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(B1)

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(24) 2001 05 21

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(21) 10 - 1992 - 0013069 (65) 1993 - 0003271  
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(30) 91 - 207407 1991 07 23 (JP)  
91 - 207408 1991 07 23 (JP)  
91 - 207409 1991 07 23 (JP)  
91 - 208444 1991 07 24 (JP)  
91 - 208445 1991 07 24 (JP)

(73) 가  
5 3 6  
가 가  
가 가  
가 가 72

(72) 가  
가 1 - 71, 202  
가 67 - 27 - - 103  
가 6 - 31 - 27 - - 가 101  
가 가 1 - 16 - 3  
가 가 7 - 1 - 36  
가 1621 - 3 - 205  
2 - 17 - 28  
가 308 - 1

(74)

:

(54)

(10)

가

1

[ ]

[ ]

1

2 1

3 1

4 E<sup>2</sup>PROM (10 )5 1 E<sup>2</sup>PROM 가 가

6(a), (b) 1

7 2

8 2

9 2

10 2

11(a) 11(d) 2

12

13

14

15

16

17

\*

1, 40 : 12 : 1

14 : 2 16 :

22 : 38 :

182 : 192 :

196 :

11

, , , ( )가

1

, (40) 가 , 가 ,  
(40) (10) 가 (42) 가 (42)  
(46) . (載置) (42) (46) (380kHz 13.56MHz),  
(46) (42) (44) (46) (42)  
RF (44) (10) (10)

$$\begin{array}{cccccc}
 (38b) & & 2 & & (38) & (38a) & 1 \\
 & (46) & & (42) & & (46) & (42) \\
 & . & & & & (46) & (42)
 \end{array}$$

가

(10)

$$(1) \quad (10) \quad (38) \quad \text{가} \quad (10) \quad (10) \quad ,$$

2 1  
(1) (2) 가 (2) (1)  
(3) (3a) 가 (3) (4) 가 (4) (4a) 가 ,  
(4) (10) (7) (2) (2)



, (34) (P),

( (30)) ( 1 (12)) ( (30a)) ,  
 ( (30b)) . , (10) 3

가 .

, (38) (30) (30a) 1 (12) , 가 .  
 (30) 1 (12) ,

가 .

(38) 3 , 가 ( , (10) ).

(10) (10) (10)  
 , , , (10) 가 가 .

(32) (10) (16) (凹) (22)  
 (22) ,

(22) (12) , (32) (22) SiC, 가 .  
 (22) (10) , (10) 가 (10) 가 .

l) (22) 1 (12) (10) , (10) 가 ( (10) , (10) .  
 , (10) 가 (22) (22) Cl (22) (10) 가 (22) .

6(a), 6(b) 1 (22) 6(b) (22) , 6(a) (22) (10) (22) .

, (22) , (22) (22) .

[ 1 ]

(22) 가 . . . . .  
 OM 가 . . . . .  
 가 . . . . .

E<sup>2</sup>PROM 가 . . . . .  
 (10 ) , . . . . .  
 PROM 가 . . . . .  
 , E<sup>2</sup>PROM , . . . . .  
 , (V<sub>Th</sub>) , . . . . .  
 E<sup>2</sup>PROM , . . . . .

4 E<sup>2</sup>PROM (10 ) , E<sup>2</sup>PROM 가 . . . . .

4 A - B (V<sub>Th2</sub>) , . . . . .  
 (V<sub>Th</sub>) (= V<sub>Th2</sub> - V<sub>Th1</sub>) . . . . .  
 가 . . . . .

4 (38) , S N 4 (10 ) . . . . .  
 . . . . .  
 . . . . .

, . . . . .  
 가 . . . . .  
 (22)

5 . . . . .  
 , . . . . .  
 가 . . . . .  
 (10 ) A - B ( . . . . .)

5 . . . . .  
 , . . . . .  
 V<sub>Th</sub> . . . . .  
 V<sub>Th</sub> 가 . . . . .  
 2[V] . . . . .  
 V<sub>Th</sub> . . . . .  
 8[V] 가 . . . . .  
 . . . . .  
 . . . . .  
 (22)

7 2  
 3 1

8 . . . . .  
 . . . . .  
 2가 (32C) 1 (32) (32b) . . . . .  
 (22) . . . . .  
 (32C) . . . . .  
 (16)

(22) 1 . . . . .  
 (22) . . . . .  
 SiC, . . . . .  
 가 . . . . .  
 . . . . .  
 (22) . . . . .  
 (12) . . . . .  
 1 . . . . .  
 (12) . . . . .  
 (10) . . . . .

, 2 1 . . . . .

11(a) 11(d) 2 (22) 11(b) (22) . . . . .  
 (22) (10) . . . . .  
 . . . . .  
 11(c) (22) (22a) (22b) . . . . .  
 . . . . .  
 . . . . .  
 . . . . .  
 11(a) (10) . . . . .  
 . . . . .  
 . . . . .

(22a) (10) , (10) . 11(d)  
(22) 7 8 2 .

$$(22) \quad , \quad (22) \quad (22)$$

[ 2 ]

(22) (10) , 2 ,  
11(d) (22) .

예 청 조건	
압력	75 mTorr
가스 유량	100 SCCM
가스	C $\ell_2$
RF 주파수	13.56 MHz
RF 파워	0.39 W/cm <sup>2</sup>
자장	120 gauss

9 (100 ( mm) ,  
 ( nm/min) .

186mm( , 8 d=18mm) (22) (10)  
, . , (10) 256.7nm/min ,  
, ± 10.7% .

200mm ( , d=25mm) (22) 211.2nm/min ,  
 $\pm 6.4\%$  . 186mm 14mm (22)

220mm( , d=35mm) (22) 198.7nm/min ,

250mm ( , d=50mm) 185.3nm/min ,

(22) , (10) , ,  
 (22) 가  
 (22) 가 . .  
 $\pm 10\%$  ,  $\pm 7\%$   
 $\pm 7\%$  (22) (10) 130~150

[ 3 ]



CVD

가

(2) ( 2 )

(100)

12

17

$$, \quad 2 \quad (112) \quad , \quad \quad \quad \quad \quad (114) \quad , \quad \quad (116) \quad .$$

1 (110) , 1 (110) 가 (180)  
 (182) 가 (118) 2 1 (120,120) , 1 (120,120) 2 (122,122)  
 (120,120) . , 1 (110,110) (180)  
 . , (180) . , ,

$$2 \quad (112) \quad 1 \quad (110) \quad , \quad 2 \quad (112,112) \\ \text{가} \quad \quad \quad 1 \quad (110,110) \quad 2 \quad (122,122) \quad 2 \quad (122,122)$$

(114) 2 3 (124,124) , 3 (124,124) 2 (112,112) , 3 (124,124) 2 (112,  
 112) , (114) (126) (128) 가 (126) 가 .

$$\begin{array}{ccccccc}
 (116) & 13 & & 1 & (110,110) & 2 & (120,120) \\
 (112,112) & & 2 & (122,122) & & , & (120,120) \\
 2 & (122,122) & & . & (116,116) & 1 & (120,120) \\
 (136,138) & & . & & & & 2
 \end{array}$$

(142) (140) (148) (150) (116) (146)  
 (152,154) , 1 (120,120) (144) (156,158) , (146)  
 (154) (144) (156) (160,162) 가  
 . , (146) (152,154) , (144) (156,158)  
 (148) (150) (146) (160) (144) .

, (140) 1 (120,120) 16  
 (156) (148) (150), (144) (162), (144)  
 (144) (158) , (144) , (144) (144)  
 , 1 (110,110) . , (116,116) 15  
 (148) (150), (146) (160), (146) (154)  
 (146) (152) , (146) , (146) , (146)  
 (136,138) 2 (122,122) , 2 (112,112) ,

, (146) (152) (144) (156) 2 , 2  
 (152,156) 가 (164)

, 1 (110,110) (118) (118a) (166) 가  
 , (166) (168) (170) (172)  
 (170) (18) (114)  
 . , (118) (182) (190) 가

(144,144) , (146,146) , (118) (118a) 5  
 (192) (144), (188), (182) (192) (194) (194)  
 (192) (144), (146) (118) (96) (184,186,190)

(100)

, (2) 가 (114) (12  
 6) 가 (140) (148) (150), (12  
 (162), (156,158) (144,144) 1 (110,110) 1 (1  
 120,120)

, 1 (110,110) , (140) (148) (150), (160), (1  
 54,152) (146) , (146) (112,112) (133,1  
 38) 2 (122,122) , 2

2 3 (124,124) (114) , 가  
(116) ,  
가 가 ,  
(140) 4 (140) 1 (120,120) (144)  
(146) 가 .

, (140) 1 (110,110) , 2 (112,112) 가 ,  
(132) (134) (134) 가  
가 .

2) , (168), (118) (114) 가 (166) (170) (118)가 (170),  
1 (110,110) 2 (112,112) (140) (114) 가

, (180),  
 44,144), (146,146), (118) (118a) 5 (192) (196) 가 (118)  
 (118a) (192) 가 (192) ,  
 (118a) (170) 1/10 가 가 . ,  
 1 (120,120) (144), (146) 4

(57)

1.

2.

1 ,

가 , 2

3.

2 ,  
가

, 1

4.

1 ,

5.

4 ,

SiC ,

6.

1 , 1  
1 ,  
가

가 ,

7.

6 ,  
ess)

(recess) 가

(rec

8.

7 ,  
2

가 ,

9.

6 ,  
2

,

가 ,

10.

9 ,

가 ,

11.

1

12.

11 , 가

13.

11 ,

14.

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16.

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17.

