FIG.1

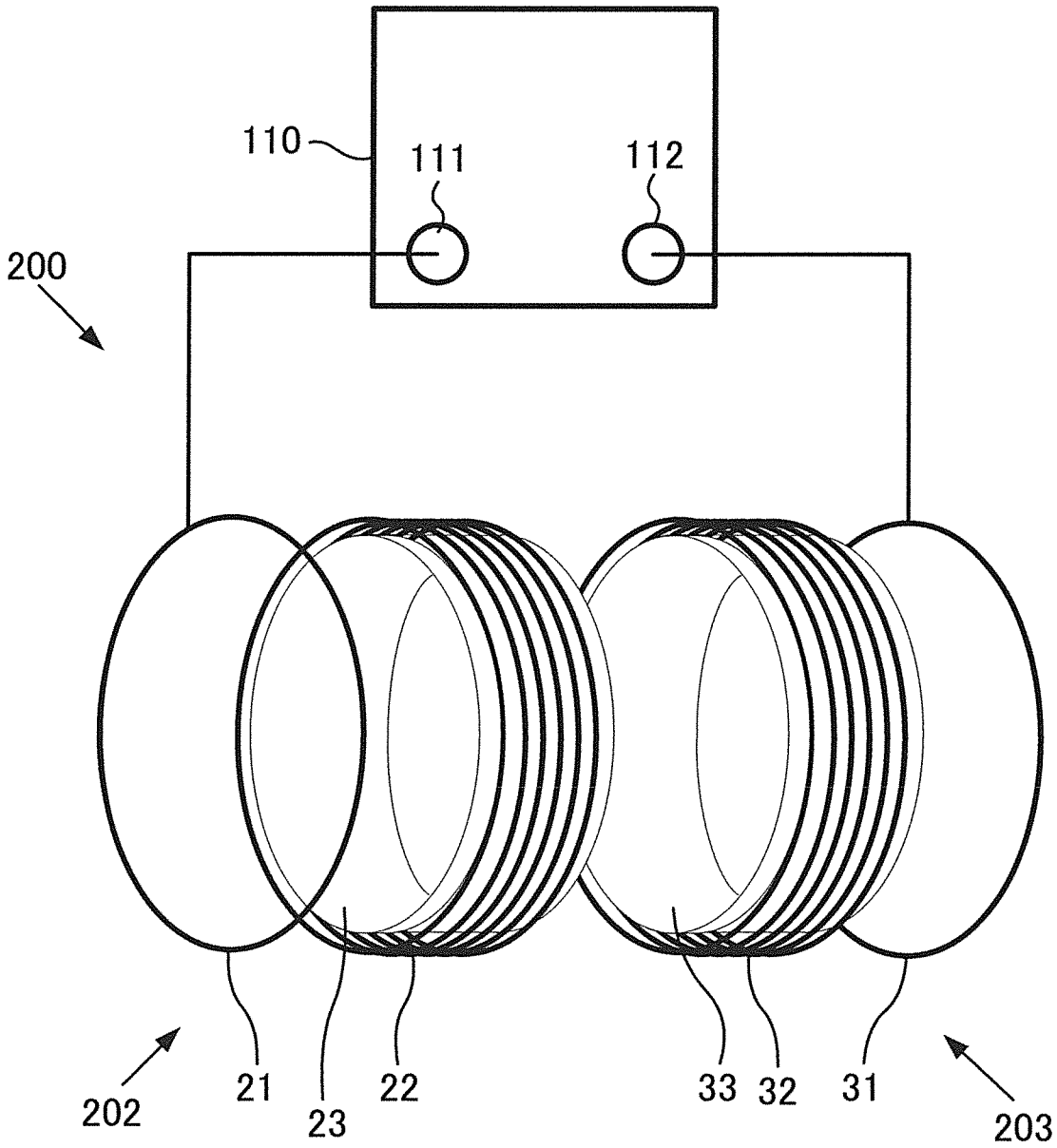


FIG.2

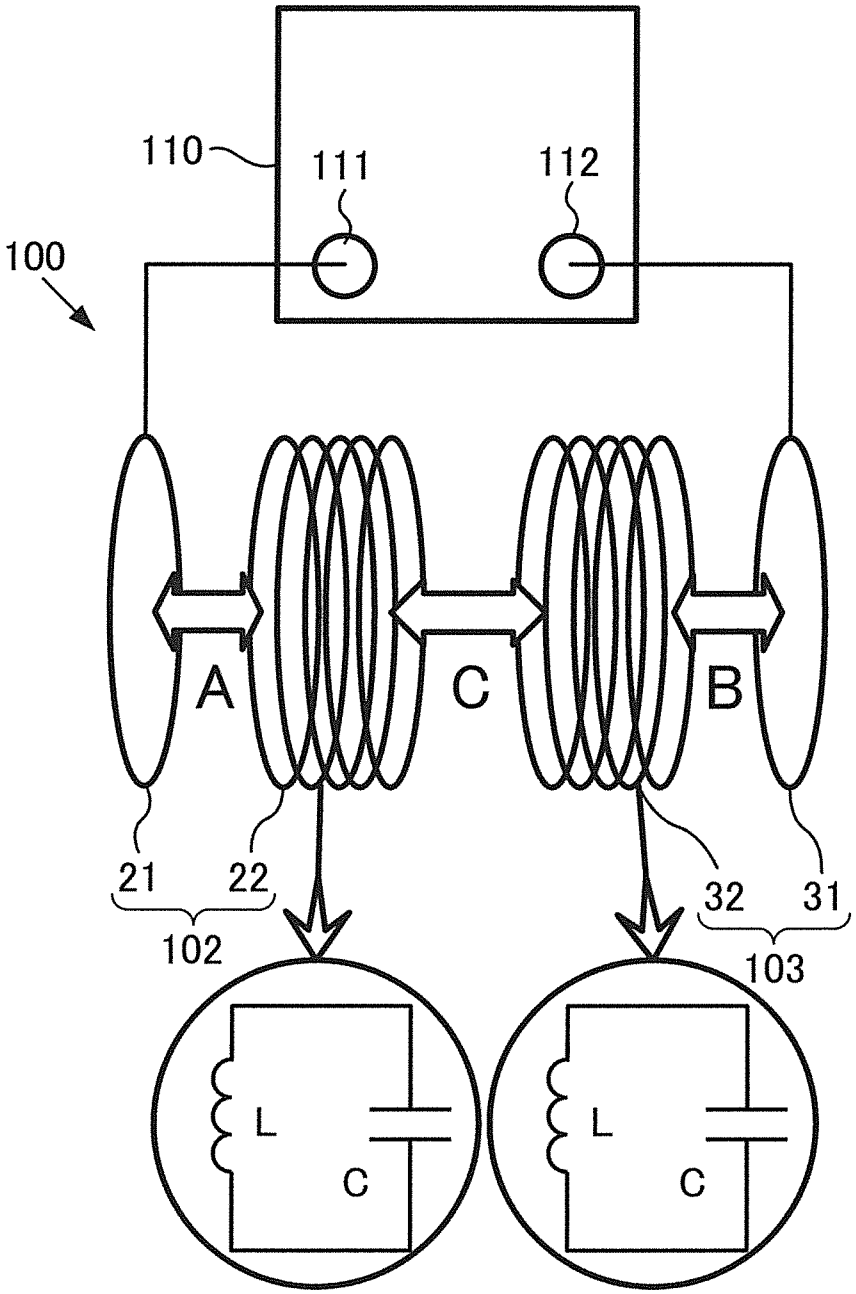


FIG.3

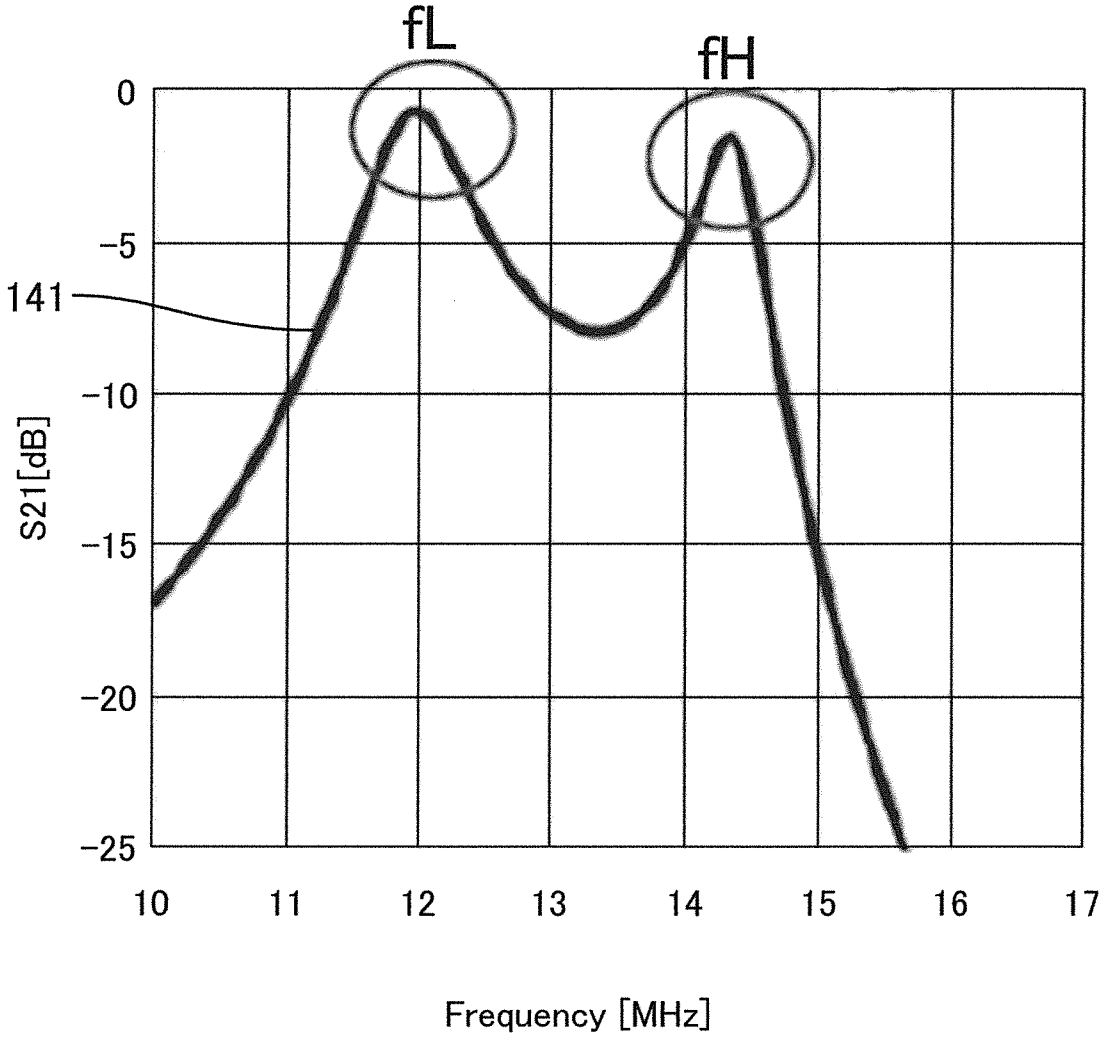

fL
fH
0
-5
141
-10
-15
-20
-25
S21[dB]
10
11
12
13
14
15
16
17
Frequency [MHz]

FIG.4(A)

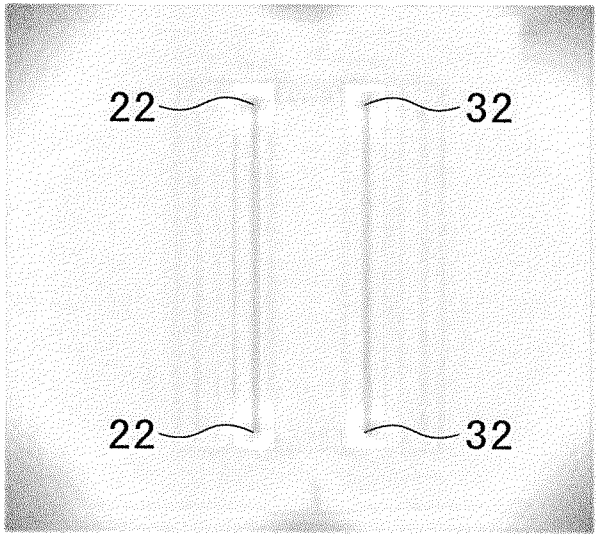

INPHASE RESONANCE MODE FL
22
32
22
32

FIG.4(B)

