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(73) 가 가 1 1 1

(72) 가 가 50 가 가

가 가 8 가 가
가 가

(74)

:

(54) , , ,

(40) 가 2 가 1 (41) 1 (32) (41) (40) ,
(44) 가 1 (44) 2 , (44) (32) 1 (41) (41) 2
(44) (41) 2 (44) (43)

3

1 가

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

* *
 20: 21:
 22: 23:
 24: 25G:
 25B, 25R: 26:
 27: 28:
 29: 30:
 32: 32-1: 1
 32-2: 2 35: 가
 40, 50, 60: 41, 51, 61: 1
 42, 52, 62: 42-1, 52-1, 62-1: 1
 42-2, 52-2, 62-2: 2 43:
 43A: 1 43B: 2
 43C: 3 44, 54, 64: 2
 45, 55, 65: 46, 56, 66:
 47: 53, 63:
 54P: 54A: 1
 54B: 2 54C: 3
 71A, 71B, 72A, 72B: 3

가

가

가

가

, (2)

(Joul)

(1)

가

, (3)

가
가

, (4)

가

가

가

(trimming)

가

(21) (27)가 (21) (26) (21) 3 (25B, 25G, 25R) (28)
 (21) (29)가 (29) (29)
 (H) (V) (22) (26) 3 (25B, 25G, 25R) (22) (29)가
 2 (26) (H) (22) 3 (K(B, G, R)) (Z)
 G3), 4 (G4), 5 () (G5), 1 (Gm1), 2 (G1), 2 (G2), 3 ((G6) (shield) (SC) (K(R, G, B)) (G1) 6 (G6) 1 2 (Gm1, Gm2) 가)
 3 (K(B, G, R)), 1 (G1) (V) (G6) 1 2 (Gm1, Gm2) (SC)
 6 (G6) 가 3 (G3),
 1 (G1) 2 (G2) 가 , 3 (G3),
 4 (G4), 5 (G5) 6 (G6) 가 , 3 (G3),
 m2) 가 5 (G5) 6 (G6) 1 (Gm1) 2 (G
 3 가 3 (K(R, G, B))
 , (26) (32)가 (32) (A) 6 (G6)
 tem pin) , (32) (B) 가 (35) (stem) , (32)
 (A) (B) 1 (32-1) 1 (Gm1) ,
 2 (32-2) 2 (Gm2) ,
 (26) 가 , 1 (G1)
 (K(B, G, R)) 190V 가 , 1 (G1)
 2 (G2) 4 (G4) , 800V 가
 3 (G3) 5 (G5) , 8 9kV 가
 6 (G6) 30kV (27) 가 , (21)
 (27), (28), (SC) (28) 가 , (21)
 (bulb spacer) (SC) 6 (G6) (32)
 , 1 (Gm1) 6 (G6) 가 ,
 65% 40% 가 2 (Gm2)
 2 (G2) (26) 가 (K(B, G, R)), 1 (G1)
 3 (G3), 4 (G4) (pre-focus) , 2 (G2) 3 (G3)
 5 (G5), 1 (Gm1), 2 (Gm2) 6 (G6)
 (22)
 , (32)
 (1)
 , 3 12 (32) (40) (40)
 1 (41) 1 (41) 2 (44)
 (40) (32) (45), (46) 1 (41)
 (borosilicate) () 1 (41)
 1kΩ/? (41)
 1 (41) (42(-1, -2, ...)) , (43) (42)
 (40) (47) (43)
 (42(-1, -2, ...)) , 1 (41) (4)
 2) (43) (42) (43)
 , (43) 1 (41) 2 (44) 가 1 (41)
 2 (44) , 1 (41) 2 (44)
) 2 , 2 (44) 1 (41) (43) () 가 (44)
 2 1 (41) 2 (44) 가 1

(44) 1 (42-1) 2 (42-2) 2 (44) 3 가 .
 , 2 (44) 3 1.0mm , 2
 , 3 25MΩ 가 .
 , 1 (41) 가 . , 1 (42-1)
 2 (42-2) (42-1) 2 (44) (42-2) 가 .
 , 5 -0.8mm , 2 (44) (44) Y (41) (43)
) 3 (43C) . , 1 (41) (41) (43)
 . 1 (42-1) 2 (42-2) 2 (44) 3
 (44) 2 (44) 3 2.0mm , 2
 1 (41) 3 43MΩ (42) (46)
 , 2 3 , (42-1)가 (32)
 (A)~ (32-1) (42-2)가 (32-2) , (32)
 (32-2) "R1", (32-1)~ (32-2) "R2", (32-1)~ (B)
 "R3" , (32-1) (RD1) (32-2) (RD2)

