FIG.1A

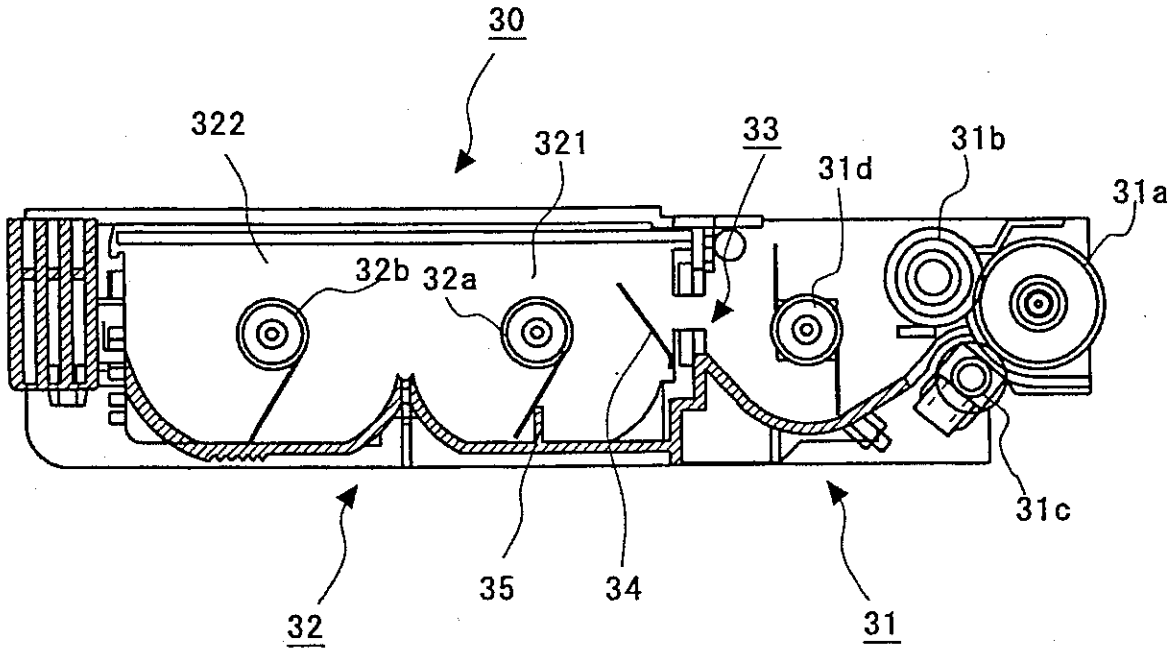

30
322
321
33
31d
31b
31a
32b
32a
31c
35
34
32
31

FIG.1B

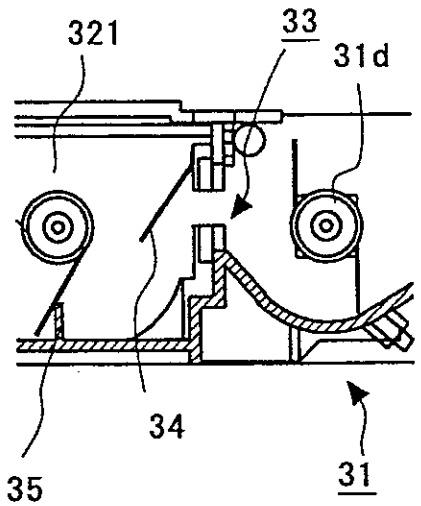

321
33
31d
34
35
31

FIG.2

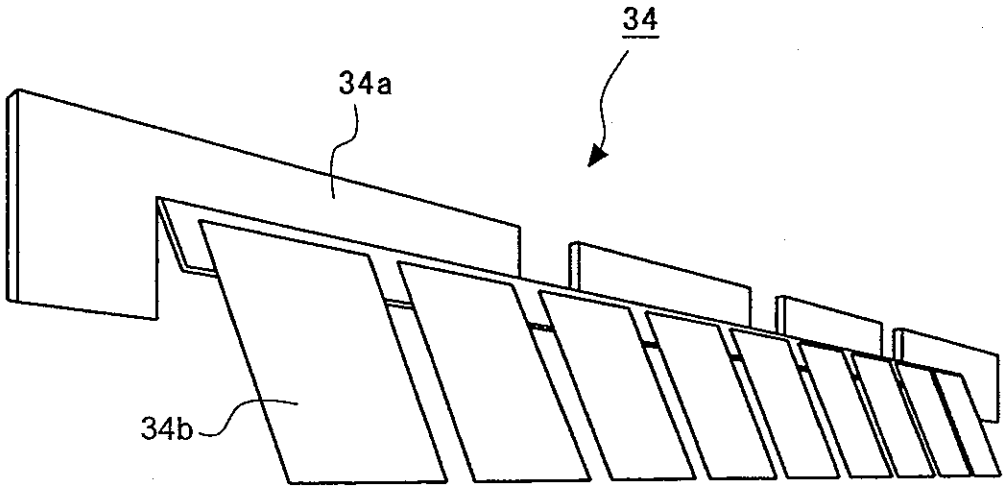


FIG.3

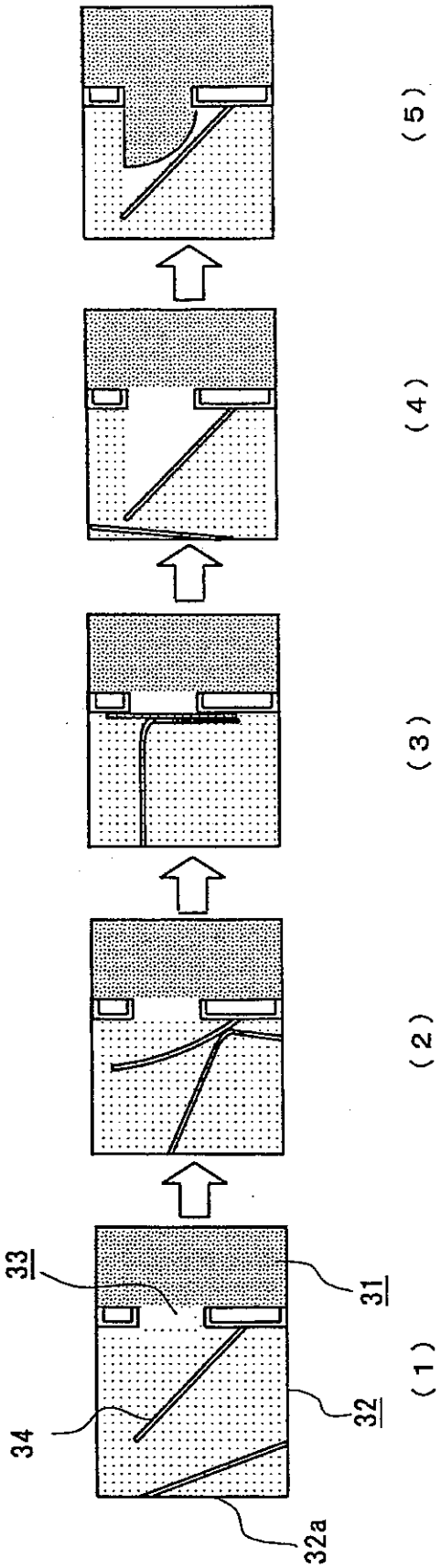


FIG.4