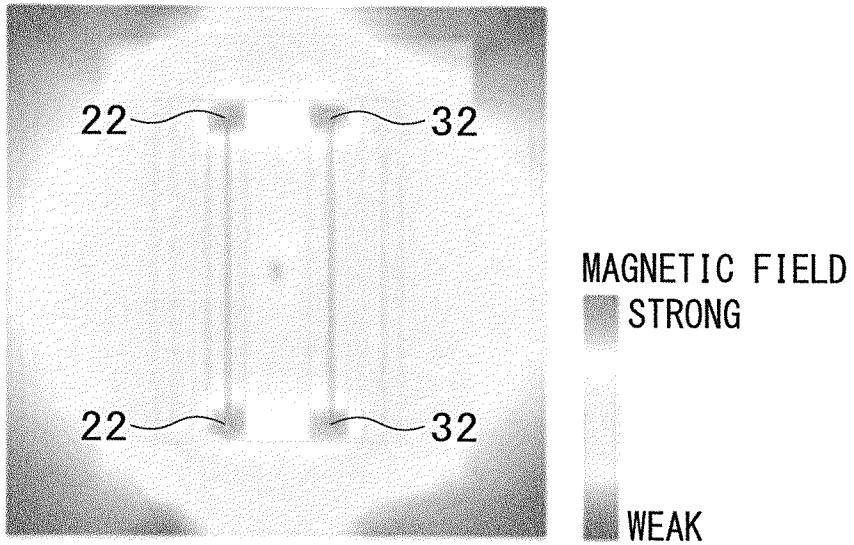

ANTIPHASE RESONANCE MODE FH
22
32
22
32
MAGNETIC FIELD
STRONG
WEAK

FIG.5

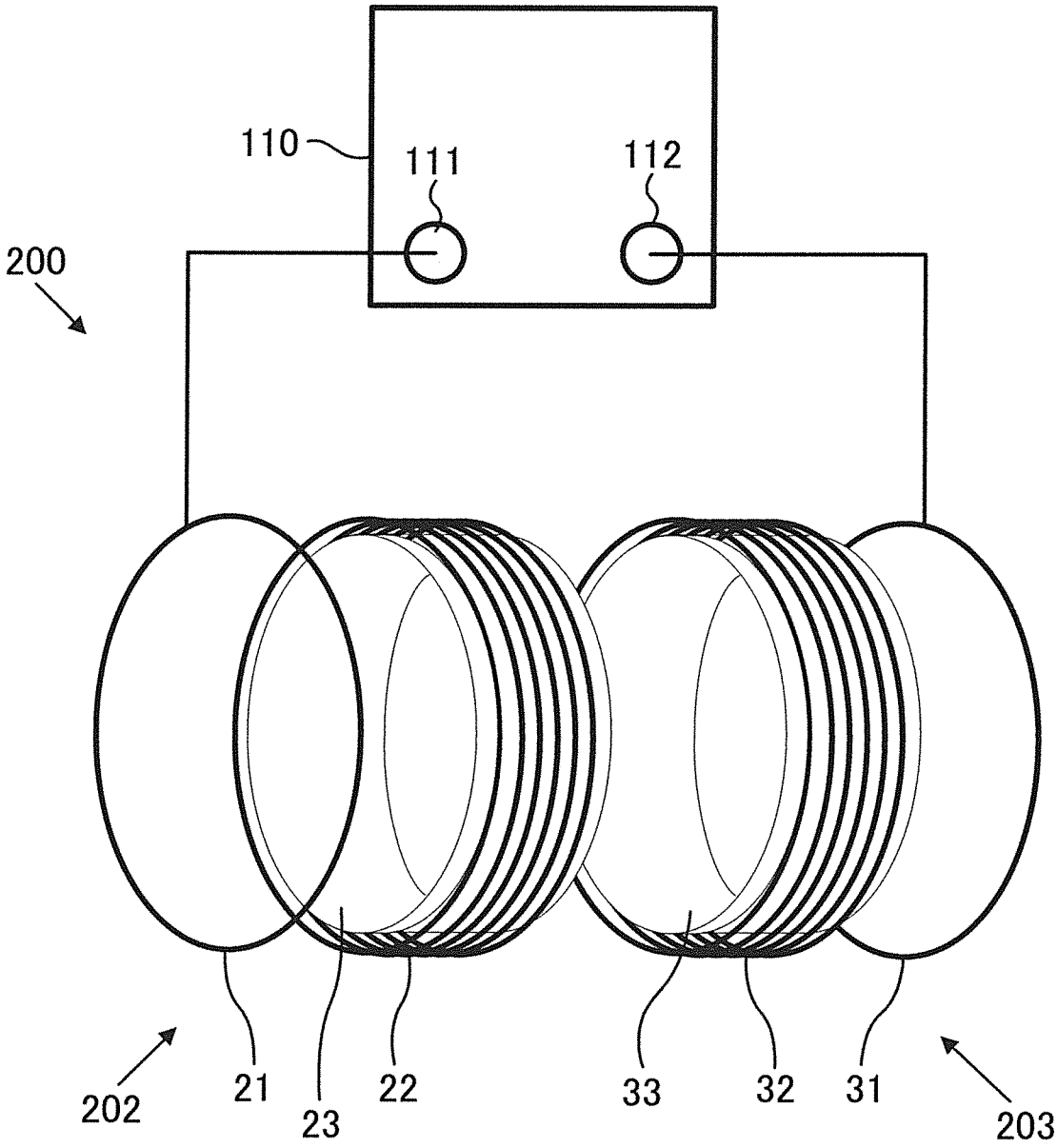


FIG.6

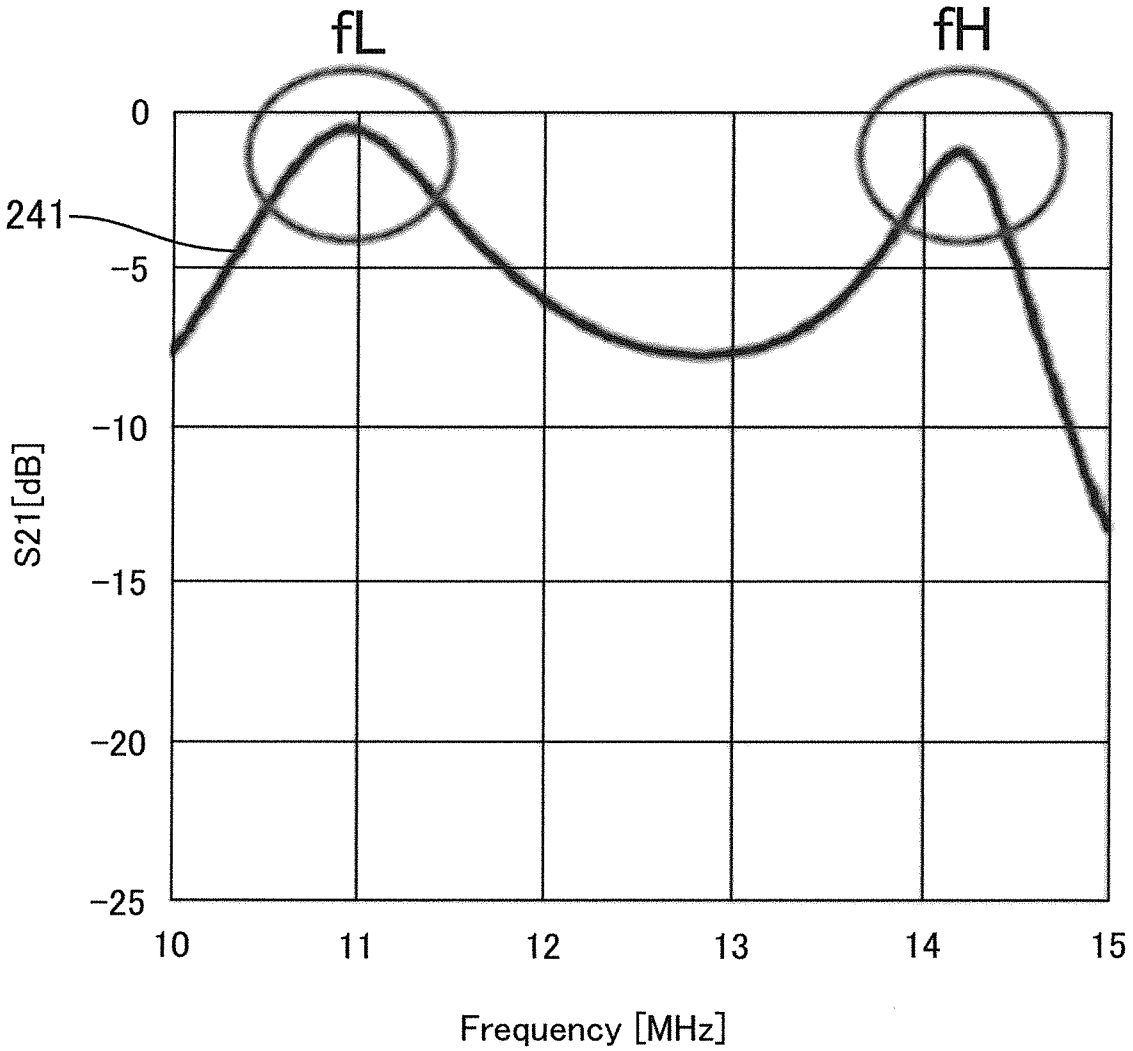


FIG.7(A)

INPHASE RESONANCE MODE FL

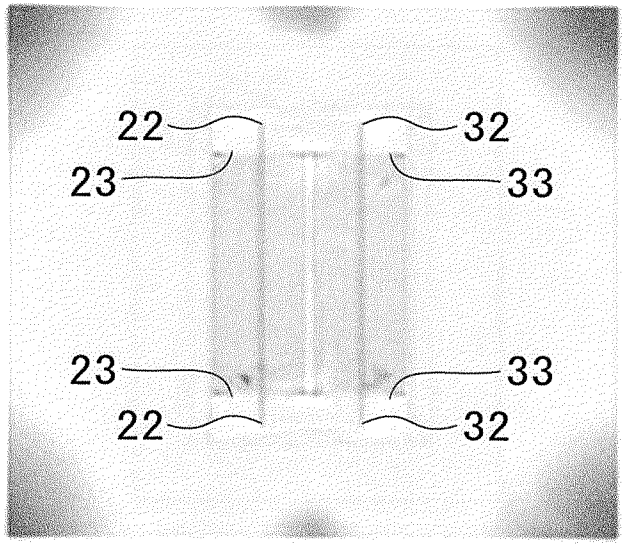


FIG.7(B)