RD1={ (R2+R3)/(R1+R2+R3) } × 100
 RD2={ R3/(R1+R2+R3) } × 100

(42-1) 13 (46) 4 3 (RD1) 0.6% 가 , 2 (42-2)
 (46) (RD2) 0.4% 가 , 5
 3 (RD1) 1.2% , (RD2) 1.0% .
 , 가 . 가
 , 가 . 가
 , 가 . 가
 2 15μm , 가 1μm , 가
 , 가 . 가
 , 가 . 가
 4) 1 (41) (43) 1 (43A) 2 (4)
 , (40), 1 (41), 2 (44) (45)
 , 150 (32) , 550 700 (32) (46) (47)
 가 . (4)
 3) , 가 . 가 . , 1 (42-1)
 2 (42-2) 2 (44) 가 . (40)
 40) , 1 (41) , 2 (44) , 1 (41) (43)
) 4 2 (43B) , 2 (44) , 1 (41) (43)
 , (42-2) 2 가 (44) 가 . , 1 (42-1) 2 (40)

) 5 1 (41) , 2 (44) . 1 (41) (43)
 3 (43C) 2 (44)
 2 , 1 1 ()
 가 2 가 1 2 가
 2 가 1 3 , 2 가
 2 가 2
 , 2 1 (43A), 2
 (43B) 3 (43C) (32)
 1 ,
 가 가 가
 가 , 1 4 가 , 2 5 1
 , 1000 가 , 0 가 . 5
 , 1 2 , 1 가 3
 (2)
 , 6 12 (32) (50), (50)
 1 (51), 1 (51) 2 (54),
 (55), (56) (32) 1
 1 (51) , 1 (51) 2 (54) 1
 3) (51) (52(-1, -2, ...)) , (53) (53) (52) (52) (5)
 2 (54) 2 (54P) , (54P) (54A, 54B, 54C)
 (53) 2 (54) 1 (51)
 (54P) (54A, 54B, 54C) 가 1 (51) 2 (54)
 2 (54) (54P) 2 (54) (54A, 54B, 54C)
 (54) (54P) 0.4mm (Y) (54A, 54B, 54C)
 1 (X) , 1.0mm
 4C) (53) (54A) 2 (54B) 1 (52-1)
 3 (54C) 2 (54B) 1 (54A) 3 (5)
 2 (54B) 3 (54C) X (53) 1 (52-1)
 (53) 2 (52-2) (53) X
 (54A, 54B, 54C) (54P) (54P)
 (54P)
 , 2 (54) 1 (51)
 (54A) 6 , 2 (54) 1
 1 (52-1) (53)
 2 (54) 2 (54B) 1 (52-1) 2 (52-2)
 3 (54C) 1 (52-1) 2 (52-2)
 2 (52-2) (53) (54P) , 2 (54)

1 (52-1) (53) 2 (54B) 2 (52-2) (53)
 (54P)

1 (51)
 1 (52-1) 2 (52-2) 가 1 (52-1)
 2 (52-2) 2 (54)

7 2 (54) 2 (54) (54)
 (X) -1.7mm 2 (54) 2 (54) (54)
 4B) 1 (52-1) (53)

2 (54A) 1 (52-1) 2 (52-2) (54)
 3 (54C) 2 (52-2) 2 (54B) 2 (52-2) (54)
 1 (52-1) (53) 2 (54B) 2 (52-2)
 (53) 3 (54C)

1 (52-1) 2 (52-2) 2 (54) 6 가
 2 (54) (54) 6 1.7mm 2
 (54) 6 10MΩ 가

1 (51)
 1 (52-1) 2 (52-2) 가 1 (52-1)
 2 (52-2) 2 (54)

8 2 (54) 2 (54) (54)
 (X) +1.7mm 2 (54) 1 (53) (5)
 4A) 1 (52-1) 2 (52-2)

