

(19)  
(12)

(KR)  
(B1)

(51) 。 Int. Cl. <sup>7</sup>  
H01L 21/768

(45)  
(11)  
(24)

2001 11 30  
10 - 0304753  
2001 07 24

(21) 10 - 1998 - 0035321  
(22) 1998 08 29

(65) 1999 - 0024021  
(43) 1999 03 25

(30) 97 - 234385 1997 08 29 (JP)

(73) 가 가  
가

5 7 1

(72) 5 - 7 - 1 ( )

5 - 7 - 1 ( )

5 - 7 - 1 ( )

(74)  
: -

(54) 가

OG 가 , SOG , SOG S  
가 . , S

1a 1c 1 , 1a  
 , 1b 1a A - A' , 1c 1a B - B' .  
 2 2 .  
 3a 3i 3 .  
 4a 4h .  
 5a 5b , 5a A - A' . , 5a

\*

1 : 2 :  
 7 : 8 :  
 9 : 10 : SOG

RAM

OG SOG(SPIN on GLASS) SOG S  
 SOG , 가  
 가 SOG  
 4a 4h .  
 4a 4h , 4a  
 (2) (LOCOS : Local Oxidation of Silicon) (1)  
 (13) (scribe line) (12)  
 (dicing)  
 (2) (2) , 4b 4d , (3 5)  
 (1) CVD , 4e , 가  
 , (6) , (7) (3' 5')  
 (6) (3 5)

(7)가 (6) , 4f , RIE(Reactive Ion Etching) (8) (3' 5') (9), CVD , 4g ,

(9) , 4h , SOG(SPIN on GLASS) (10) (Z) SOG (dry etch - back) SOG 가 SOG

가 RAM , 가 (3 5) , 5a b , (200) 가

(8) SOG (10) (stepped portion) SOG , 5a 5b 가 SOG가 ( SOG (puddle)(100) , SOG (100) 가 (100) , SOG (100) (bump)가 , SOG 가 (200) , 가

SOG가 가

; ; 가 1 ; 가 1 ; 2 ; 가 2 ; 가

가

;

가

;

가

1

;

1

1

;

;

2

;

;

2

가

;

2

SOG가

SOG

SOG가

가

가

가

SOG

SOG가

SOG가

1a

1c

1

가

4a

4i

(8)

(3

5)

가

(14a,14b)가 1a

(AI)

(8)

(14a,14b)

(8)

RIE

(14a,14b)가

(14a,14b)가

(8)

, SOG가

SOG

(14a,14b)

(12)

(14a,14b)

SOG (10)

(14a,14b)

SOG

가

(14a,14b)

(8)

SOG

(14a,14b)

SOG (10)

1b

1c

SOG

(8)

( )

가 (8) SOG가

2 SOG 가 (8)

(8) SOG RIE (AI) (8)

SOG (14')

3a 3i (22) (21) 3 가 (33) 3a (LOCOS)

(32)

(21) (22) 3b (23) CVD

3c 가 (26)

(23) (26) (22) (27) ( )

(23') (22')

(26) 3d (31) RIE (22') 가 (31) (22',23')

(23') (24,25) CVD

(23 25)

3f 가 (26') (26') (24,25) (27')

가 (24',25')

(26') 3g RIE (AI) (28) 3h (29)

24',25') 가 CVD (24') (25')

3i SOG , SOG (30) 가 Z

( ) (40)

(24') (25')

1 2

가

3 , (24',25') 가 (21) (22) 가 , 1  
 , (24',25') 가 (28) 가 , 1  
 2 , (28) (28) (22',23') (24',25') (24',25') ,  
 , (28) (21) (29) ,  
 (28) SOG SOG

3 , (23' 25') , (23') 가  
 (23') , (24',25') (28) .  
 (31,28) , 가 가 (23')  
 , (28) 가 (23')

3 , (31) (31) (22',23') 가  
 , 가 , (31) SOG

가 (31) ,  
 SOG BPSG BPSG SOG ,  
 , BPSG .  
 (28) 가 AI BPSG (28) .  
 BPSG (28)

3 , (31) (23) (22) ,  
 , (22) 가 ,  
 , (31) .

3 , (21) (22) 가 ,  
 , 가 가 , 1 2  
 , 가 ,

가 , SOG , SOG  
 , SOG가 가 가  
 , SOG 가 가 .  
 , SO 가 가 , SO  
 , 1 2 3 .

(57)

1.

;

;

2.

1

3.

1

SOG

SOG

가

4.

가

;

5.

4

가

6.

4 , SOG SOG ,

7.

가 ;

1 ;

2 ; 1

2 , 2

8.

7 , 가 .

9.

7 , 1 ,

10.

9 , .

11.

가

가 ,

12.

11 , 가 .

13.

, ,



1

2

2

2

가

;

2

14.

13

가

15.

13

1

16.

15

17.

16

SOG

18.

;

(puddle)

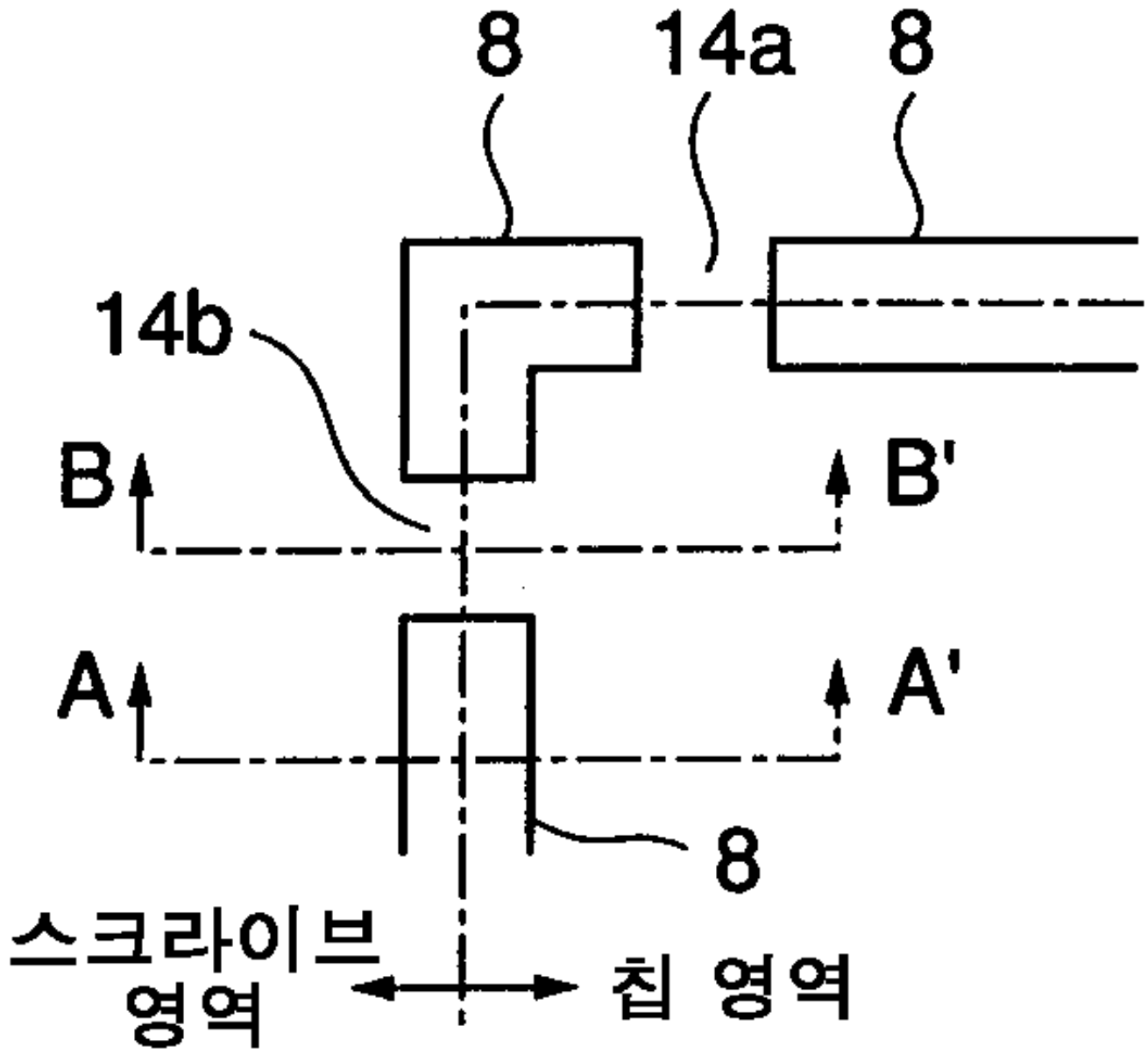
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18