15

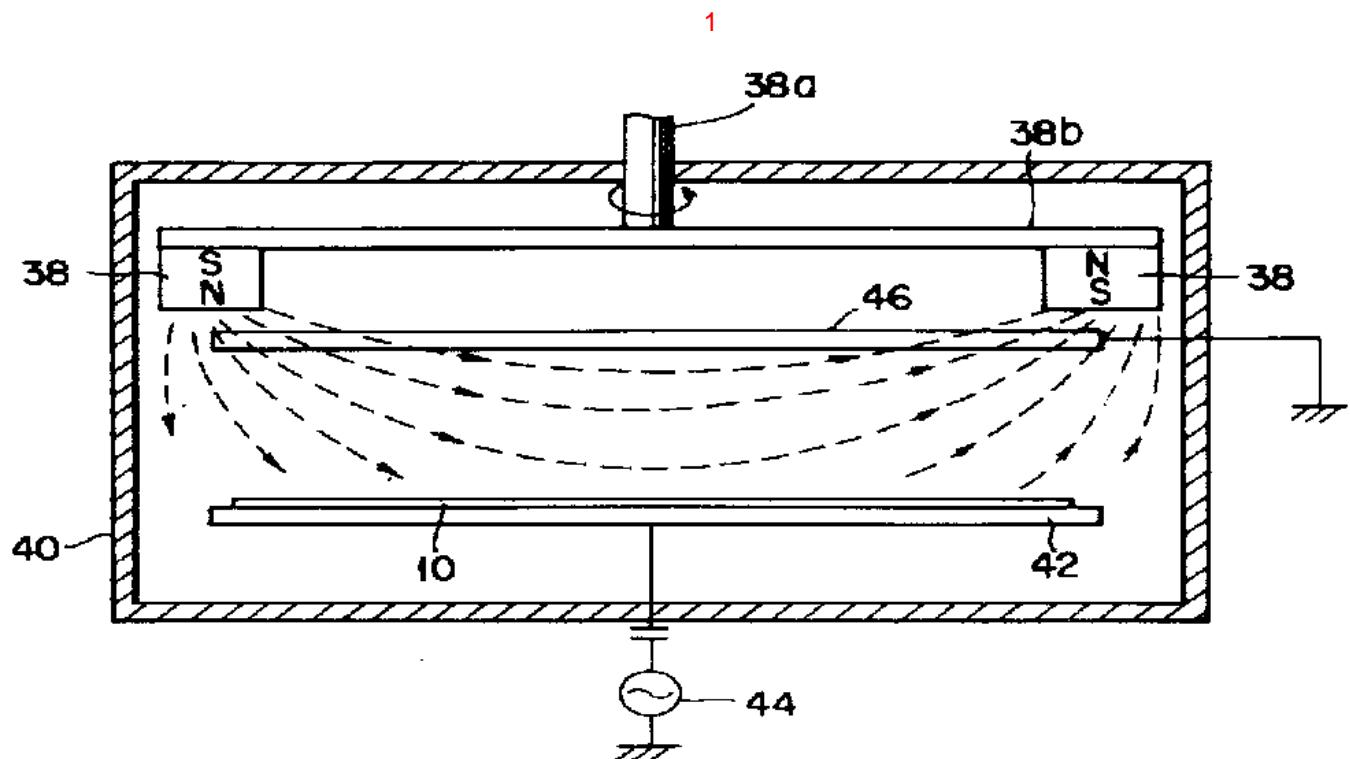
18.

14

19.

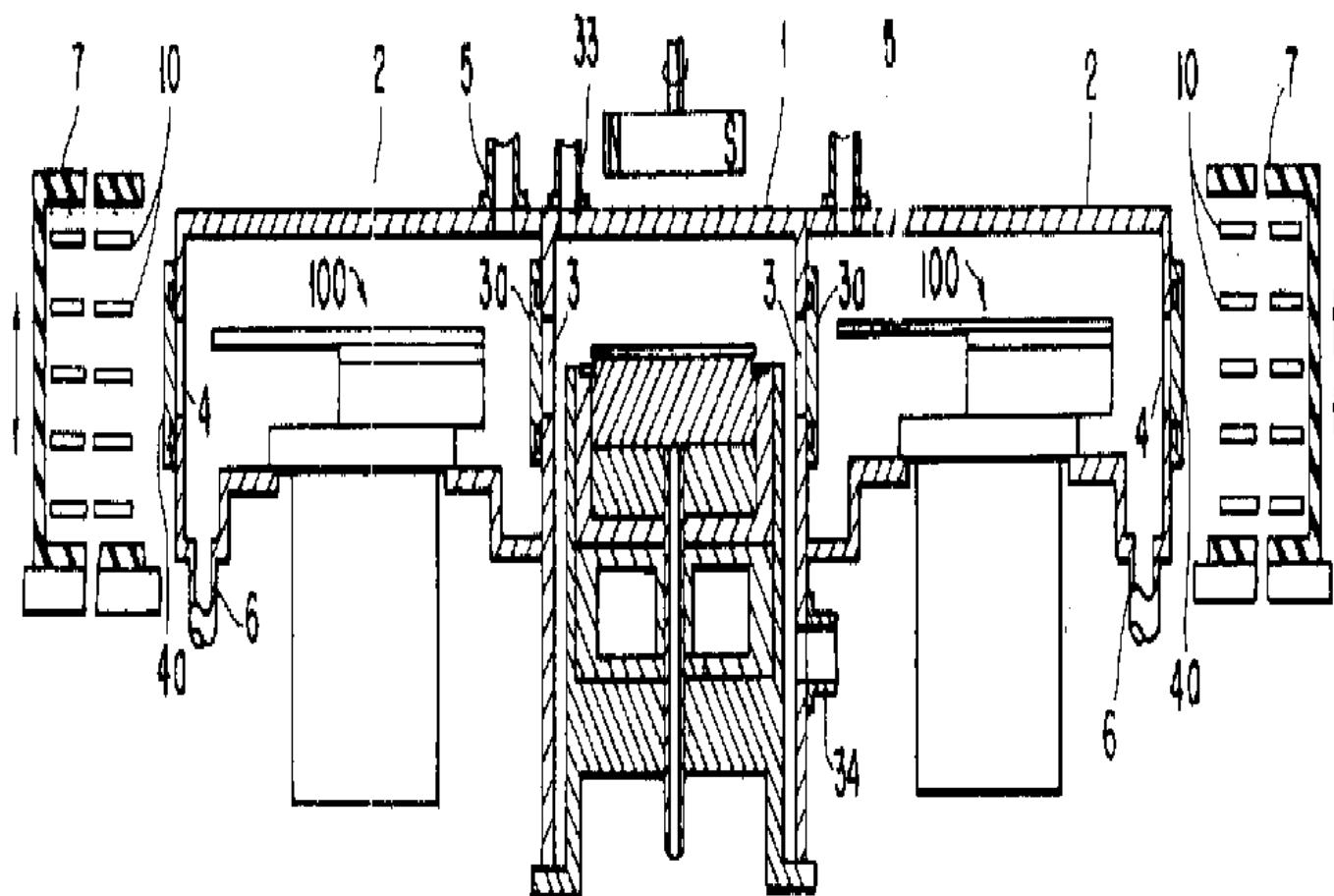
18

SiC

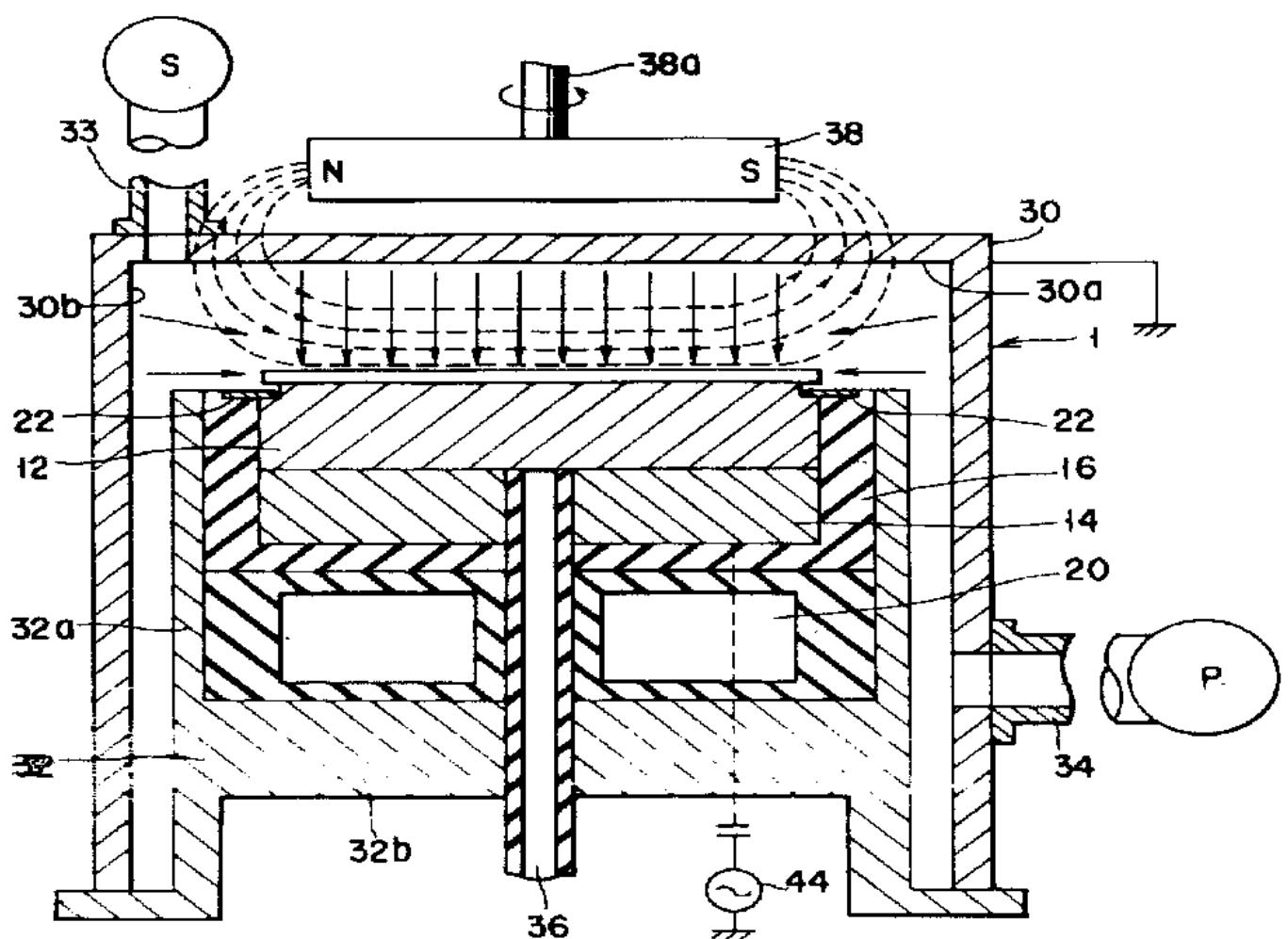


( 종래 기술 )