ANTIPHASE RESONANCE MODE FH

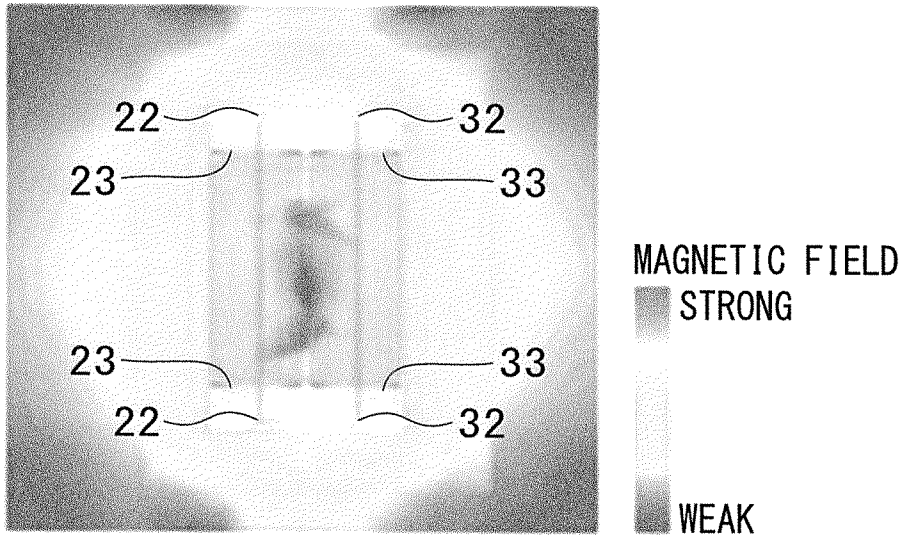


FIG.8

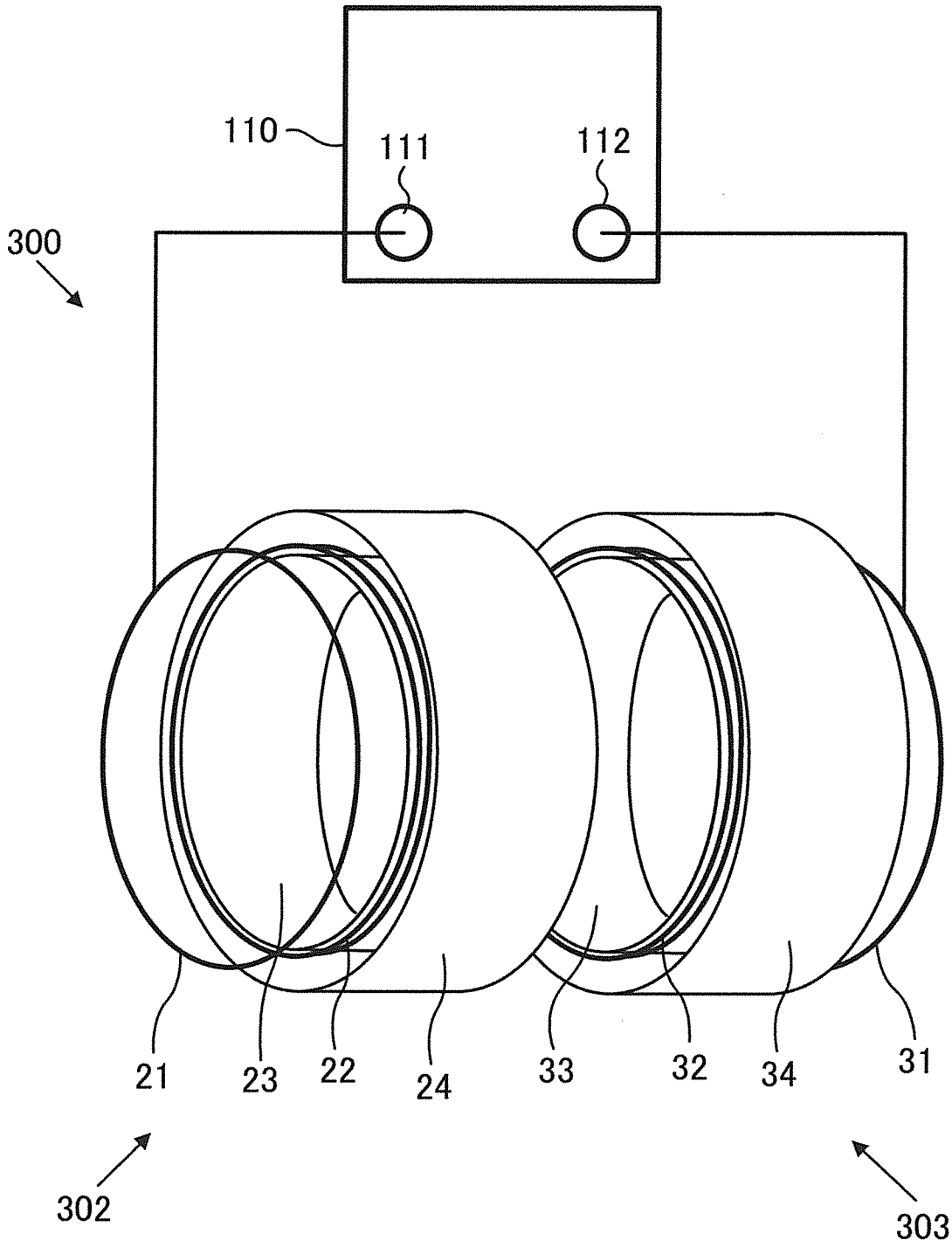


FIG.9

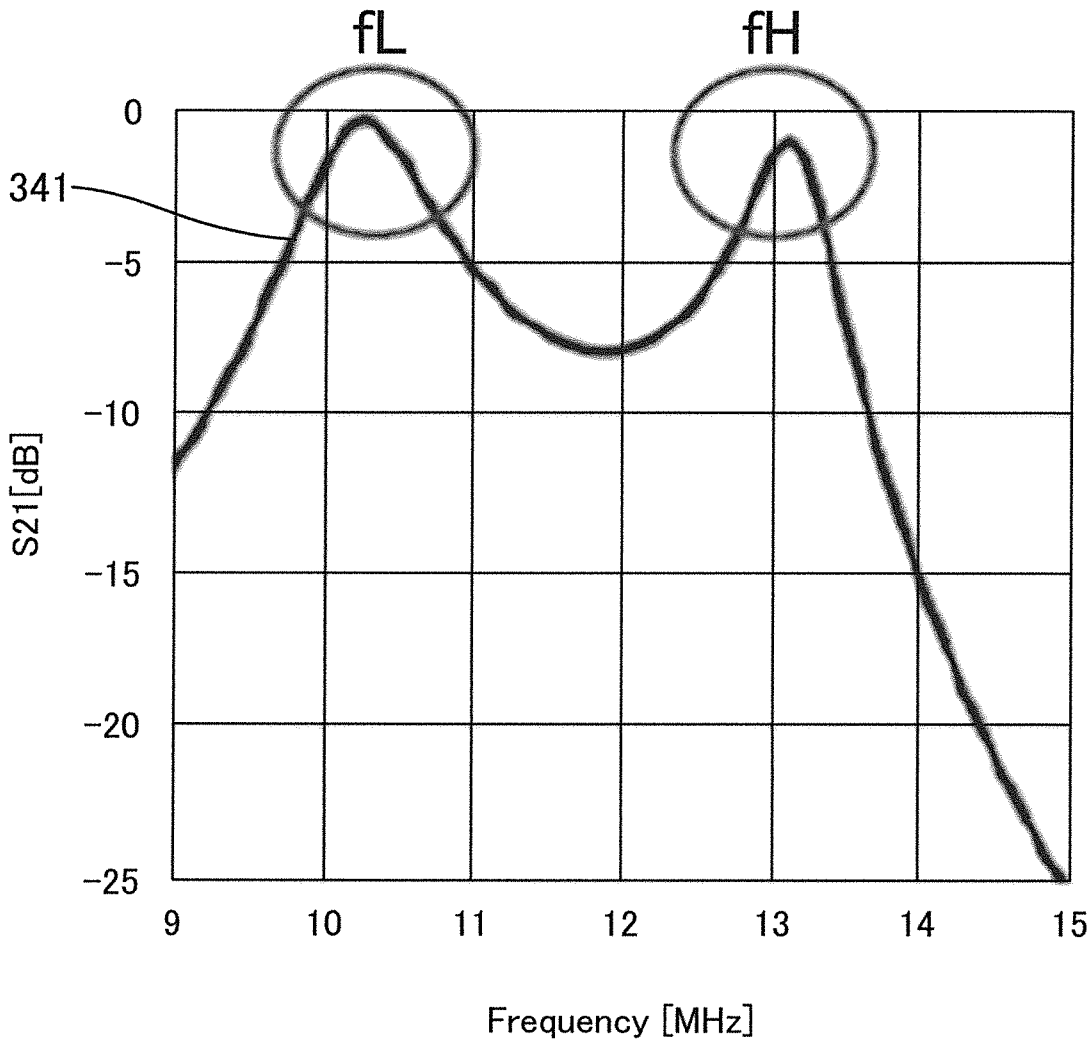


FIG.10(A)

INPHASE RESONANCE MODE FL

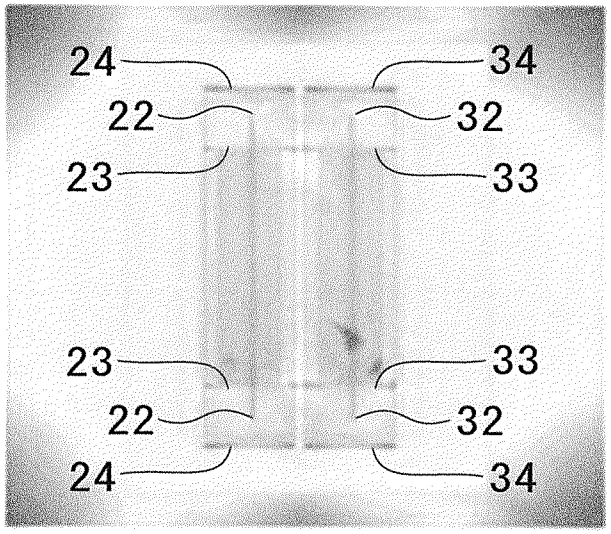
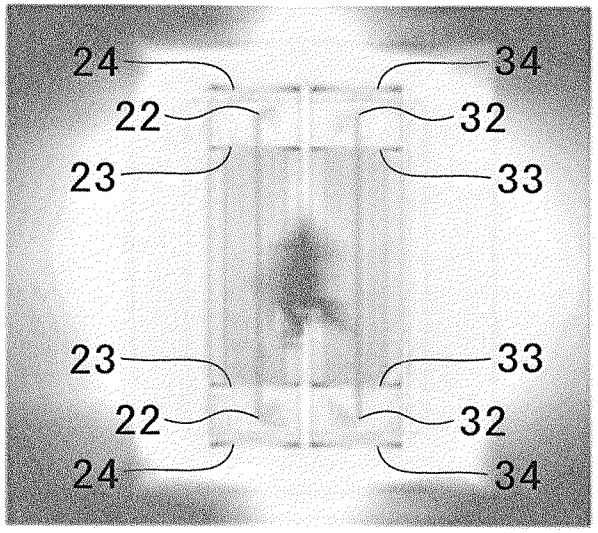


FIG.10(B)

ANTIPHASE RESONANCE MODE FH



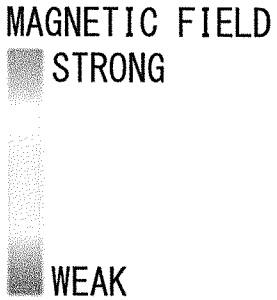


FIG.11

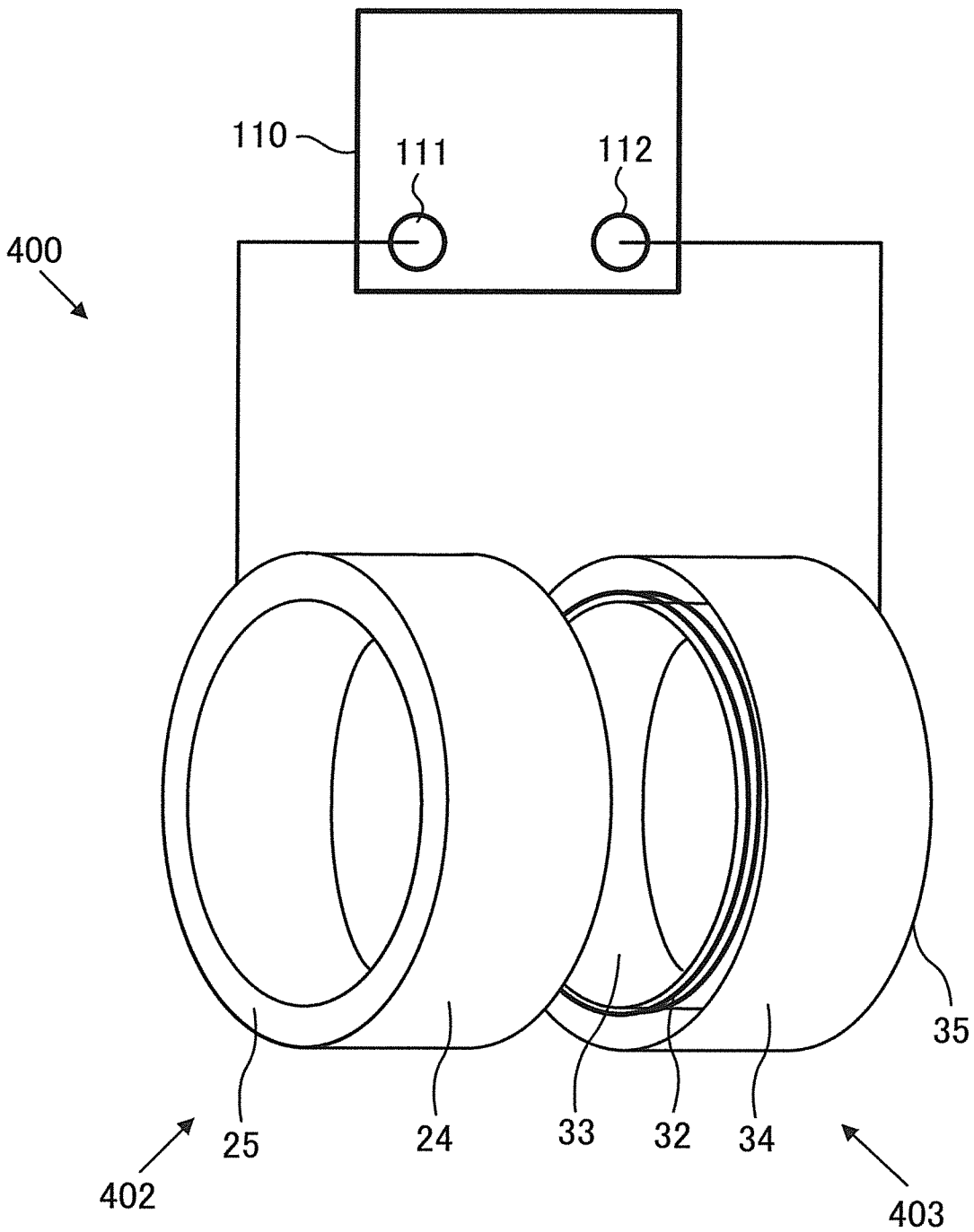


FIG.12

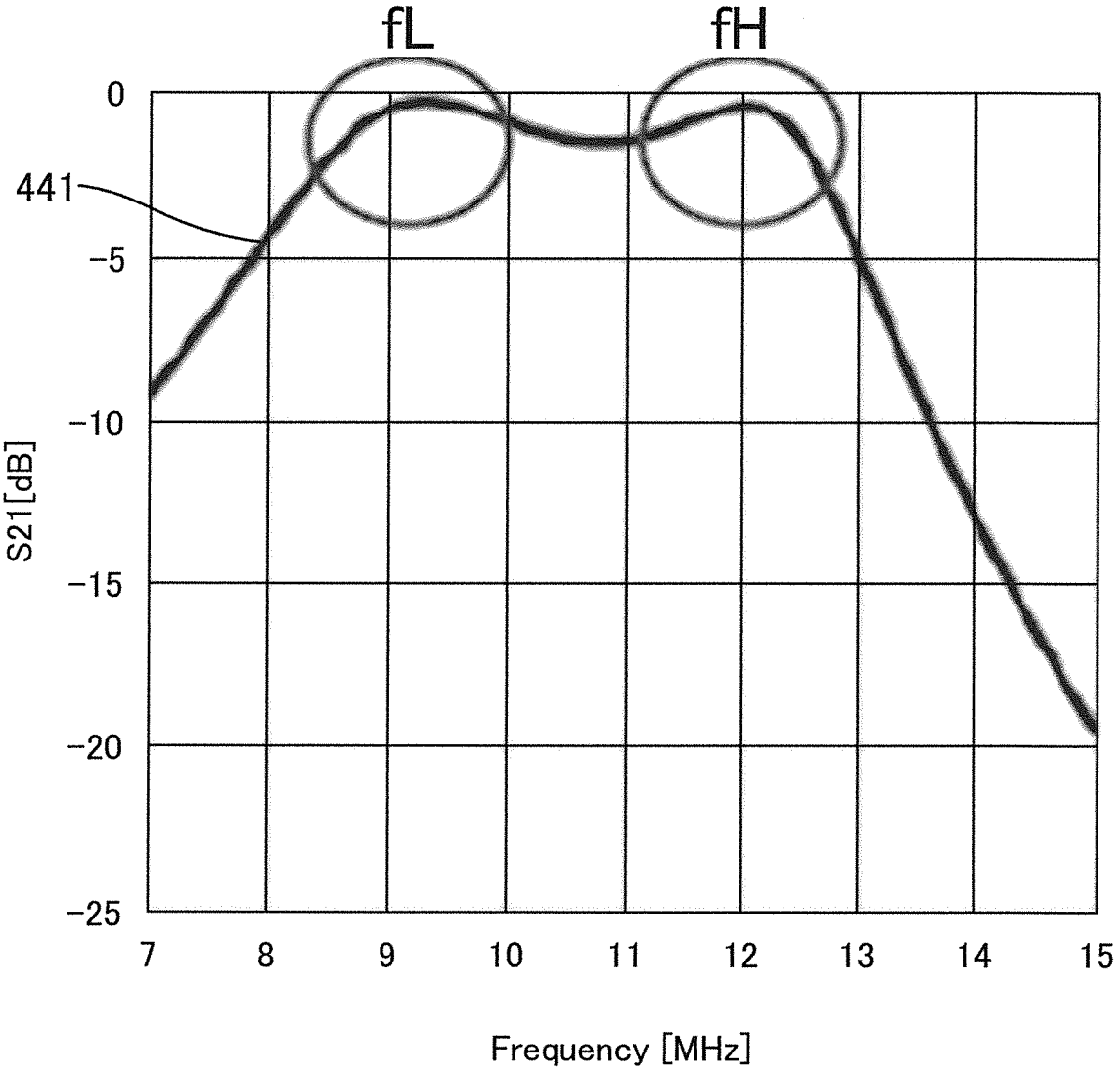


FIG.13(A)