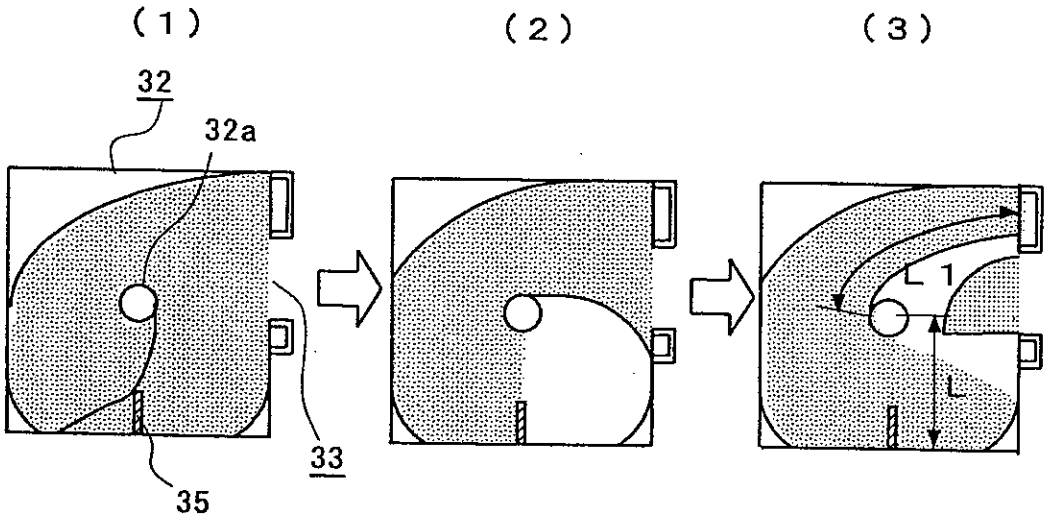


FIG.5

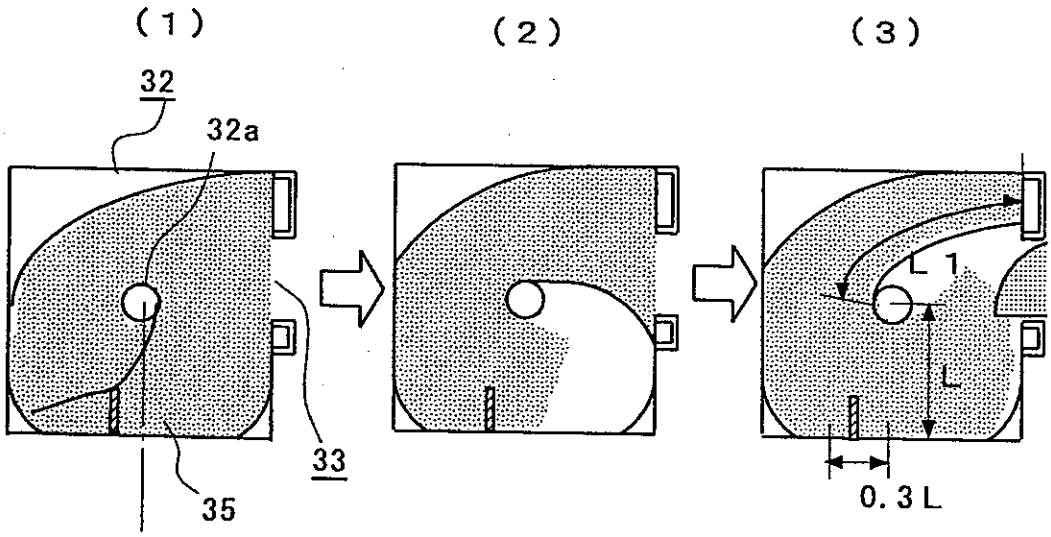


FIG.6

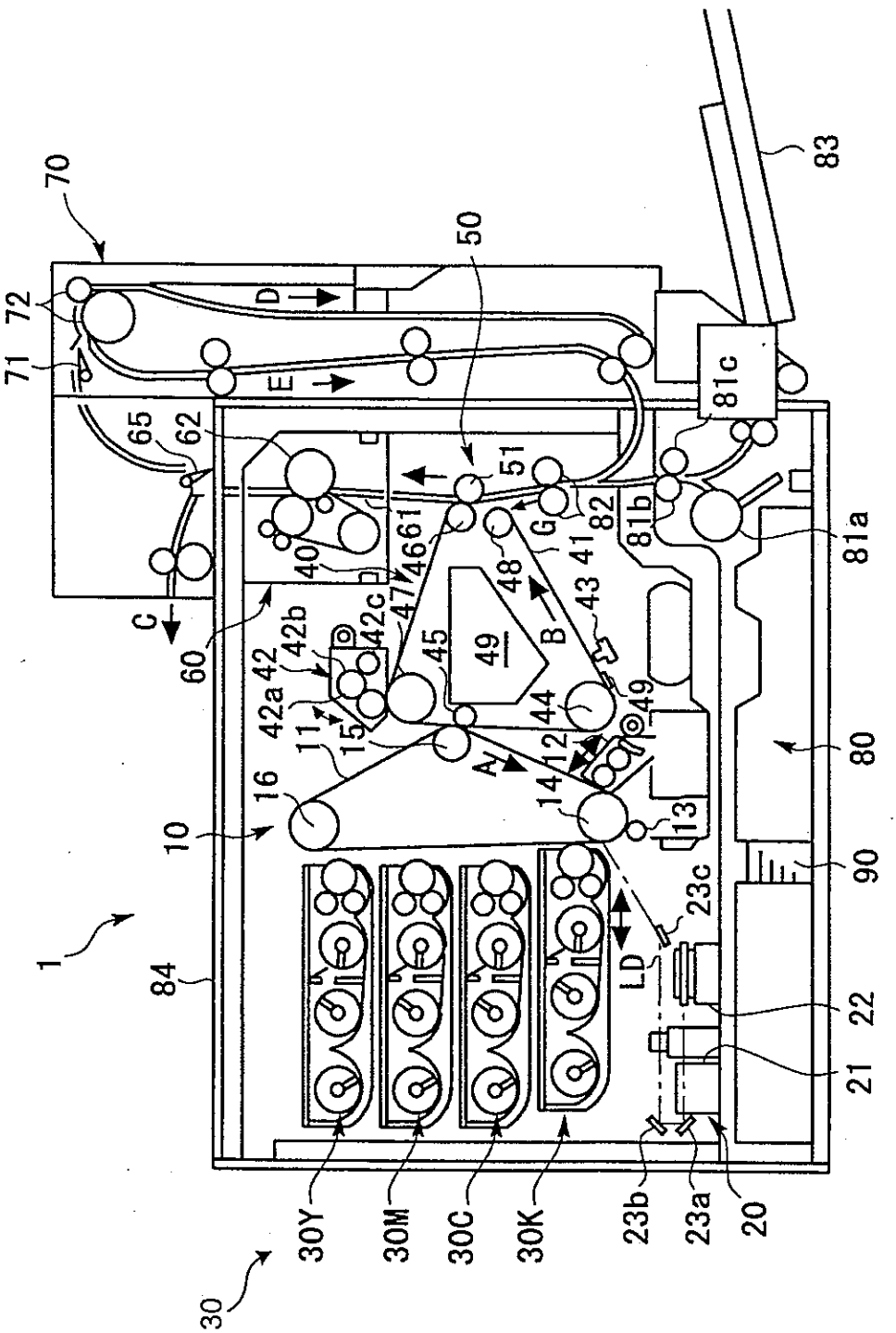

70
72
71
65
62
C
60
42
42a
42b
42c
11
15
16
10
1
84
30
30Y
30M
30C
30K
40
46
61
47
45
49
48
43
41
82
51
50
D
E
G
B
A
44
12
14
13
LD
23c
23b
23a
20
22
21
90
80
81a
81b
81c
83

