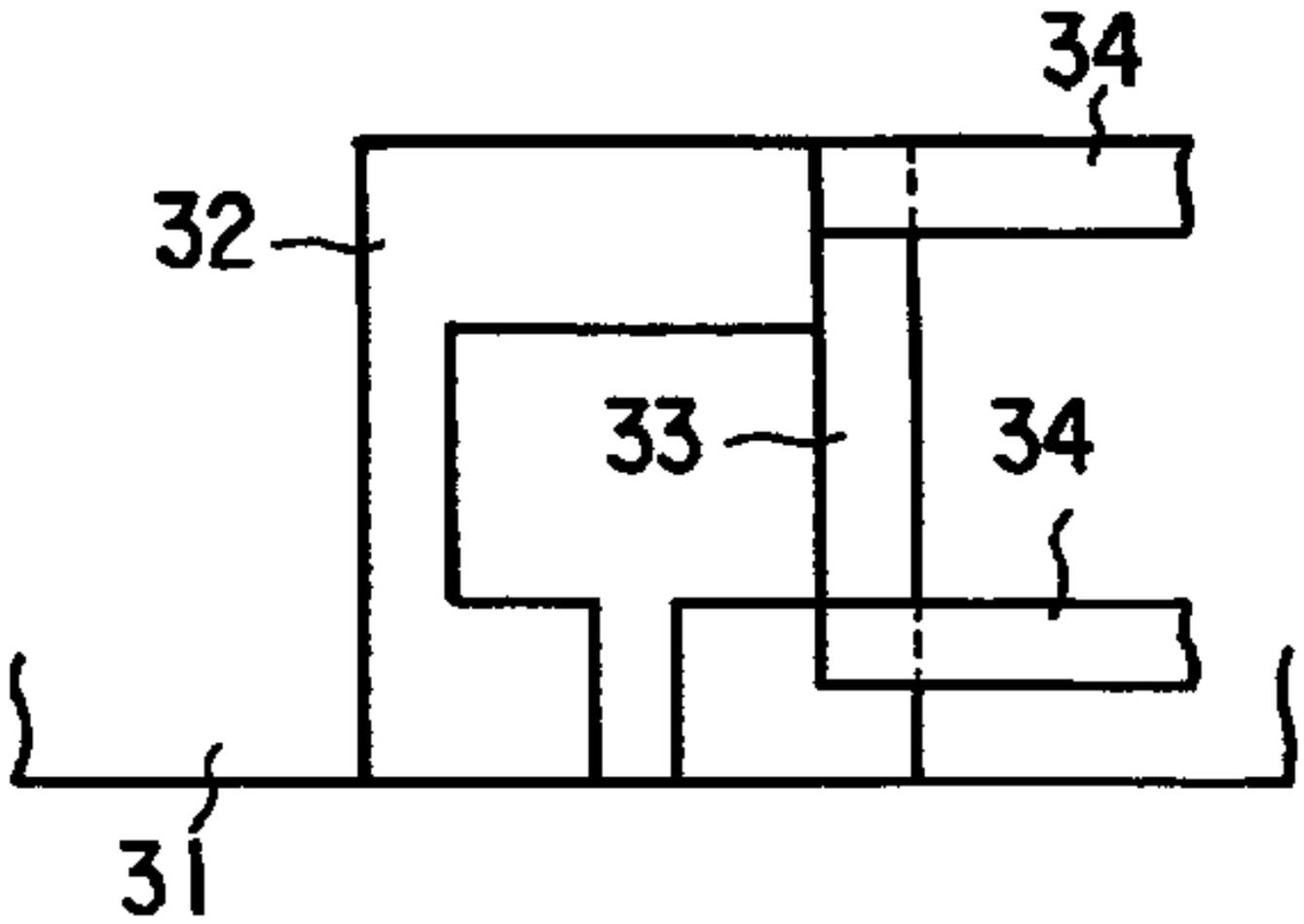
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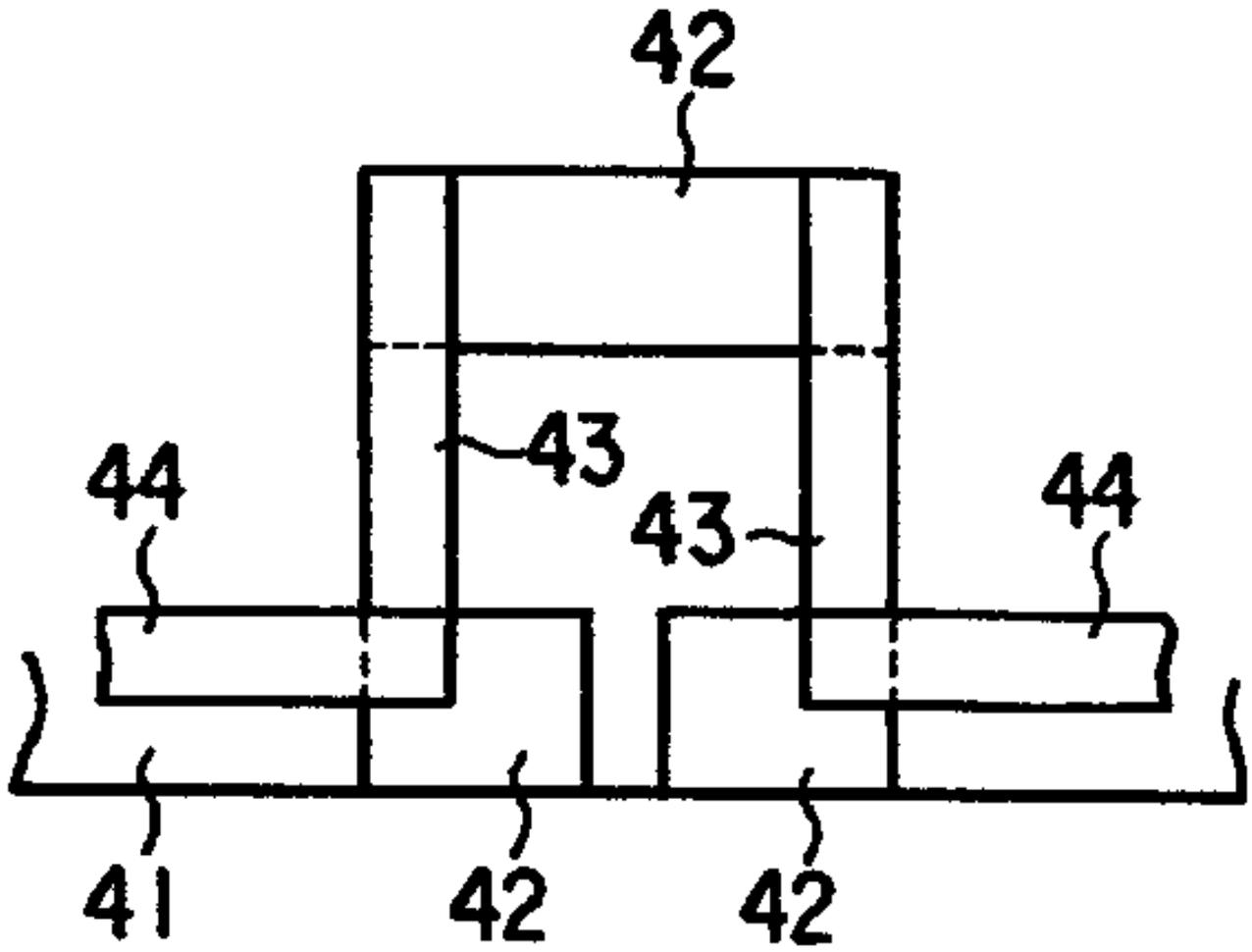