2 (54) 1 (54A) 2 (54B) 1 (52-1)
 2 (52-2) 3 (54C) 1 (52-1) 2 (52-2)
 2 (54B) 2 (52-2) (53) 1 (52-1) (53)
 1 (52-1) 2 (52-2) (53) 2 (54) (54P) 6
 2 (54) (54) 6 1.7mm 2
 (54) 6 8MΩ

2 (52-1) 13 7 6 (RD1) 1.1% 가 2
 (52-2) (56) (RD2) 0.8% 가 8
 6 (RD1) 1.2% (RD2) 1.1%

2 가 1 2
 (3)
 9 12 (32) (60), (60)
 1 (61), 1 (61) 2 (64),
 (65), (66) (32) 1 (64) 1
 3 1 (61) 2 (64) 1
 1 (61) (62(-1, -2, ...)) 3 (63) (63) (62) (62)
 3) (62) (63) 1 (61) (62) (6)
 2 (64) 1 (61) (63)
 3 (71A, 71B, 72A, 72B) 1 (61) 1
 (61) 3 (71A, 71B, 72A, 72B) 1 (61)

3 (71A, 71B) 1 (62-1) 3 (71A) 1 (62-1)
 (63) 2 (62-2) 3 (71B) 1 (6)
 2-1) (63) 2 (62-2) 가
 3 (72A, 72B) 2 (62-2) 3 (72A) 2 (62-2)
 (63) 1 (62-1) 가 3 (72B) 2 (62-2)

2) (63) 1 (62-1)
 3 (71A, 71B, 72A, 72B) 1 (61) 2 (64)
 가 1 (61) 2 (64) 3 (71B)
 (71A, 72A, 72B) 1.0mm×1.0mm
 2.0mm×1.0mm
 3 (71A, 71B, 72A, 72B) 2 (64)
 3 1 (61)
 , 2 (64) 1 (61)
 9 2 (64)
 1 (62-1) (63) 3 (71B)
 2 (64) 2 (62-2) 1 (61) (63)
 3 (71A, 72A, 72B) , 2 (64) 1 (63)
 (62-1) (63) 3 (71B) 2 (62-2) (63)
 , 1 (61)
 1 (62-1) 2 (62-2) 가 , 1 (62-1)
 2 (62-2) 2 (64) 가 , 2 (64)
 , 10 Y , 2 (64)
 (X) 1 (62-1) (63) 3 +1.0mm (64)
 1 (62-1) (71A)
 2 (64) 2 (62-2) 1 (61) (63)
 3 (71B, 72A, 72B) , 2 (64) 1 (63)
 (62-1) (63) 2 (62-2) (63) 1
 1 (62-1) 2 (62-2) 2 (64)
 , 2 (64) 9 9 가
 2 (64) 2 (64) 9 1.0mm , 2
 (64) 9 23MΩ 가
 1 (61)
 1 (62-1) 2 (62-2) 가 , 1 (62-1)
 2 (62-2) 2 (64) 가 , Y
 , 11 (64) 1 (62-1)
 (63) 3 -1.0mm
 (71B, 72A, 72B)
 2 (64) 2 (62-2) (63) , 3 (7)
 1A) 3 (71B) 2 (62-2) (63) 1 (62-1) (63)
 1 (62-1) 2 (62-2) 2 (64) 9
 , 2 (64) 9 1.0mm , 2
 (64) 9 19MΩ
 , 3 13 10 9 1
 (62-1) (66) (RD1) 1.0% 가 , 2
 (62-2) (66) (RD2) 0.9% 가 , 11
 9 (RD1) 1.0% , (RD2) 1.0%
 3 3 1 1
 , 3
 3 가 1 , 2
 , 가 , 1
 , 2
 , 1 , 2 , 3
 , 가 ,

가
 1 2 3
 2 1 2
 3
 (32-2) 2 (B) (32) (32-1) (A) (32-2) (32-1)
 2
 가 가 가
 1 2 1
 2 2 가 1
 가 가
 가 가
 가 가
 가 가
 가 가

(57)

1. (26) 가 (32)
 (40, 50, 60), 1 (41, 51, 61),
 1 1 2 가 1 2 (44, 54, 64)
 (43, 54A, 54B, 54C, 71A, 71B, 72A, 72B)
- 1 2
 (43, 54A, 54B, 54C)
 1 (41) (43)
4. (26) 가 (32)
 (40, 50, 60), 1 (41, 51, 61),
 1 1 2 가 1 2 (44, 54, 64)
 (43, 54A, 54B, 54C, 71A, 71B, 72A, 72B)
- 1 2
 (43, 54A, 54B, 54C)
 2 (54) (54A, 54B, 54C)
5. (26) 가 (32)

