

FIG.1

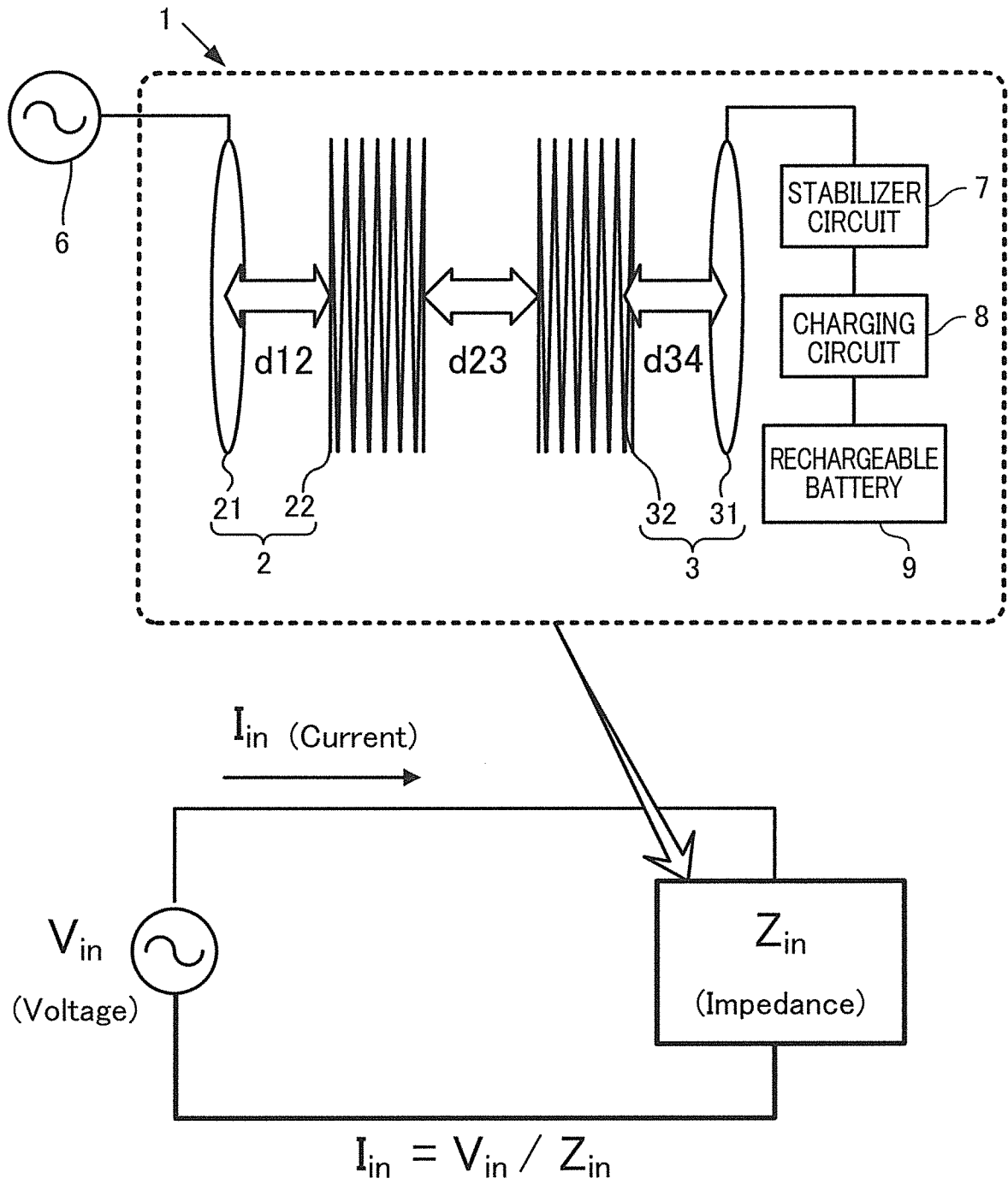


FIG.2

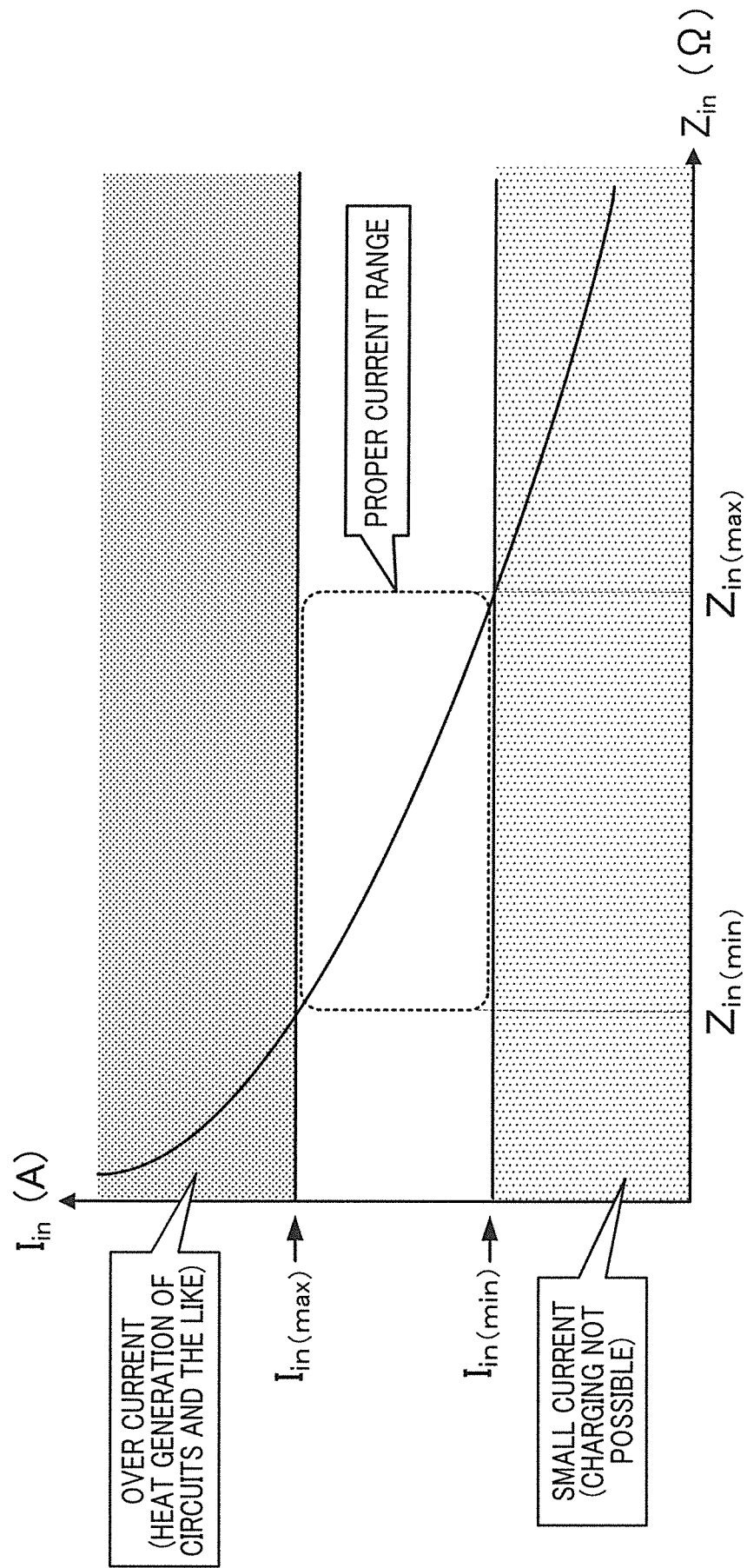


FIG.3

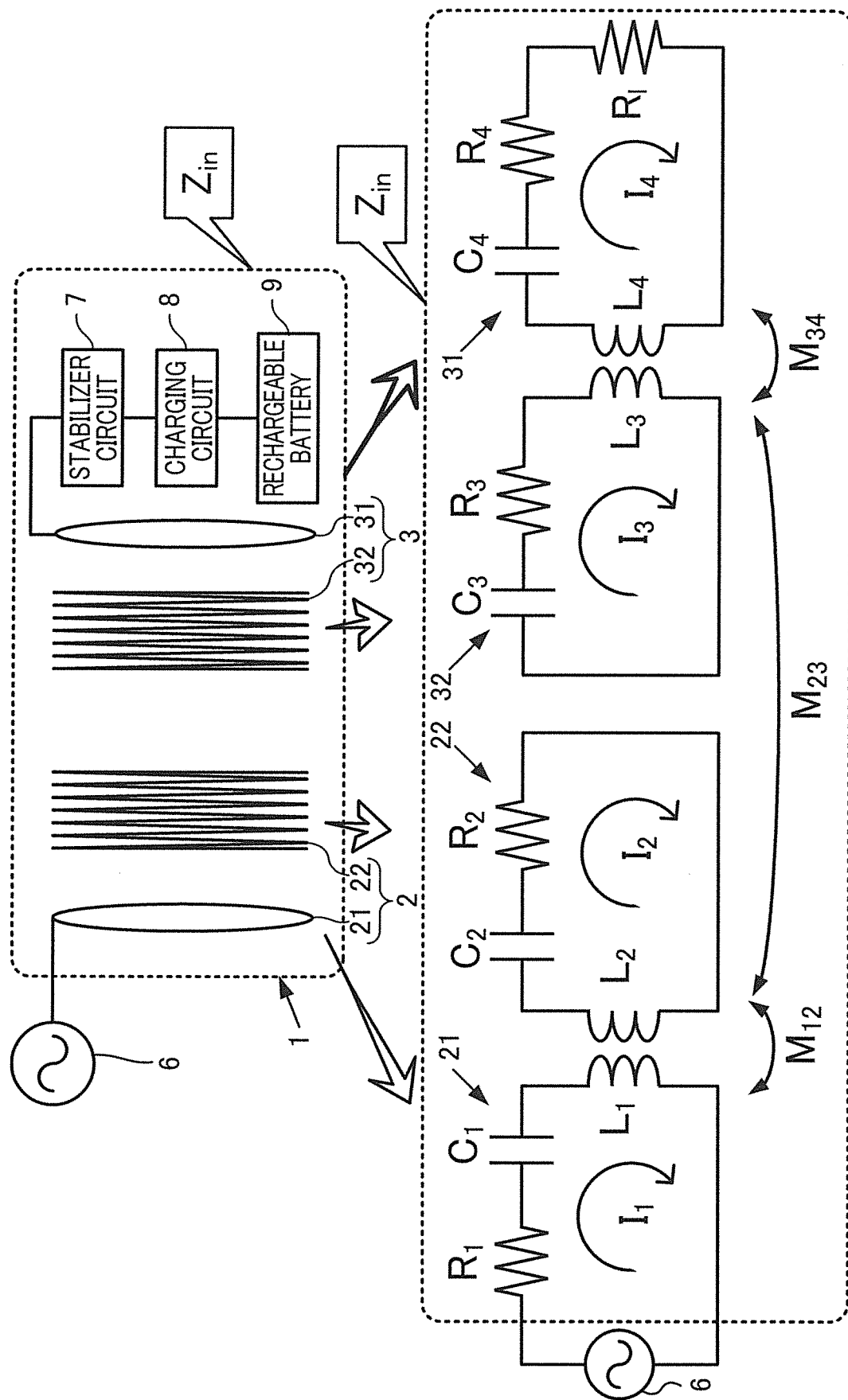


FIG.4

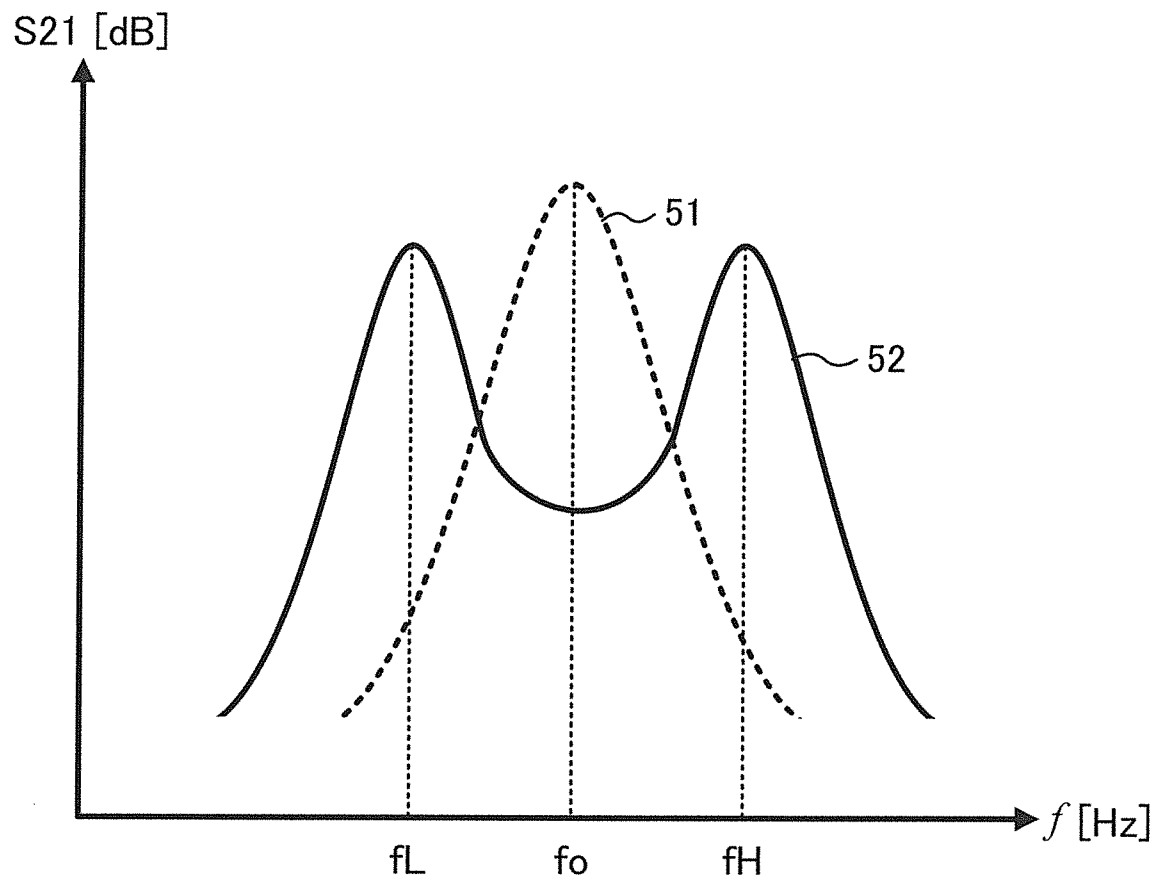


FIG. 5

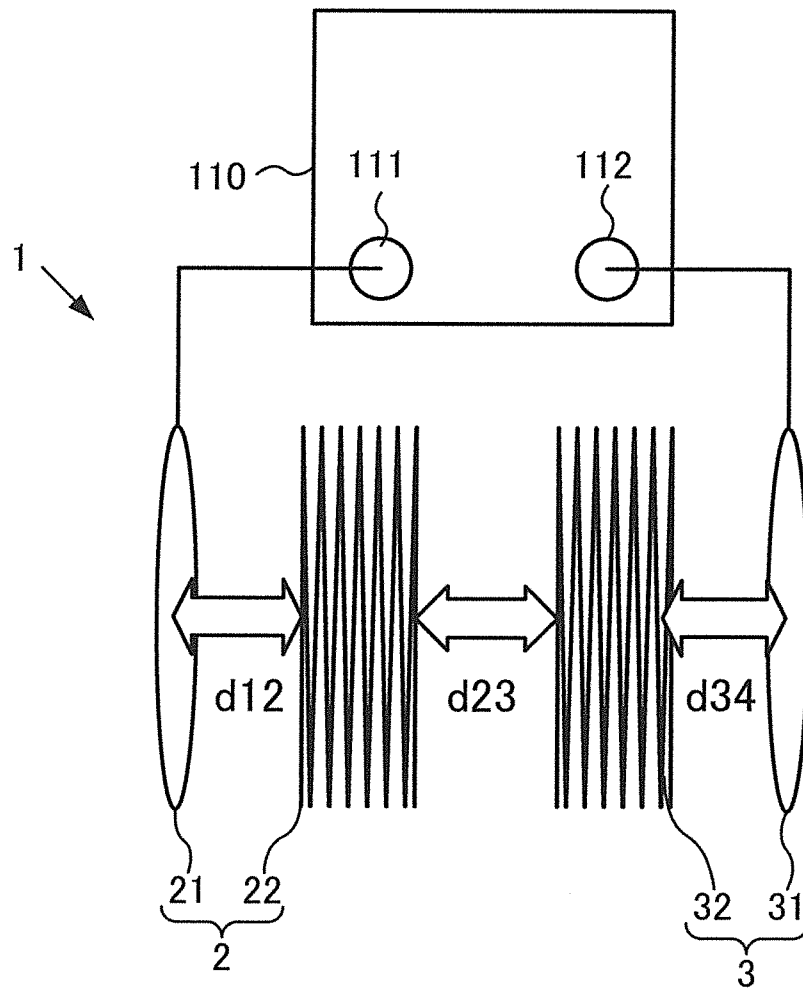


FIG.6