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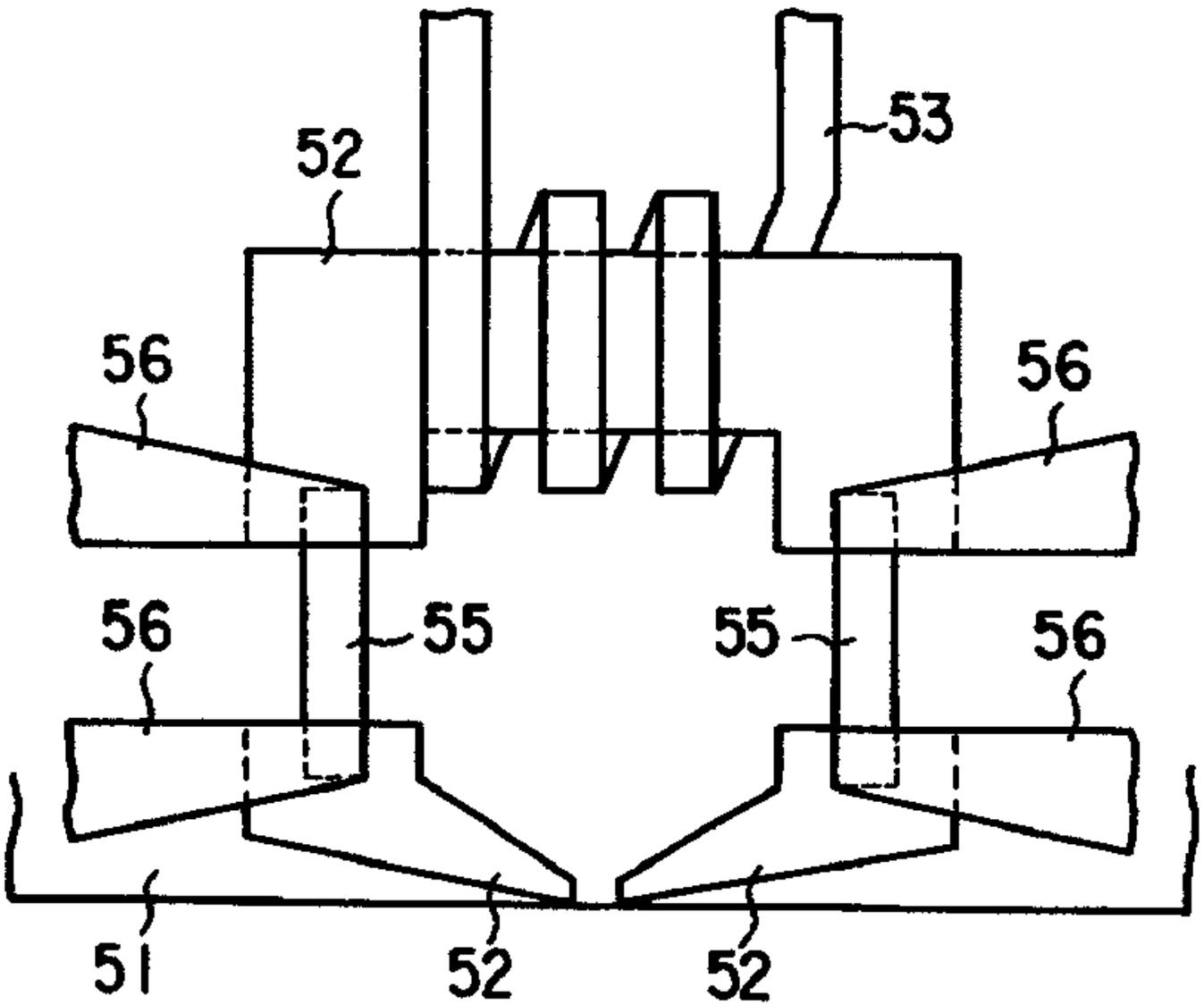
