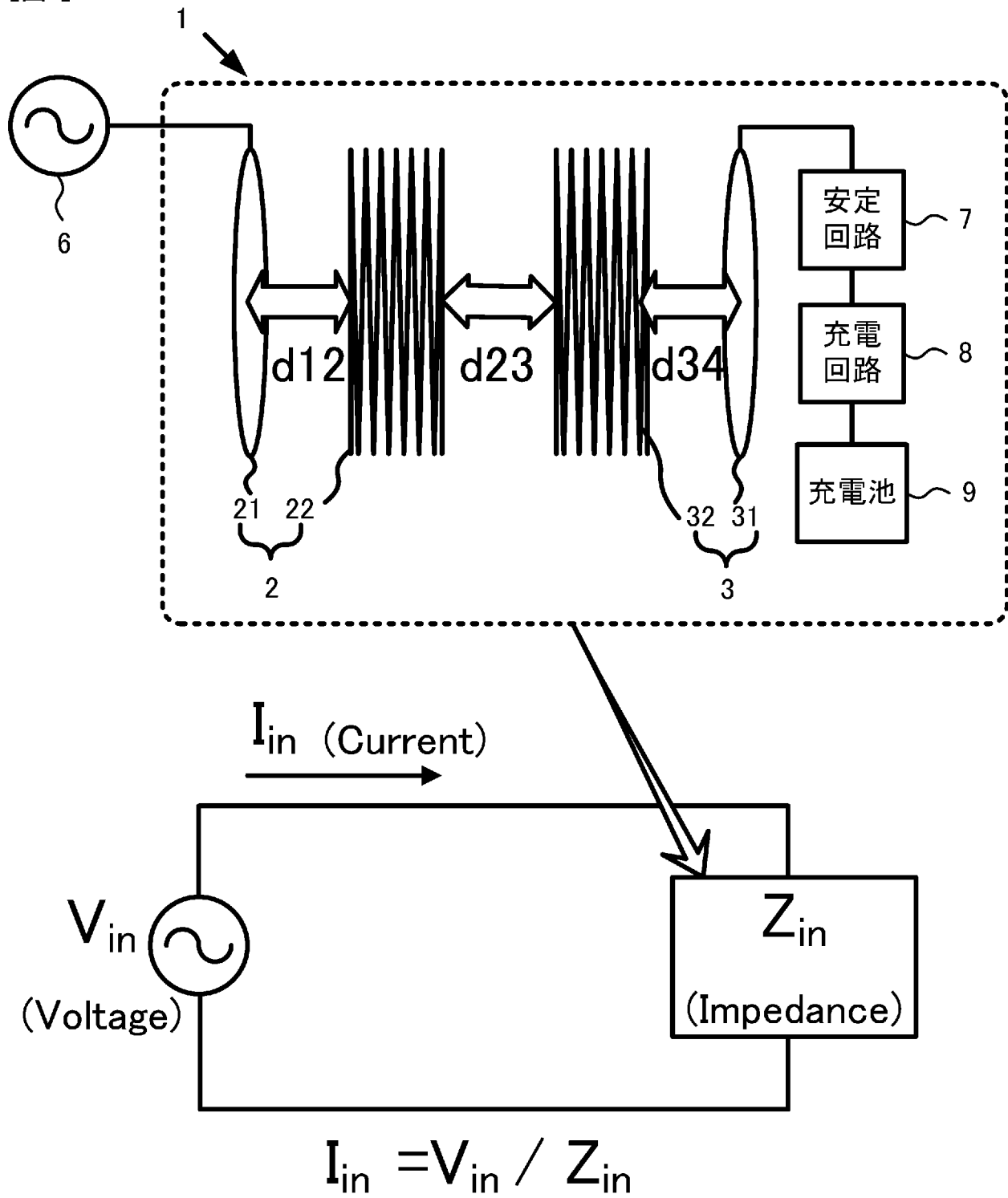
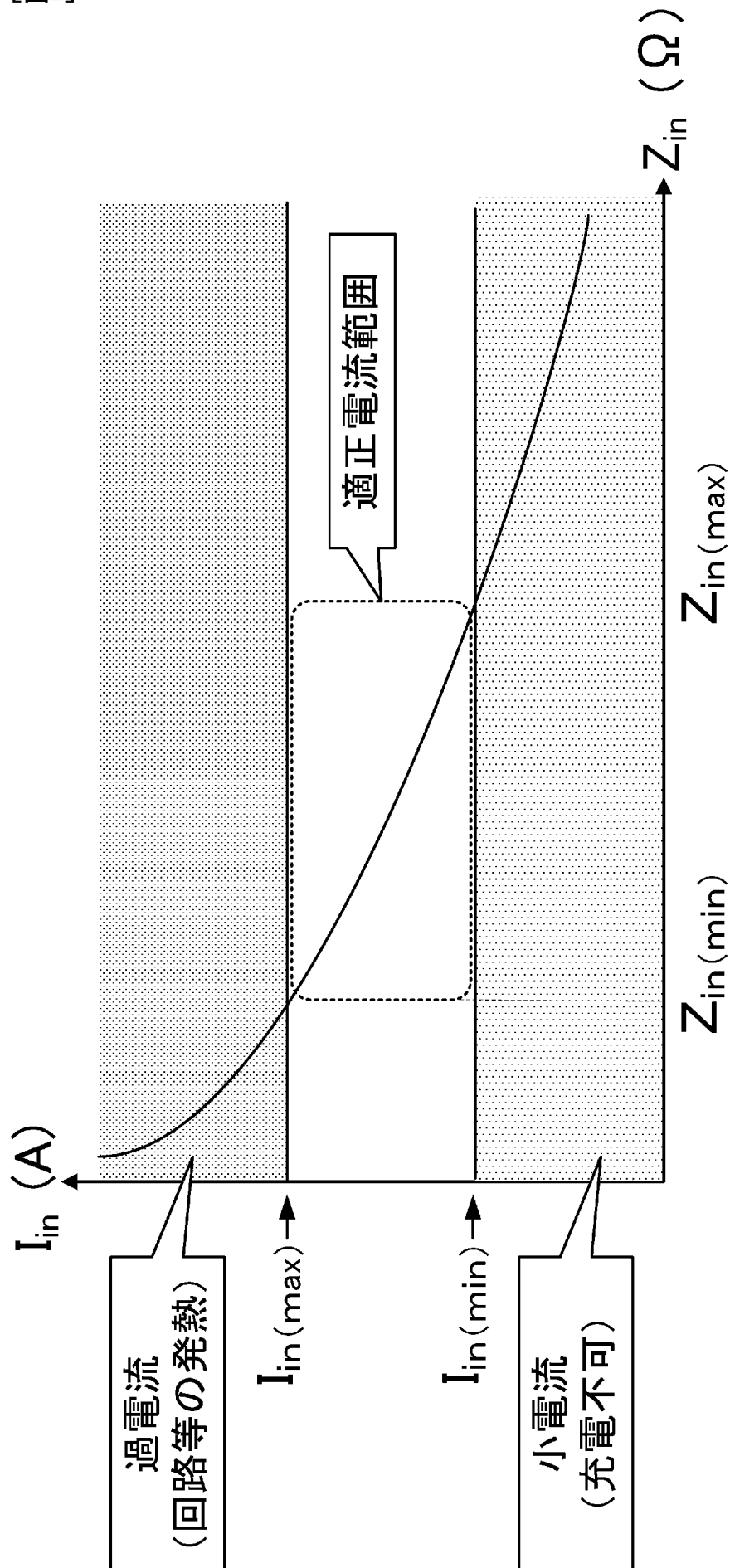