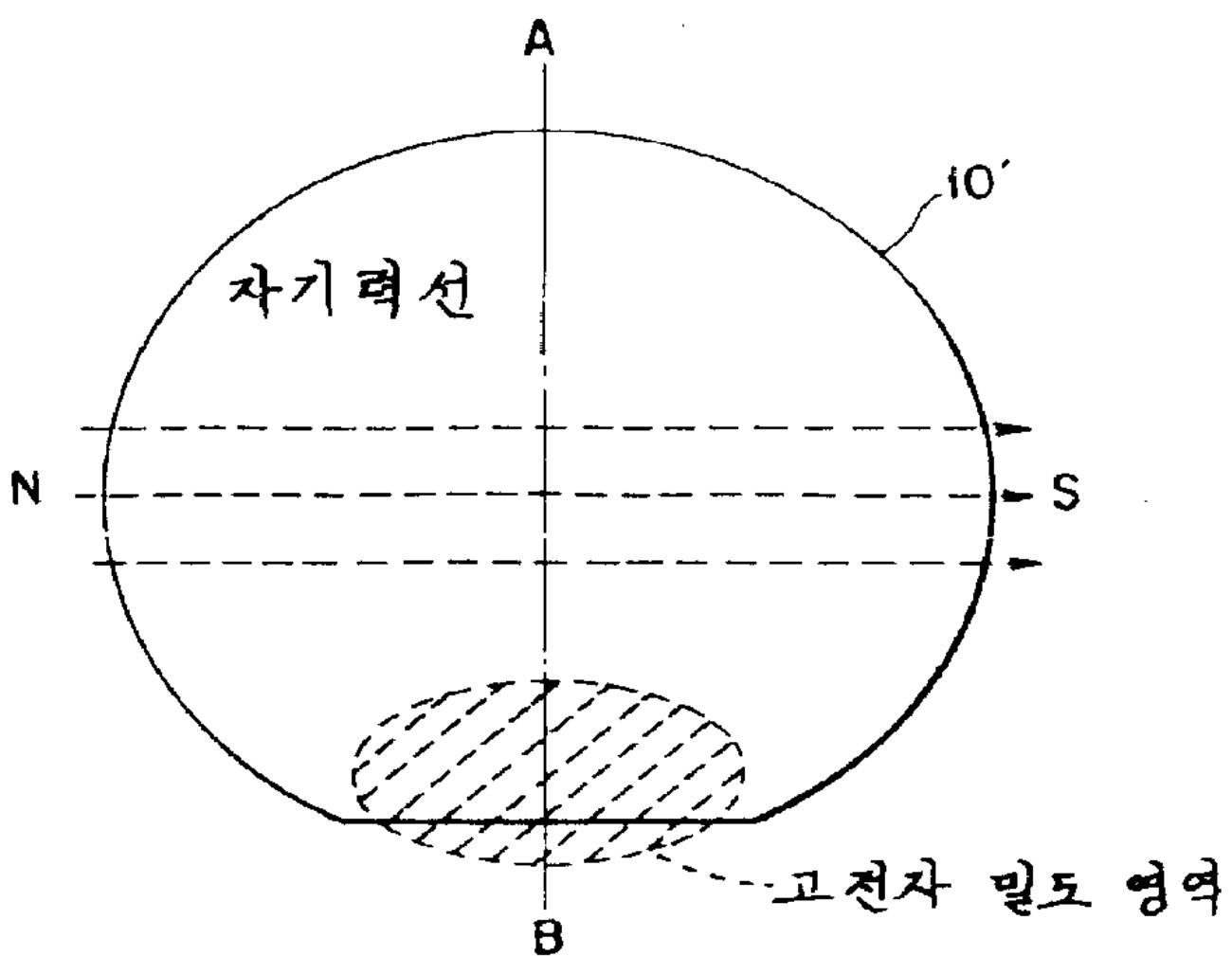
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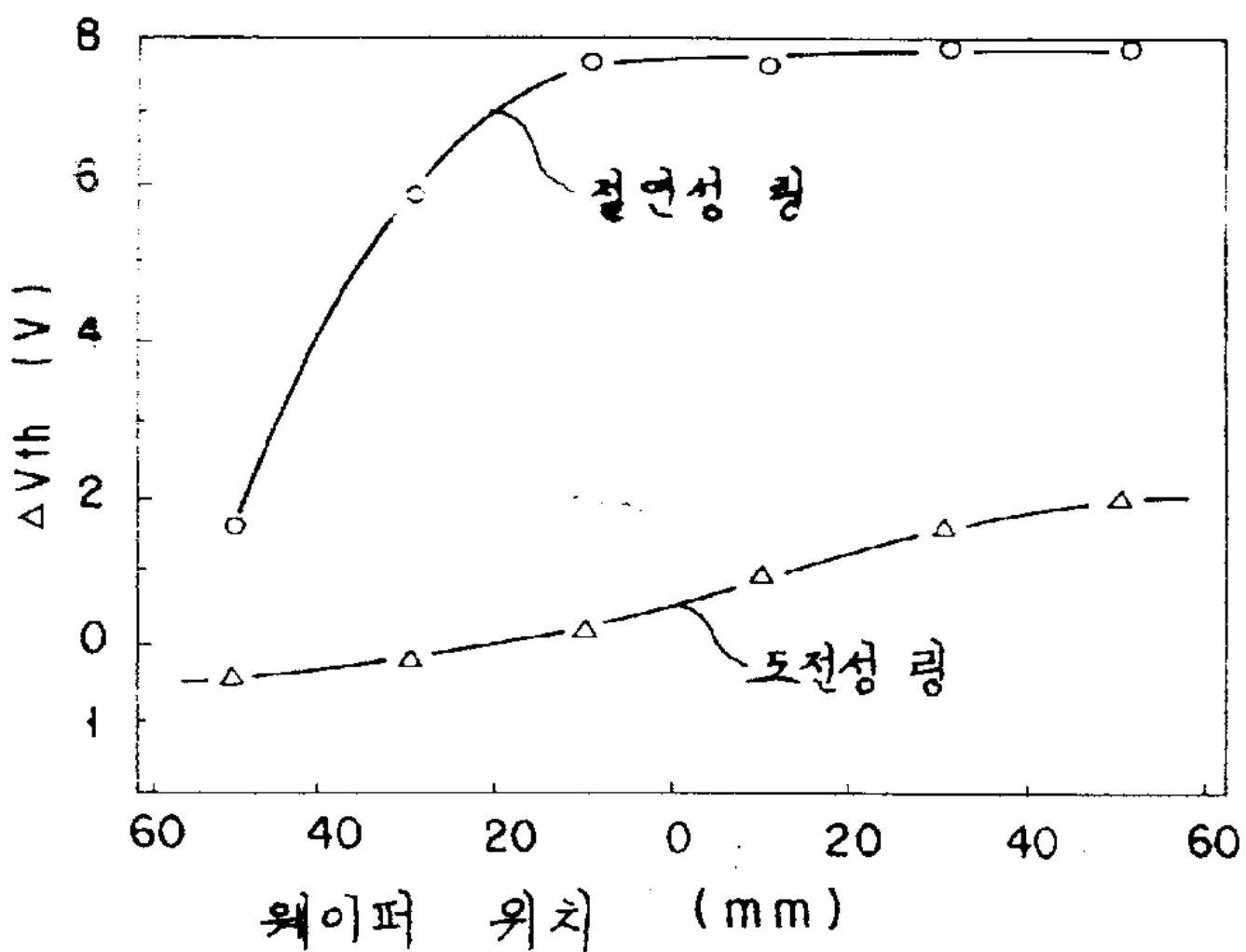
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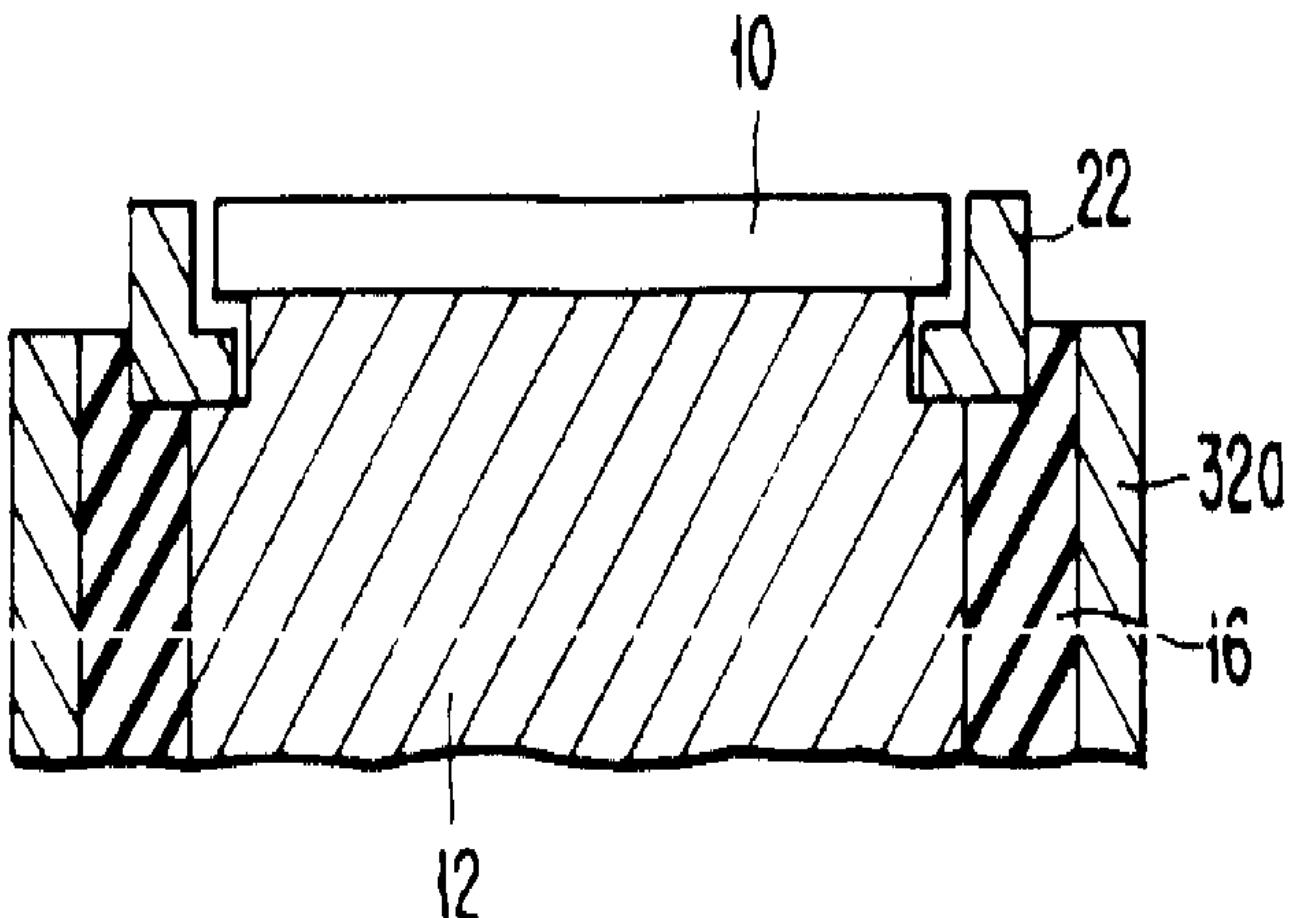