INPHASE RESONANCE MODE FL

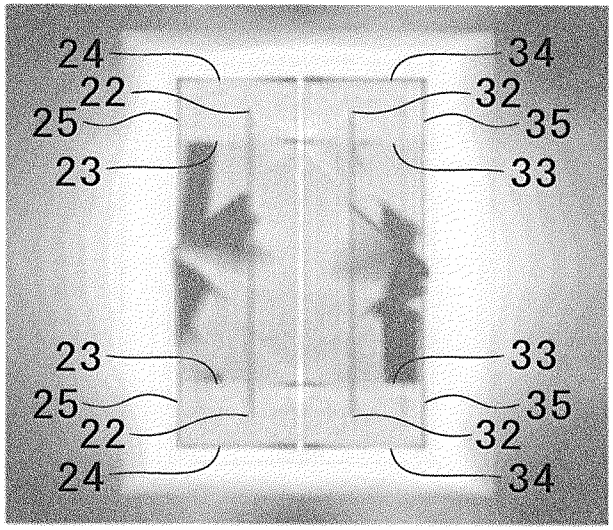
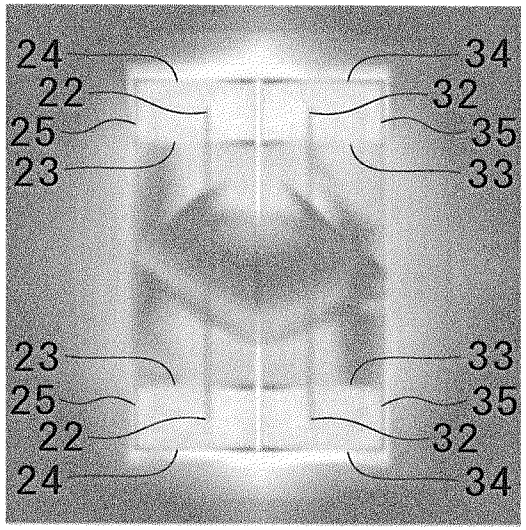


FIG.13(B)

ANTIPHASE RESONANCE MODE FH



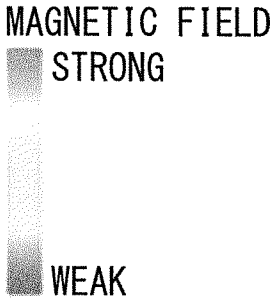


FIG.14

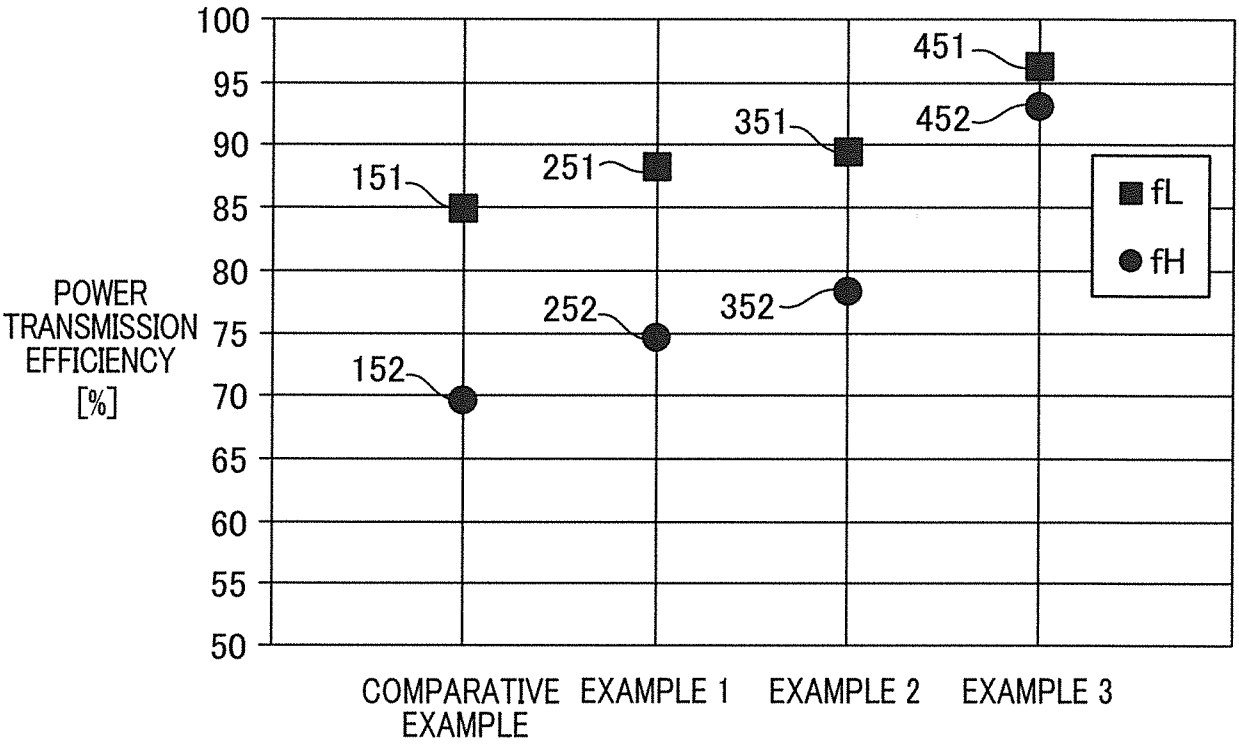

100
95
90
85
80
75
70
65
60
55
50
POWER TRANSMISSION EFFICIENCY [%]
151
251
351
451
152
252
352
452
fL
fH
COMPARATIVE EXAMPLE
EXAMPLE 1
EXAMPLE 2
EXAMPLE 3

FIG.15

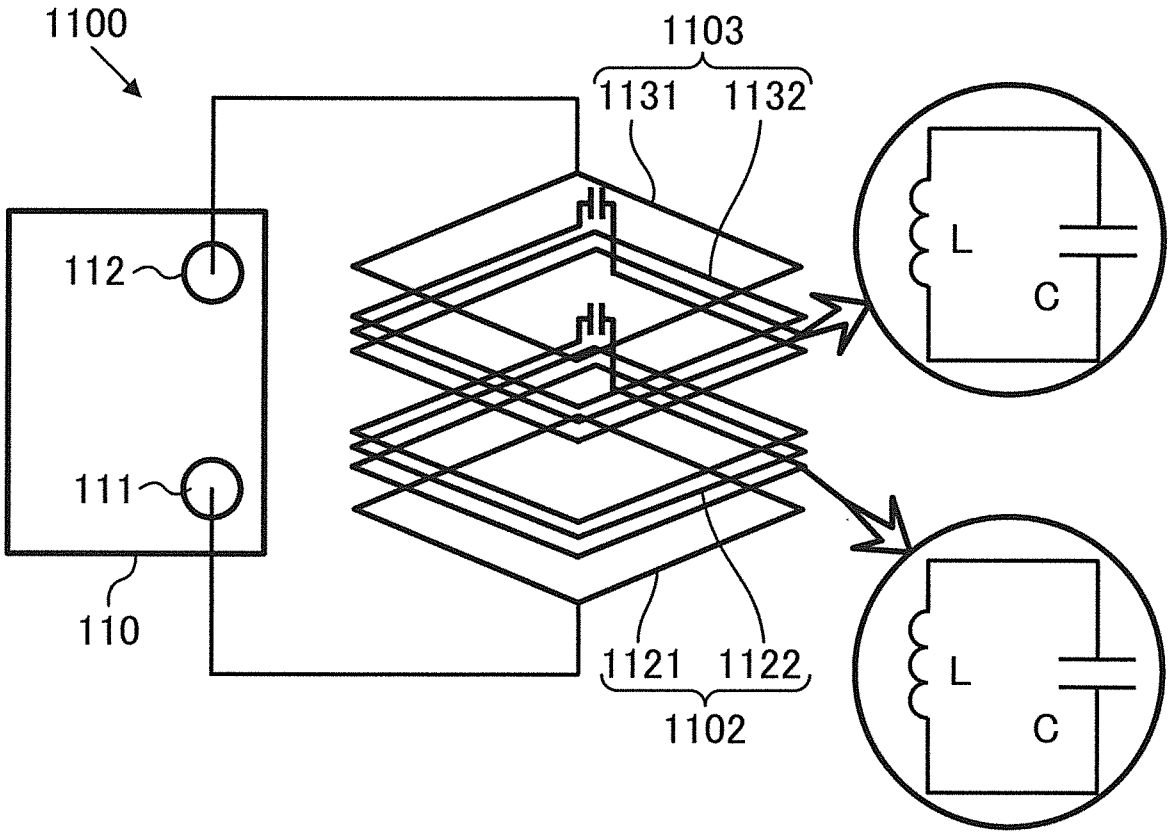

1100
1103
1131
1132
112
111
110
L
C
L
C
1121
1122
1102

FIG.16

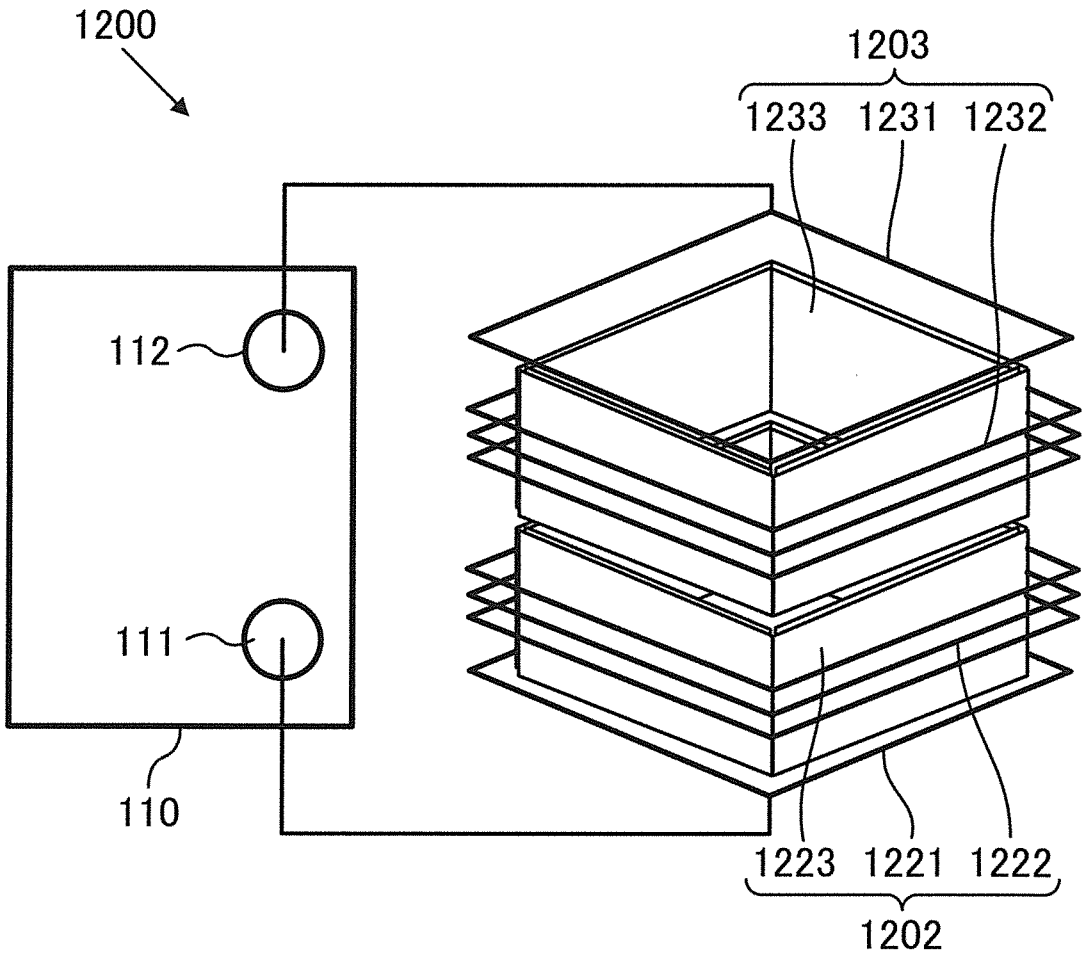


FIG.17(A)