(40, 50, 60),
 1 (41, 51, 61),
 1 1 (43, 54A, 54B, 54C, 71A, 71B, 72A, 72B) 2 (44, 54, 64) 2 ,
 1 2 (43, 54A, 54B, 54C) , 3 (71A, 71B, 72A, 72B)
) 가
6.
 3 1 5 (41, 51, 61) 2 (44, 54, 64)
7.
8.
9.
 (26) 가 (32)
 (40, 50, 60) 1 (41, 51, 61)
 1 2 (44, 54, 64)
 , 1 2 가 1 2
 1 2 ,
 1 (43, 54A, 54B, 54C) (43)
 1 (41)
10.
 (26) 가 (32)
 (40, 50, 60) 1 (41, 51, 61)
 1 2 (44, 54, 64)
 , 1 2 가 1 2
 1 2 ,
 1 (43, 54A, 54B, 54C) (54A, 54B, 54C)
 2 (54)
11.
 (26) 가 (32)
 (40, 50, 60) 1 (41, 51, 61)
 1 2 (44, 54, 64)
 , 1 2 가 1 2
 1 2 ,
 1 (43, 54A, 54B, 54C) , 3 (71A, 71B, 72A, 7
 2B) 가
12.
 9 1 11 (41, 51, 61) 2 (44, 54, 64)
13.
 9 1 11 2 ,

14.

13

2

(X)

(Y)

15.

(25R, 25G, 25B)

(G1, G2, G3, G4, G5, Gm

1, Gm2, G6)

가

(32)

(26)

(32)

(40, 50, 60),

1

(41, 51, 61),

(44, 54, 64)

1

1

2

가

1

2

(43, 54A, 54B, 54C, 71A, 71B, 72A, 72B)

1

2

(43, 54A, 54B, 54C)

1

(41)

(43)

16.

(25R, 25G, 25B)

(G1, G2, G3, G4, G5, Gm

1, Gm2, G6)

가

(32)

(26)

(29)

(40, 50, 60),

1

(41, 51, 61),

(44, 54, 64)

1

1

2

가

1

2

(43, 54A, 54B, 54C, 71A, 71B, 72A, 72B)

1

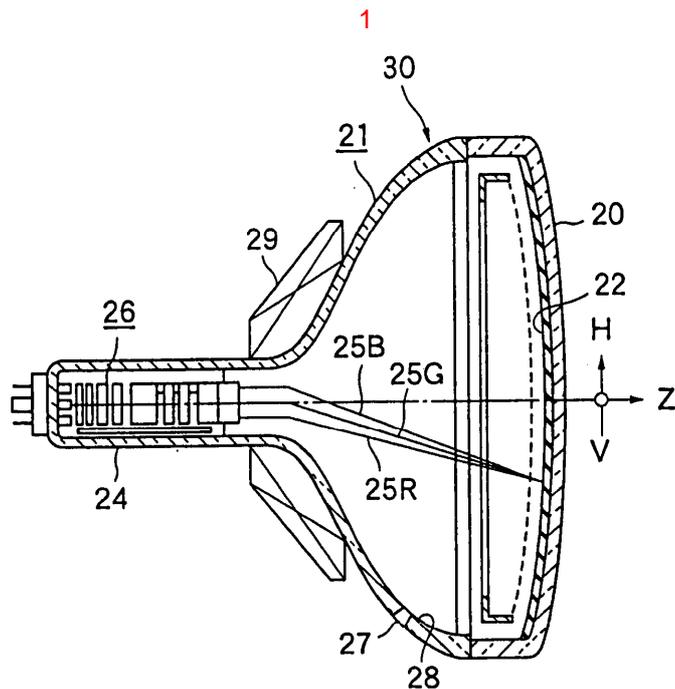
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(43, 54A, 54B, 54C)