FIG.7

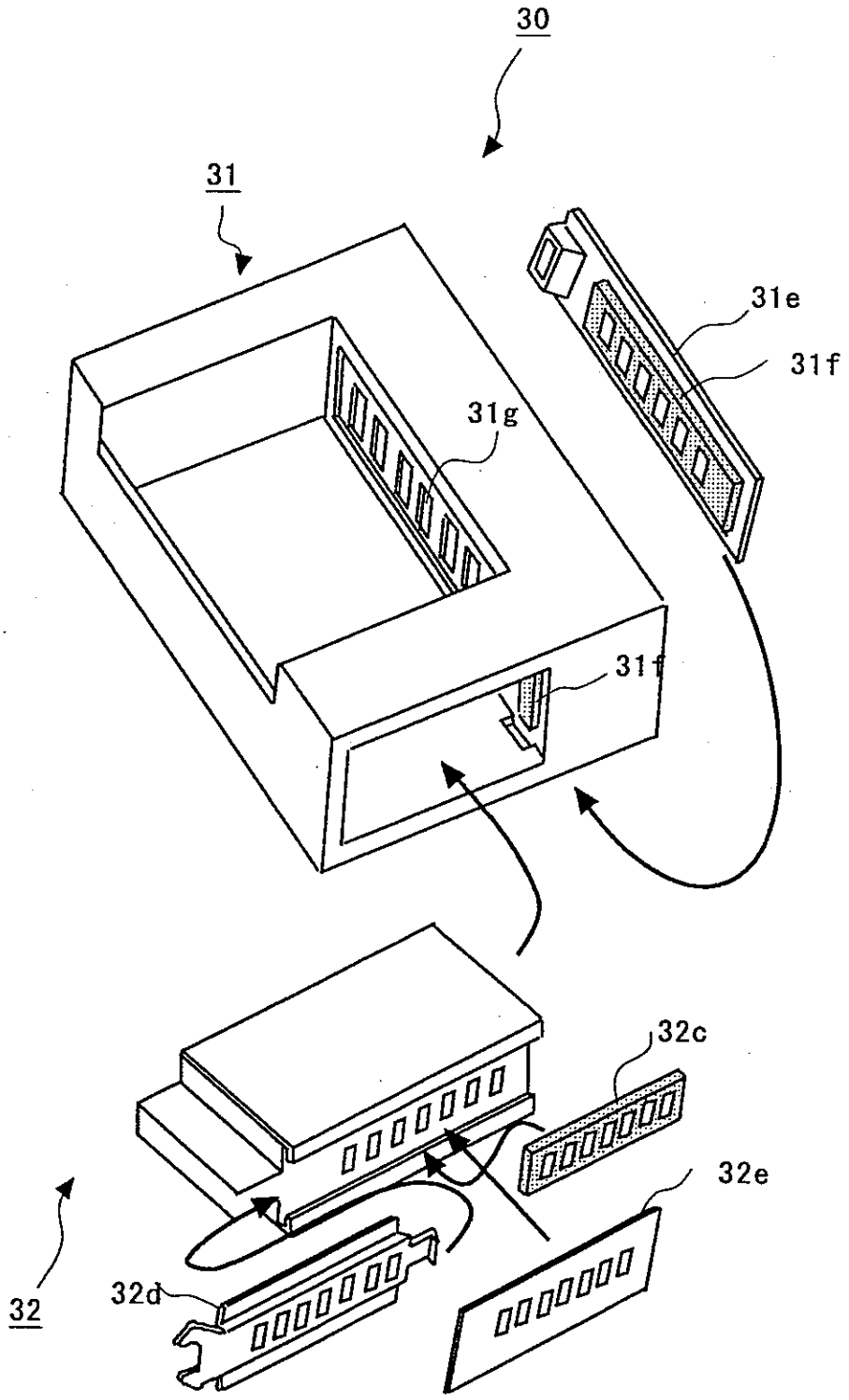


FIG.8

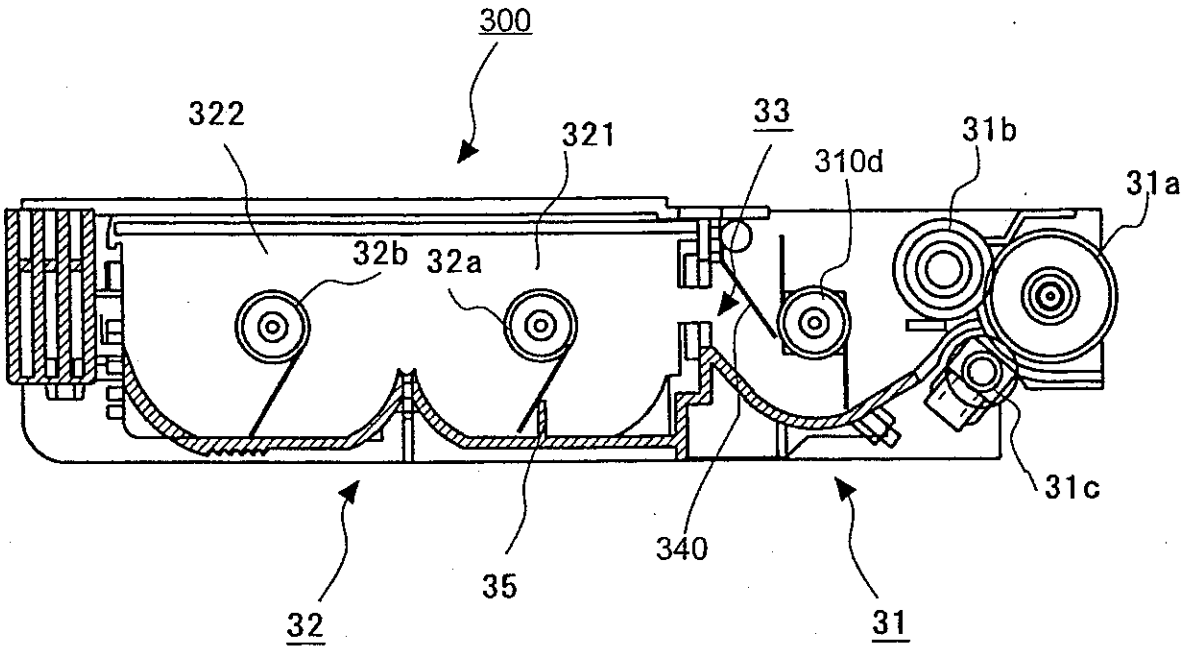


FIG.9

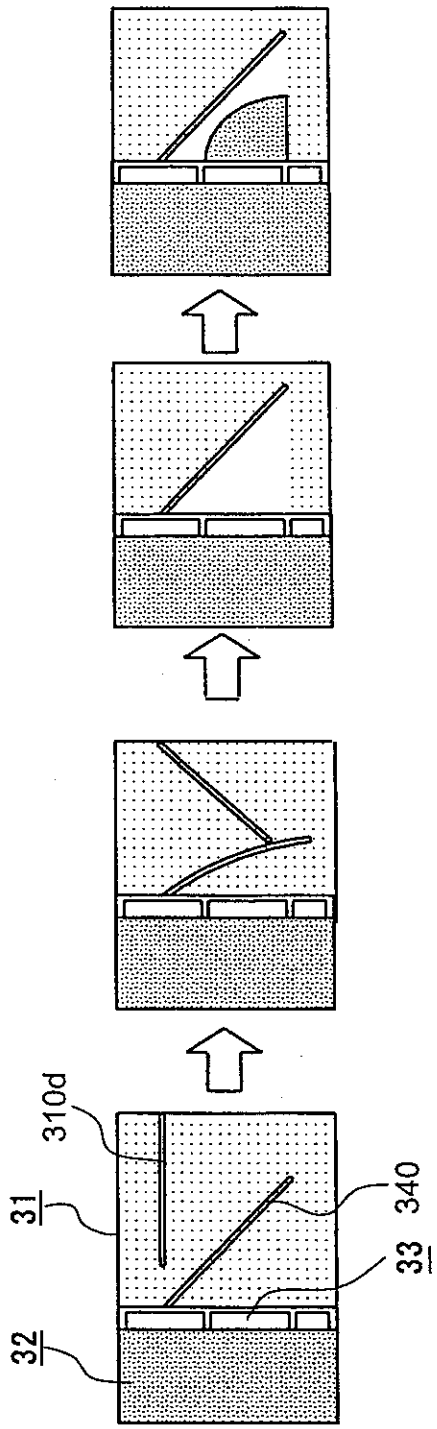


FIG.10

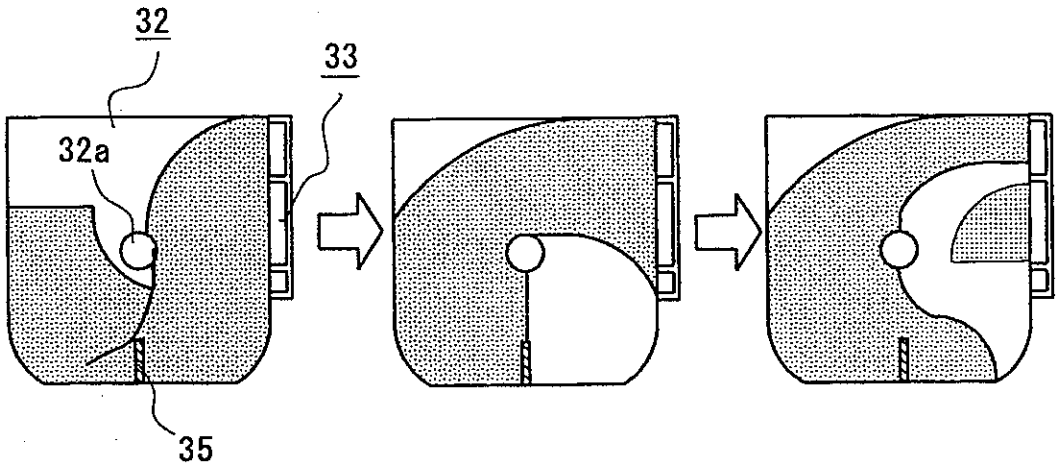


FIG.11A

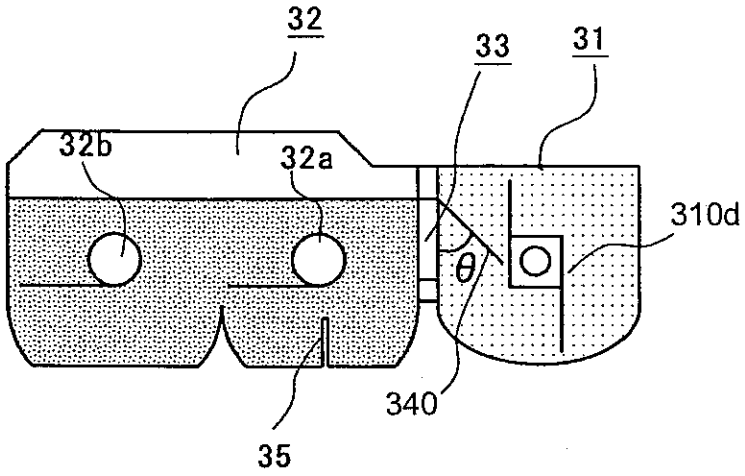


FIG.11B

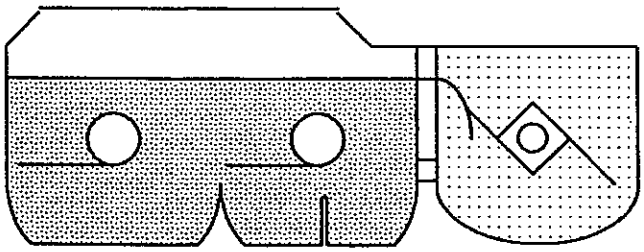


FIG.11C

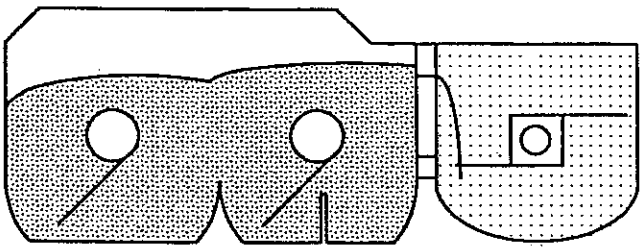


FIG.11D