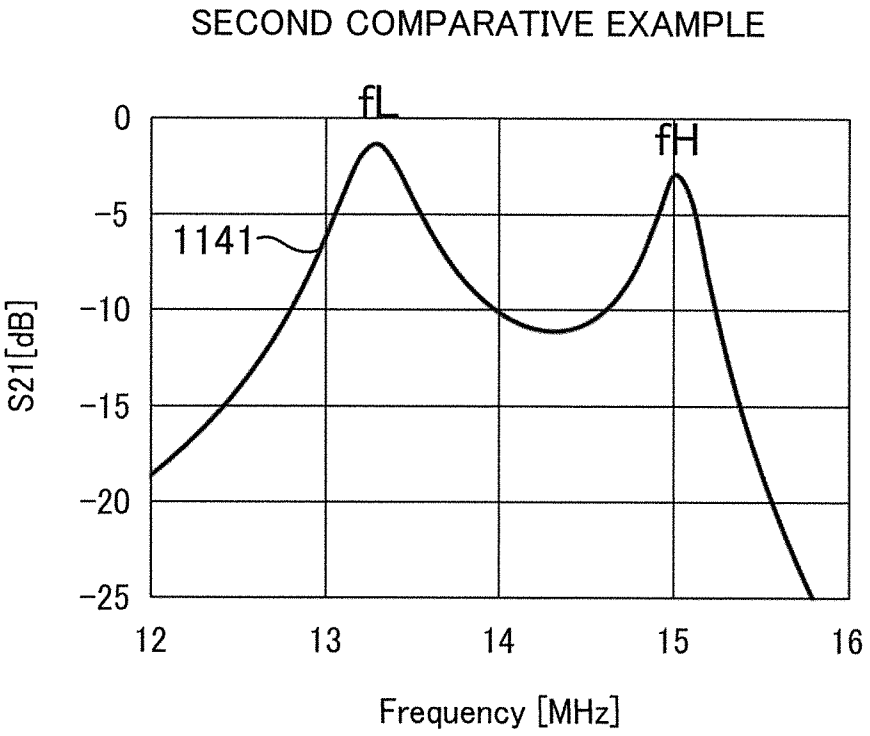


FIG.17(B)

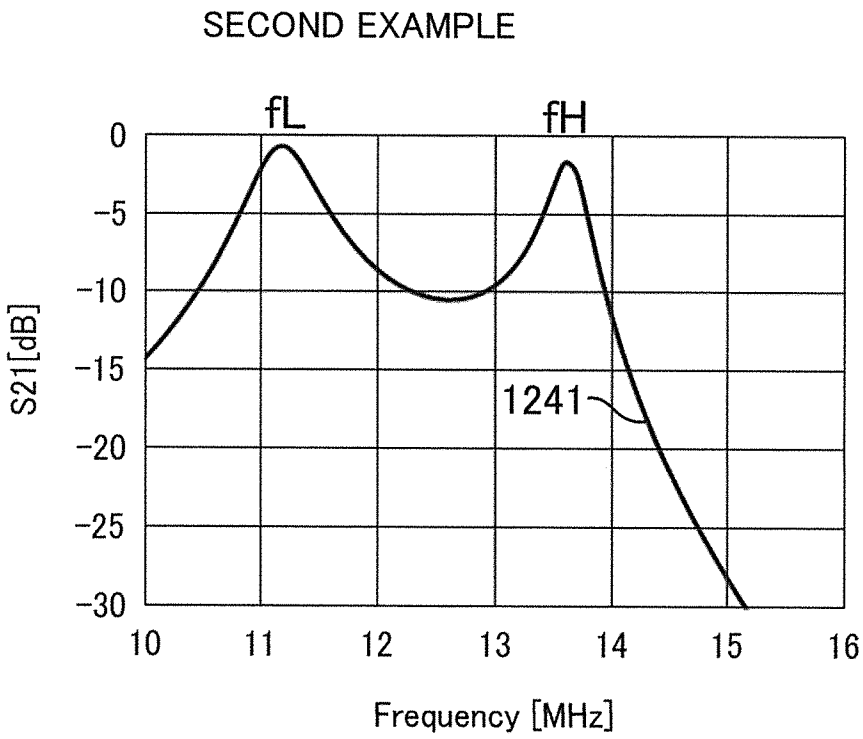


FIG.18

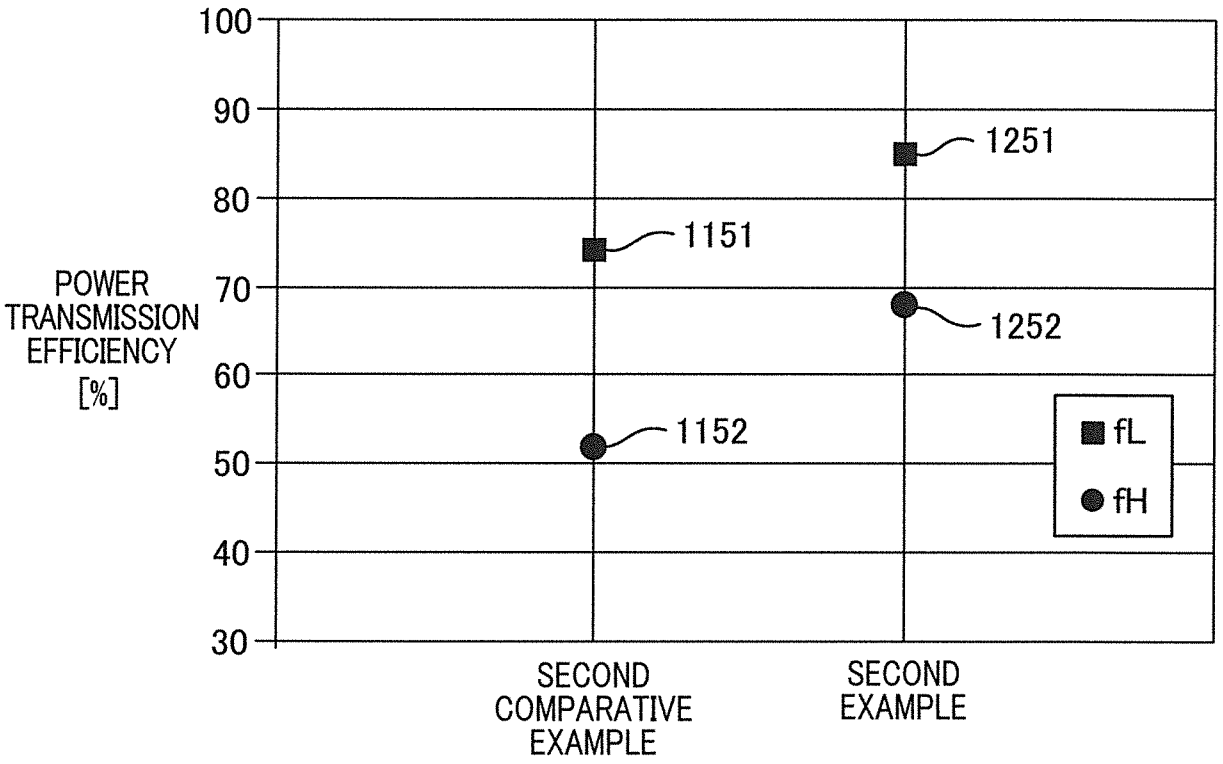

100
90
80
70
60
50
40
30
POWER TRANSMISSION EFFICIENCY [%]
1151
1251
1152
1252
fL
fH
SECOND COMPARATIVE EXAMPLE
SECOND EXAMPLE

FIG.19

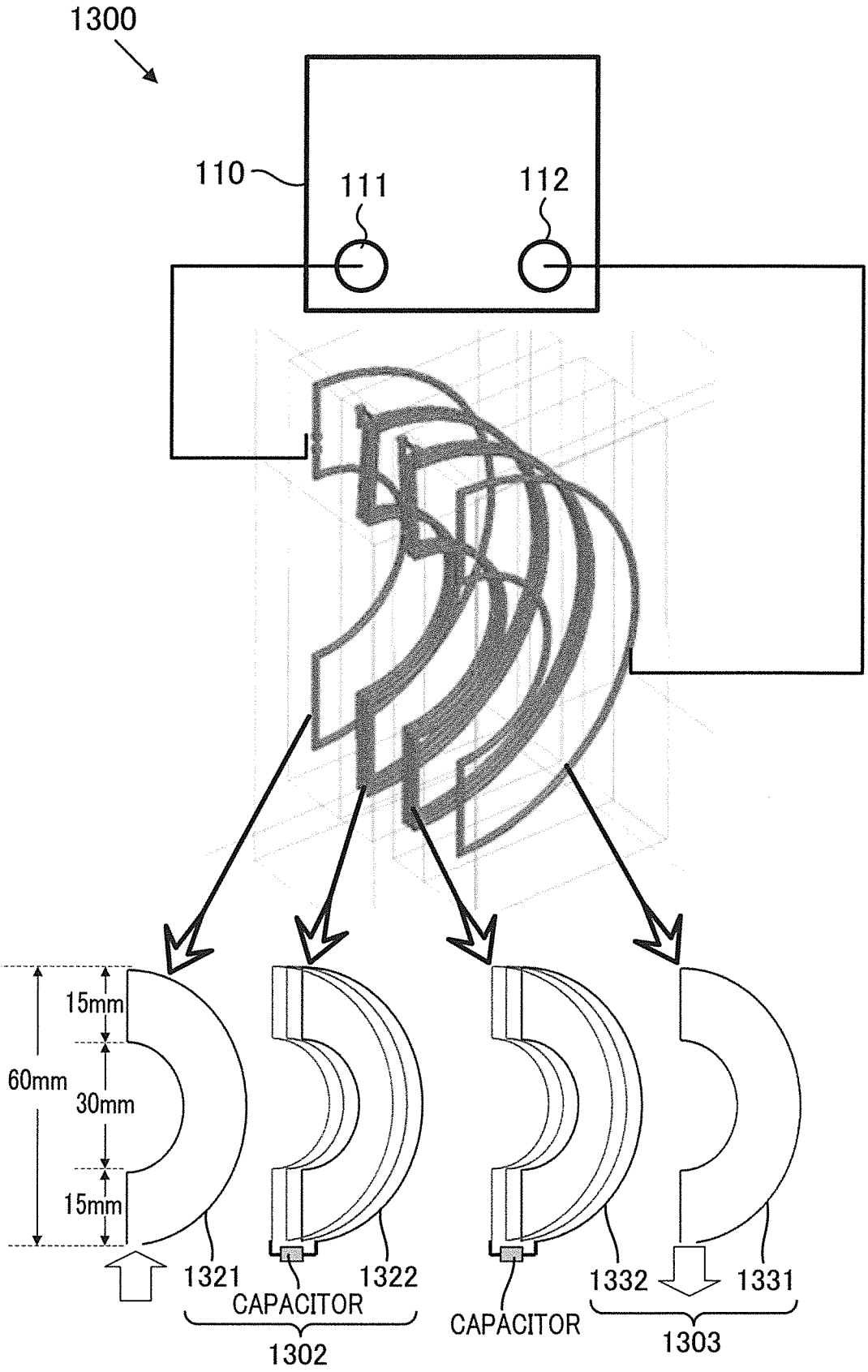

1300
110
111
112
15mm
60mm
30mm
15mm
1321
1322
CAPACITOR
1302
CAPACITOR
1332
1331
1303

FIG.20

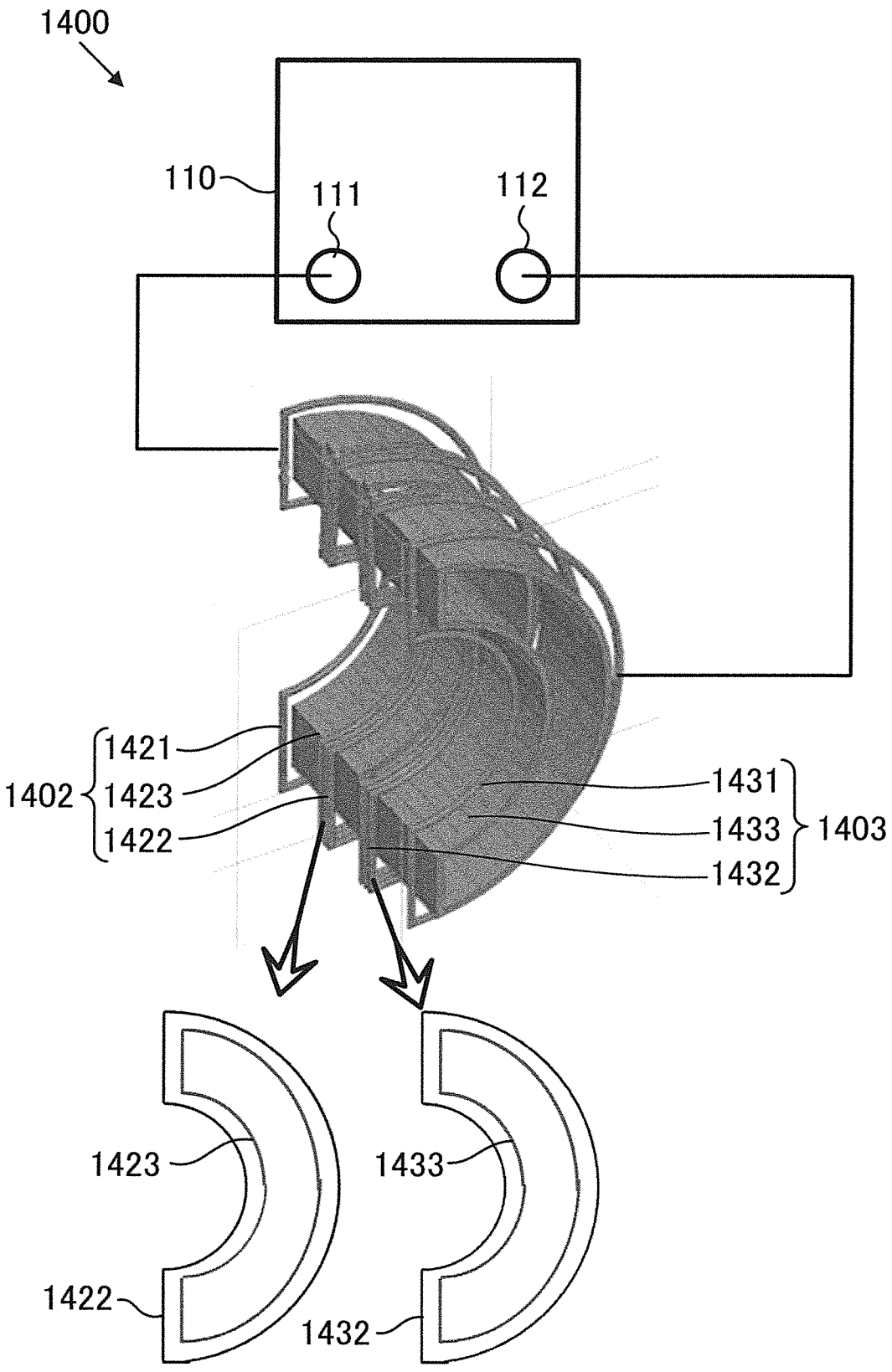

1400
110
111
112
1421
1402
1423
1422
1431
1433
1403
1432
1423
1433
1422
1432

FIG.21(A)