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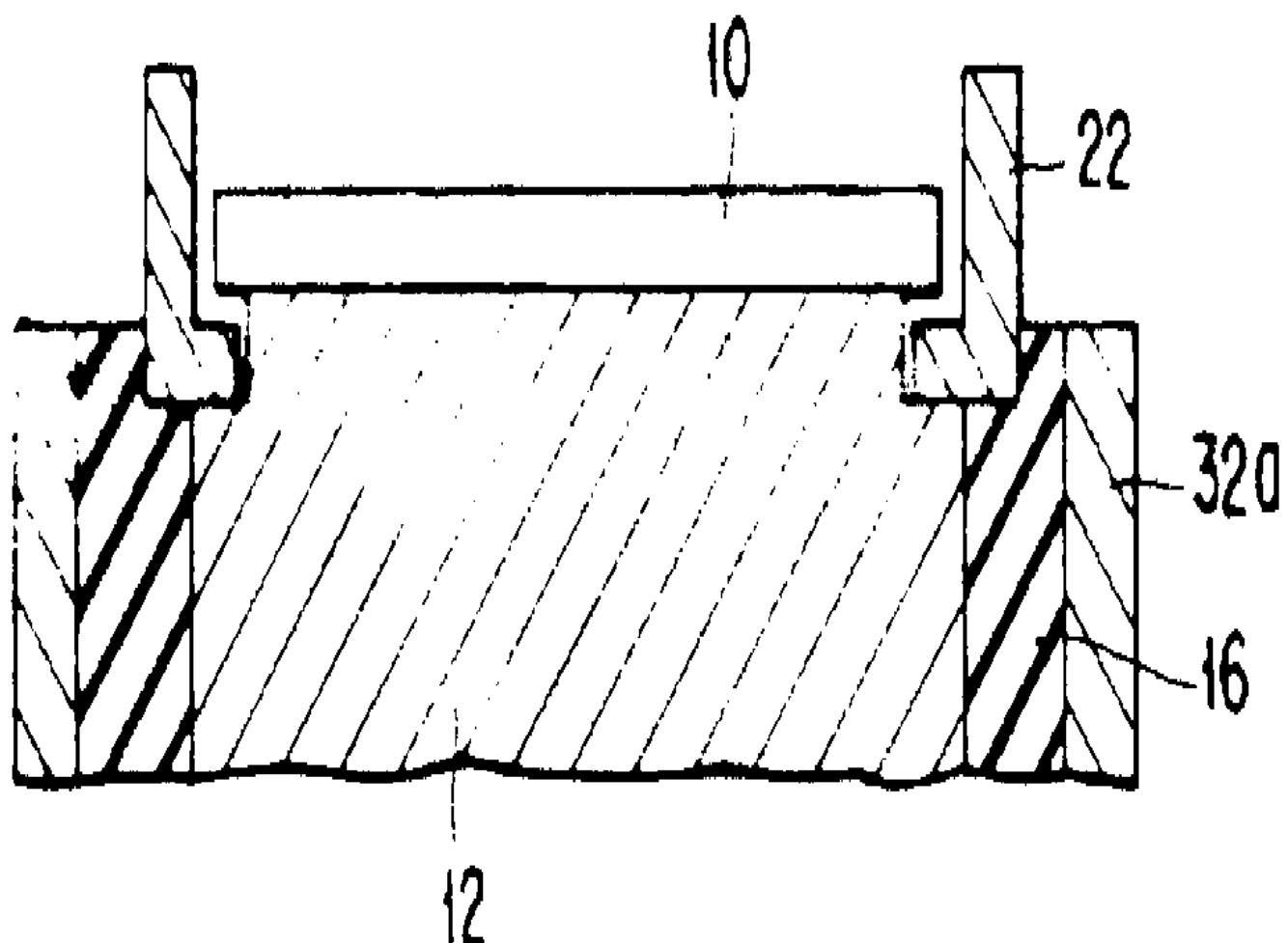
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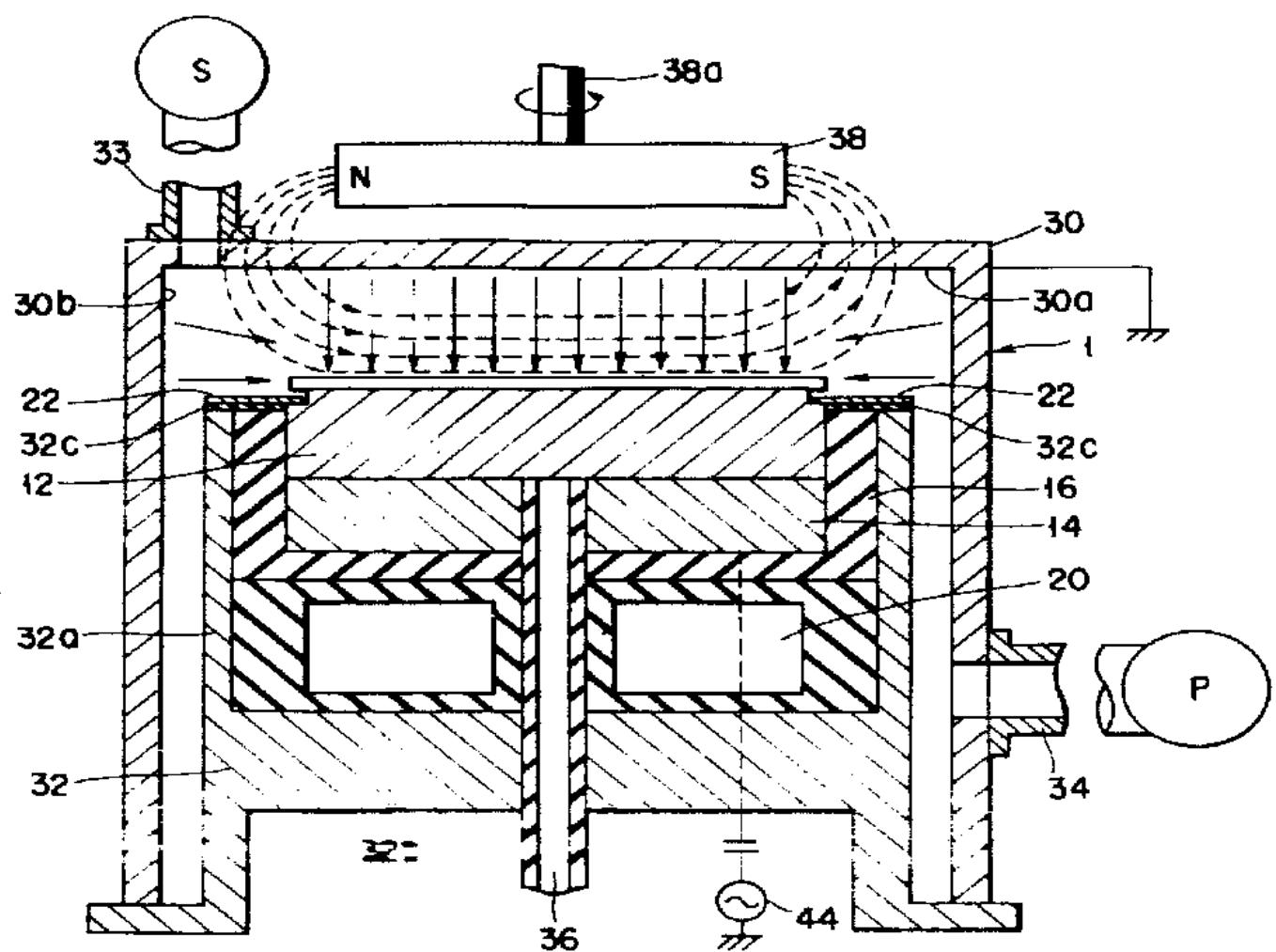
6a