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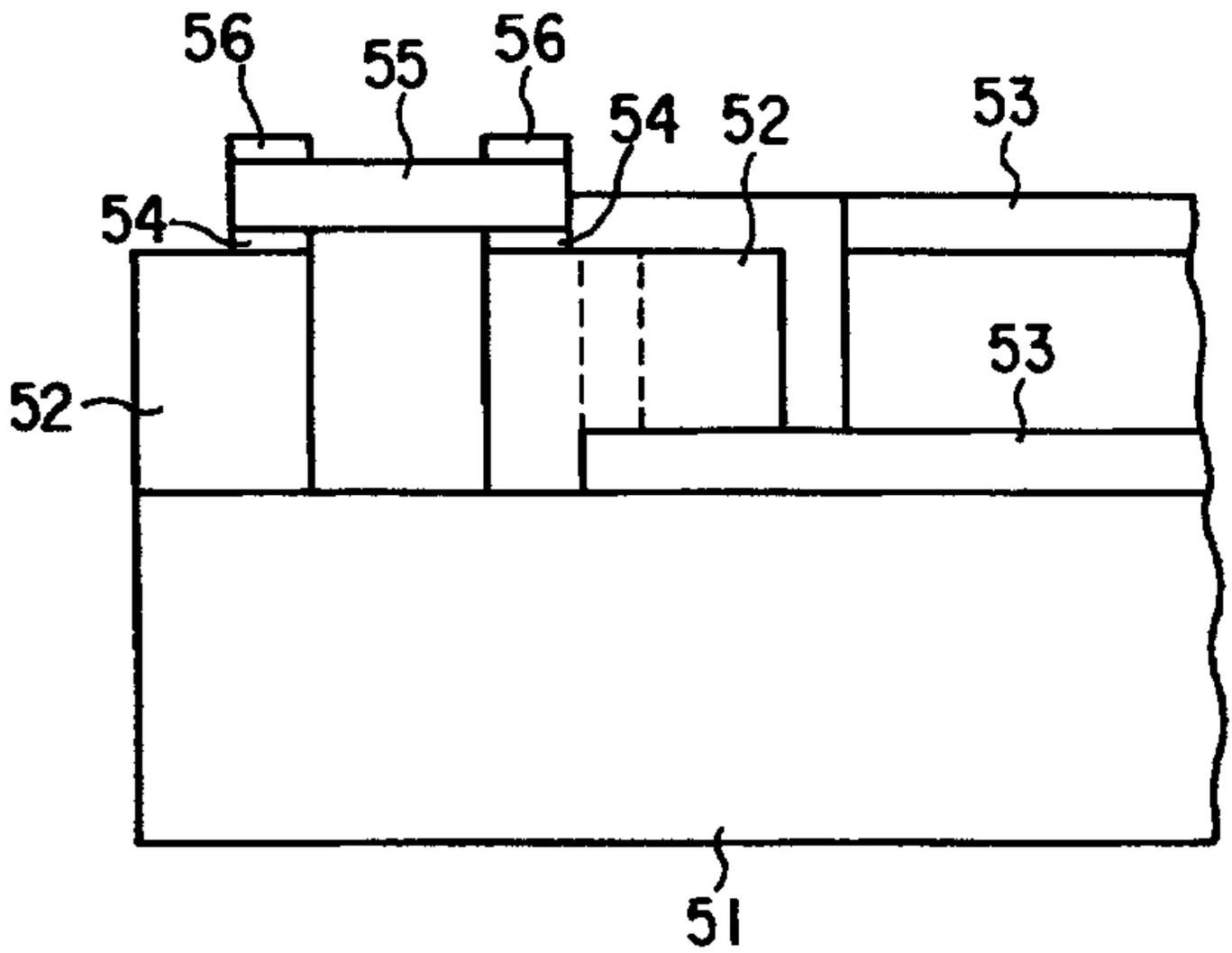
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