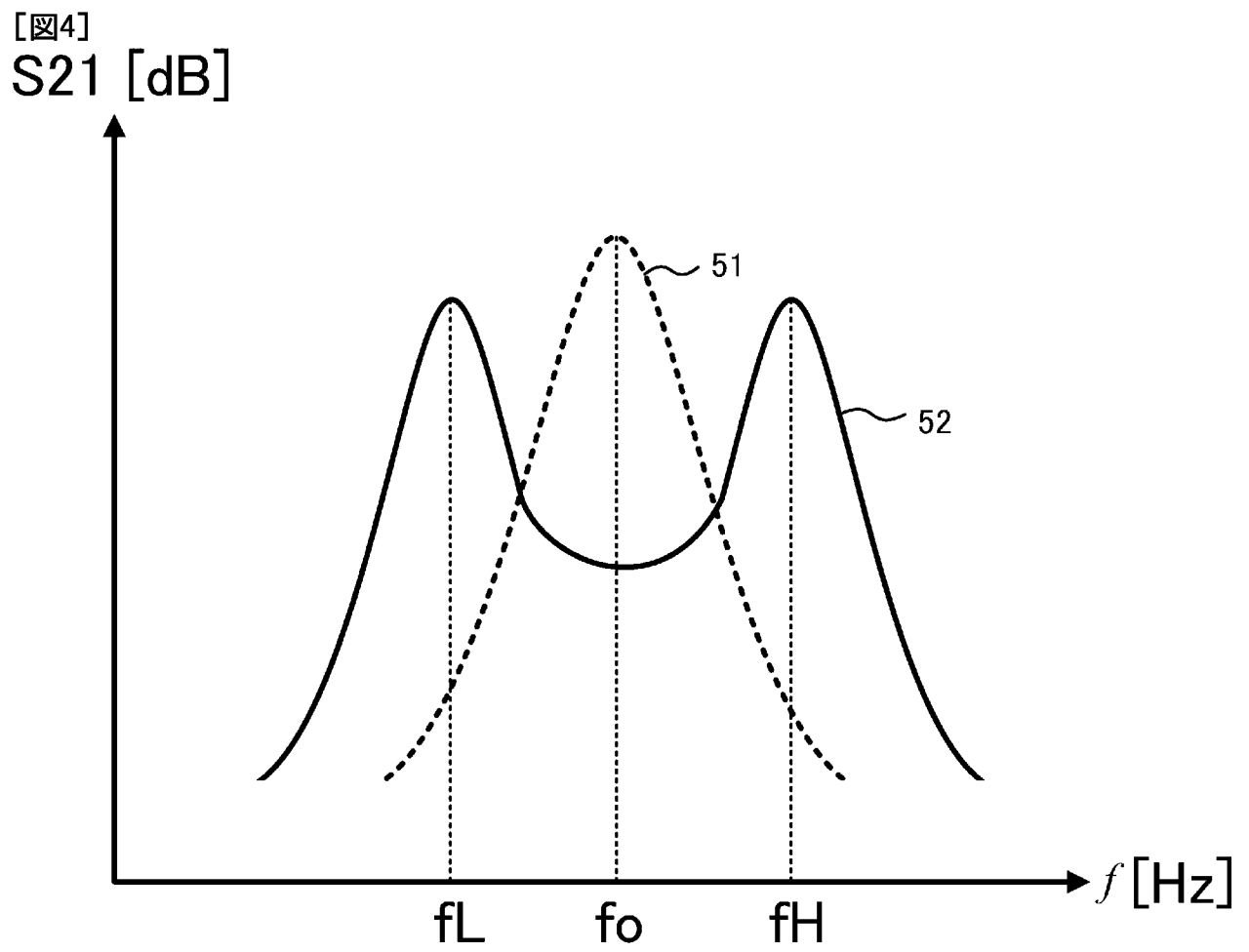
[図1]