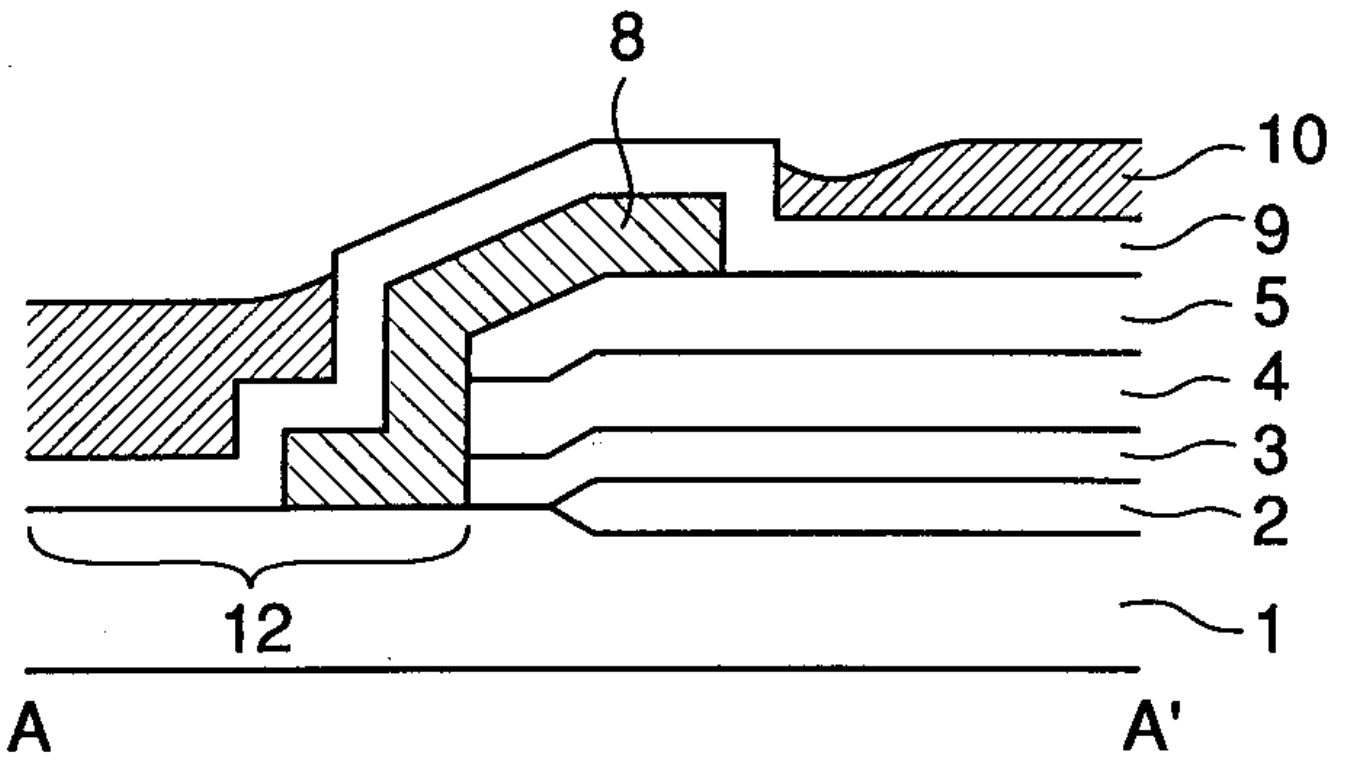
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18