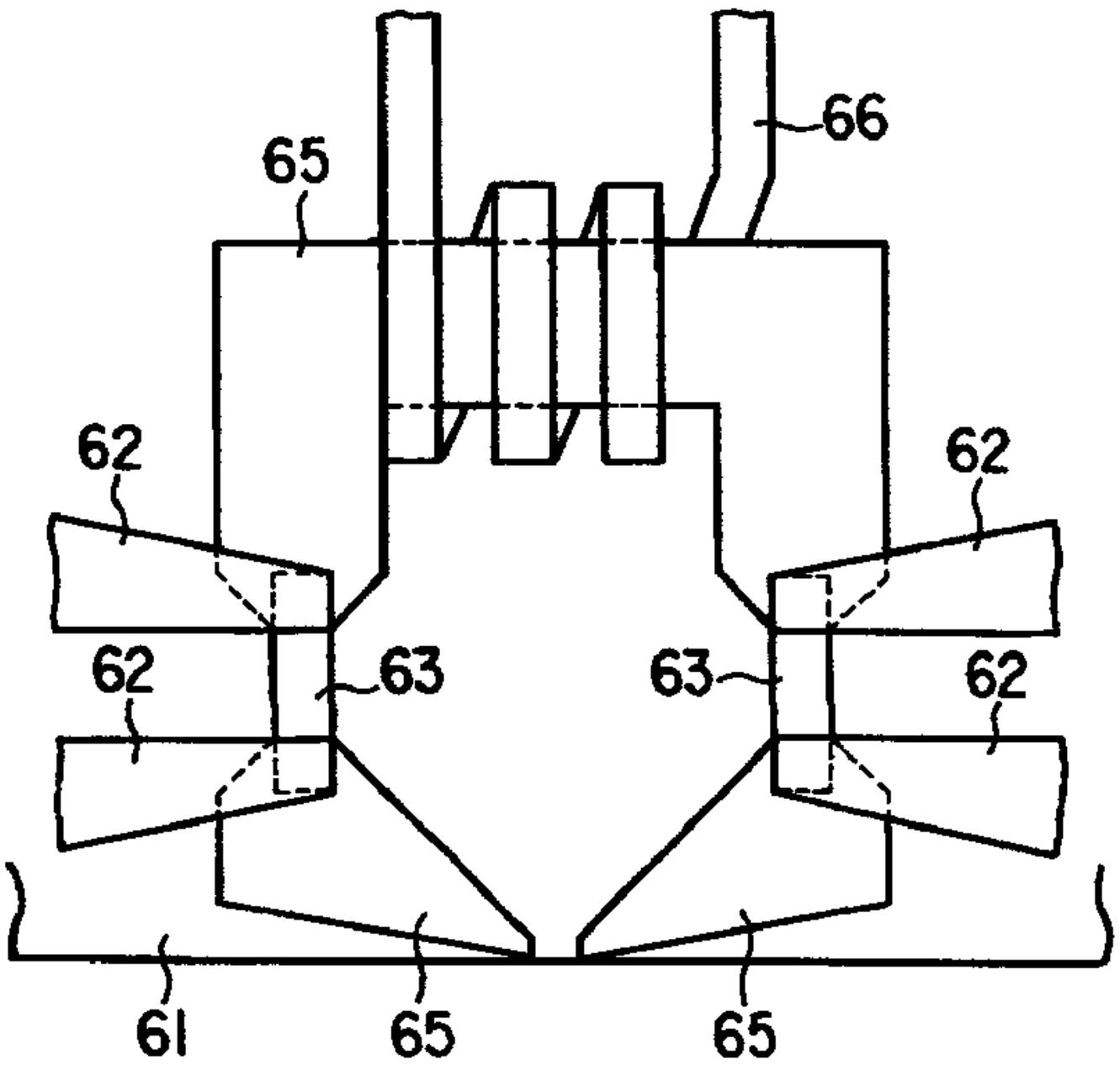
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