SINGLE-HUMP CHARACTERISTIC				RESONANCE FREQUENCY (fo)	
	d12[mm]	d23[mm]	d34[mm]	S21[dB]	Zin[Ω]
COMPARATIVE EXAMPLE 1	0	48	0	-3.37	236.8
COMPARATIVE EXAMPLE 2	1	48	0	-2.74	186.1
COMPARATIVE EXAMPLE 3	1	48	1	-2.25	160.9
COMPARATIVE EXAMPLE 4	2	48	2	-1.68	123.3
COMPARATIVE EXAMPLE 5	3	48	3	-1.00	85.5
COMPARATIVE EXAMPLE 6	4	48	4	-0.84	66.6

FIG.7

DOUBLE-HUMP CHARACTERISTIC				INPHASE (fL)		ANTIPHASE (fH)	
	d12[mm]	d23[mm]	d34[mm]	S21[dB]	Zin[Ω]	S21[dB]	Zin[Ω]
EXAMPLE 1	5	48	5	-0.68	62.13	-1.49	64.25
EXAMPLE 2	10	48	10	-0.98	51.37	-1.42	38.61
EXAMPLE 3	20	48	20	-1.83	38.03	-3.12	21.97
EXAMPLE 4	25	48	25	-2.46	33.30	-4.24	18.46
EXAMPLE 5	30	48	30	-3.21	29.26	-5.60	15.28
EXAMPLE 6	20	48	5	-2.20	15.51	-2.77	12.98
EXAMPLE 7	5	48	20	-2.58	149.81	-2.06	116.76

FIG.8(A)

VALUE OF Z_{in} BY WHICH VALUE OF S_{21} [dB]
IS APPROXIMATELY -2.2dB

	DOUBLE-HUMP CHARACTERISTIC				INPHASE (fL)	
	d12[mm]	d23[mm]	d34[mm]		S_{21} [dB]	Z_{in} [Ω]
EXAMPLE 8	5	48	18		-2.08	129.79
EXAMPLE 9	10	48	22		-2.25	94.30
EXAMPLE 10	25	48	25		-2.46	33.30
EXAMPLE 11	24	48	10		-2.26	16.47
EXAMPLE 12	20	48	5		-2.20	15.51