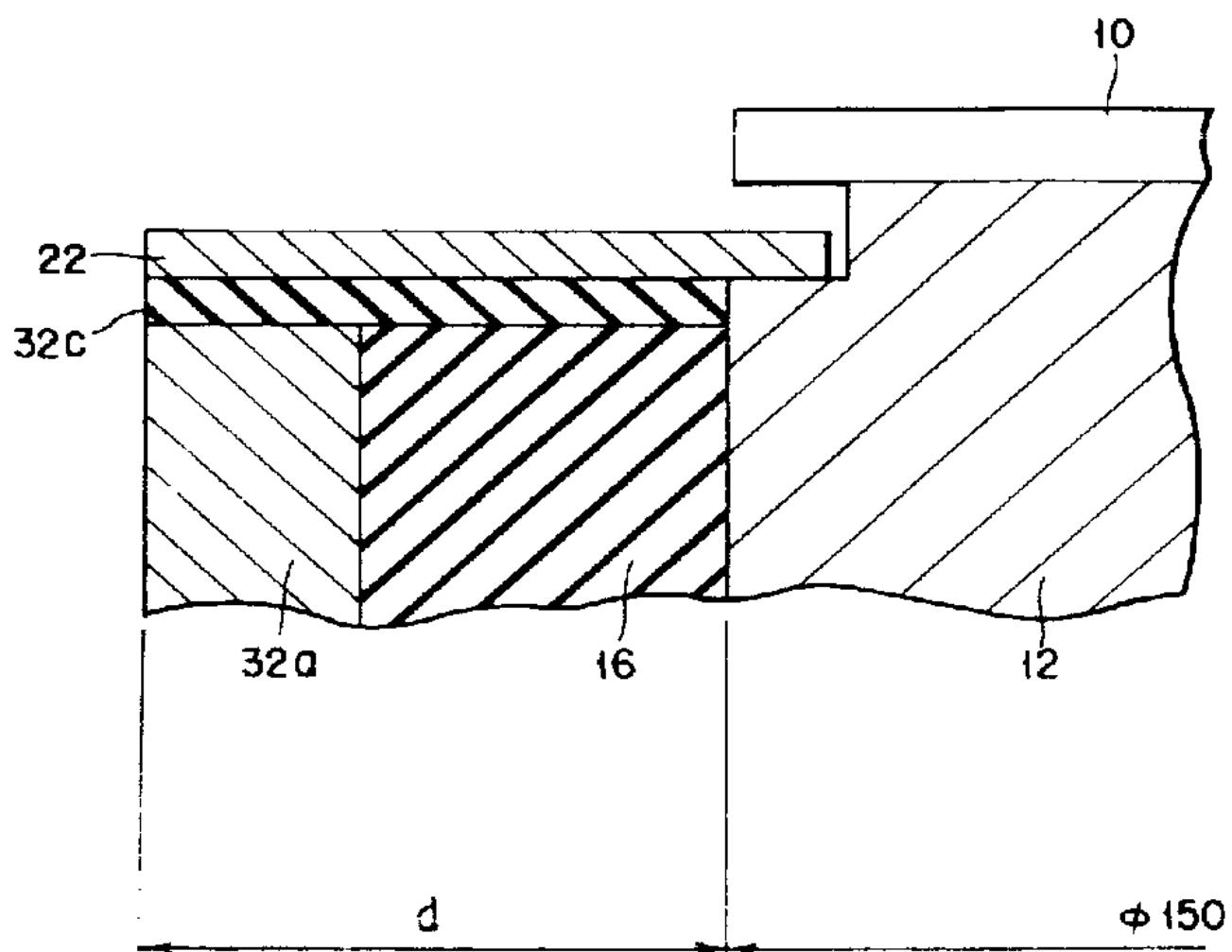
6b

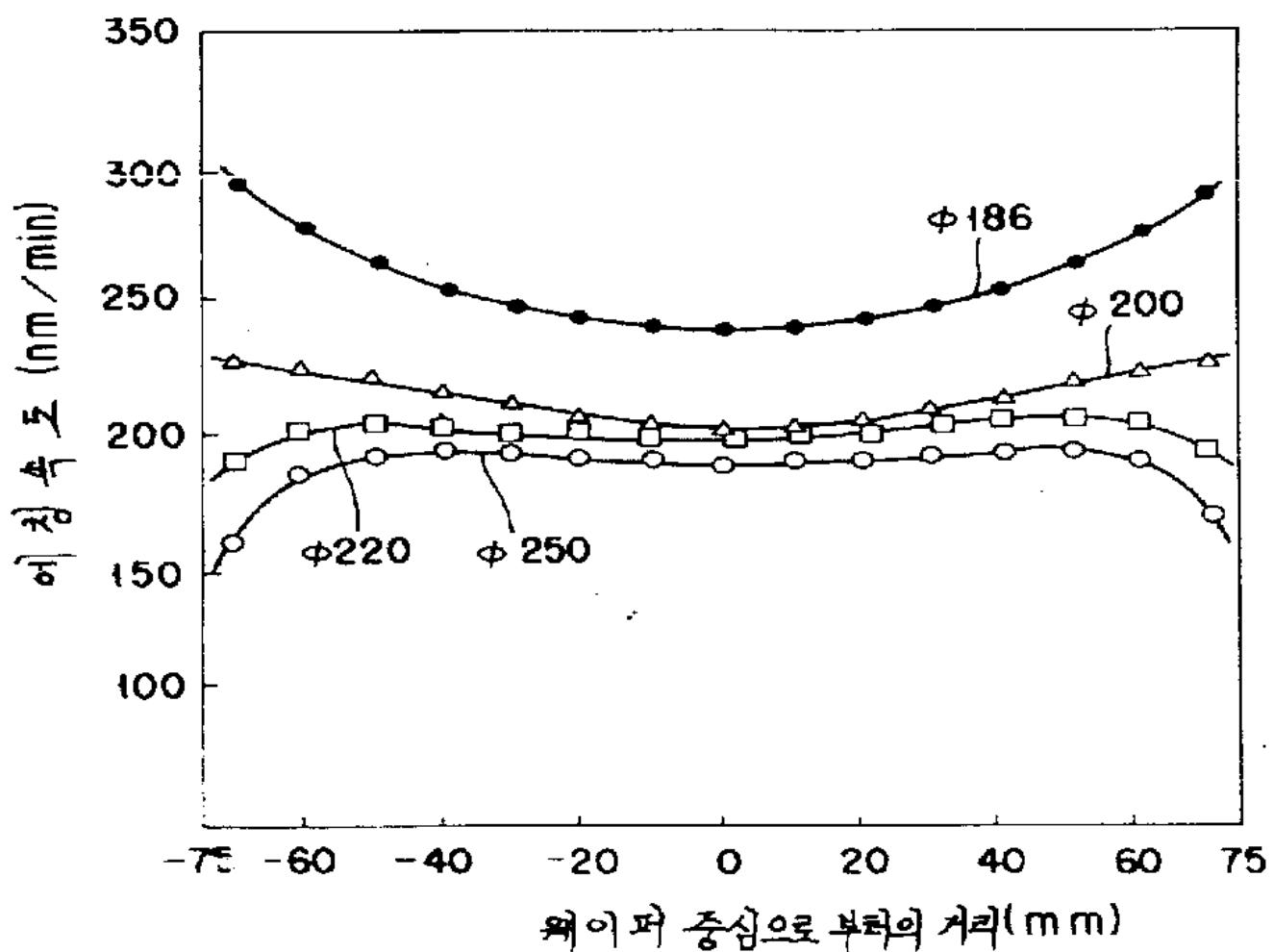


7

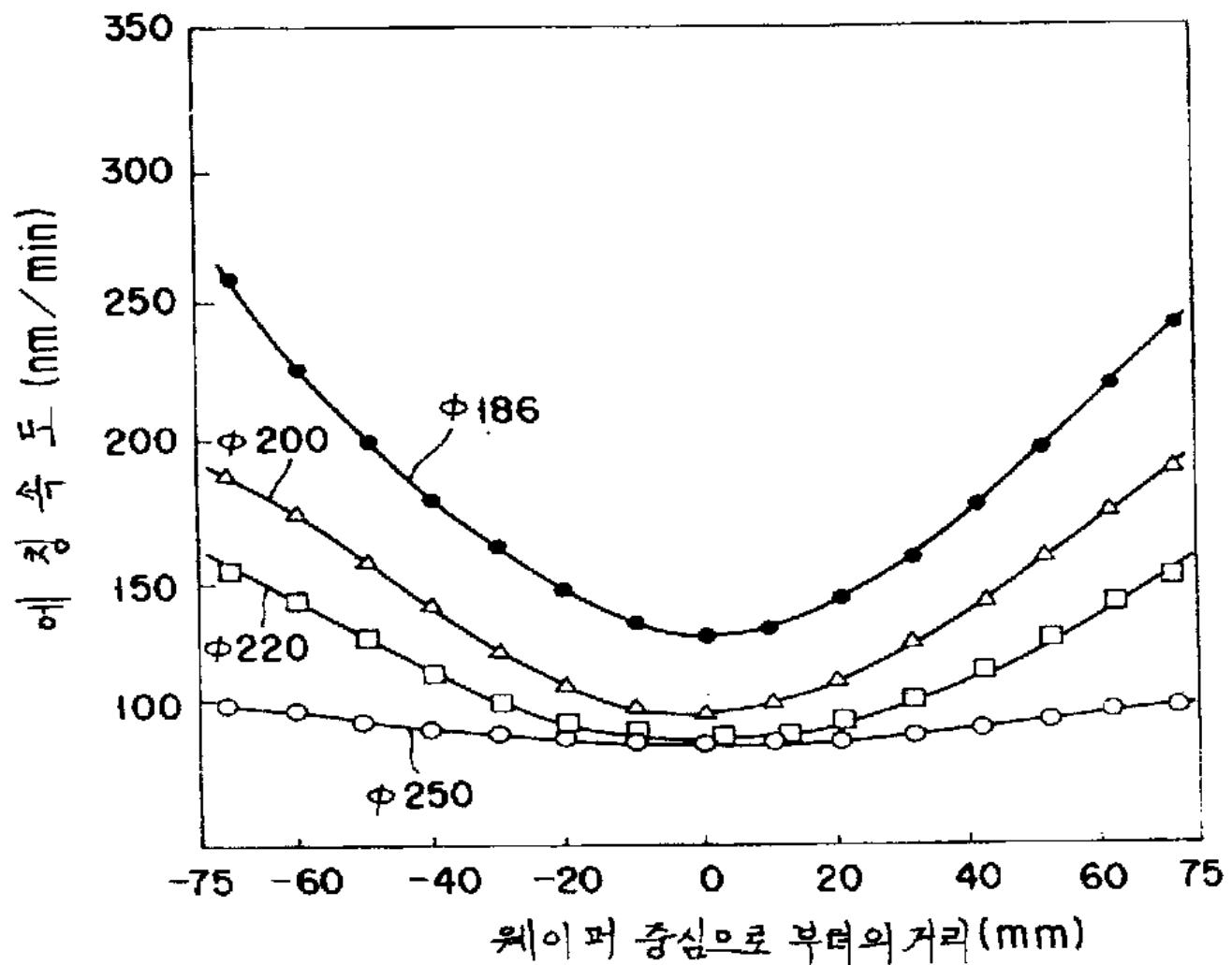


8