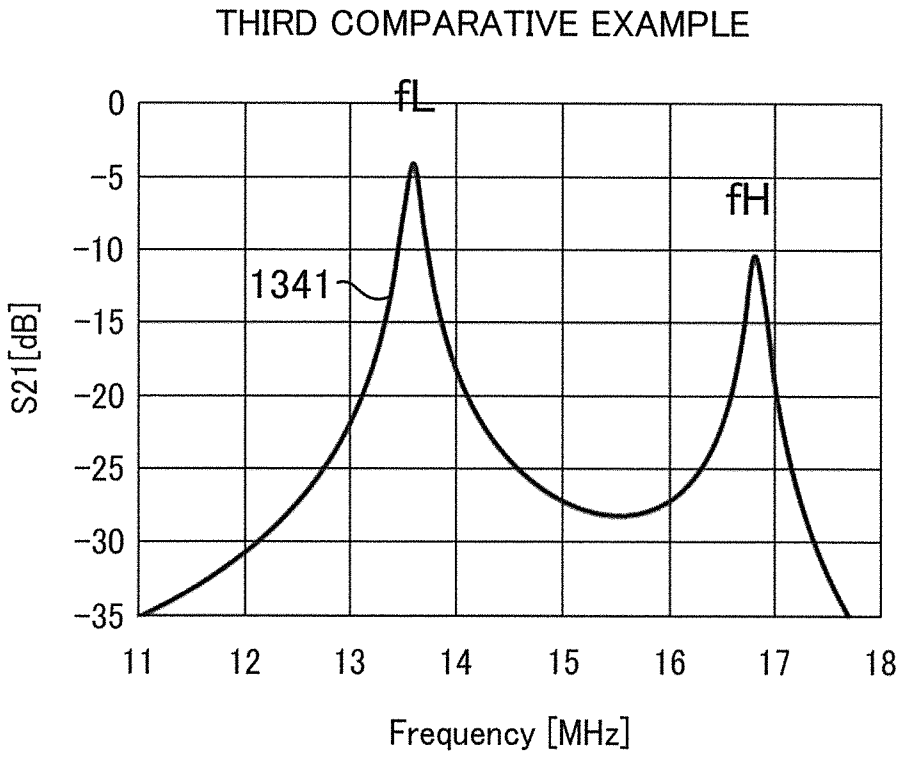


FIG.21(B)

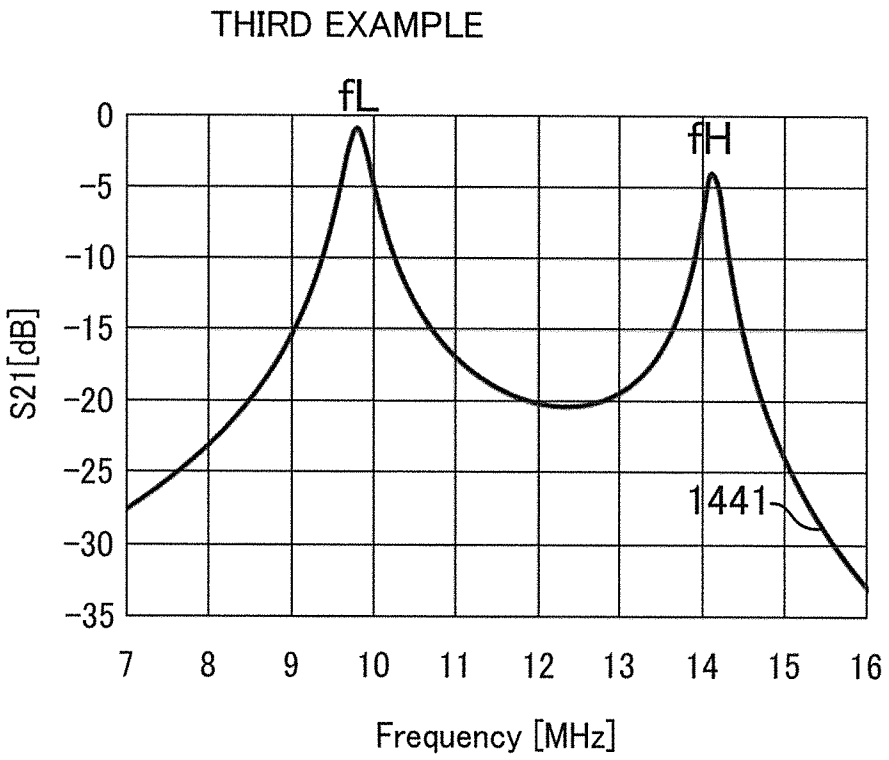


FIG.22

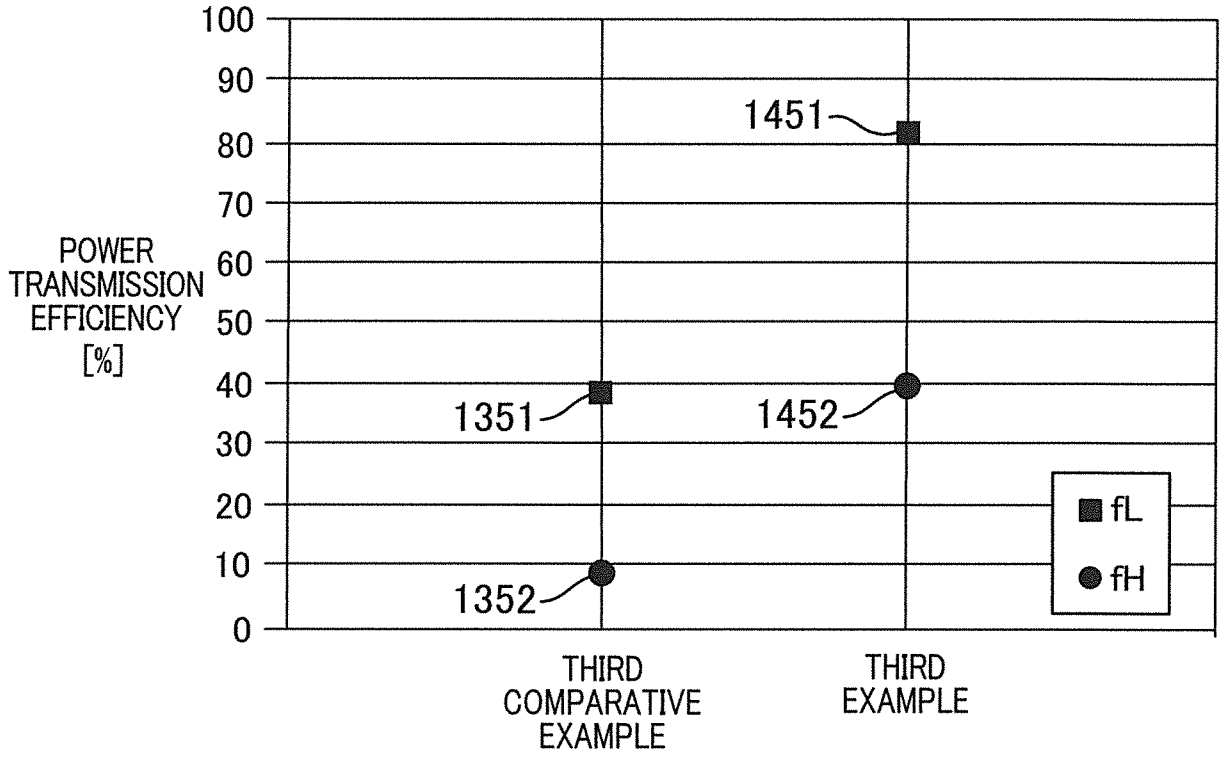

100
90
80
70
60
50
40
30
20
10
0
POWER TRANSMISSION EFFICIENCY [%]
1451
1351
1452
1352
fL
fH
THIRD COMPARATIVE EXAMPLE
THIRD EXAMPLE