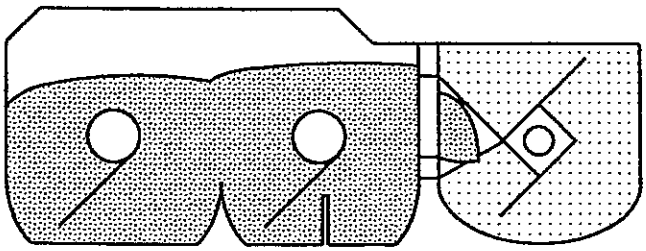


FIG.11E

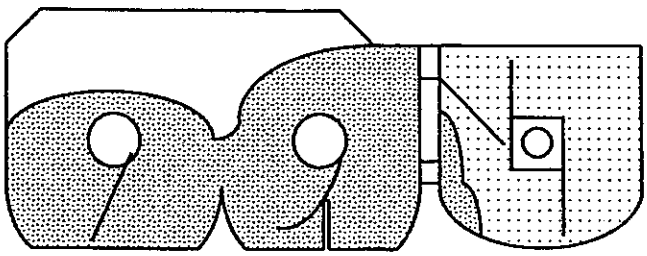


FIG.11F

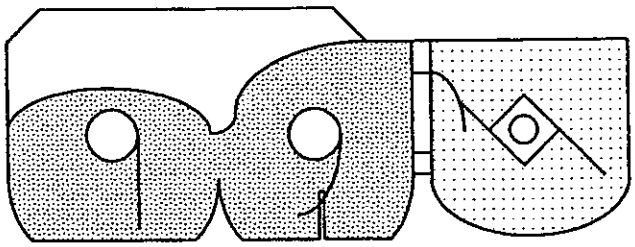


FIG.11G

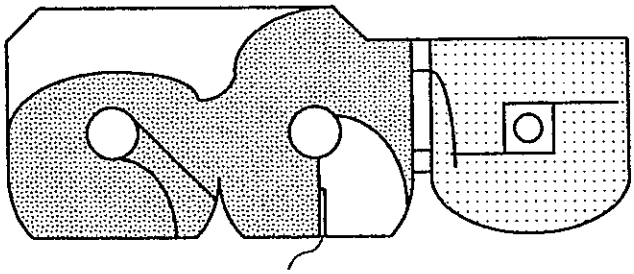


FIG.11H

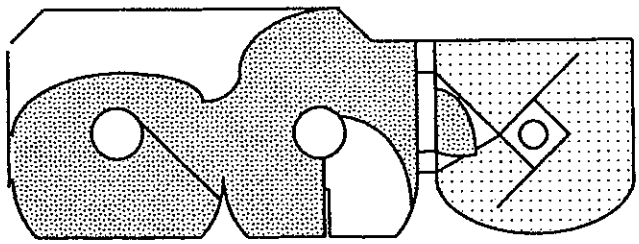


FIG.11I

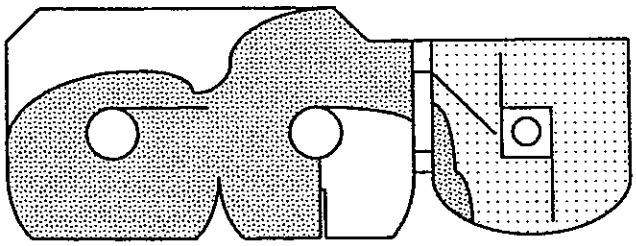


FIG.11J

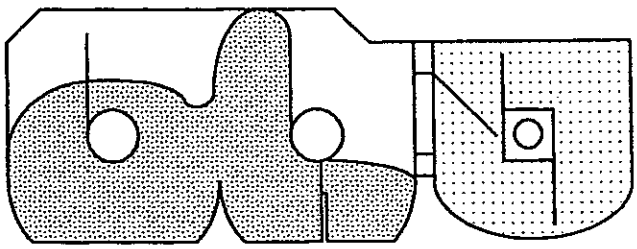


FIG.11K