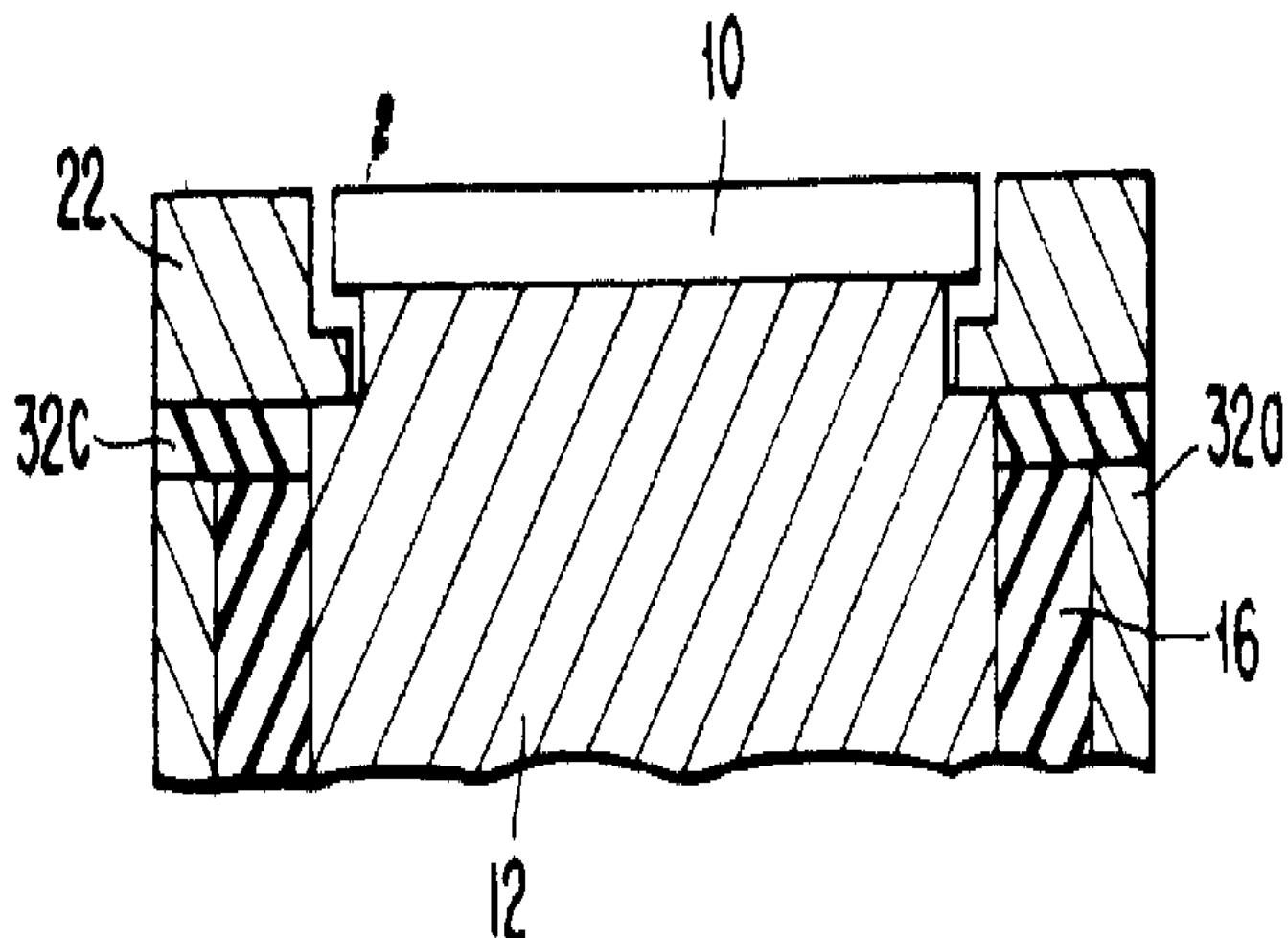




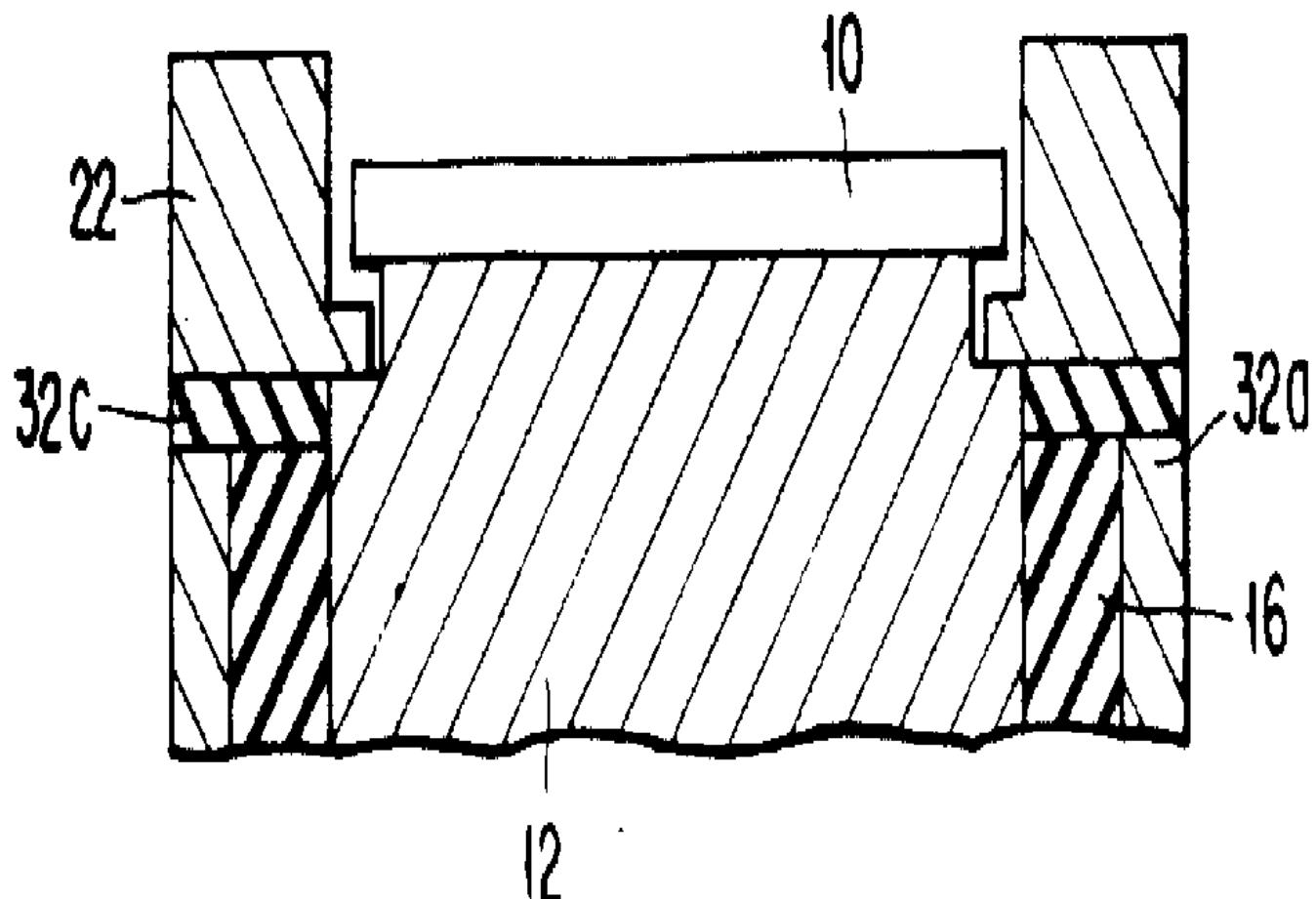
10



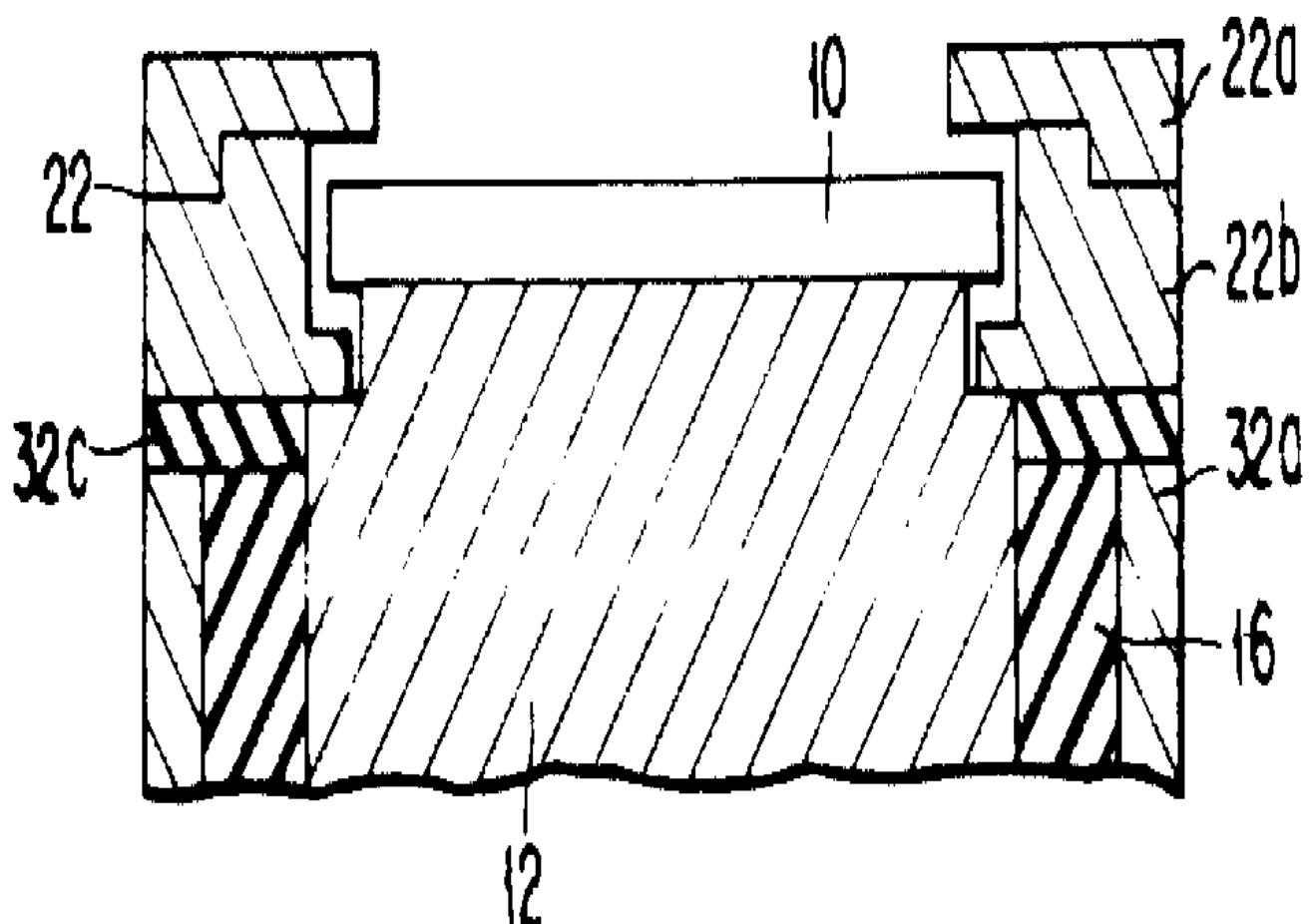
11a



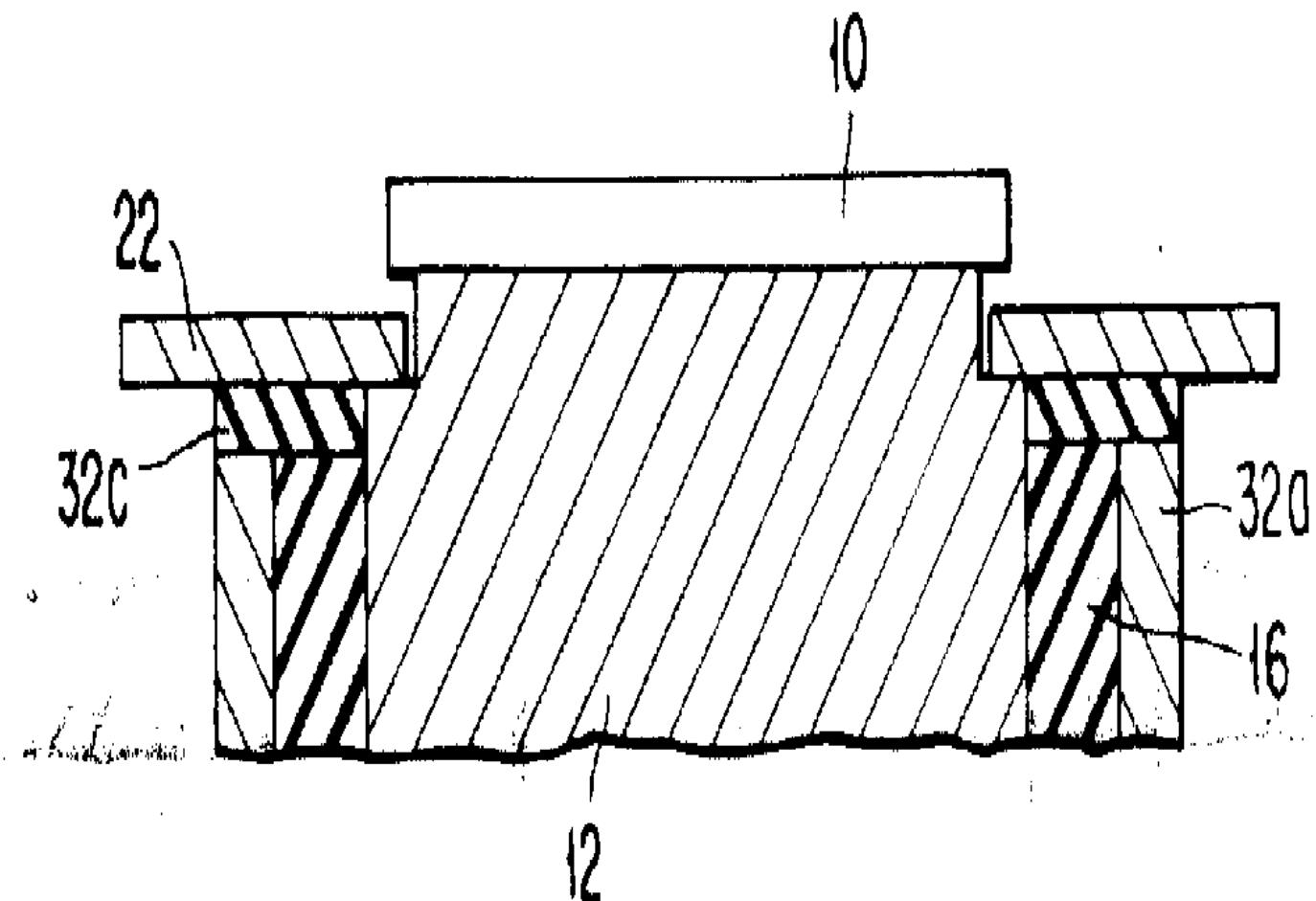