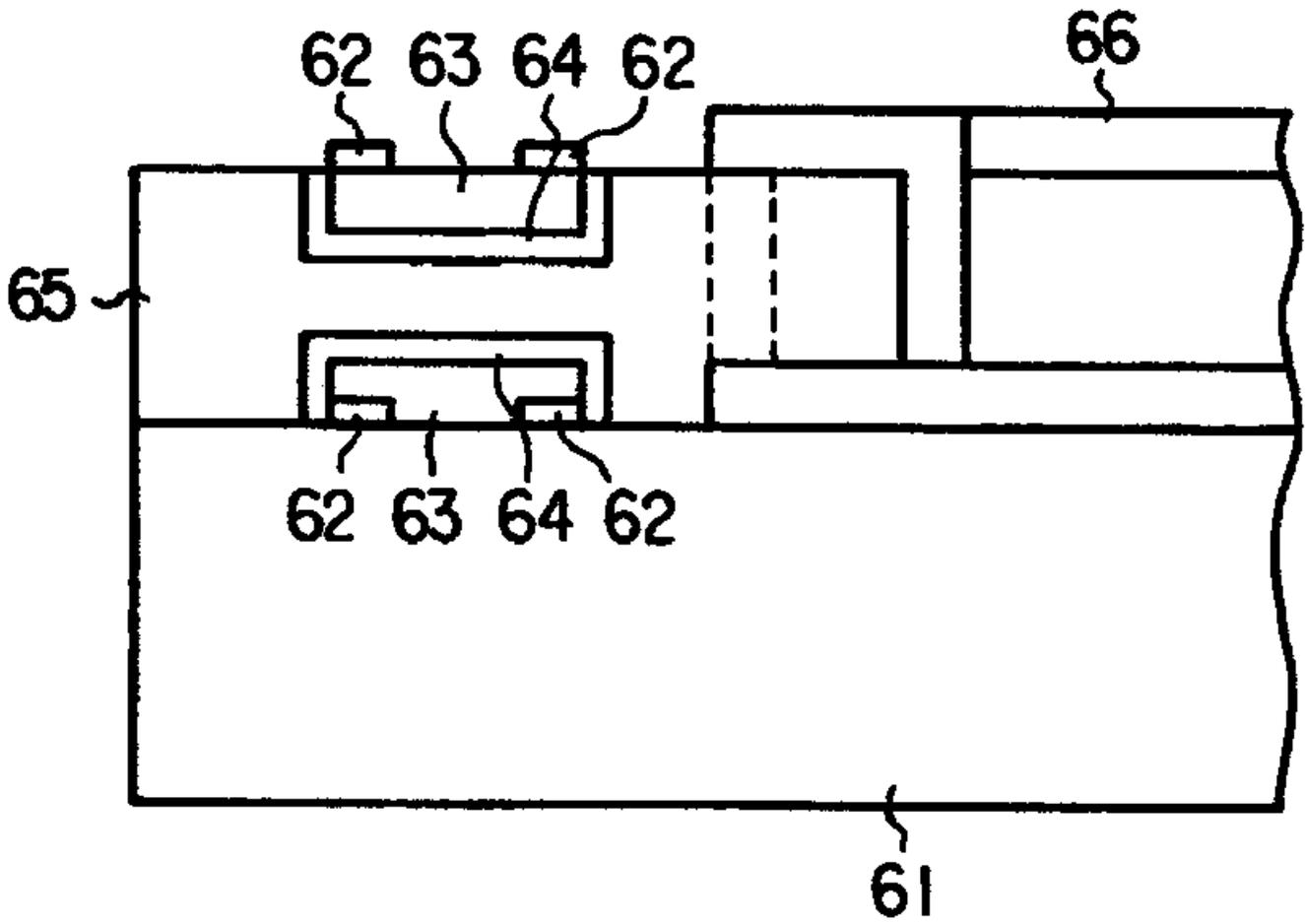
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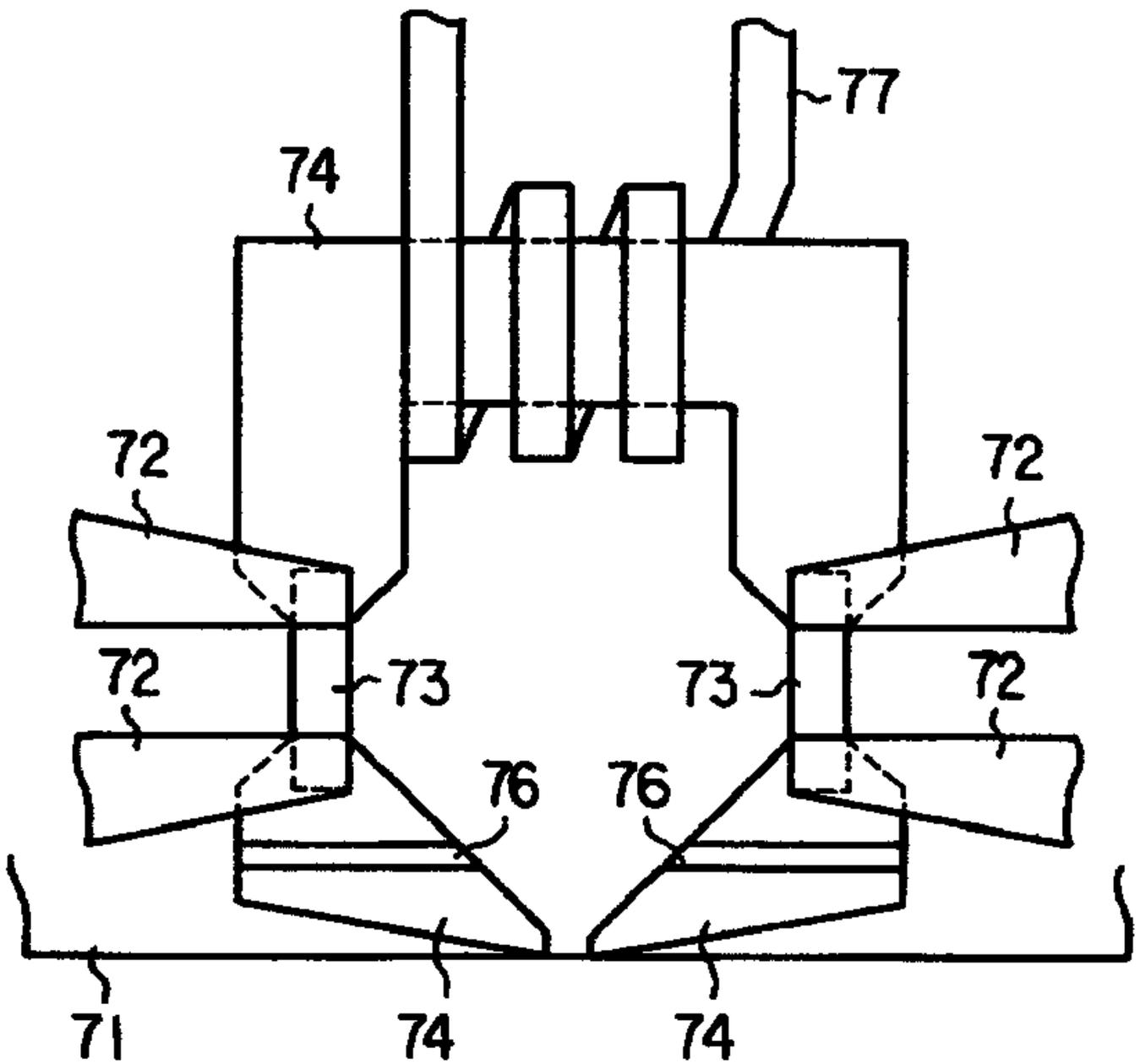