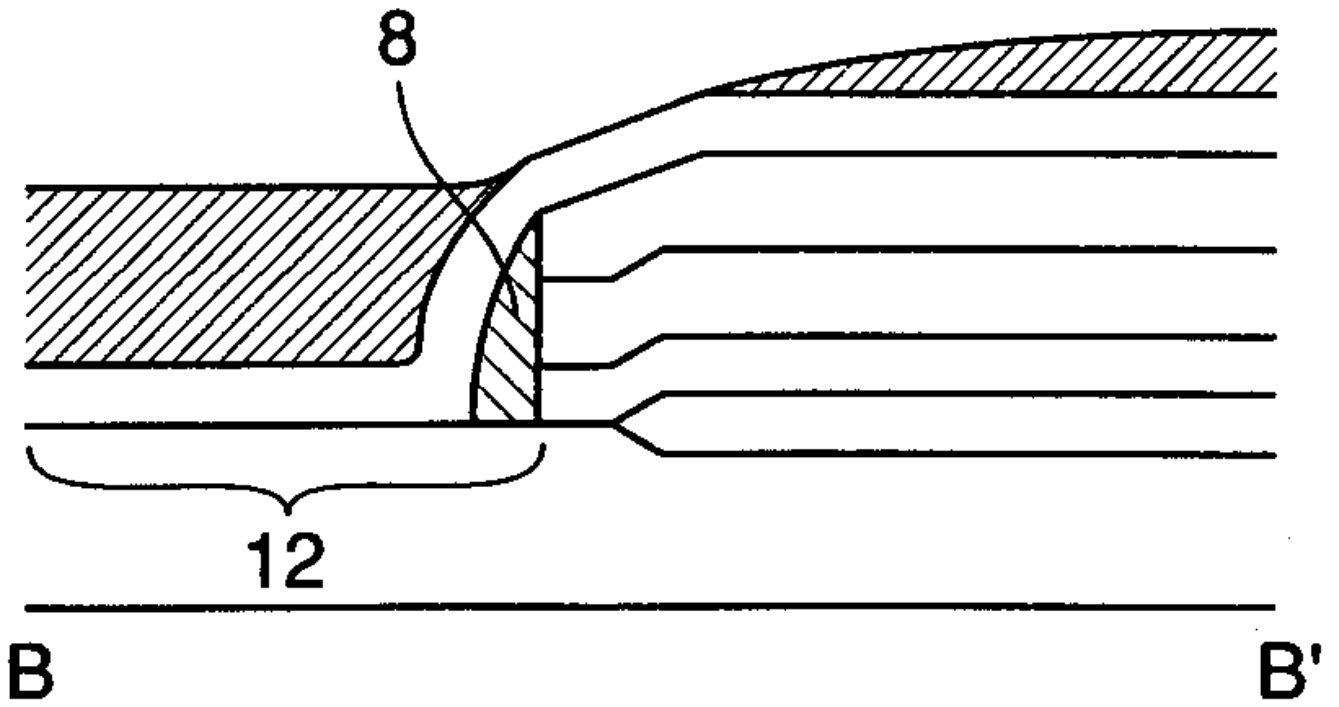
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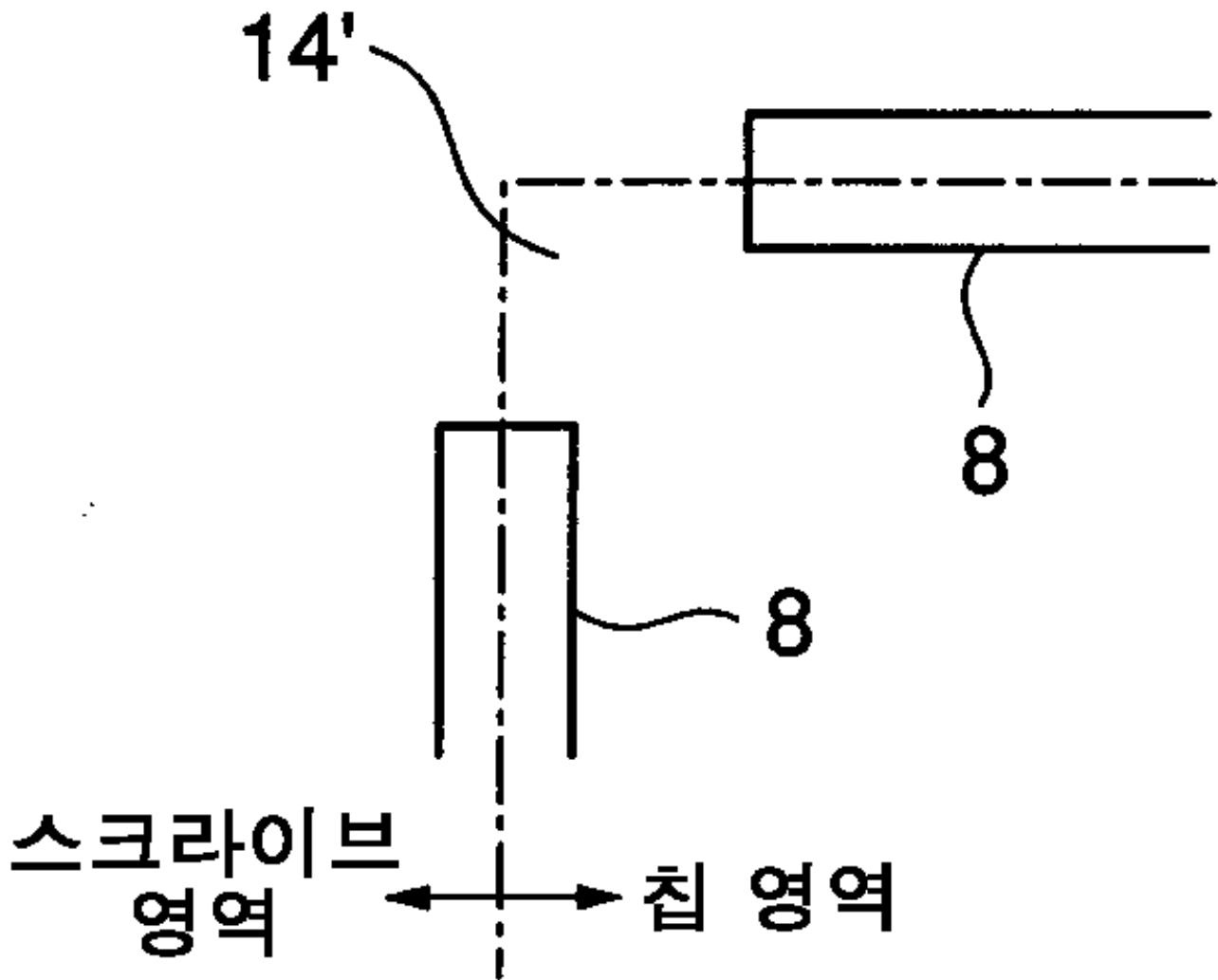
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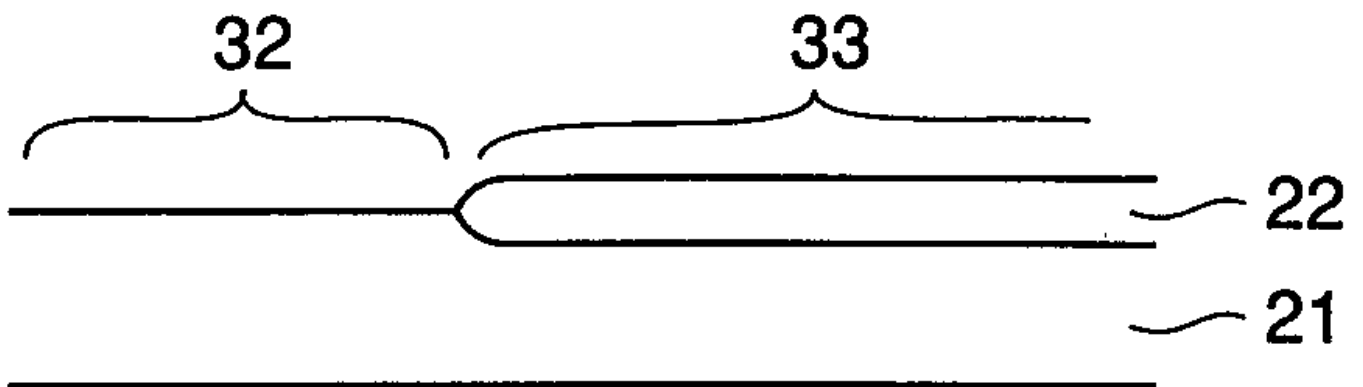
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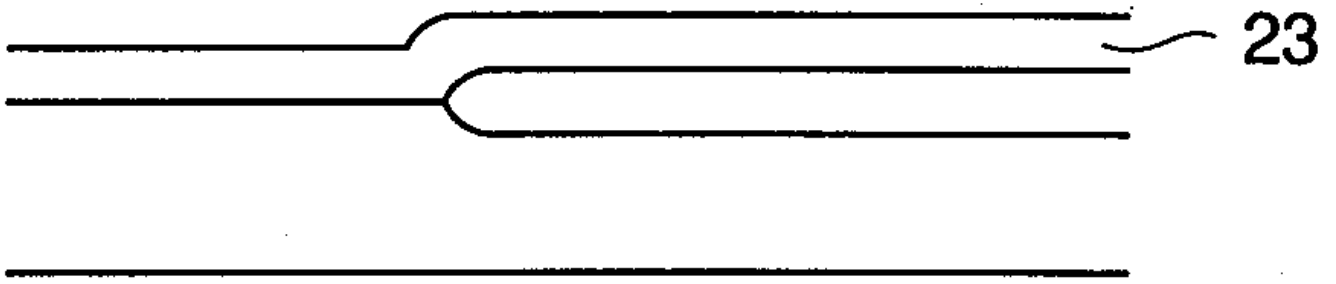