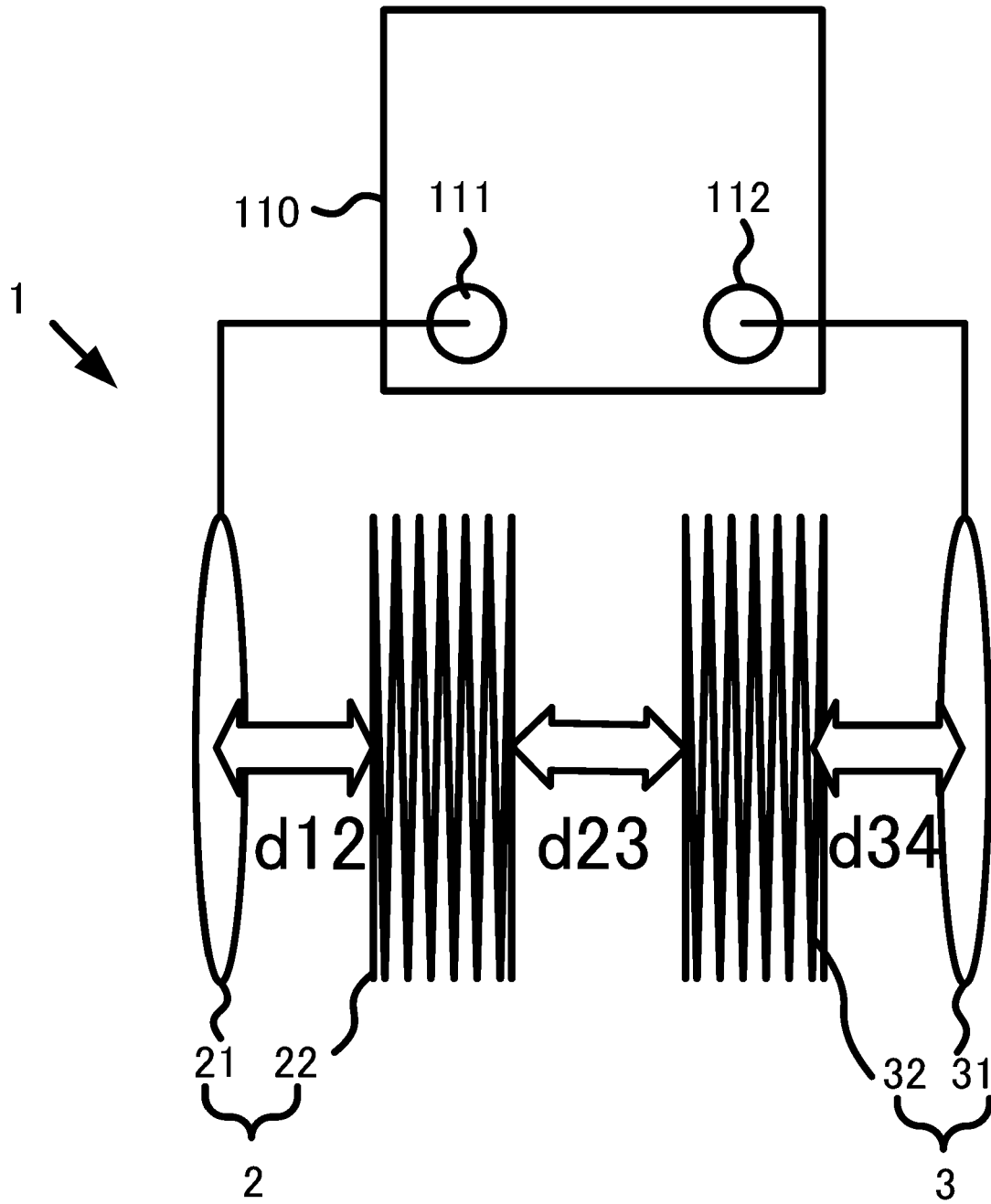
[図2]