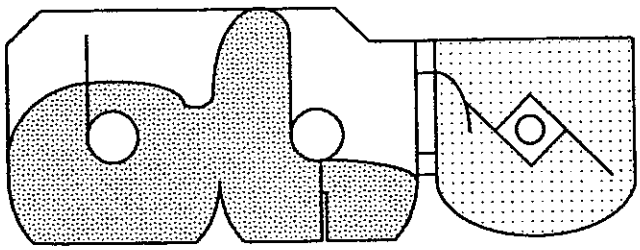


FIG.11L

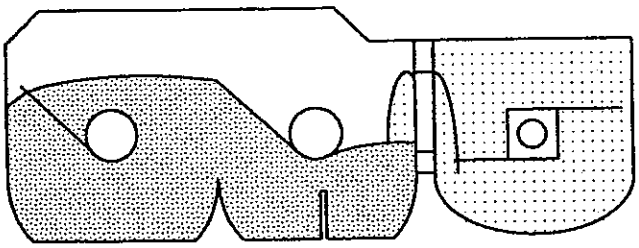


FIG.11M

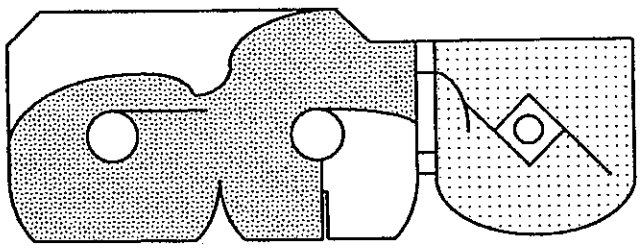


FIG.11N

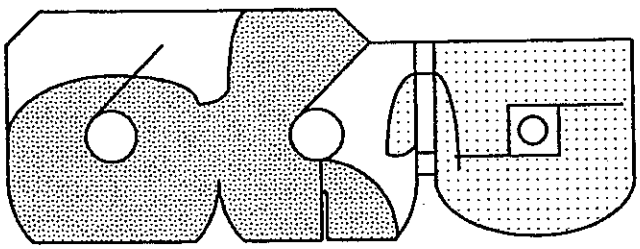


FIG.11O

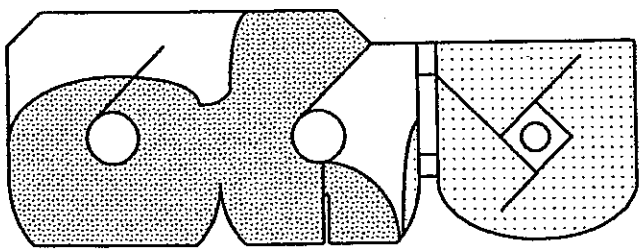


FIG.11P

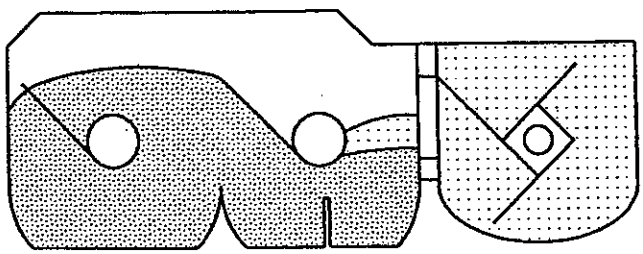


FIG.12

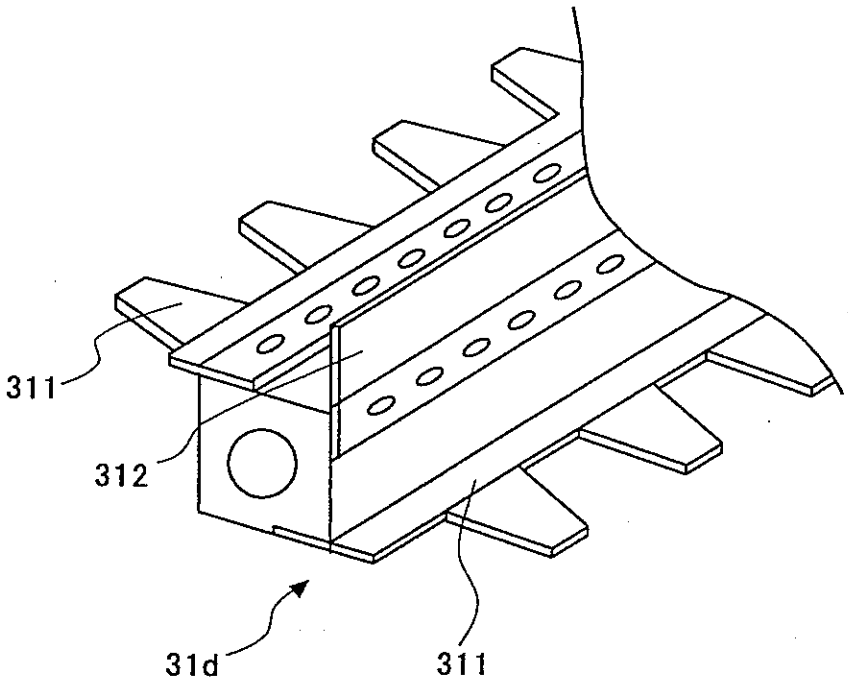


FIG.13