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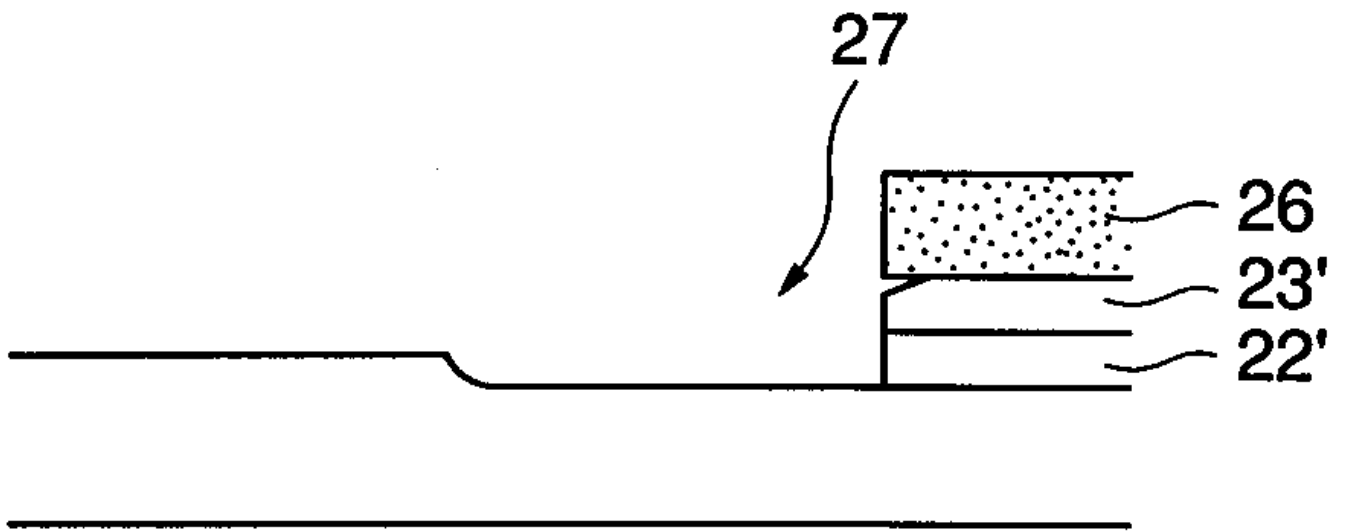
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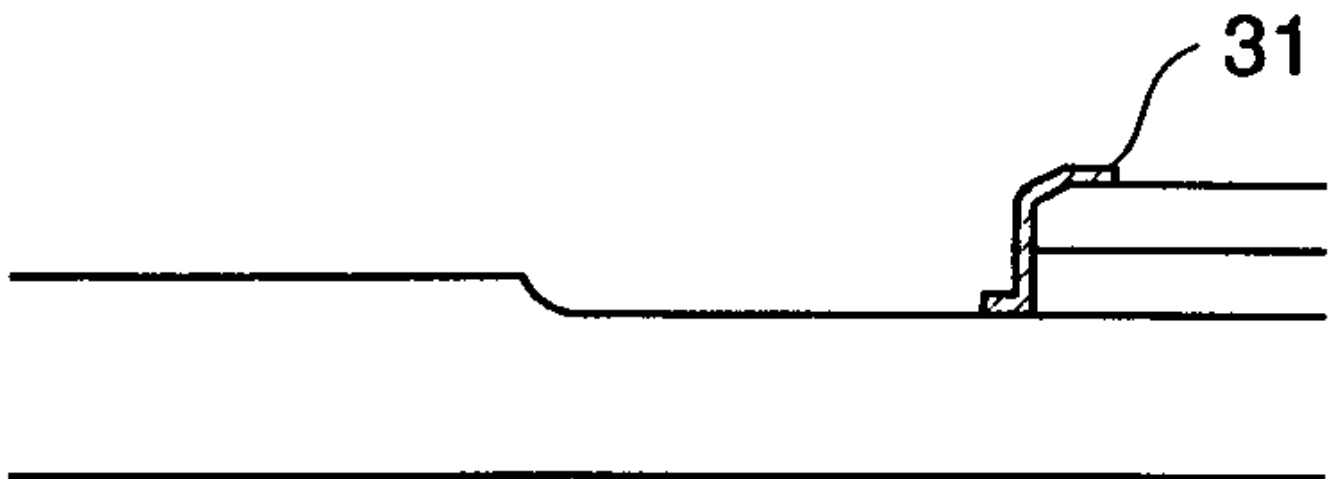
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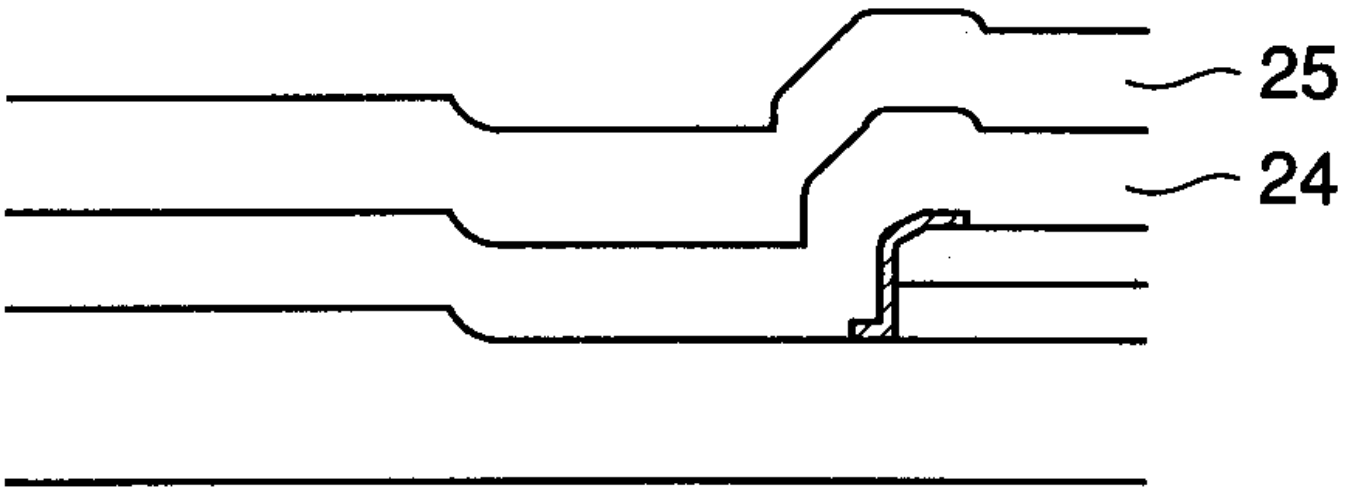
3c