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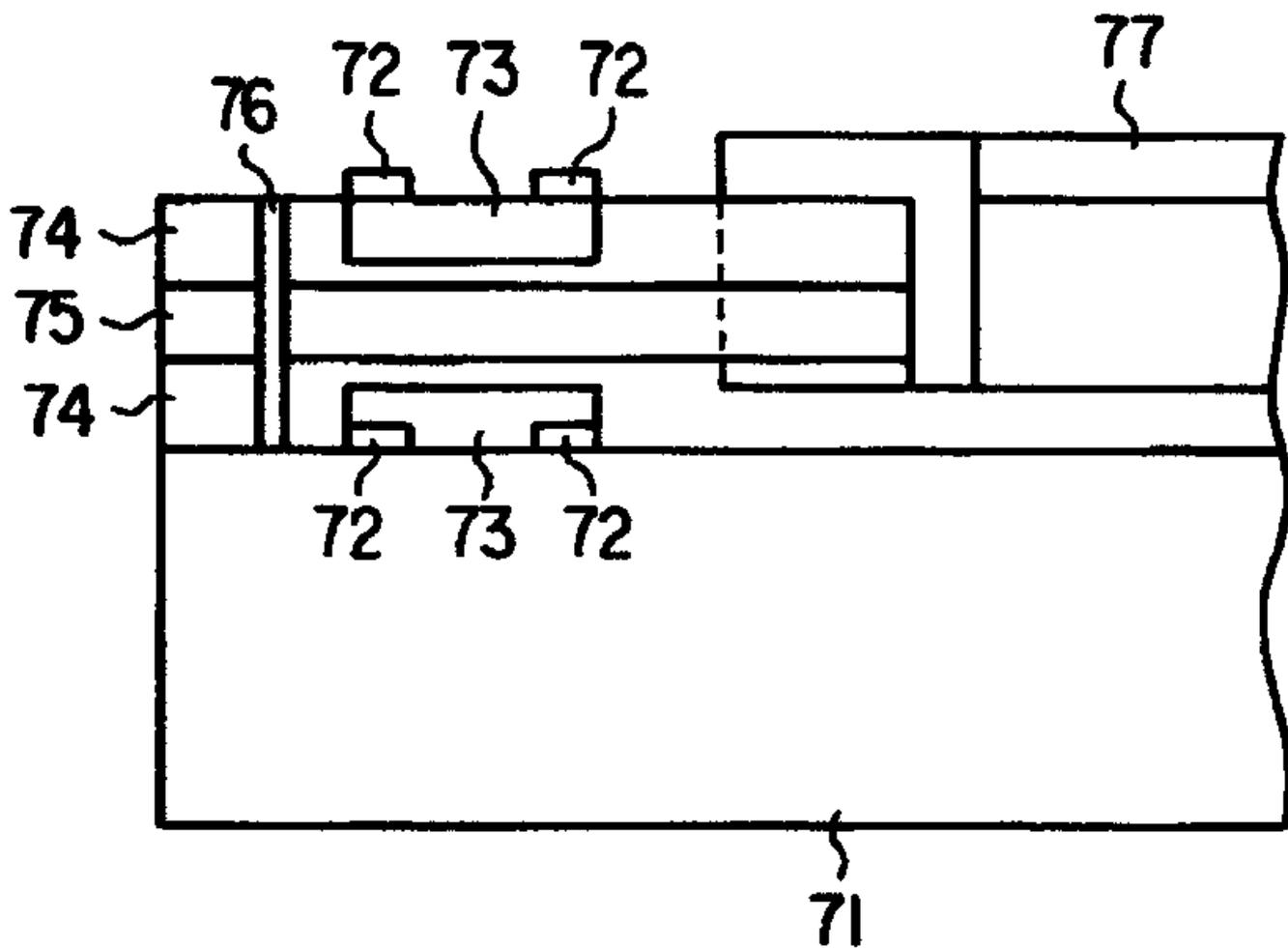