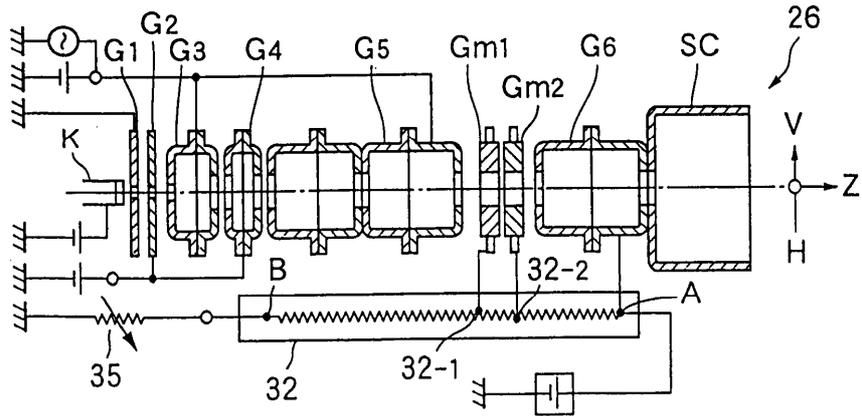
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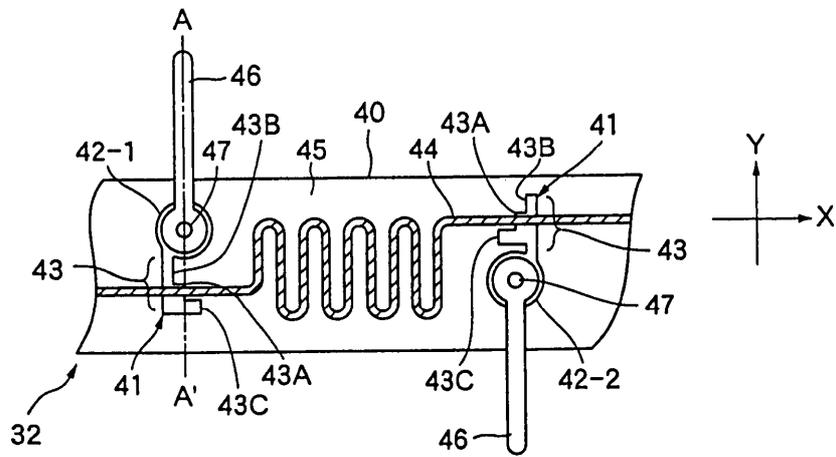
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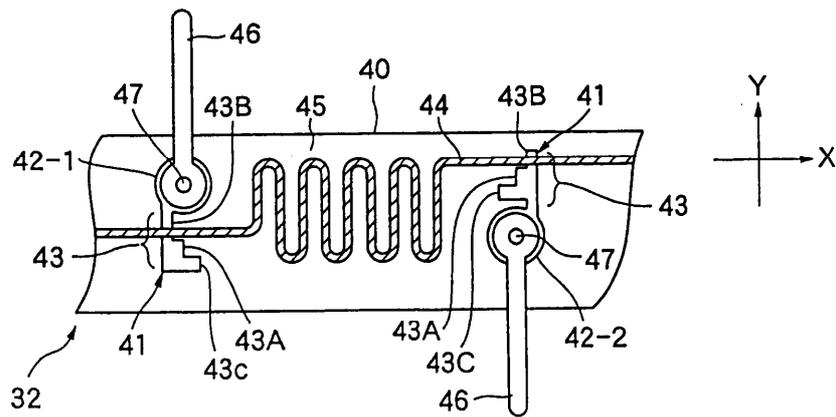
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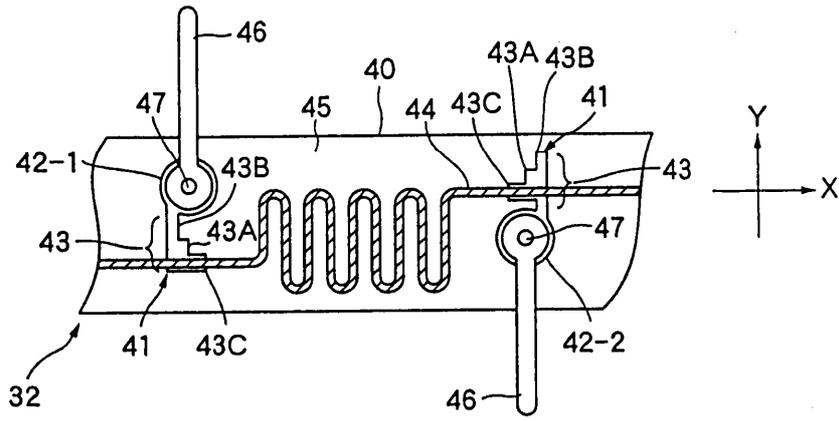
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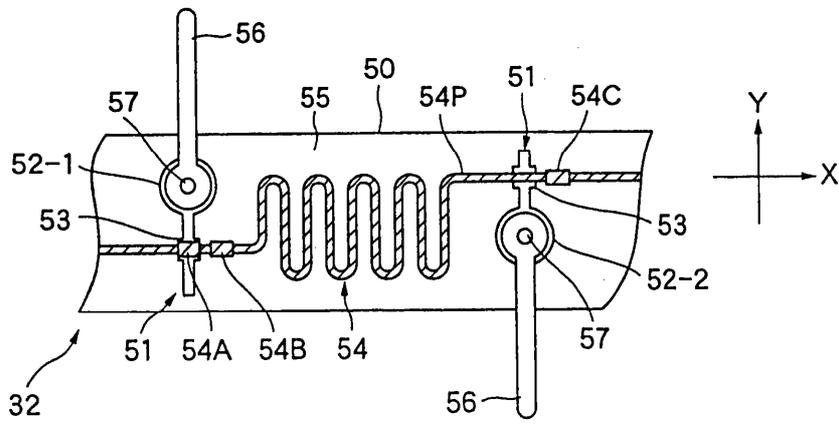