[図5]



[図6]

| 単峰性  |         |         |         | 共振周波数( $f_0$ ) |                 |
|------|---------|---------|---------|----------------|-----------------|
|      | d12[mm] | d23[mm] | d34[mm] | S21[dB]        | Zin[ $\Omega$ ] |
| 比較例1 | 0       | 48      | 0       | -3.37          | 236.8           |
| 比較例2 | 1       | 48      | 0       | -2.74          | 186.1           |
| 比較例3 | 1       | 48      | 1       | -2.25          | 160.9           |
| 比較例4 | 2       | 48      | 2       | -1.68          | 123.3           |
| 比較例5 | 3       | 48      | 3       | -1.00          | 85.5            |
| 比較例6 | 4       | 48      | 4       | -0.84          | 66.6            |

[図7]

| 双峰性  |         |         |         | 同相 (fL) |                 | 逆相 (fH) |                 |
|------|---------|---------|---------|---------|-----------------|---------|-----------------|
|      | d12[mm] | d23[mm] | d34[mm] | S21[dB] | Zin[ $\Omega$ ] | S21[dB] | Zin[ $\Omega$ ] |
| 実施例1 | 5       | 48      | 5       | -0.68   | 62.13           | -1.49   | 64.25           |
| 実施例2 | 10      | 48      | 10      | -0.98   | 51.37           | -1.42   | 38.61           |
| 実施例3 | 20      | 48      | 20      | -1.83   | 38.03           | -3.12   | 21.97           |
| 実施例4 | 25      | 48      | 25      | -2.46   | 33.30           | -4.24   | 18.46           |
| 実施例5 | 30      | 48      | 30      | -3.21   | 29.26           | -5.60   | 15.28           |
| 実施例6 | 20      | 48      | 5       | -2.20   | 15.51           | -2.77   | 12.98           |
| 実施例7 | 5       | 48      | 20      | -2.58   | 149.81          | -2.06   | 116.76          |

[図8]

(B)