11b



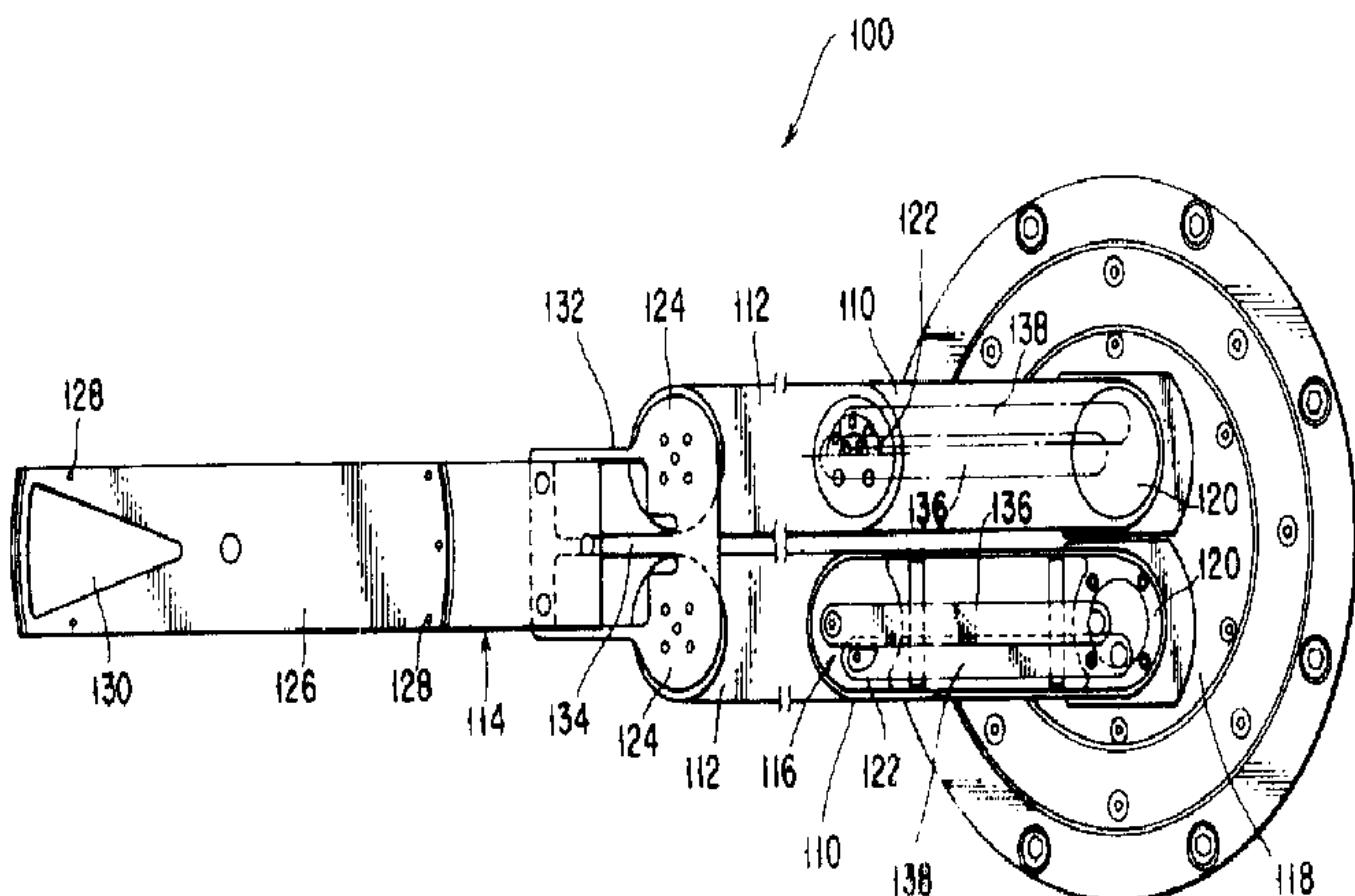
11c



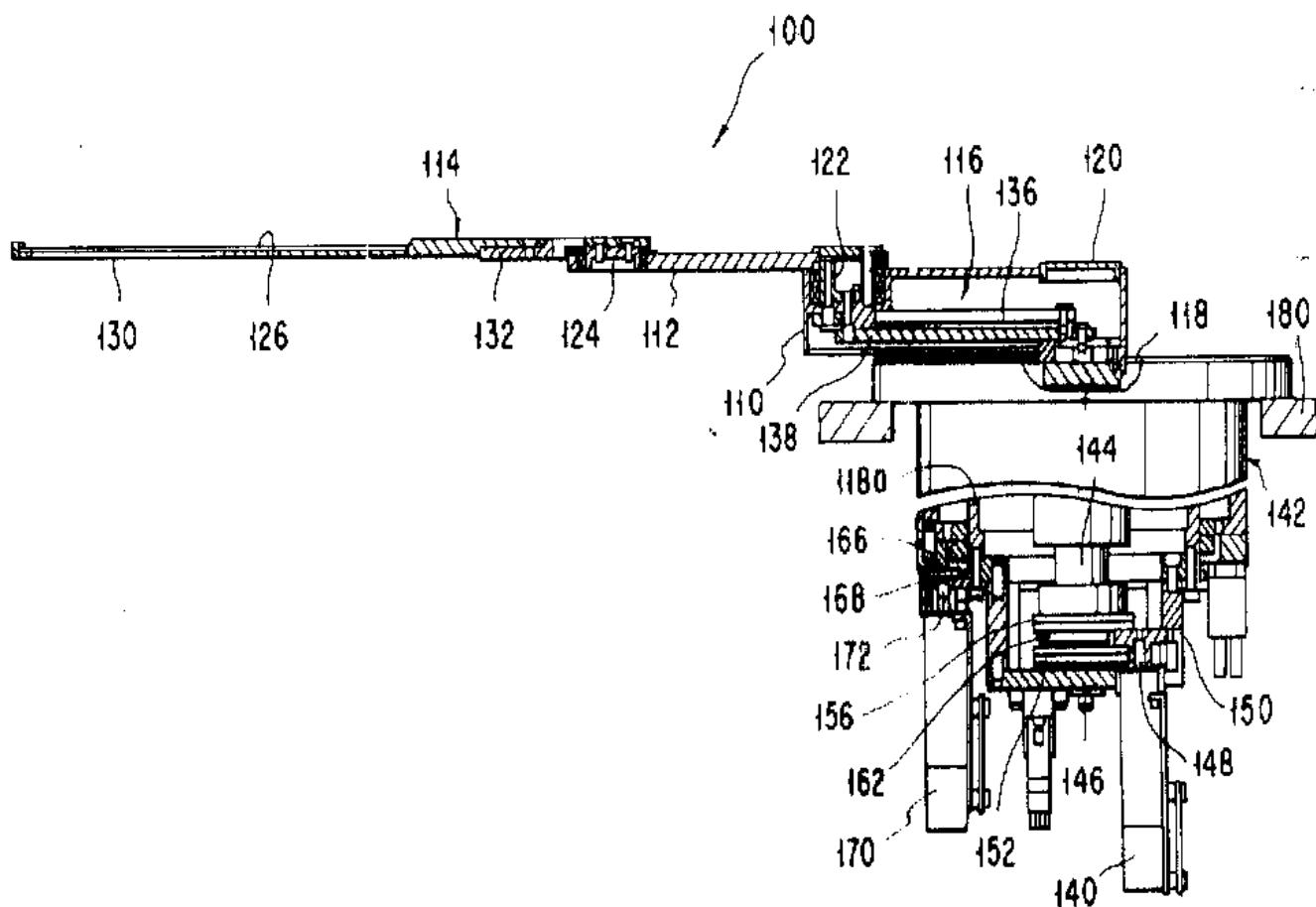
11d



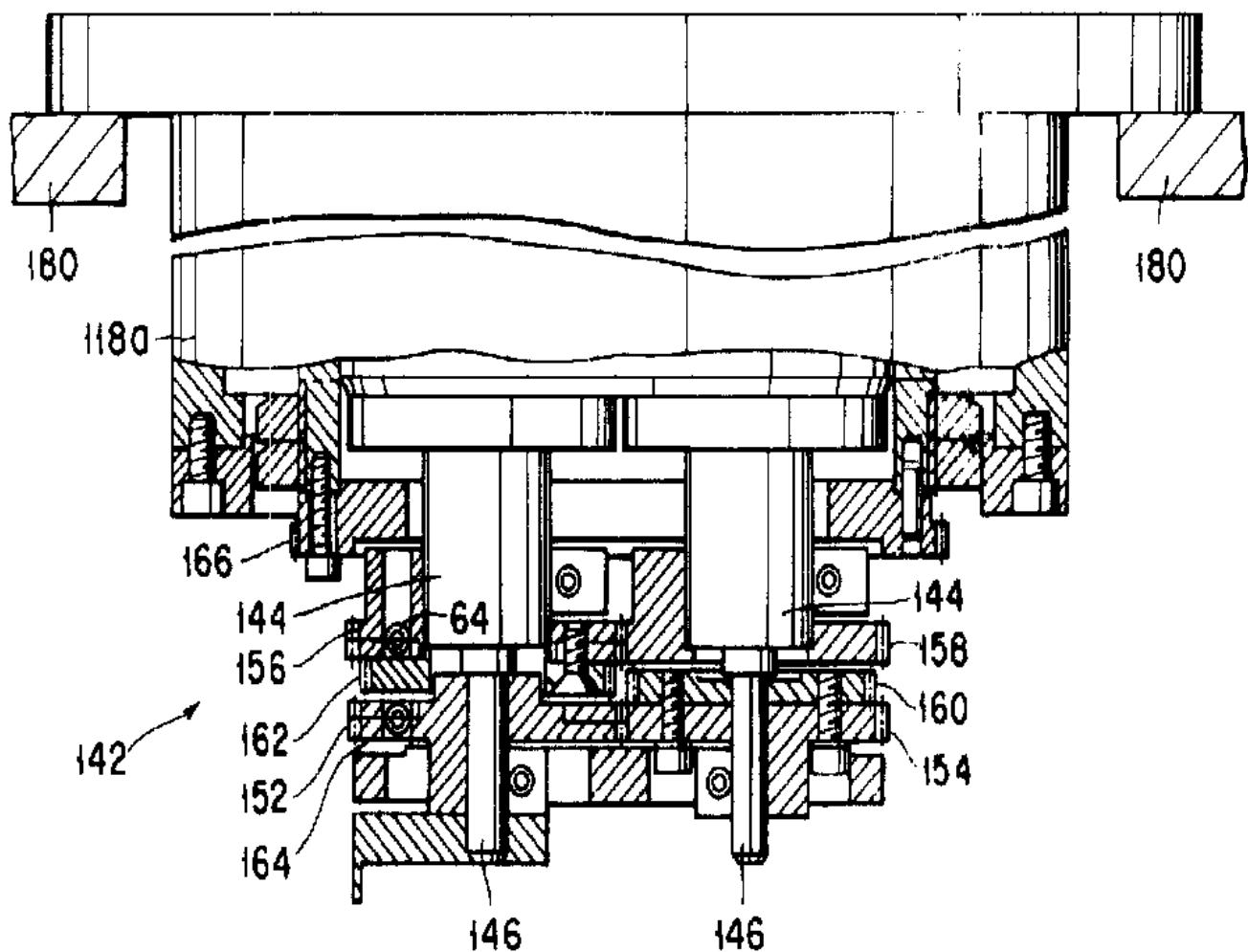