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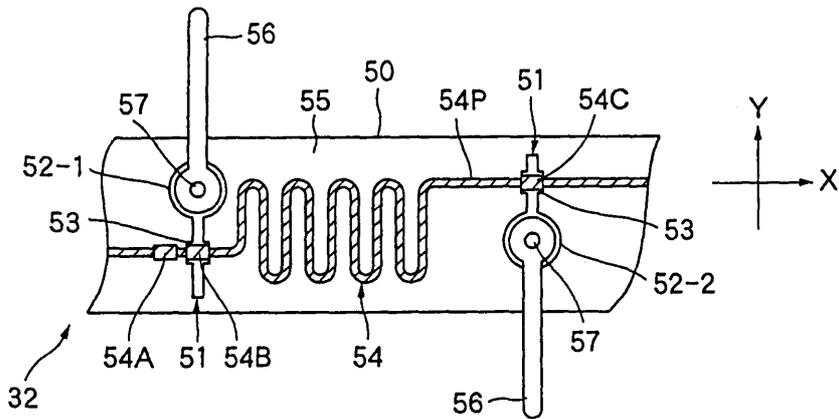
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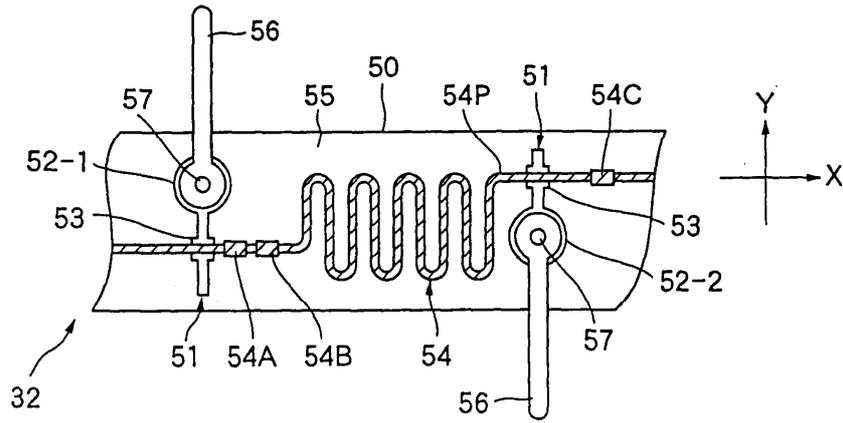
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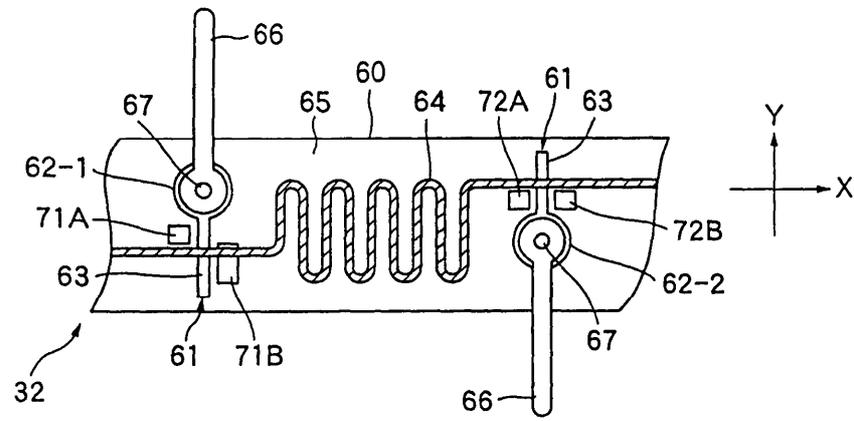
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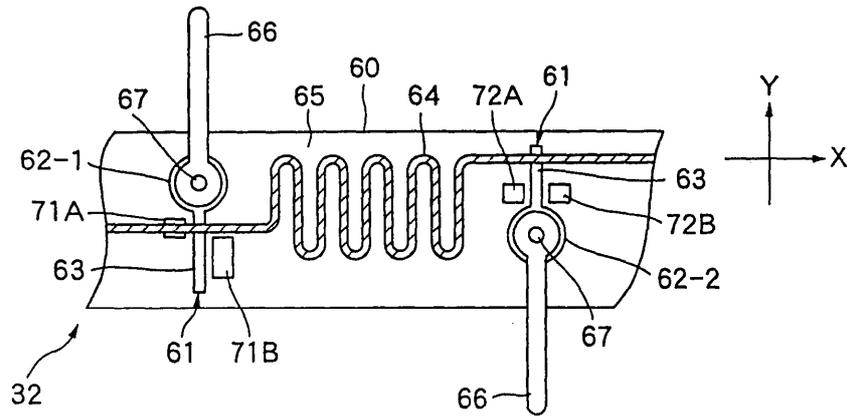