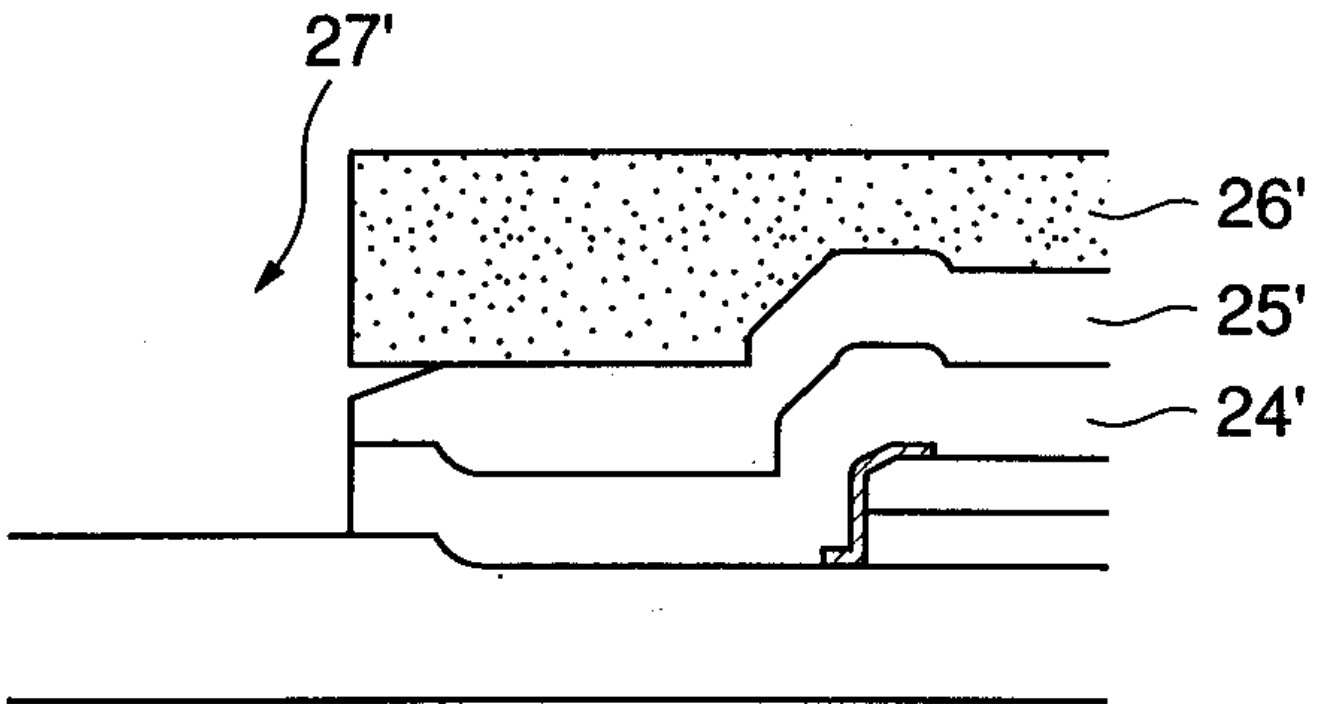
3d



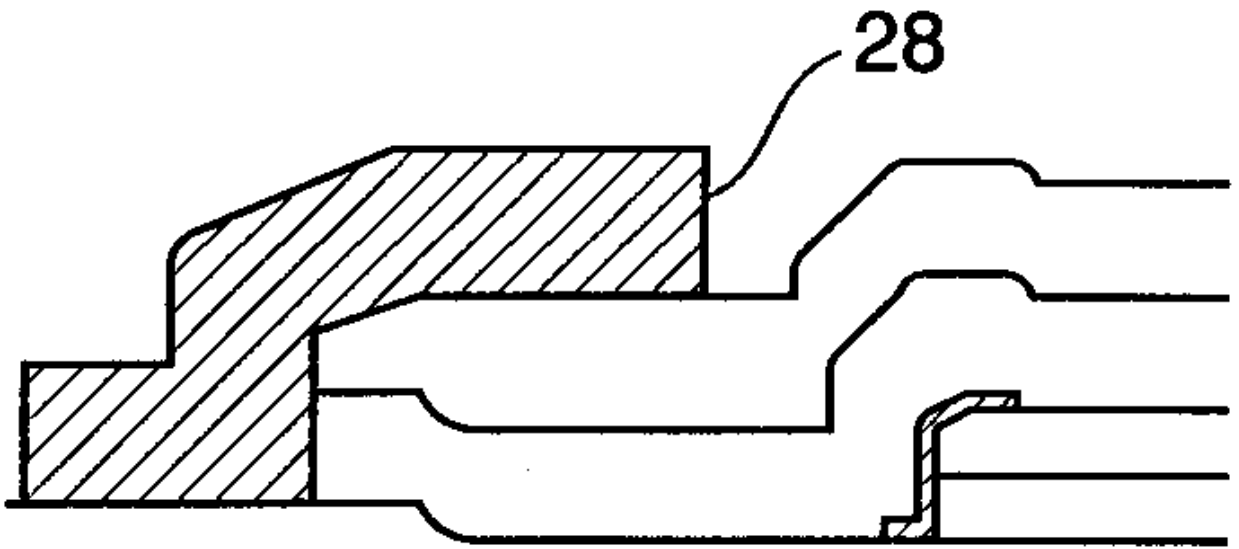
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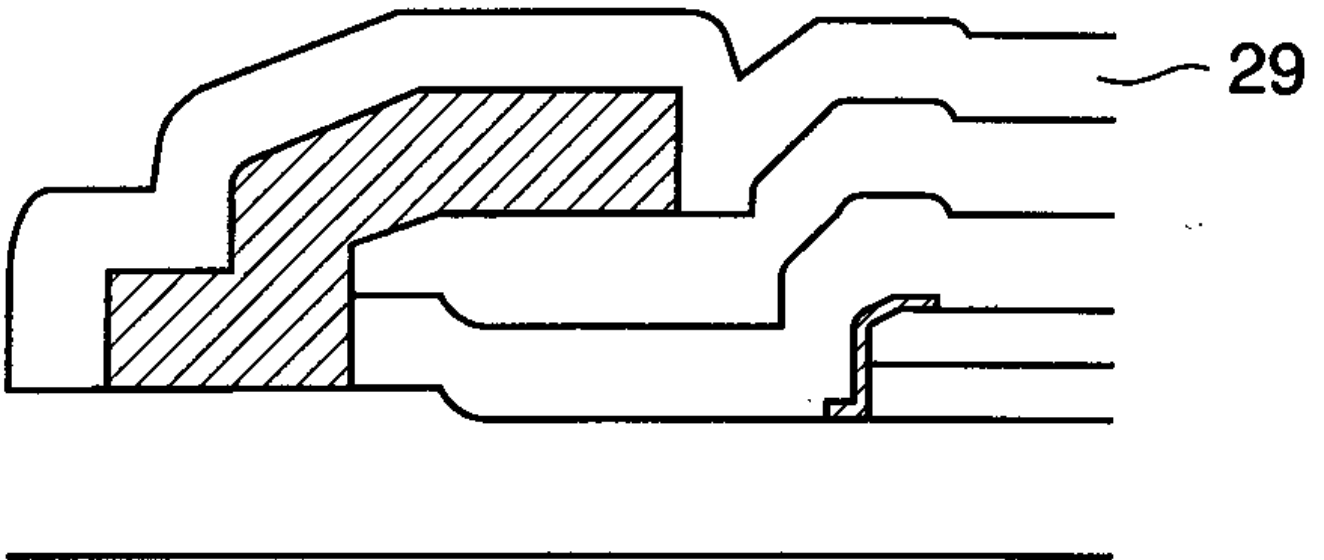
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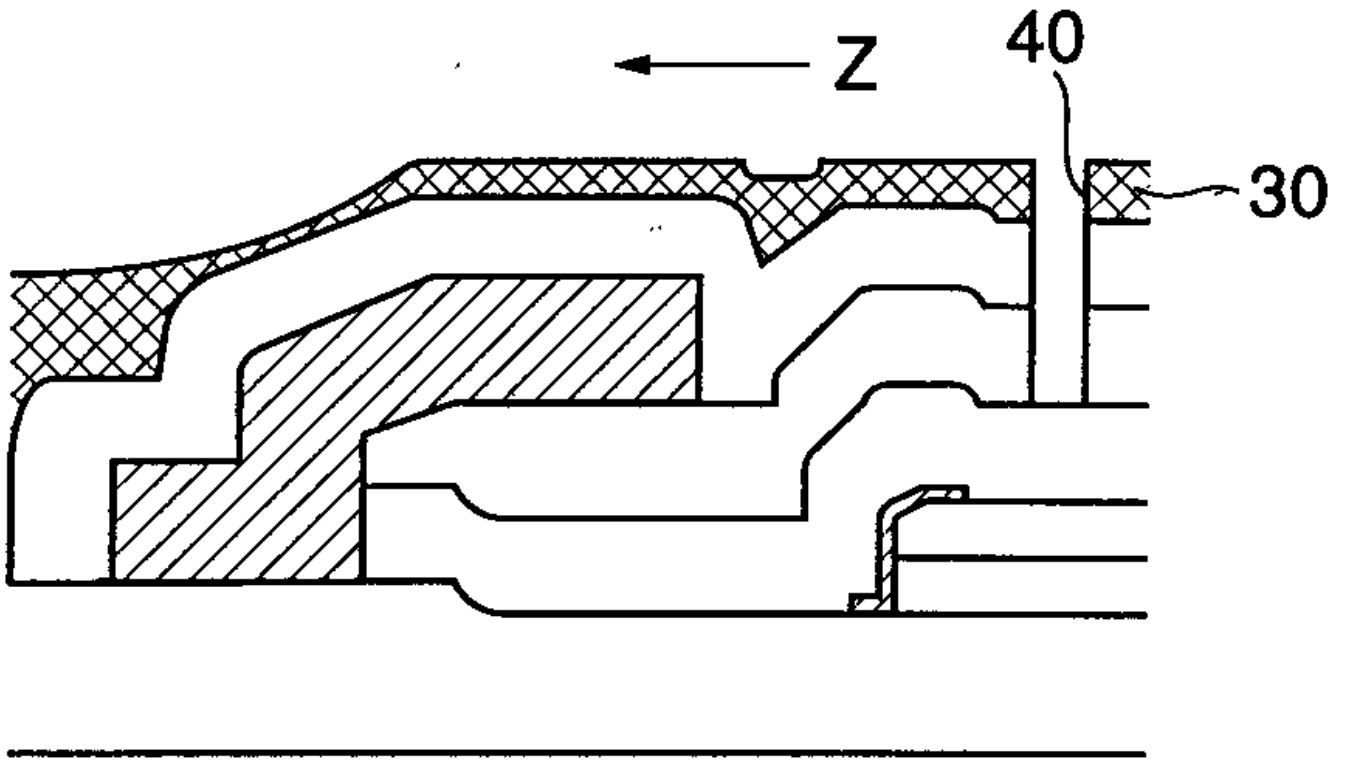
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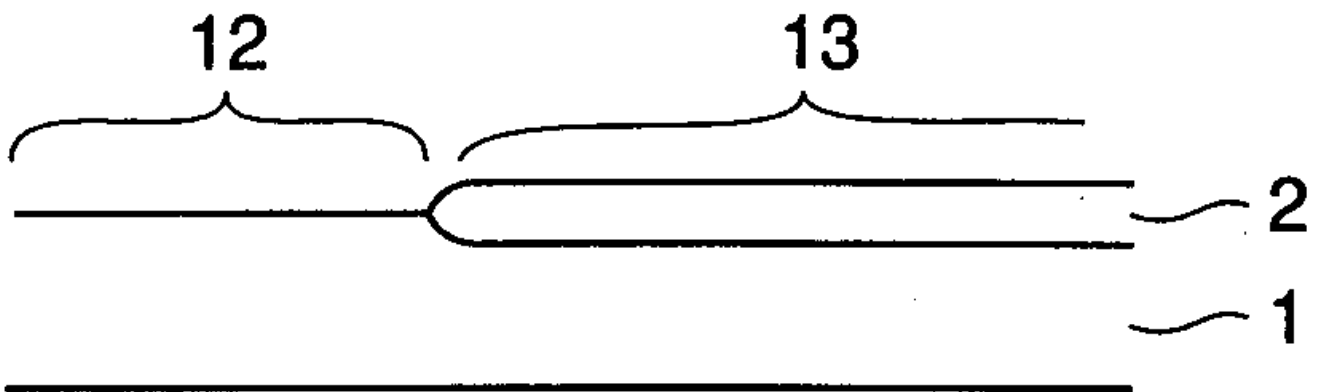
3h