FIG.23

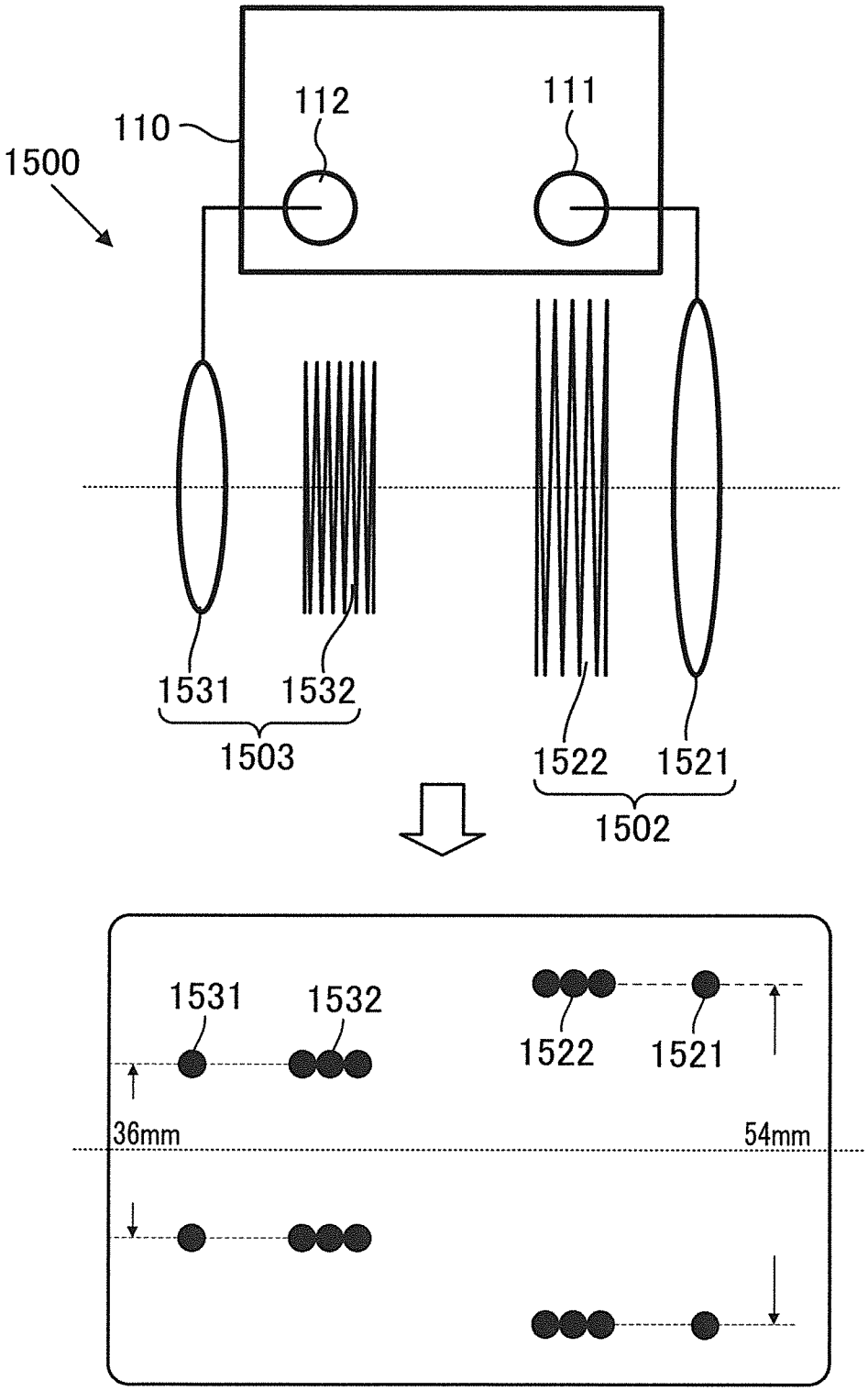

110
112
111
1500
1531
1532
1503
1522
1521
1502
1531
1532
1522
1521
36mm
54mm

FIG.24

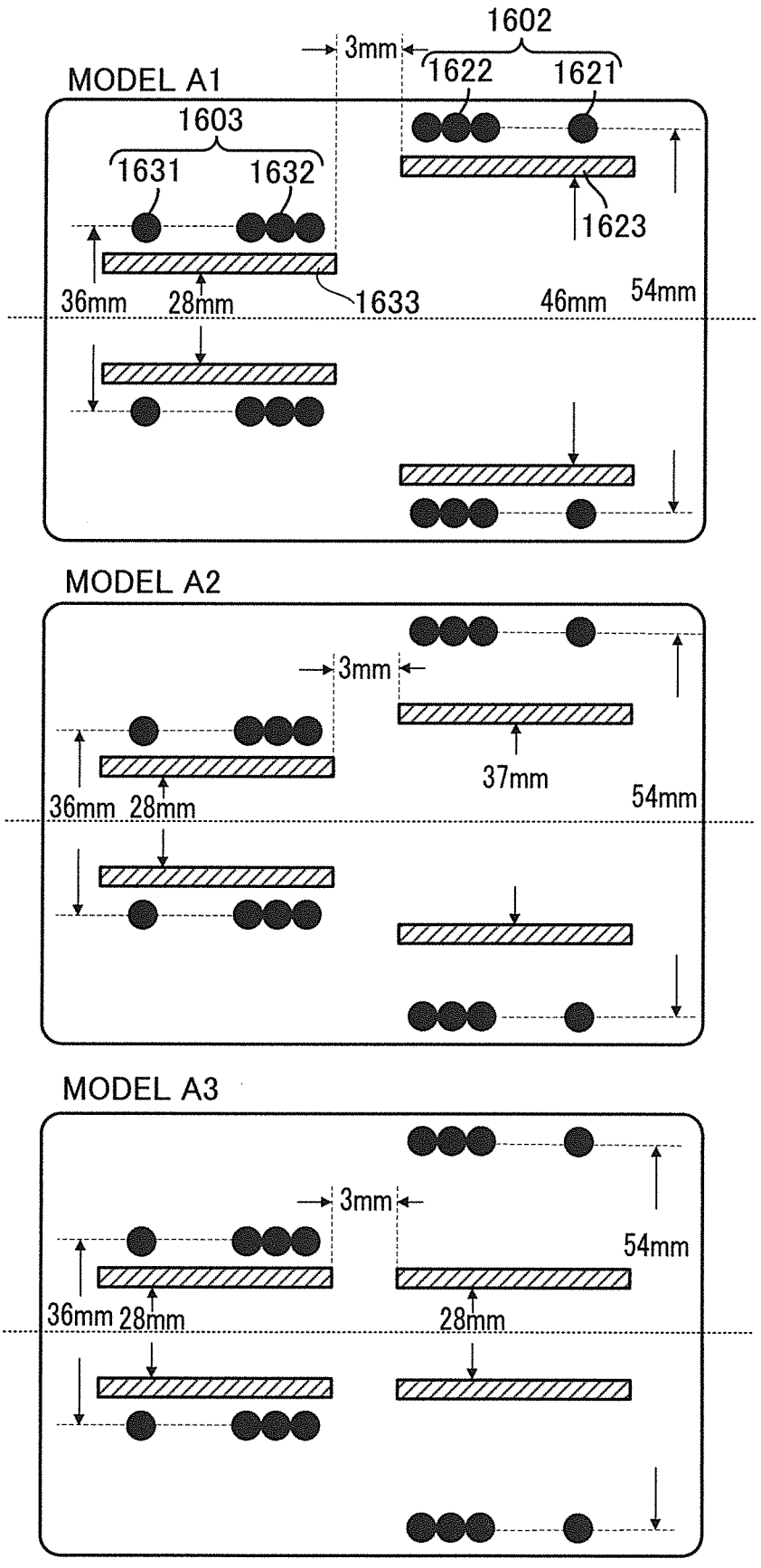

MODEL A1
1602
3mm
1622
1621
1603
1631
1632
1623
36mm
28mm
1633
46mm
54mm
MODEL A2
3mm
37mm
36mm
28mm
54mm
MODEL A3
3mm
54mm
36mm
28mm
28mm

FIG.25(A)

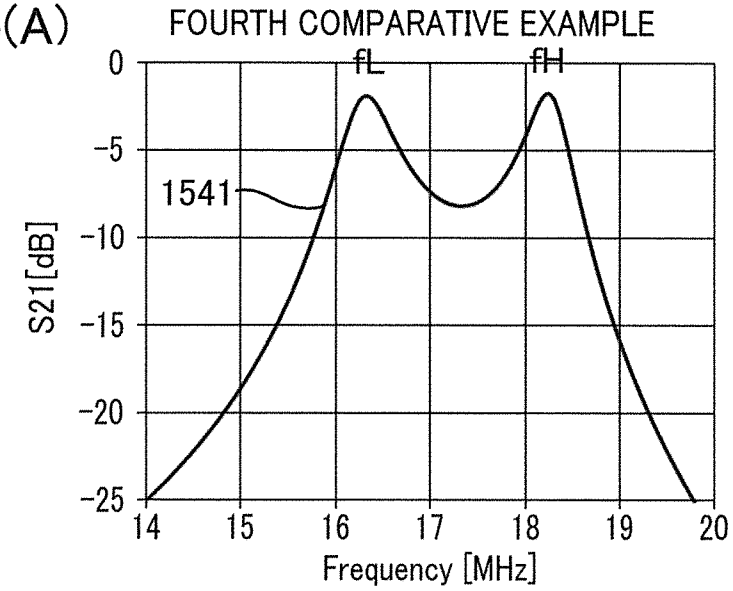


FIG.25(B)

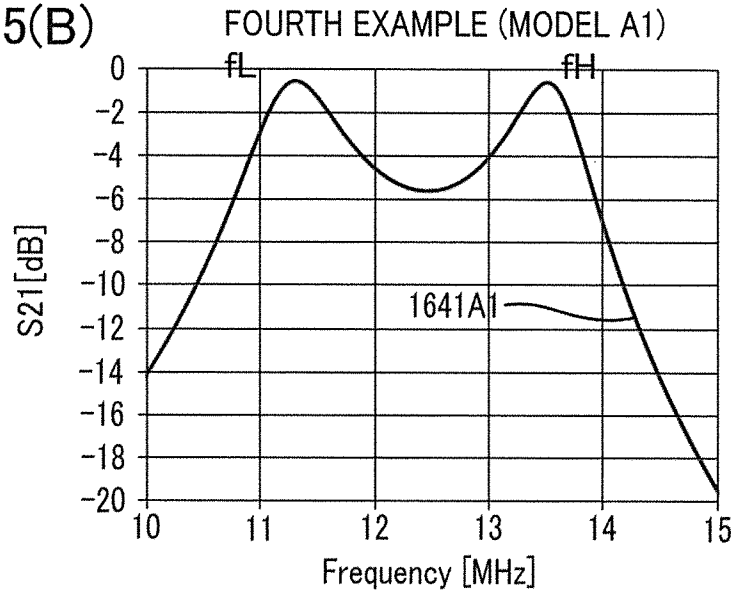


FIG.25(C)

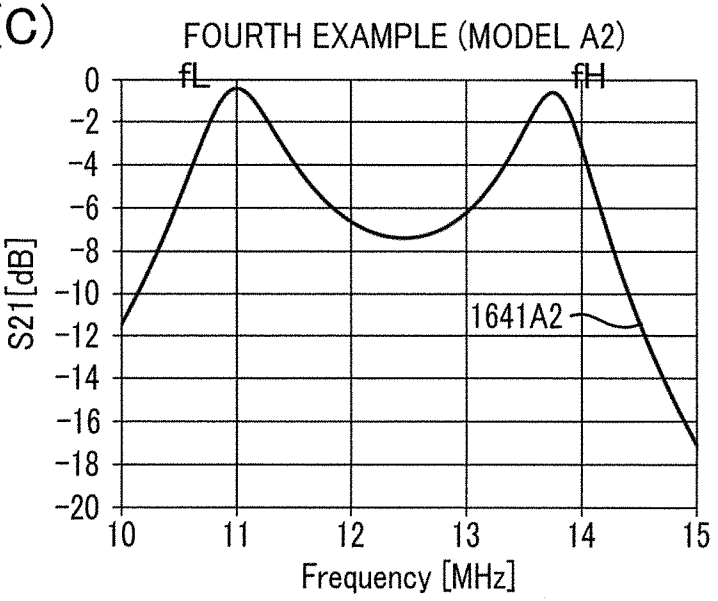


FIG.25(D)

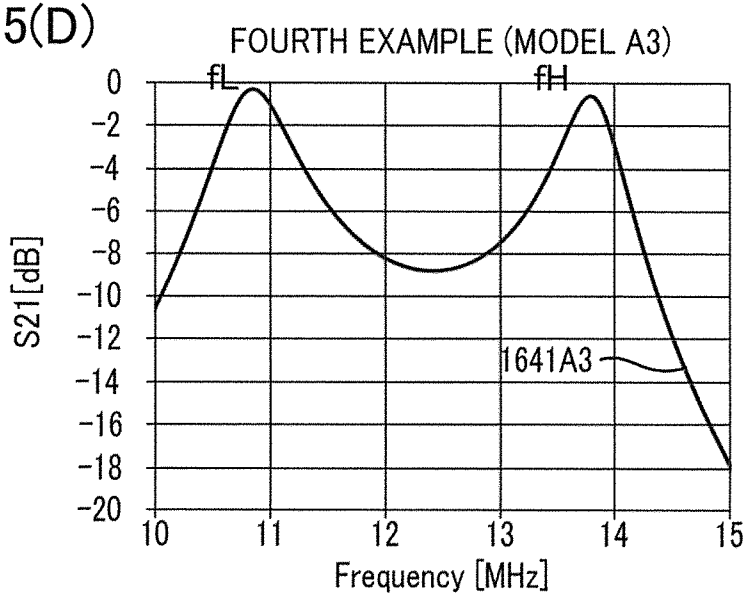


FIG.26

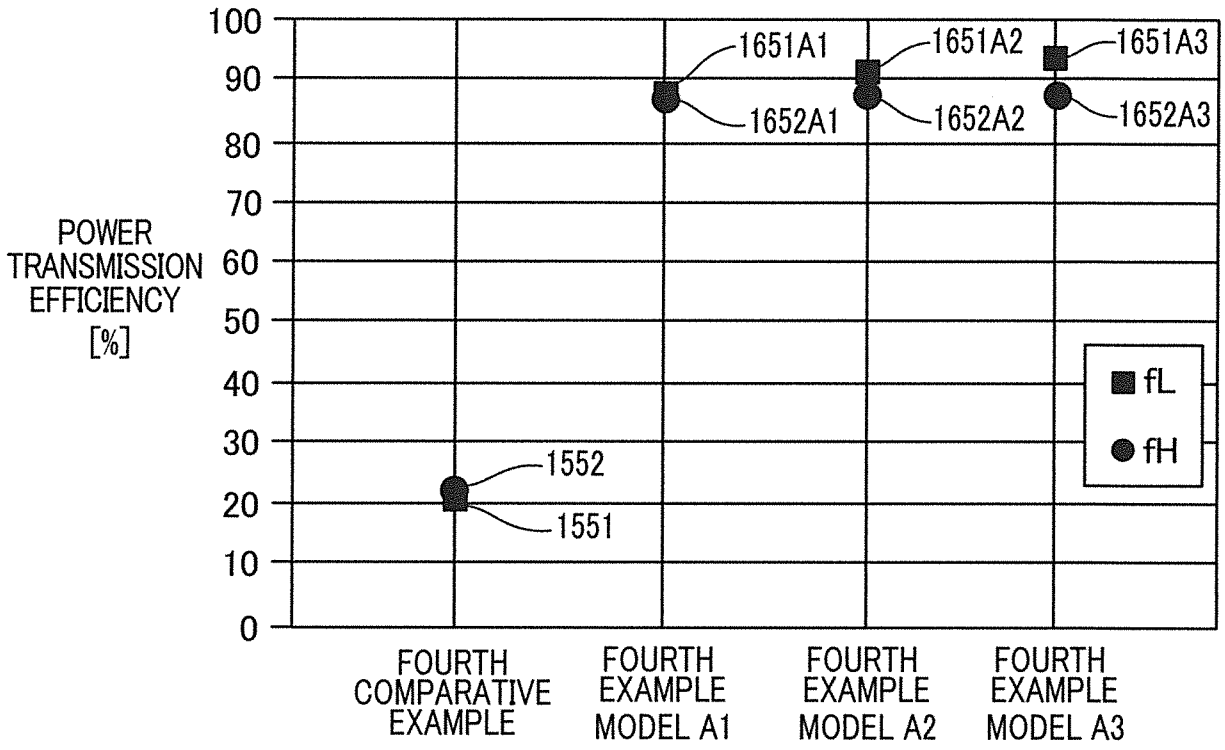

POWER TRANSMISSION EFFICIENCY [%]
100
90
80
70
60
50
40
30
20
10
0
1651A1
1651A2
1651A3
1652A1
1652A2
1652A3
1552
1551
fL
fH
FOURTH COMPARATIVE EXAMPLE
FOURTH EXAMPLE MODEL A1
FOURTH EXAMPLE MODEL A2
FOURTH EXAMPLE MODEL A3