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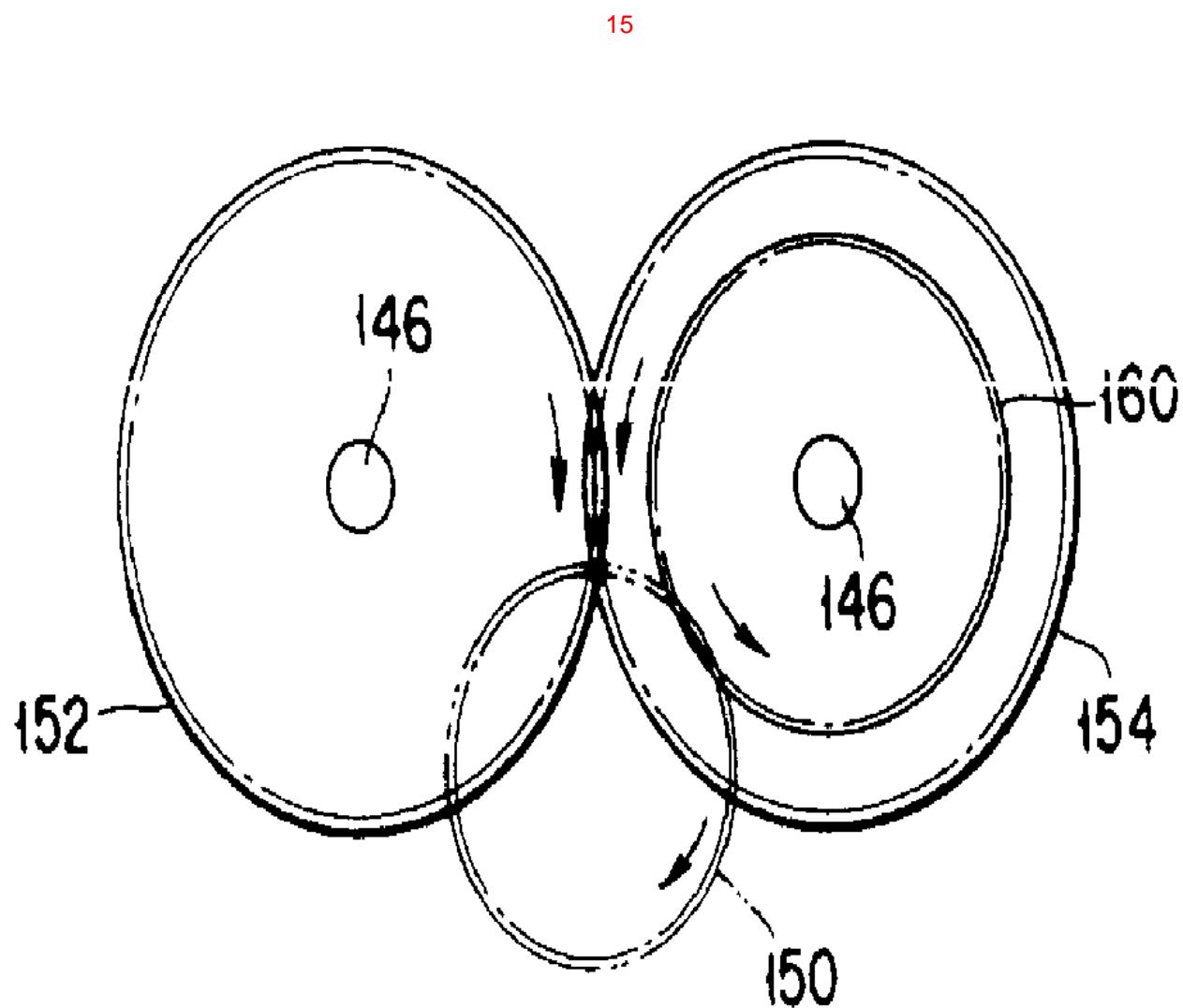


13

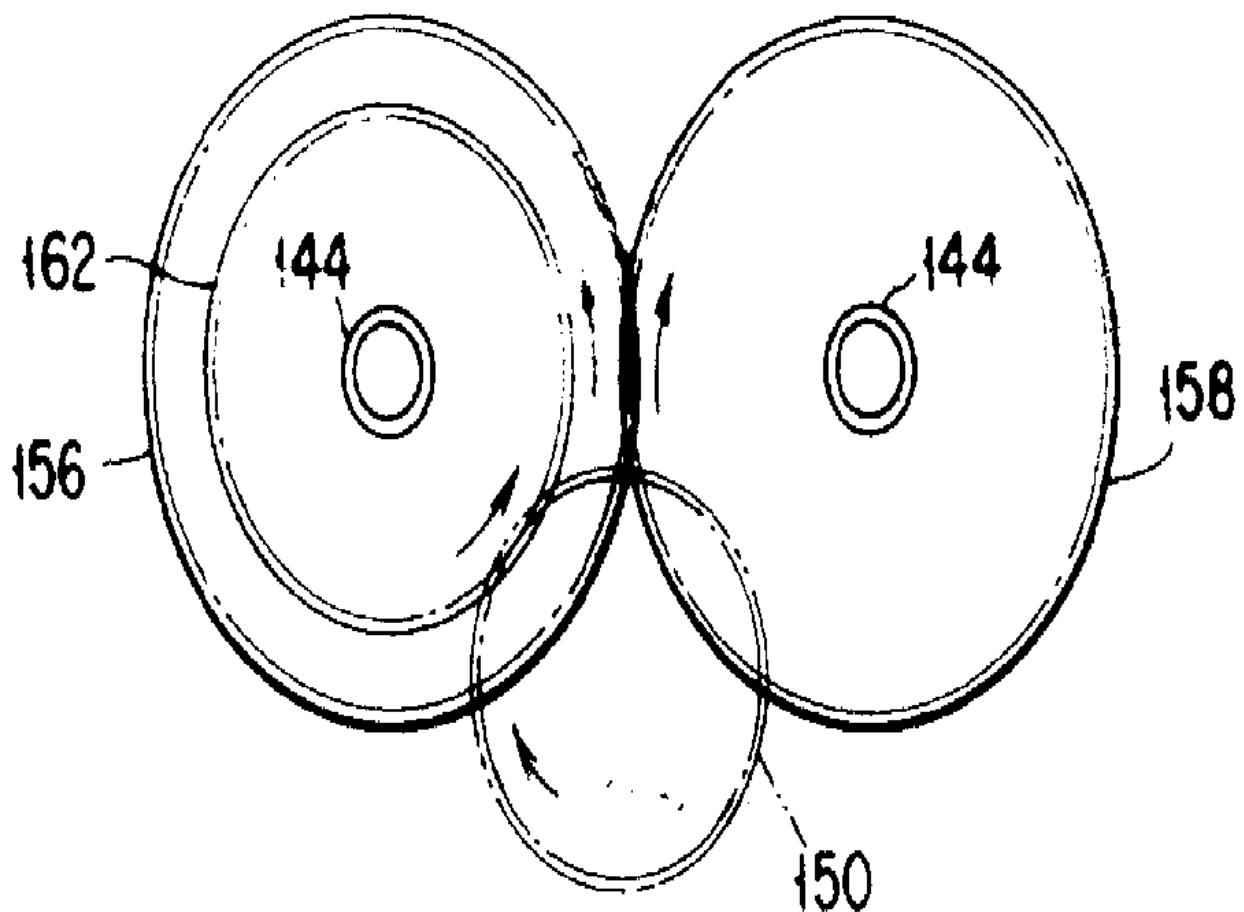


14





16



17