3i

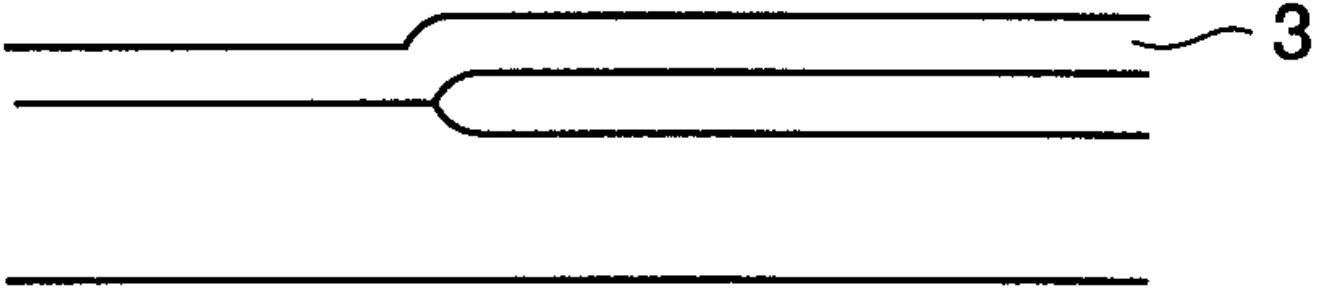


4a

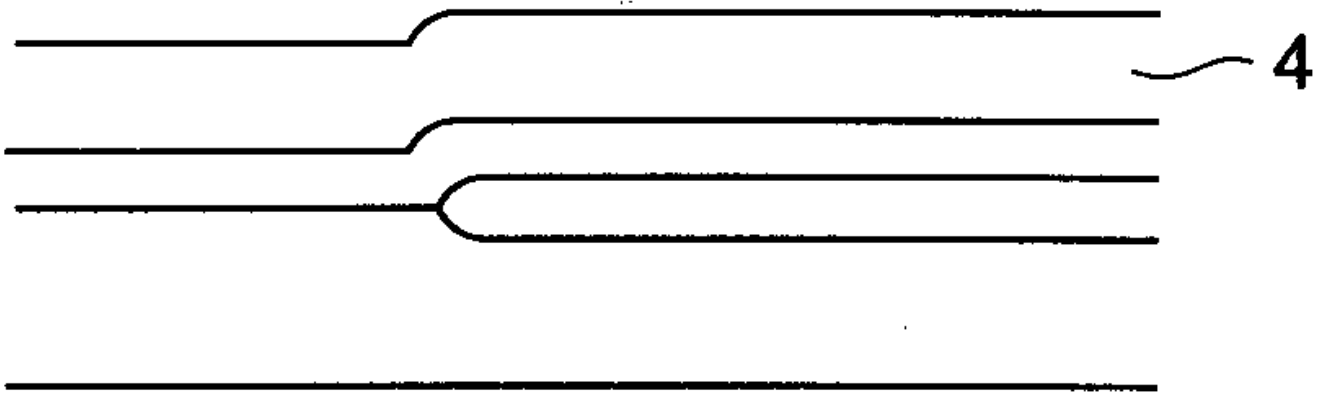




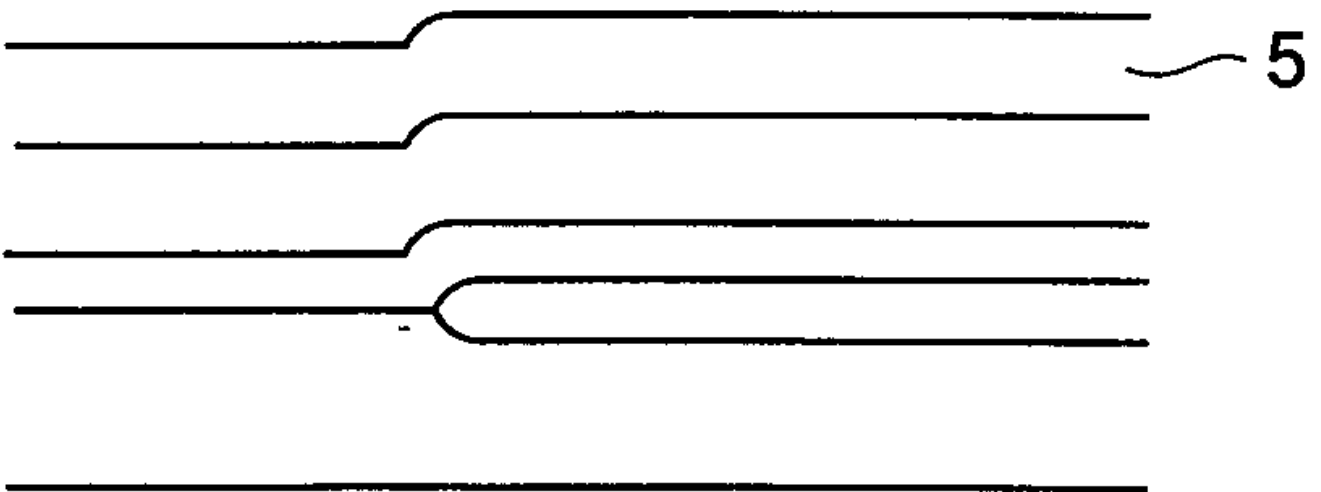
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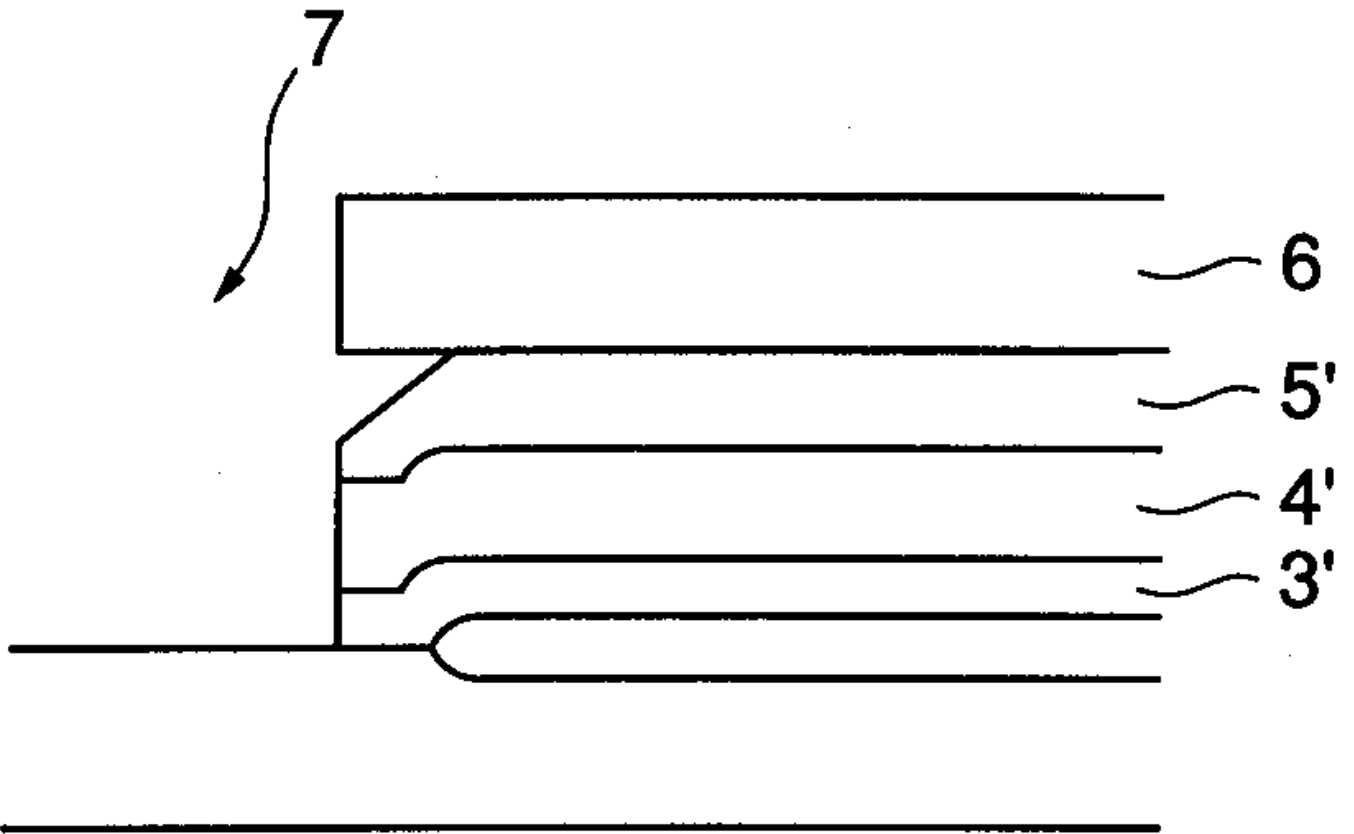