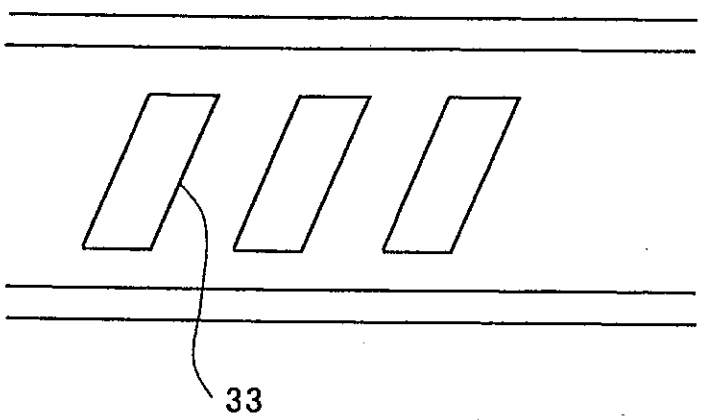


FIG.14

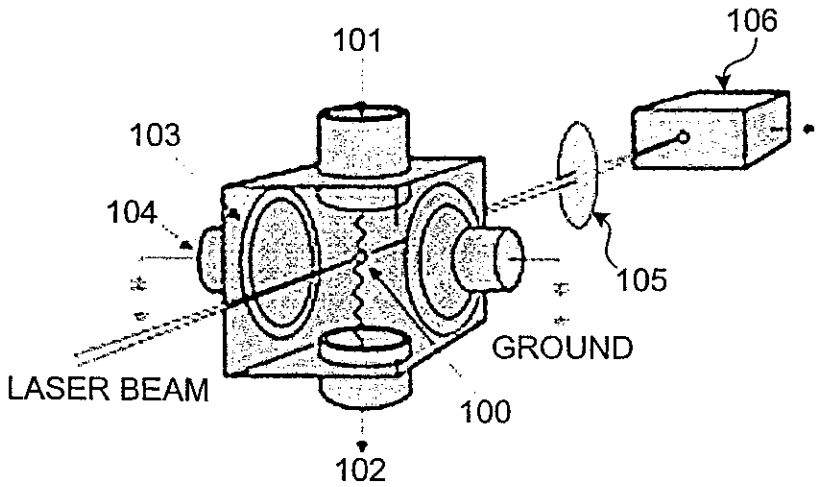

101
106
103
104
105
GROUND
LASER BEAM
100
102

FIG.15

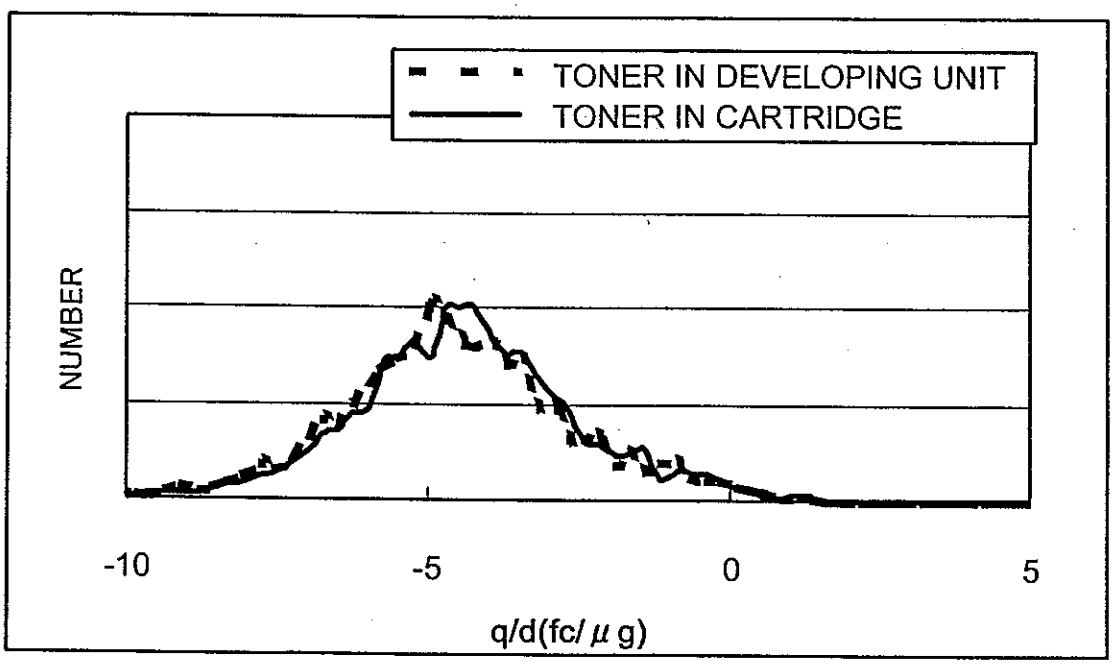

TONER IN DEVELOPING UNIT
TONER IN CARTRIDGE
NUMBER
-10
-5
0
5
q/d(fc/μg)

FIG.16

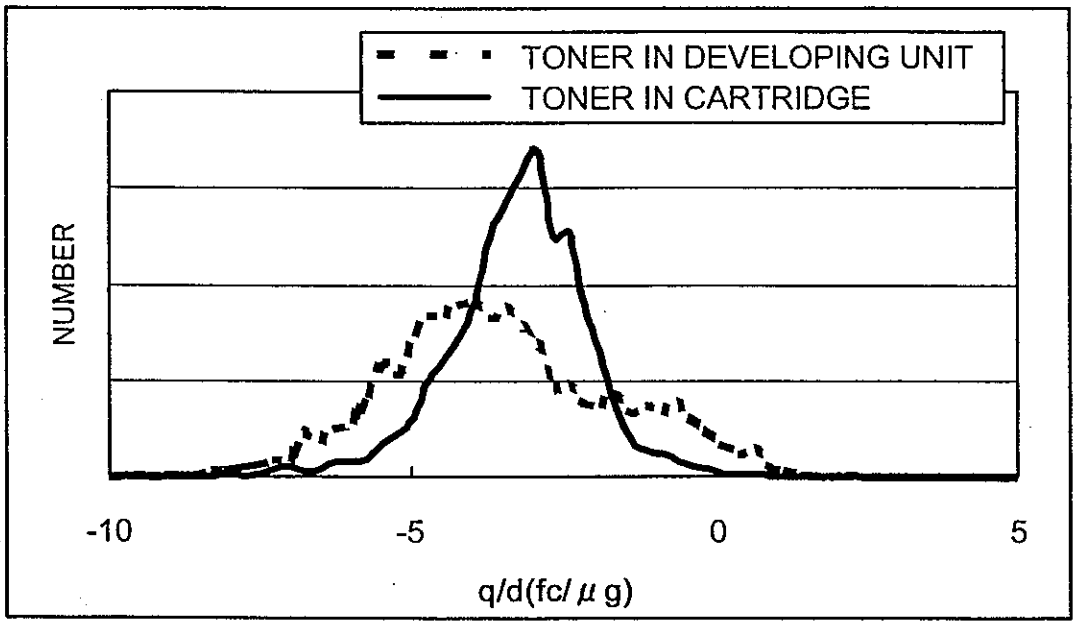

TONER IN DEVELOPING UNIT
TONER IN CARTRIDGE
NUMBER
-10
-5
0
5
q/d(fc/μg)