FIG.27

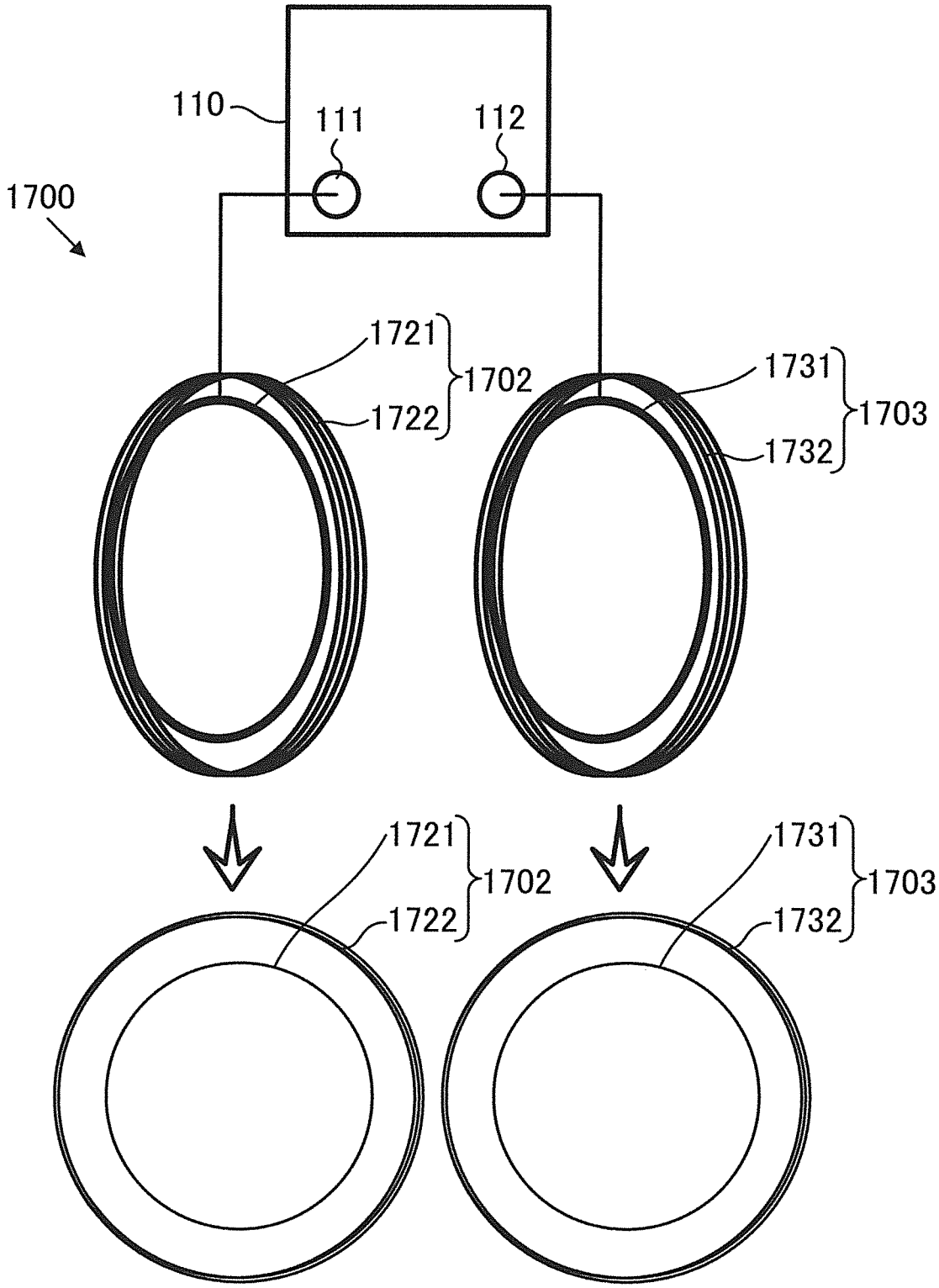

110
111
112
1700
1721
1722
1702
1731
1732
1703
1721
1722
1702
1731
1732
1703

FIG.28

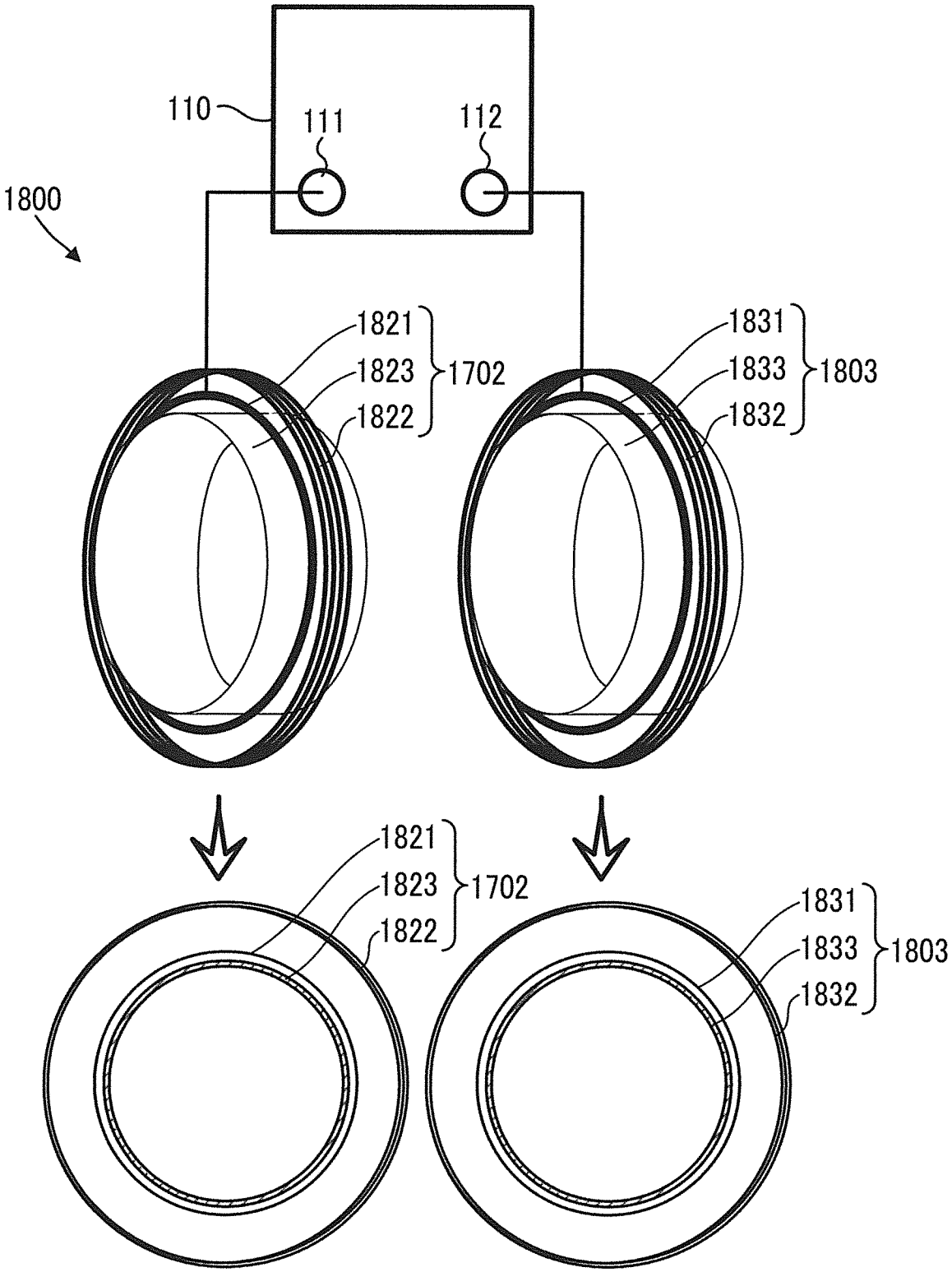

110
111
112
1800
1821
1823
1822
1702
1831
1833
1832
1803
1821
1823
1822
1702
1831
1833
1832
1803

FIG.29(A)

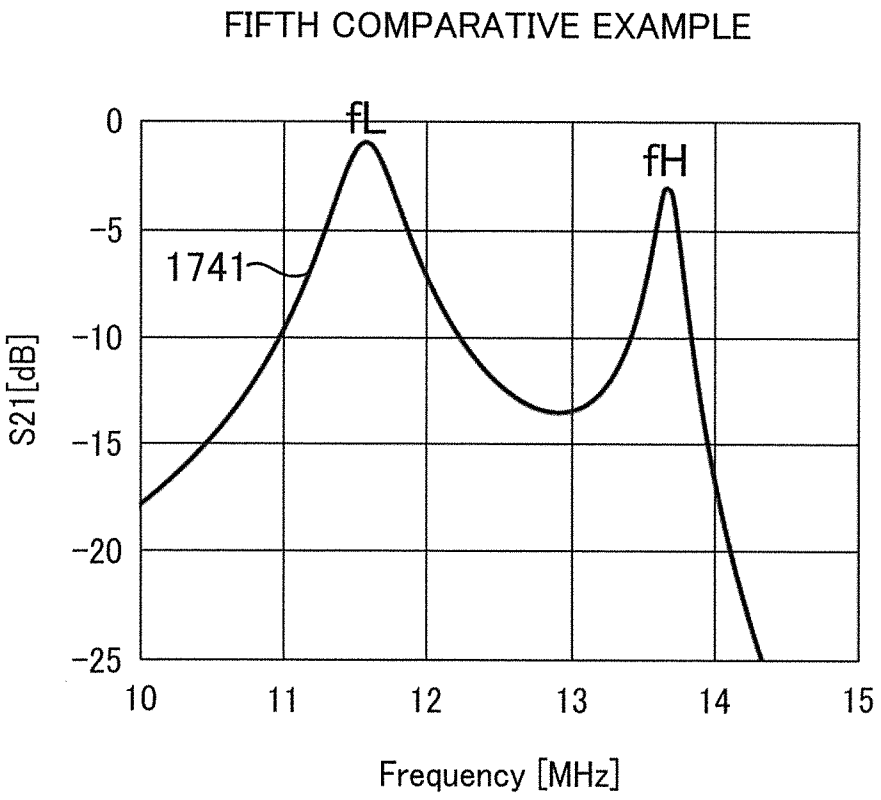


FIG.29(B)

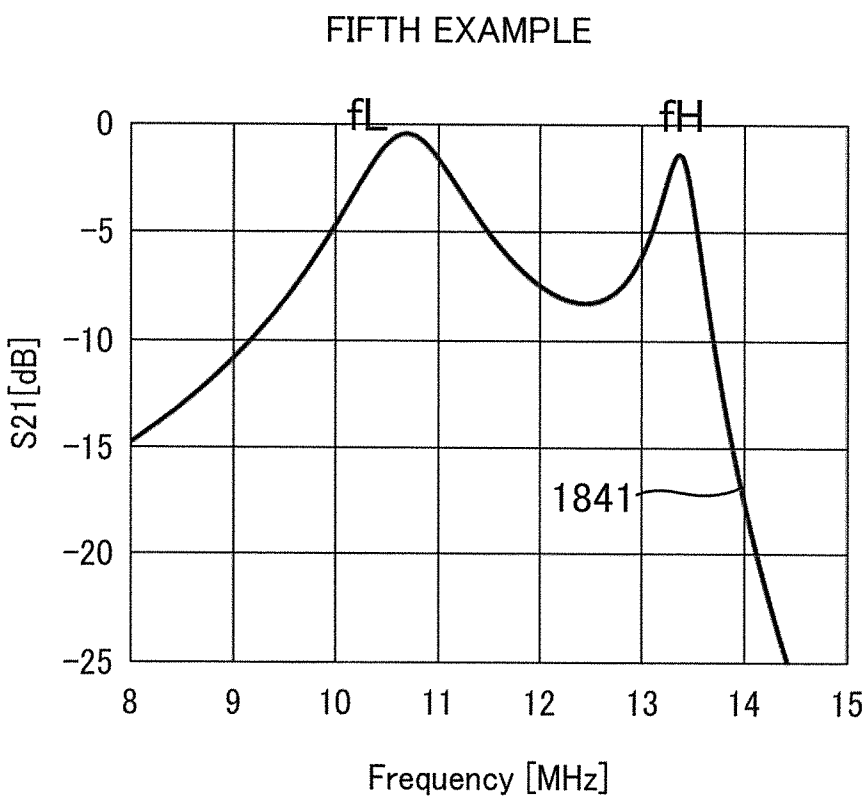
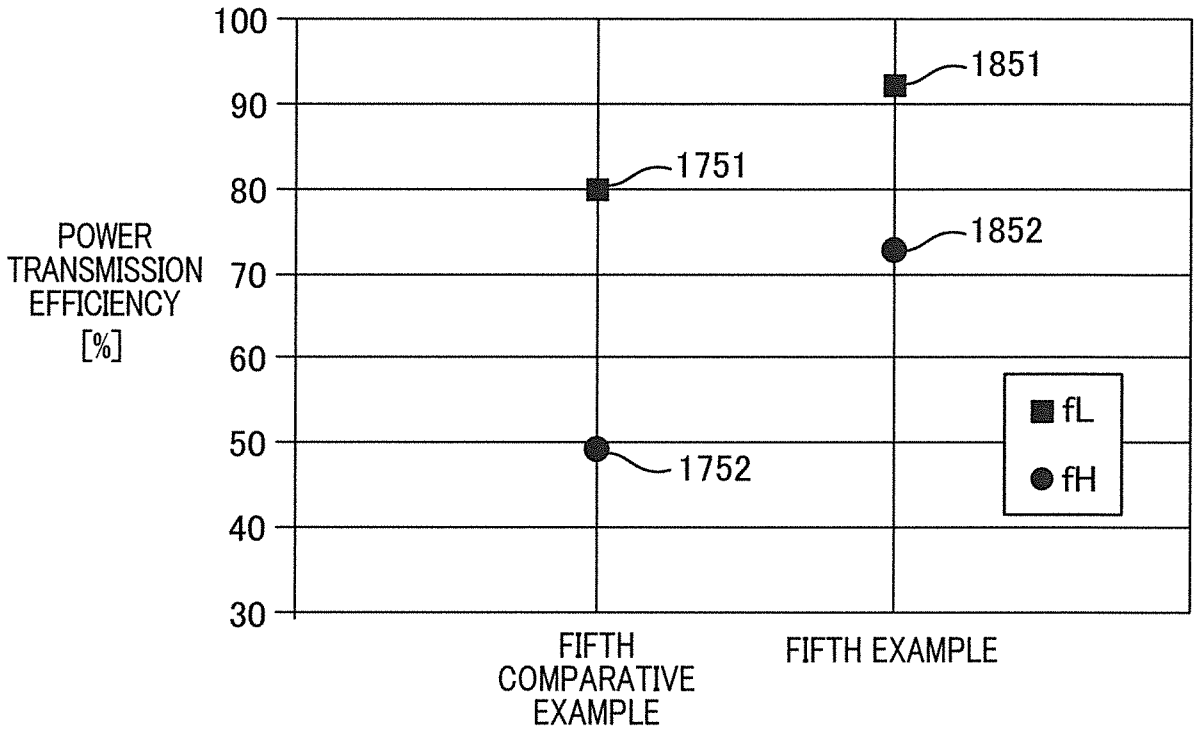


FIG.30


100
90
80
70
60
50
40
30
POWER TRANSMISSION EFFICIENCY [%]
1851
1751
1852
1752
fL
fH
FIFTH COMPARATIVE EXAMPLE
FIFTH EXAMPLE