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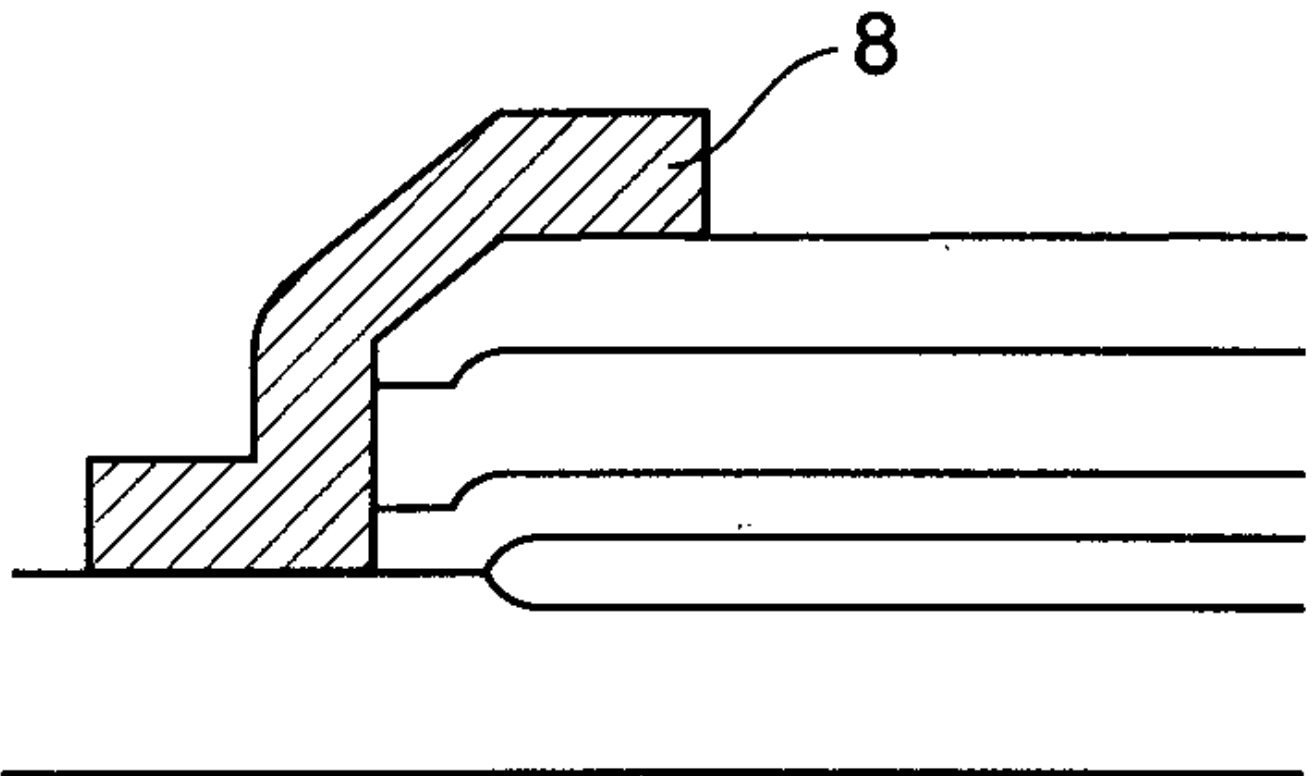
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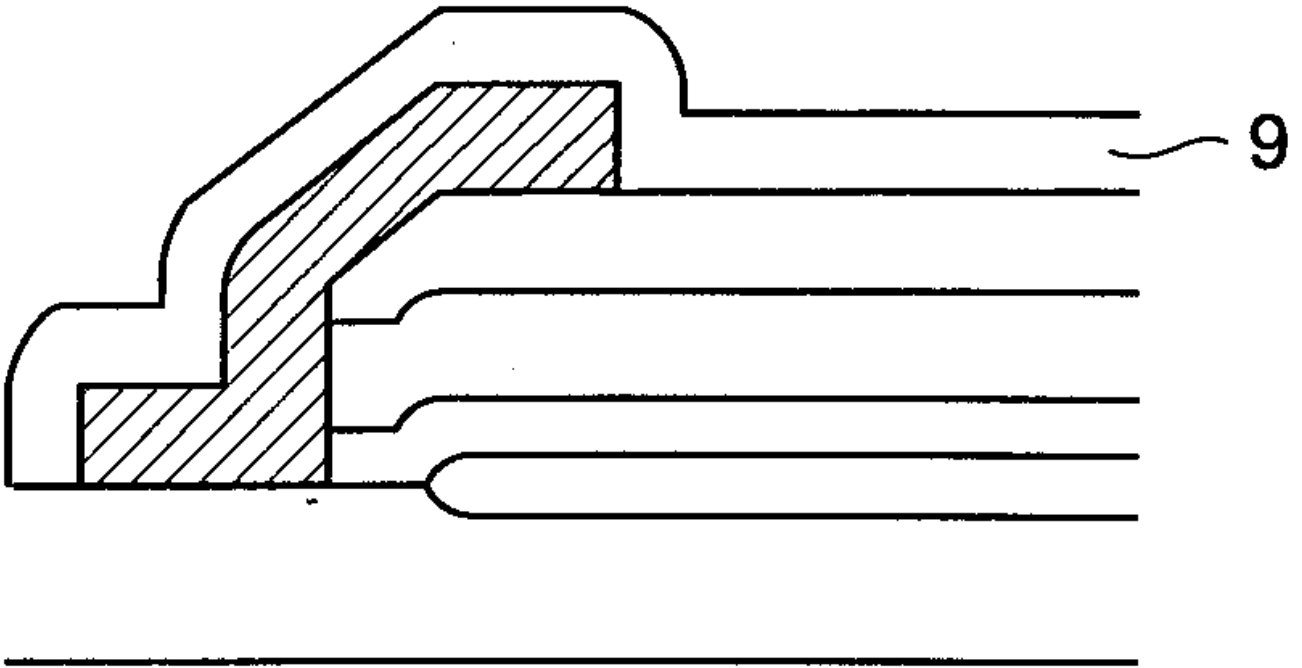