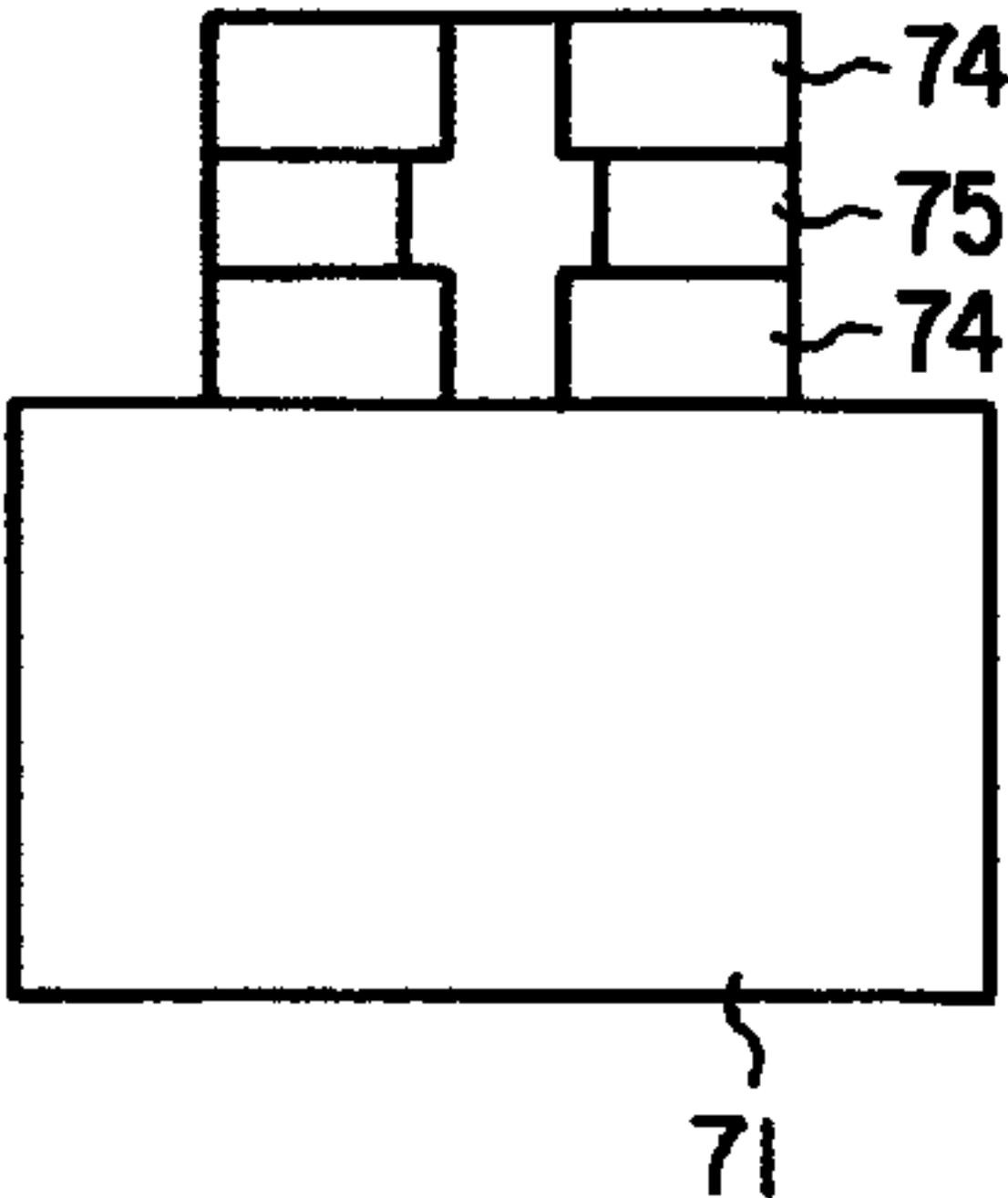
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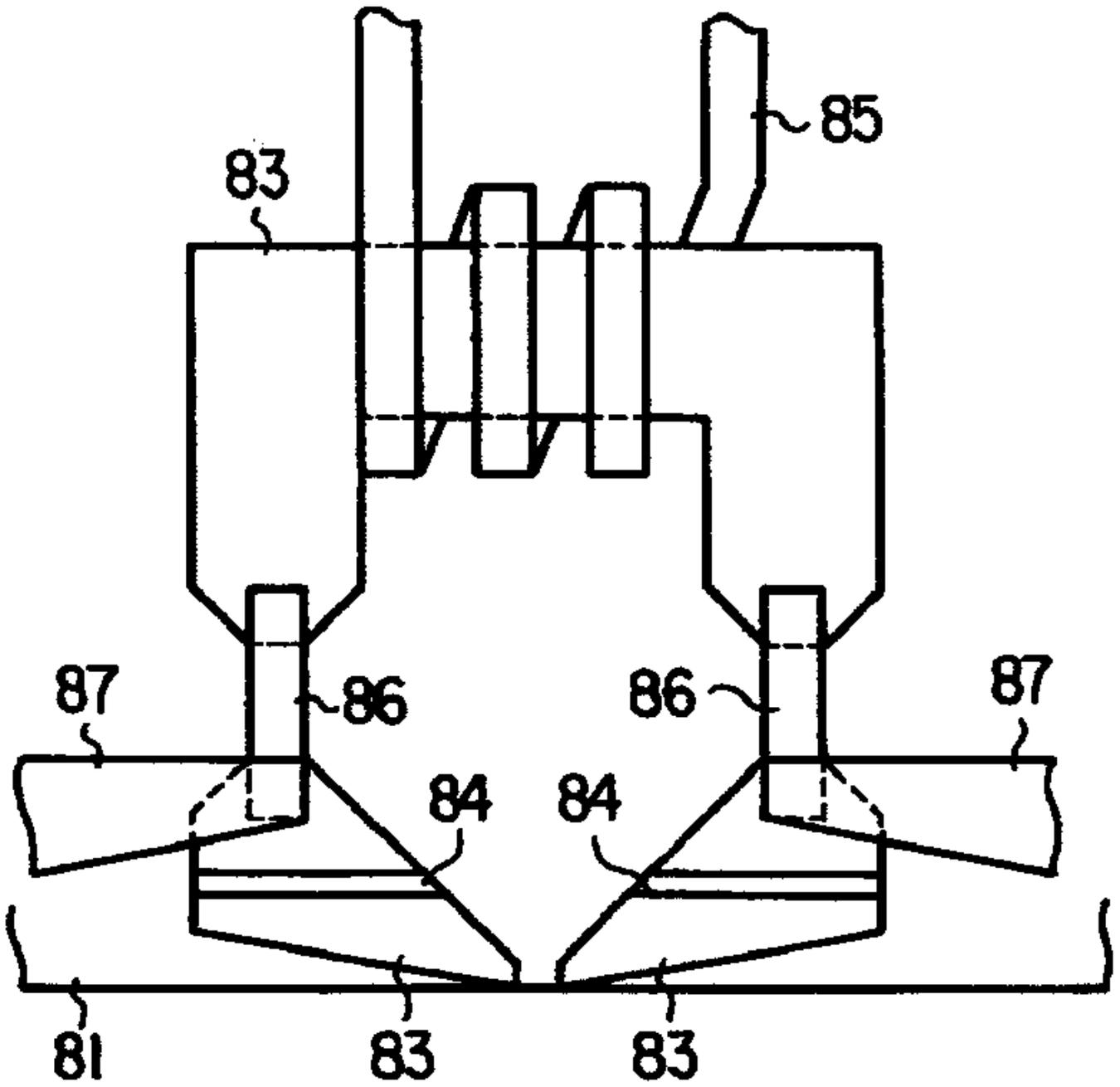