S21[dB]の値が約-2.8dBとなる場合のZinの値

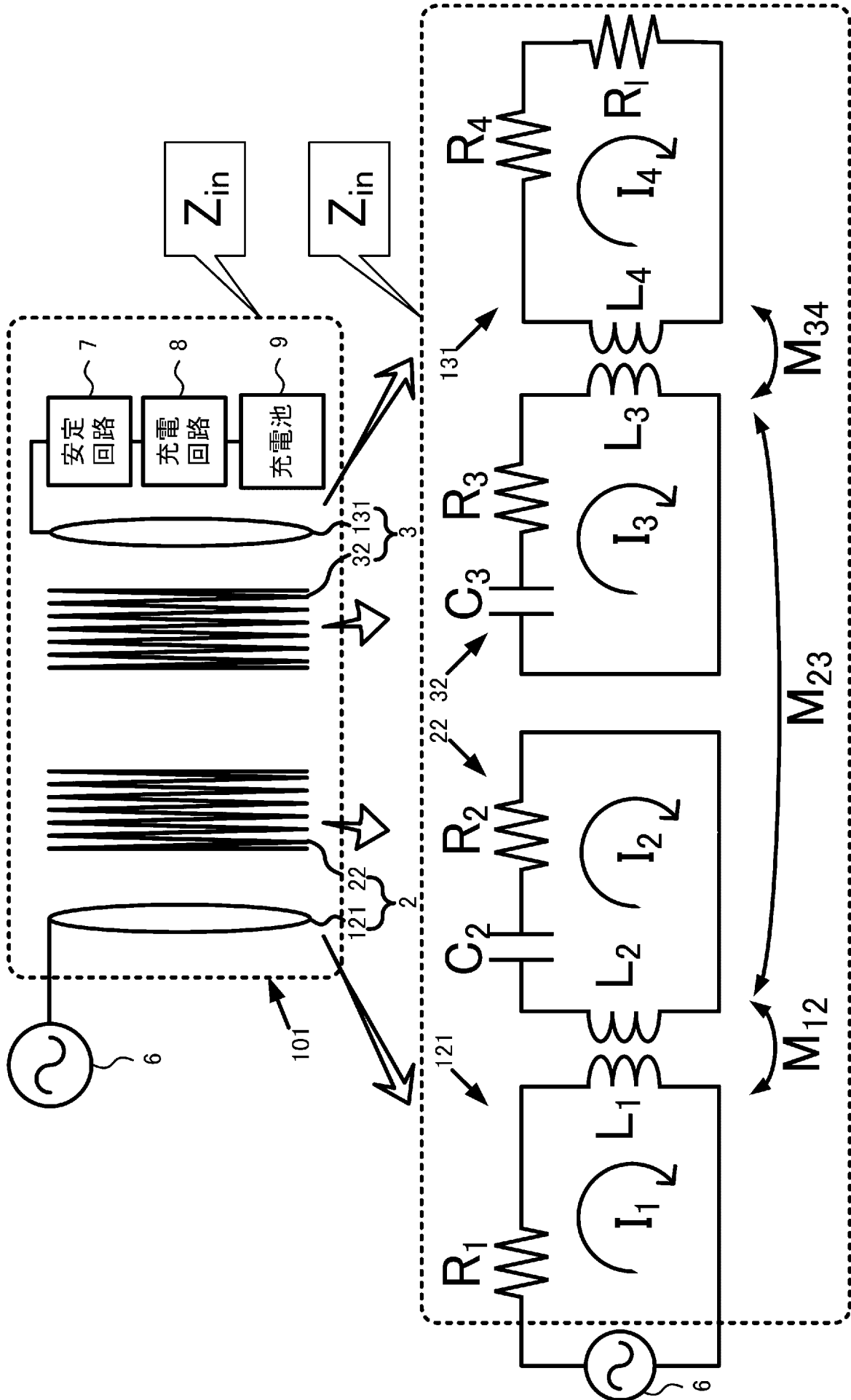
|       | 双峰性     |         |         |         | 逆相 (fH) |  |
|-------|---------|---------|---------|---------|---------|--|
|       | d12[mm] | d23[mm] | d34[mm] | S21[dB] | Zin[Ω]  |  |
| 実施例13 | 5       | 48      | 25      | -2.93   | 129.38  |  |
| 実施例14 | 10      | 48      | 25      | -2.96   | 72.66   |  |
| 実施例15 | 15      | 48      | 22      | -2.58   | 39.70   |  |
| 実施例16 | 20      | 48      | 10      | -2.83   | 14.65   |  |
| 実施例17 | 20      | 48      | 5       | -2.77   | 12.98   |  |