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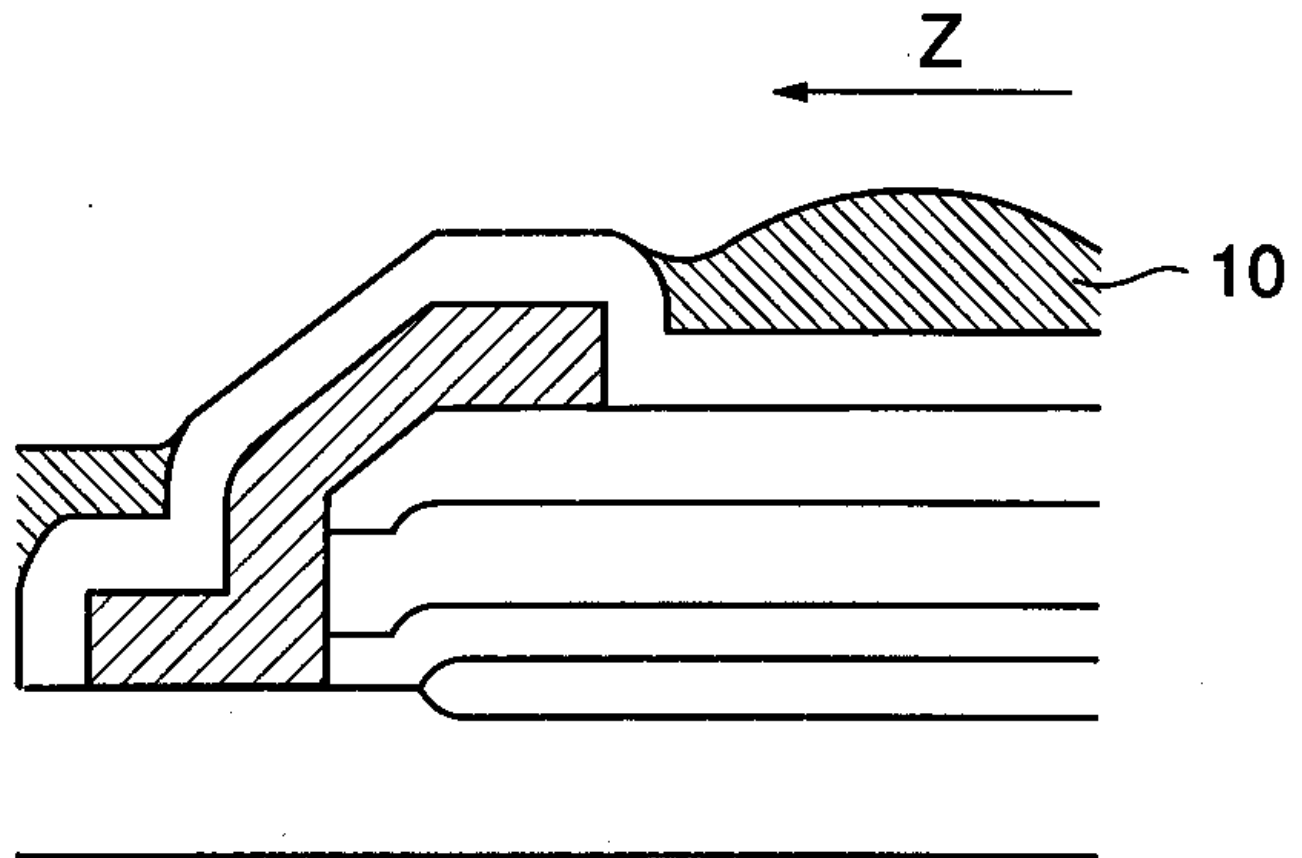
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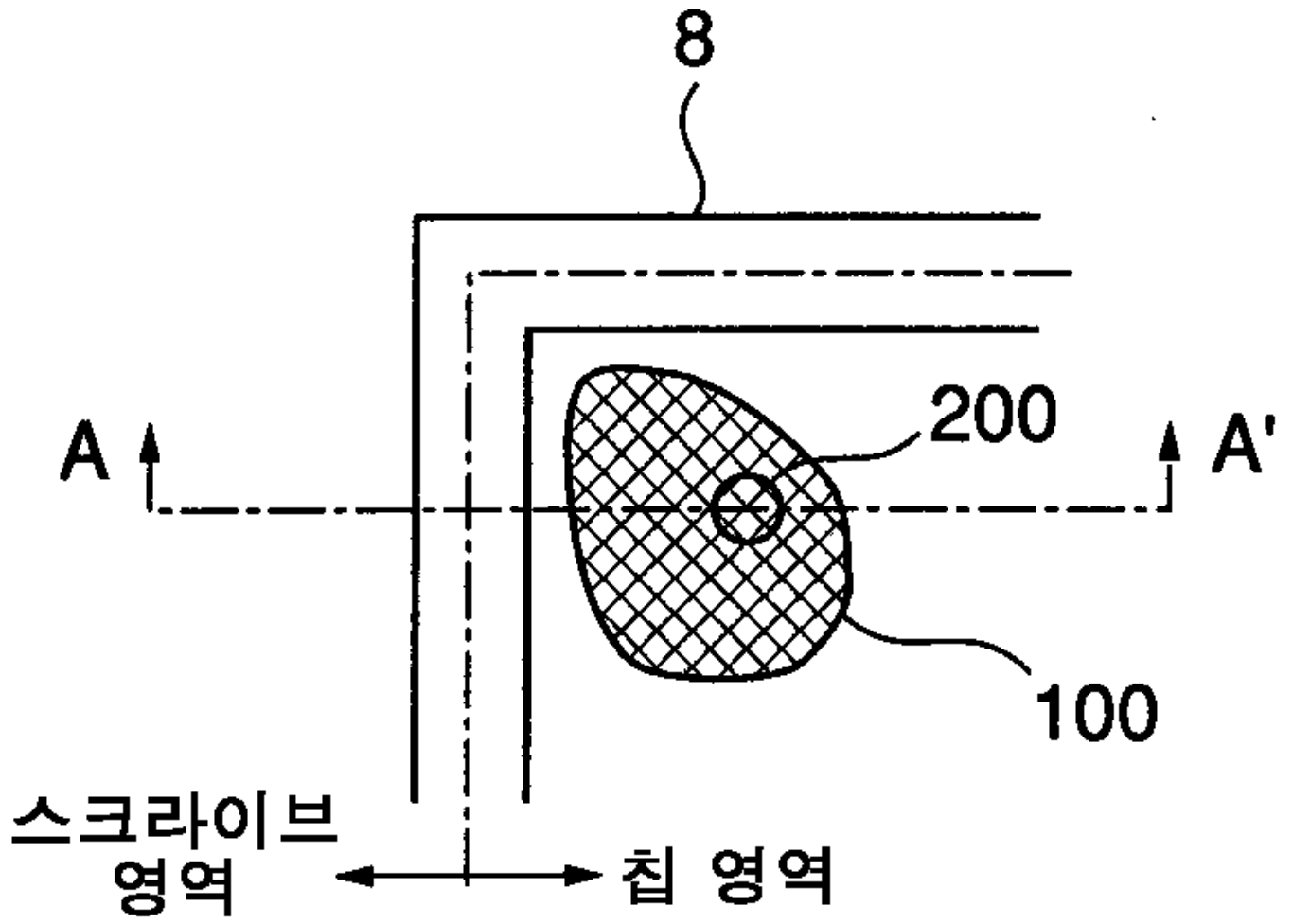
4g



4h



5a



5b