FIG.17

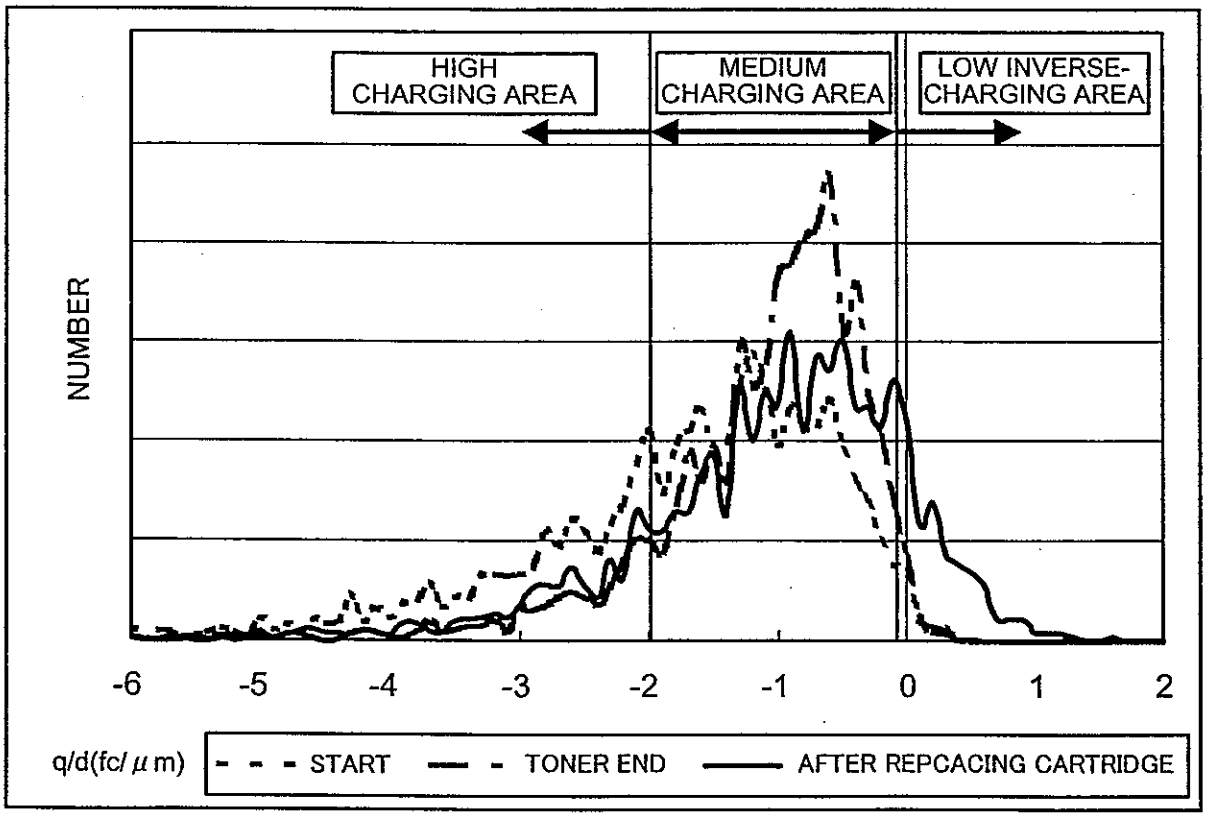

HIGH CHARGING AREA
MEDIUM CHARGING AREA
LOW INVERSE-CHARGING AREA
NUMBER
-6
-5
-4
-3
-2
-1
0
1
2
q/d(fc/μm)
START
TONER END
AFTER REPCACING CARTRIDGE

FIG.18

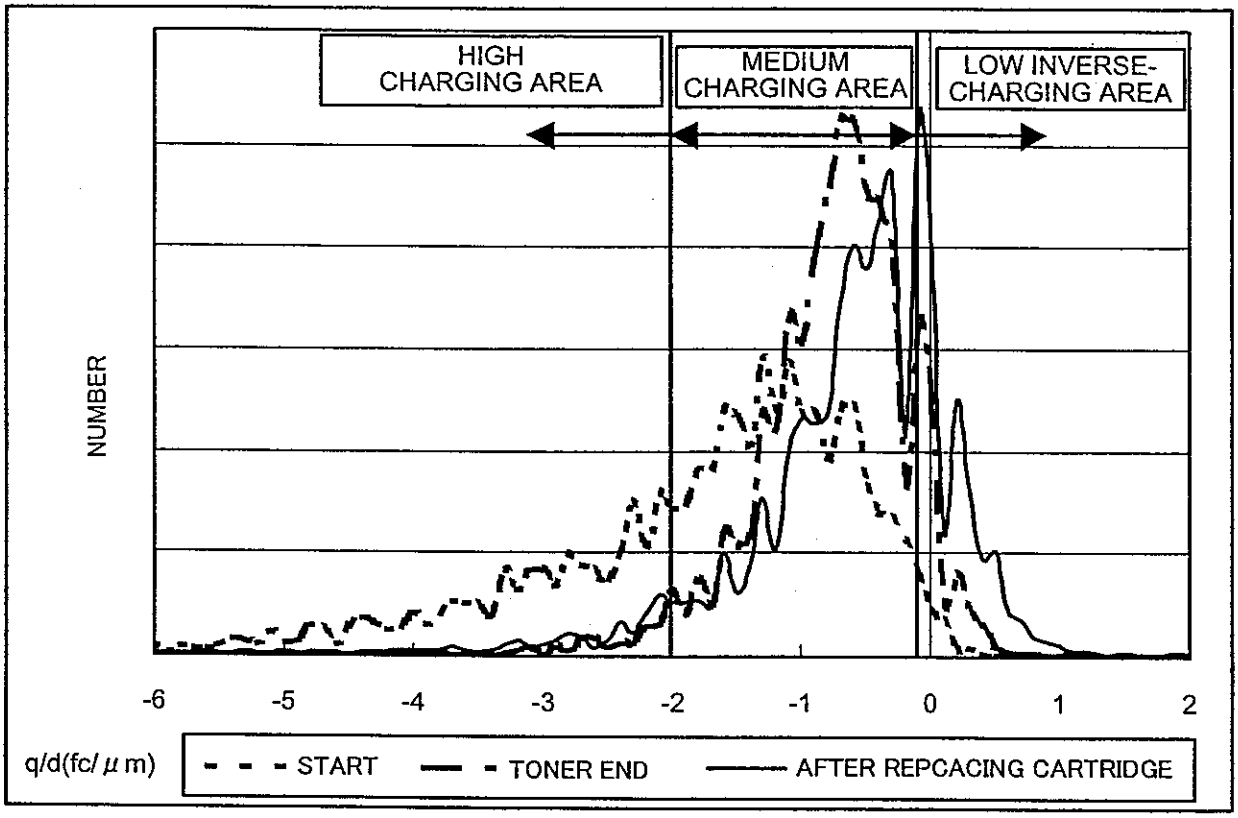

HIGH CHARGING AREA
MEDIUM CHARGING AREA
LOW INVERSE-CHARGING AREA
NUMBER
-6
-5
-4
-3
-2
-1
0
1
2
q/d(fc/μm)
START
TONER END
AFTER REPCACING CARTRIDGE