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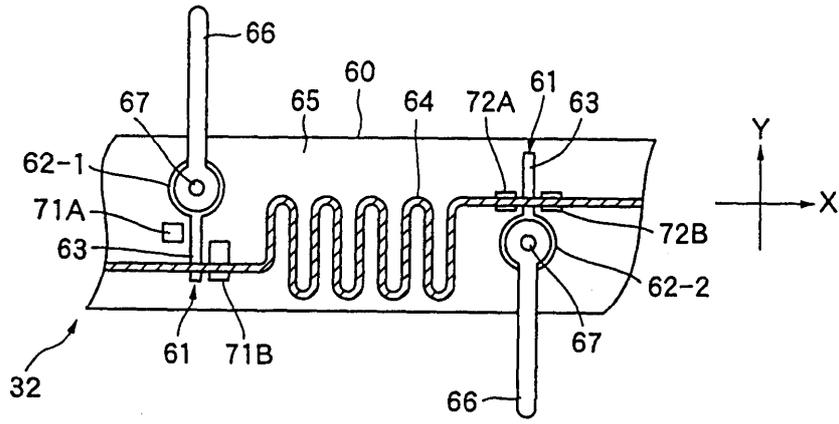
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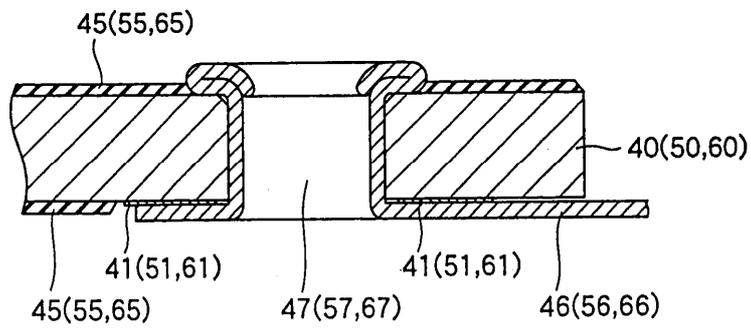
10



11



12



13

	도3	도4	도5	도6	도7	도8	도9	도10	도11
지향변화량	기준값	+25M Ω	-43M Ω	기준값	+10M Ω	-8M Ω	기준값	+23M Ω	-19M Ω
RD1	기준값	+0.6%	-1.2%	기준값	+1.1%	-1.2%	기준값	+1.0%	-1.0%
RD2	기준값	+0.4%	-1.0%	기준값	+0.8%	-1.1%	기준값	+0.9%	-1.0%