FIG.8(B)

VALUE OF Z_{in} BY WHICH VALUE OF S_{21} [dB]
IS APPROXIMATELY -2.8dB

	DOUBLE-HUMP CHARACTERISTIC				ANTI PHASE (fH)	
	d12[mm]	d23[mm]	d34[mm]		S_{21} [dB]	Z_{in} [Ω]
EXAMPLE 13	5	48	25		-2.93	129.38
EXAMPLE 14	10	48	25		-2.96	72.66
EXAMPLE 15	15	48	22		-2.58	39.70
EXAMPLE 16	20	48	10		-2.83	14.65
EXAMPLE 17	20	48	5		-2.77	12.98

FIG.9

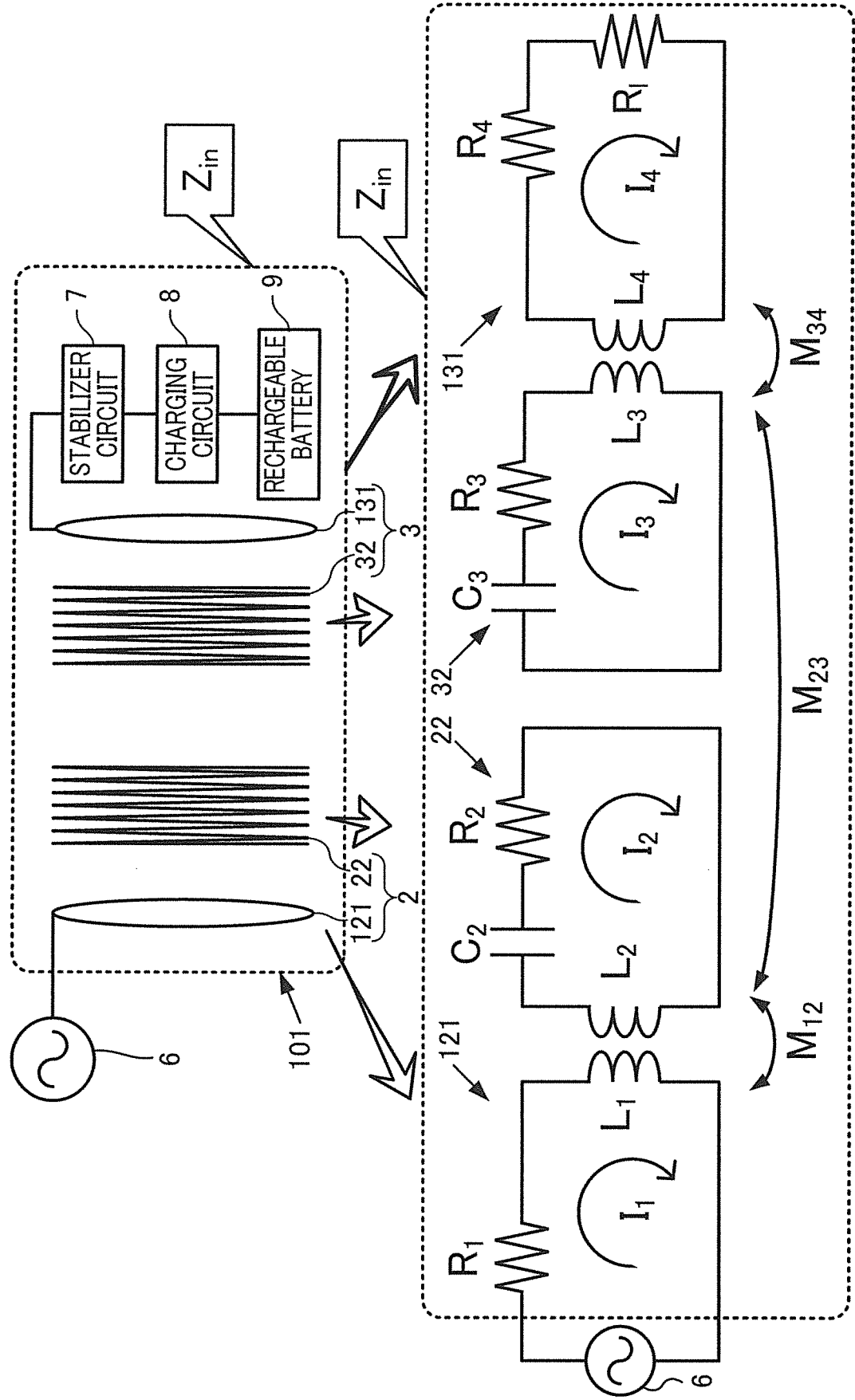


FIG.10

SINGLE-HUMP CHARACTERISTIC				RESONANCE FREQUENCY (f ₀)	
	d12[mm]	d23[mm]	d34[mm]	S21[dB]	Zin[Ω]
COMPARATIVE EXAMPLE 1	0	48	0	-3.15	212.3
COMPARATIVE EXAMPLE 2	0	48	2	-2.70	180.7
COMPARATIVE EXAMPLE 3	2	48	2	-1.90	134.0
COMPARATIVE EXAMPLE 4	3	48	3	-1.21	97.8
COMPARATIVE EXAMPLE 5	2	48	4	-1.21	92.4
COMPARATIVE EXAMPLE 6	4	48	4	-0.86	68.9

FIG.11

DOUBLE-HUMP CHARACTERISTIC				INPHASE (fL)		ANTIPHASE (fH)	
	d12[mm]	d23[mm]	d34[mm]	S21[dB]	Zin[Ω]	S21[dB]	Zin[Ω]
EXAMPLE 1	5	48	5	-0.75	87.56	-0.99	33.36
EXAMPLE 2	10	48	10	-1.04	78.15	-1.49	33.51
EXAMPLE 3	20	48	20	-2.11	55.59	-3.60	32.60