(A)

S21[dB]の値が約-2.2dBとなる場合のZinの値

|       | 双峰性     |         |         |         | 同相 (fL) |  |
|-------|---------|---------|---------|---------|---------|--|
|       | d12[mm] | d23[mm] | d34[mm] | S21[dB] | Zin[Ω]  |  |
| 実施例8  | 5       | 48      | 18      | -2.08   | 129.79  |  |
| 実施例9  | 10      | 48      | 22      | -2.25   | 94.30   |  |
| 実施例10 | 25      | 48      | 25      | -2.46   | 33.30   |  |
| 実施例11 | 24      | 48      | 10      | -2.26   | 16.47   |  |
| 実施例12 | 20      | 48      | 5       | -2.20   | 15.51   |  |

[図9]



[図10]

| 単峰性  |         |         |         | 共振周波数( $f_0$ ) |                 |
|------|---------|---------|---------|----------------|-----------------|
|      | d12[mm] | d23[mm] | d34[mm] | S21[dB]        | Zin[ $\Omega$ ] |
| 比較例1 | 0       | 48      | 0       | -3.15          | 212.3           |
| 比較例2 | 0       | 48      | 2       | -2.70          | <b>180.7</b>    |
| 比較例3 | 2       | 48      | 2       | -1.90          | 134.0           |
| 比較例4 | 3       | 48      | 3       | -1.21          | 97.8            |
| 比較例5 | 2       | 48      | 4       | -1.21          | 92.4            |
| 比較例6 | 4       | 48      | 4       | -0.86          | <b>68.9</b>     |

[図11]

| 双峰性  |         |         |         | 同相 ( $f_L$ ) |                 | 逆相 ( $f_H$ ) |                 |
|------|---------|---------|---------|--------------|-----------------|--------------|-----------------|
|      | d12[mm] | d23[mm] | d34[mm] | S21[dB]      | Zin[ $\Omega$ ] | S21[dB]      | Zin[ $\Omega$ ] |
| 実施例1 | 5       | 48      | 5       | -0.75        | 87.56           | -0.99        | 33.36           |
| 実施例2 | 10      | 48      | 10      | -1.04        | 78.15           | -1.49        | 33.51           |
| 実施例3 | 20      | 48      | 20      | -2.11        | 55.59           | -3.60        | 32.60           |
| 実施例4 | 25      | 48      | 25      | -2.74        | 49.82           | -5.32        | 31.85           |
| 実施例5 | 30      | 48      | 30      | -3.70        | 44.59           | -6.52        | 31.13           |
| 実施例6 | 25      | 48      | 5       | -2.91        | 33.05           | -5.81        | 20.54           |
| 実施例7 | 15      | 48      | 5       | -1.27        | 47.86           | -2.72        | <b>19.47</b>    |
| 実施例8 | 5       | 48      | 20      | -2.28        | <b>182.30</b>   | -2.95        | 113.80          |

[図12]

(B)