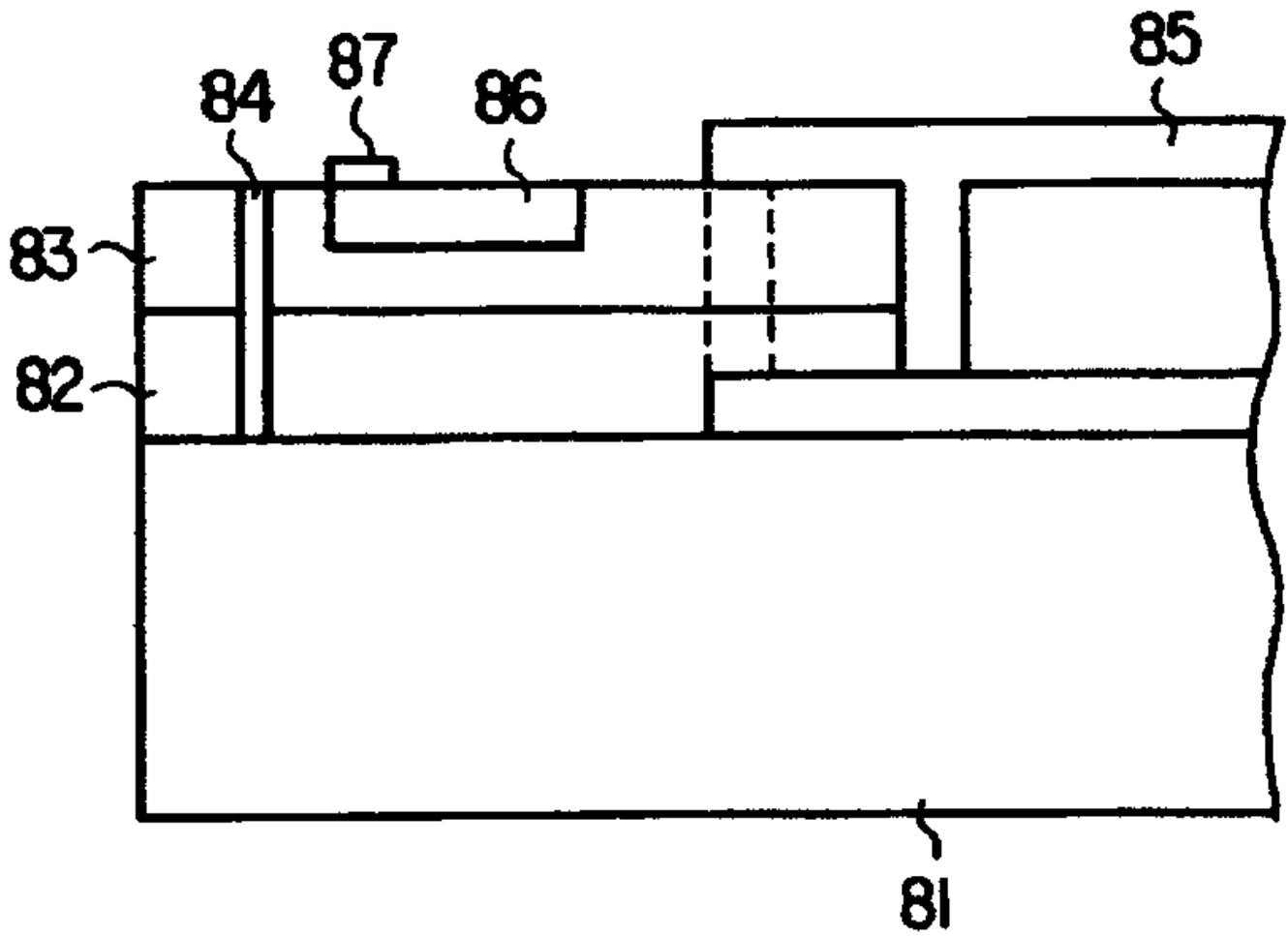
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