EXAMPLE 4	25	48	25	-2.74	49.82	-5.32	31.85
EXAMPLE 5	30	48	30	-3.70	44.59	-6.52	31.13
EXAMPLE 6	25	48	5	-2.91	33.05	-5.81	20.54
EXAMPLE 7	15	48	5	-1.27	47.86	-2.72	19.47
EXAMPLE 8	5	48	20	-2.28	182.30	-2.95	113.80

FIG.12(A)

VALUE OF Z_{in} BY WHICH VALUE OF S21 [dB]
IS APPROXIMATELY -2.0dB

	DOUBLE-HUMP CHARACTERISTIC				INPHASE (fL)	
	d12[mm]	d23[mm]	d34[mm]	S21[dB]	Z _{in} [Ω]	
EXAMPLE 9	5	48	19	-2.09	167.52	
EXAMPLE 10	10	48	20	-2.01	107.95	
EXAMPLE 11	15	48	20	-1.95	76.62	
EXAMPLE 12	20	48	20	-2.11	55.59	
EXAMPLE 13	22	48	15	-2.00	44.96	
EXAMPLE 14	22	48	10	-2.00	40.05	
EXAMPLE 15	20	48	5	-1.96	38.50	

FIG.12(B)

VALUE OF Z_{in} BY WHICH VALUE OF S21 [dB]
IS APPROXIMATELY -2.7dB

	DOUBLE-HUMP CHARACTERISTIC				ANTI PHASE (fH)	
	d12[mm]	d23[mm]	d34[mm]	S21[dB]	Z _{in} [Ω]	
EXAMPLE 16	5	48	19	-2.69	102.14	
EXAMPLE 17	10	48	20	-2.65	59.29	
EXAMPLE 18	15	48	20	-2.90	42.35	
EXAMPLE 19	16	48	15	-2.66	24.34	
EXAMPLE 20	15	48	5	-2.72	19.47	