S21[dB]の値が約-2.7dBとなる場合のZinの値

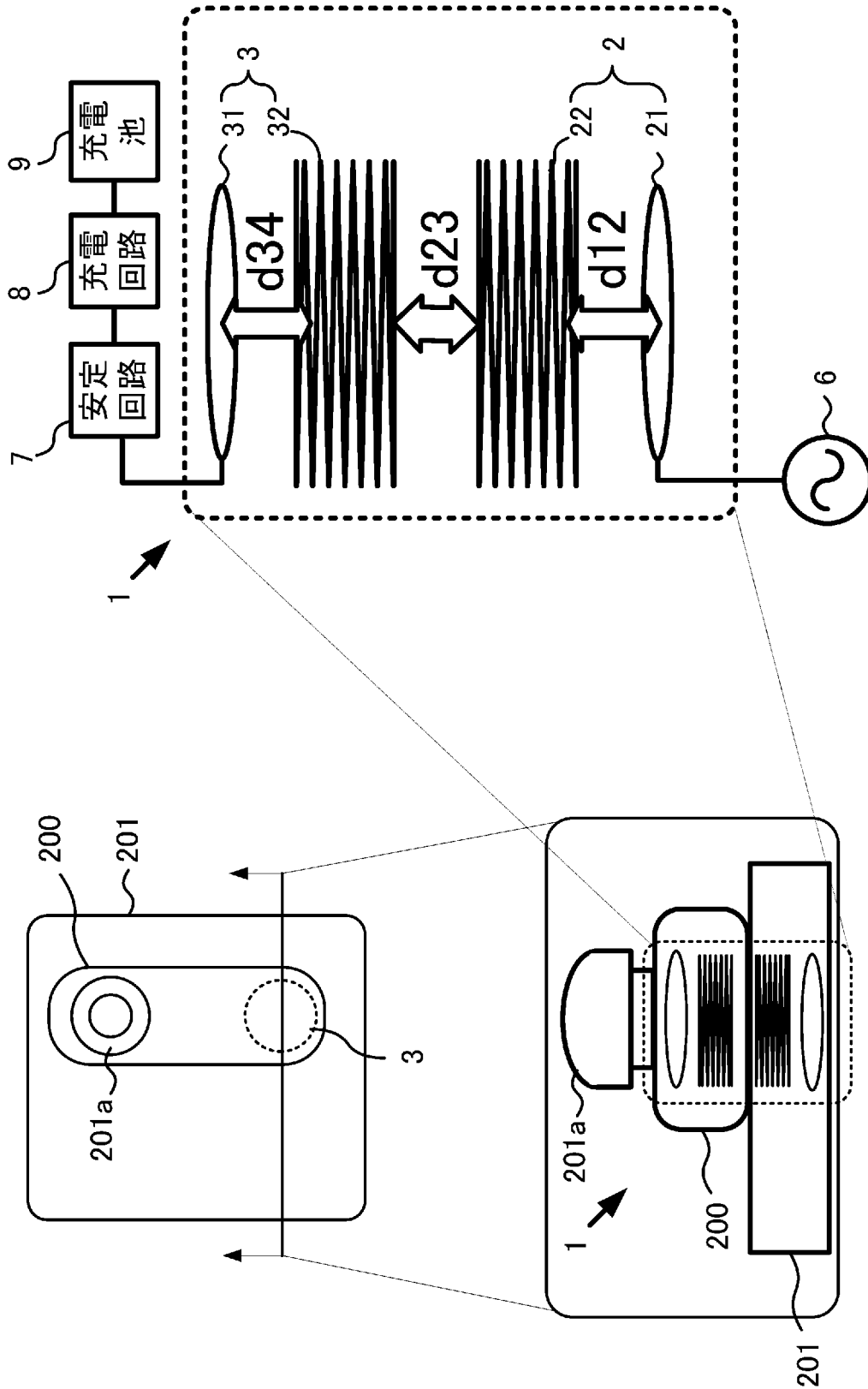
| 双峰性   |         |         |         | 逆相 (fH) |        |
|-------|---------|---------|---------|---------|--------|
|       | d12[mm] | d23[mm] | d34[mm] | S21[dB] | Zin[Ω] |
| 実施例16 | 5       | 48      | 19      | -2.69   | 102.14 |
| 実施例17 | 10      | 48      | 20      | -2.65   | 59.29  |
| 実施例18 | 15      | 48      | 20      | -2.90   | 42.35  |
| 実施例19 | 16      | 48      | 15      | -2.66   | 24.34  |
| 実施例20 | 15      | 48      | 5       | -2.72   | 19.47  |

(A)

S21[dB]の値が約-2.0dBとなる場合のZinの値

| 双峰性   |         |         |         | 同相 (fL) |        |
|-------|---------|---------|---------|---------|--------|
|       | d12[mm] | d23[mm] | d34[mm] | S21[dB] | Zin[Ω] |
| 実施例9  | 5       | 48      | 19      | -2.09   | 167.52 |
| 実施例10 | 10      | 48      | 20      | -2.01   | 107.95 |
| 実施例11 | 15      | 48      | 20      | -1.95   | 76.62  |
| 実施例12 | 20      | 48      | 20      | -2.11   | 55.59  |
| 実施例13 | 22      | 48      | 15      | -2.00   | 44.96  |
| 実施例14 | 22      | 48      | 10      | -2.00   | 40.05  |
| 実施例15 | 20      | 48      | 5       | -1.96   | 38.50  |

[図13]



[図14]