FIG.19

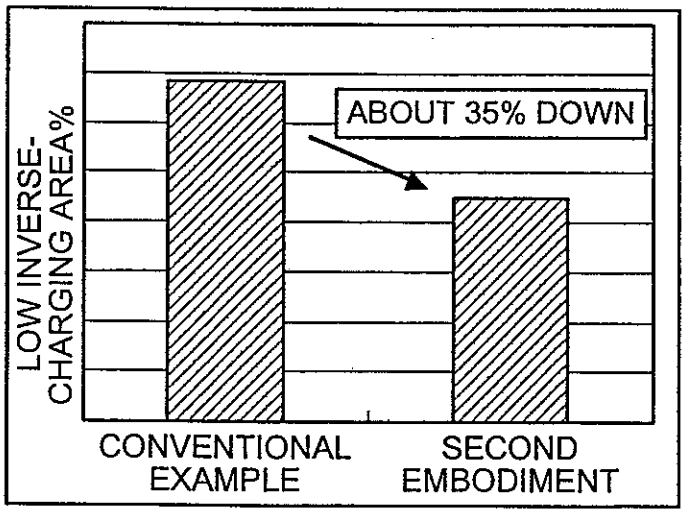

LOW INVERSE-CHARGING AREA%
ABOUT 35% DOWN
CONVENTIONAL EXAMPLE
SECOND EMBODIMENT

FIG.20

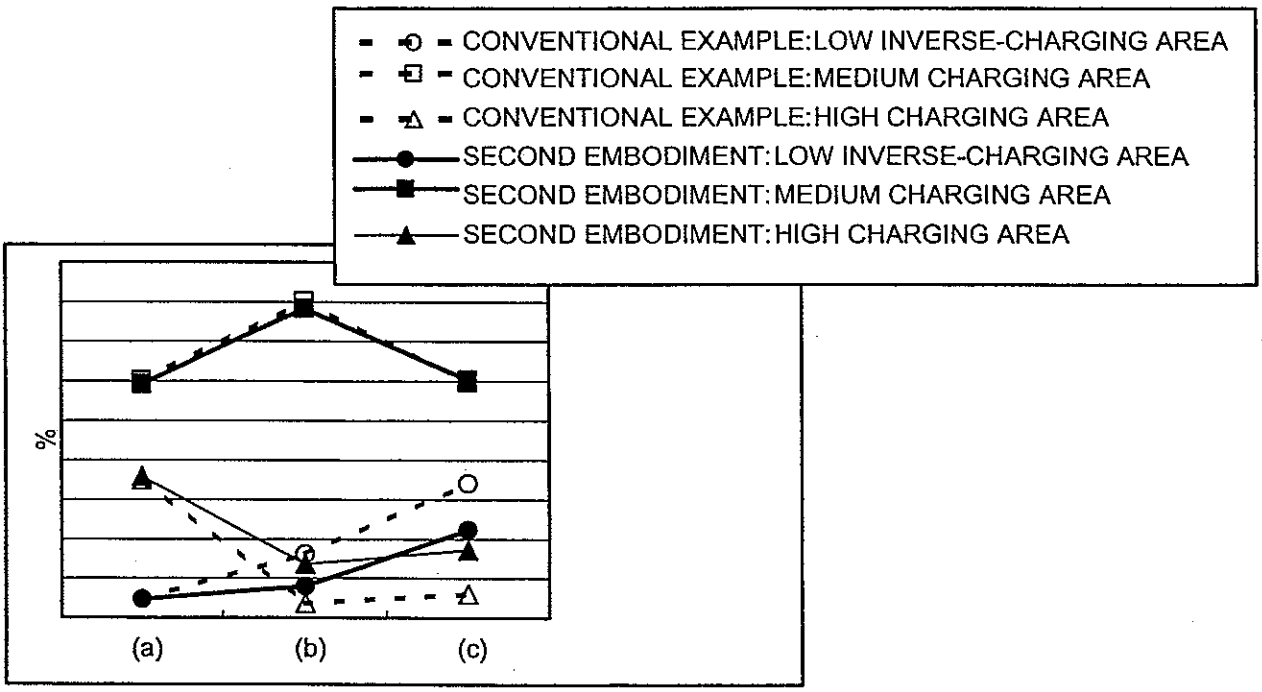
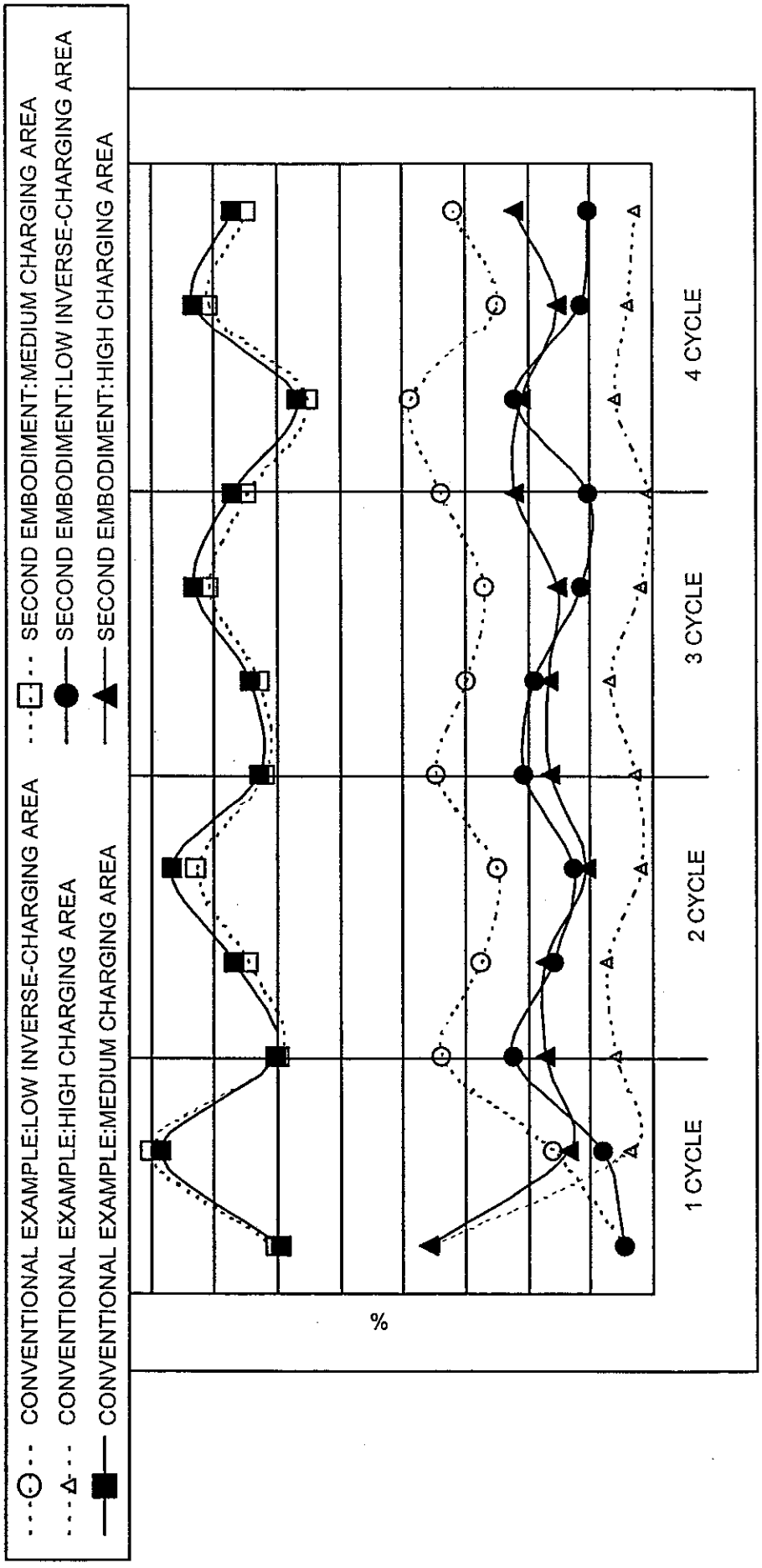

CONVENTIONAL EXAMPLE:LOW INVERSE-CHARGING AREA
CONVENTIONAL EXAMPLE:MEDIUM CHARGING AREA
CONVENTIONAL EXAMPLE:HIGH CHARGING AREA
SECOND EMBODIMENT:LOW INVERSE-CHARGING AREA
SECOND EMBODIMENT:MEDIUM CHARGING AREA
SECOND EMBODIMENT:HIGH CHARGING AREA
%
(a)
(b)
(c)

FIG.21


CONVENTIONAL EXAMPLE:LOW INVERSE-CHARGING AREA
CONVENTIONAL EXAMPLE:HIGH CHARGING AREA
CONVENTIONAL EXAMPLE:MEDIUM CHARGING AREA
SECOND EMBODIMENT:MEDIUM CHARGING AREA
SECOND EMBODIMENT:LOW INVERSE-CHARGING AREA
SECOND EMBODIMENT:HIGH CHARGING AREA
%
1 CYCLE
2 CYCLE
3 CYCLE
4 CYCLE