FIG.13

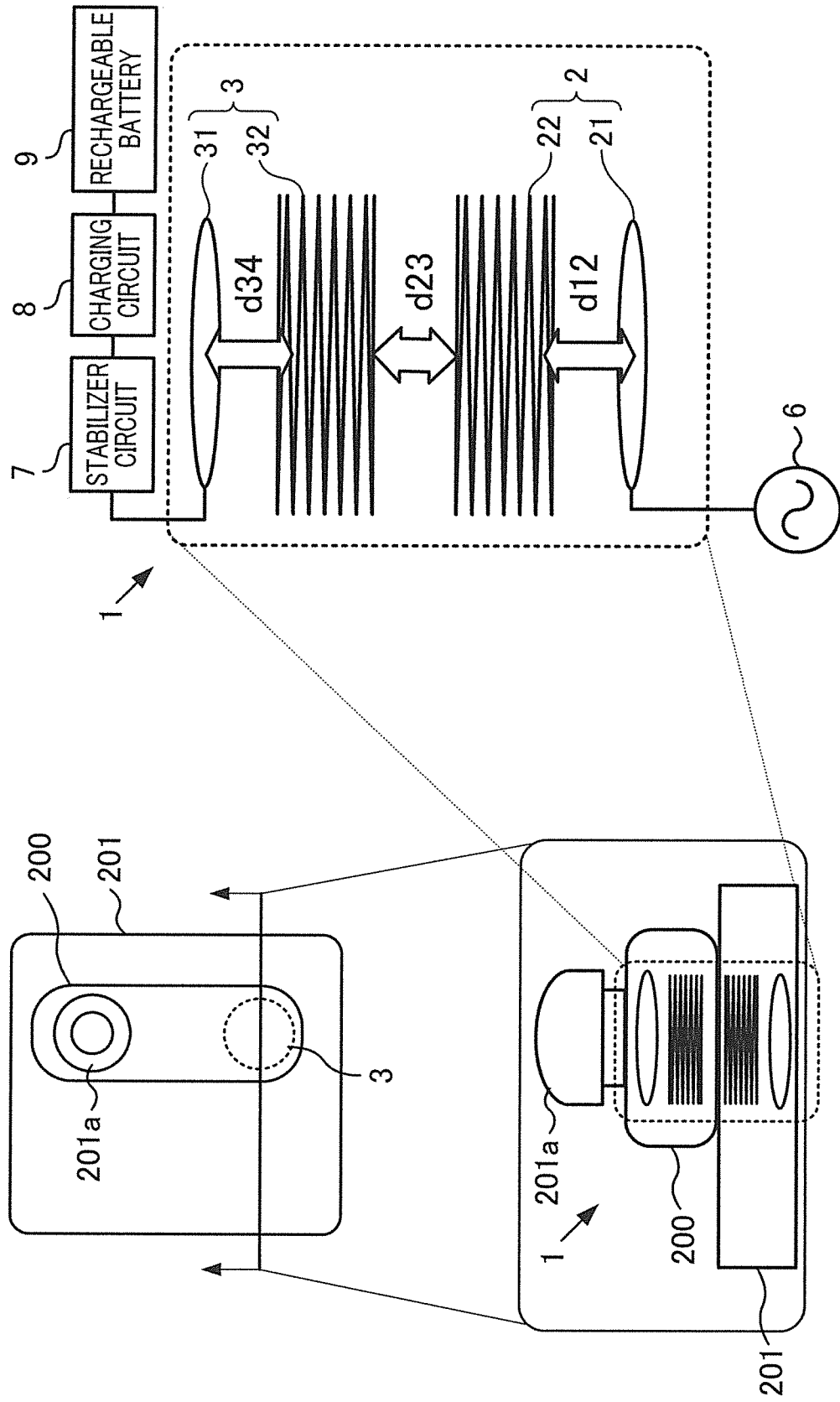


FIG.14

