FIG. 1

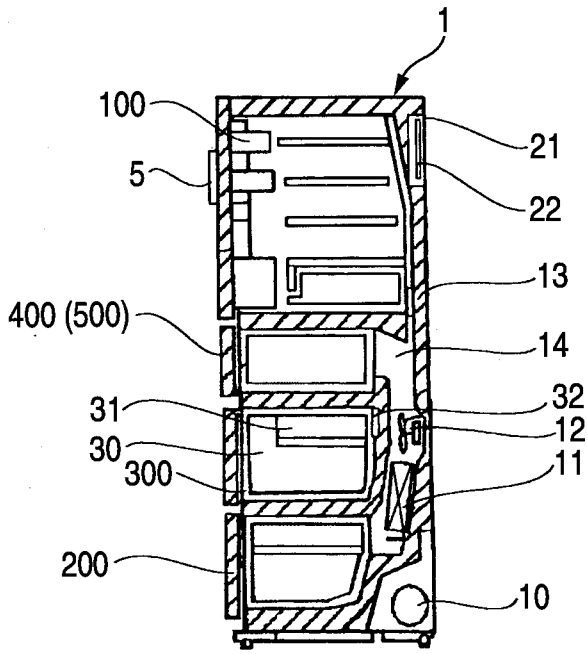


FIG. 2

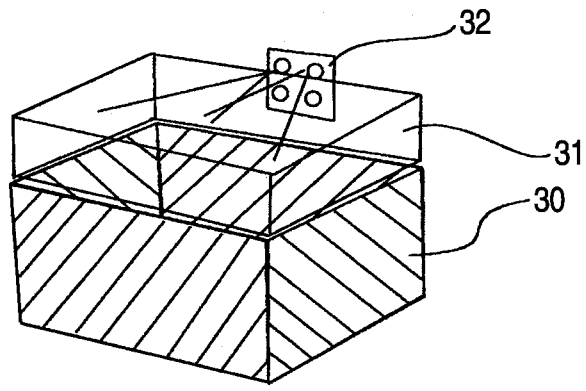


FIG. 3

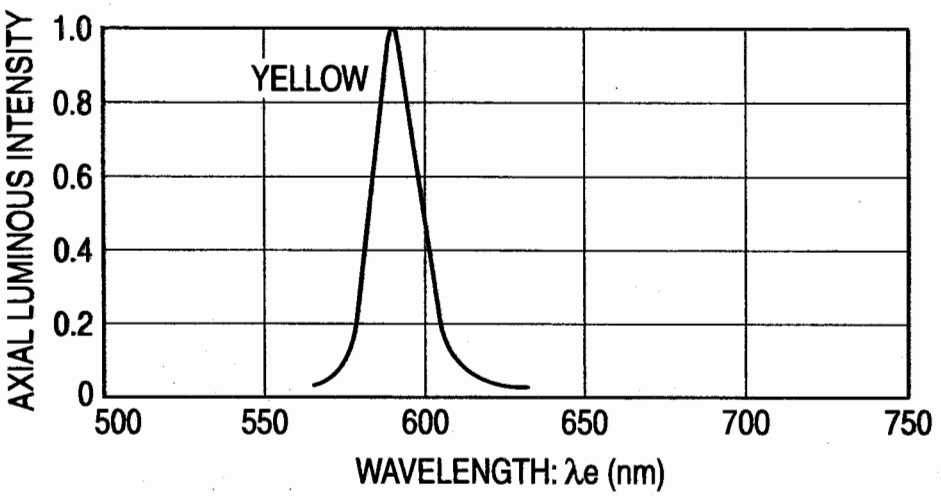

AXIAL LUMINOUS INTENSITY
1.0
0.8
0.6
0.4
0.2
0
YELLOW
500
550
600
650
700
750
WAVELENGTH: λe (nm)

FIG. 4

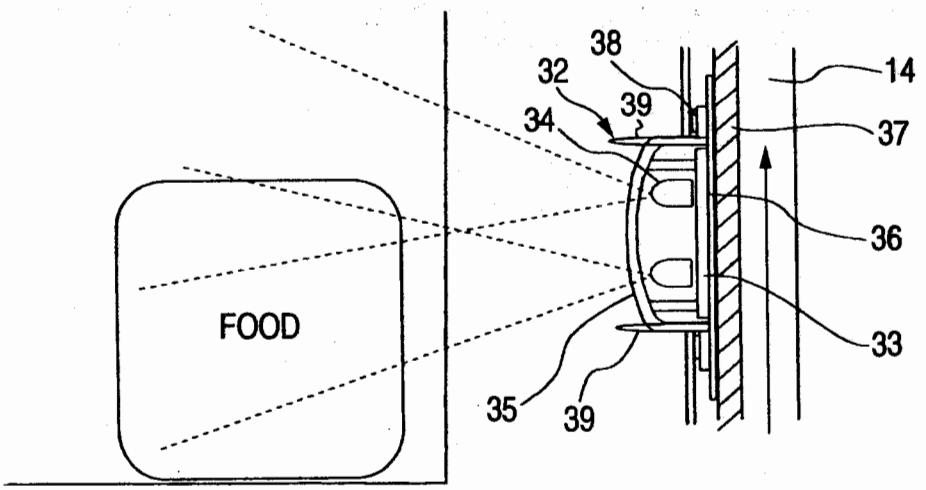

FOOD
38
32
39
34
14
37
36
33
35
39

FIG. 5

WAVELENGTH OF ABSORPTION LIGHT (nm)	COLOR OF ABSORPTION LIGHT
400-435	VIOLET
435-480	BLUE
480-490	GREEN-BLUE
490-500	BLUE-GREEN
500-560	GREEN
560-580	YELLOW-GREEN
580-595	YELLOW
595-610	ORANGE
610-750	RED
750-800	VIOLET-RED

FIG. 6

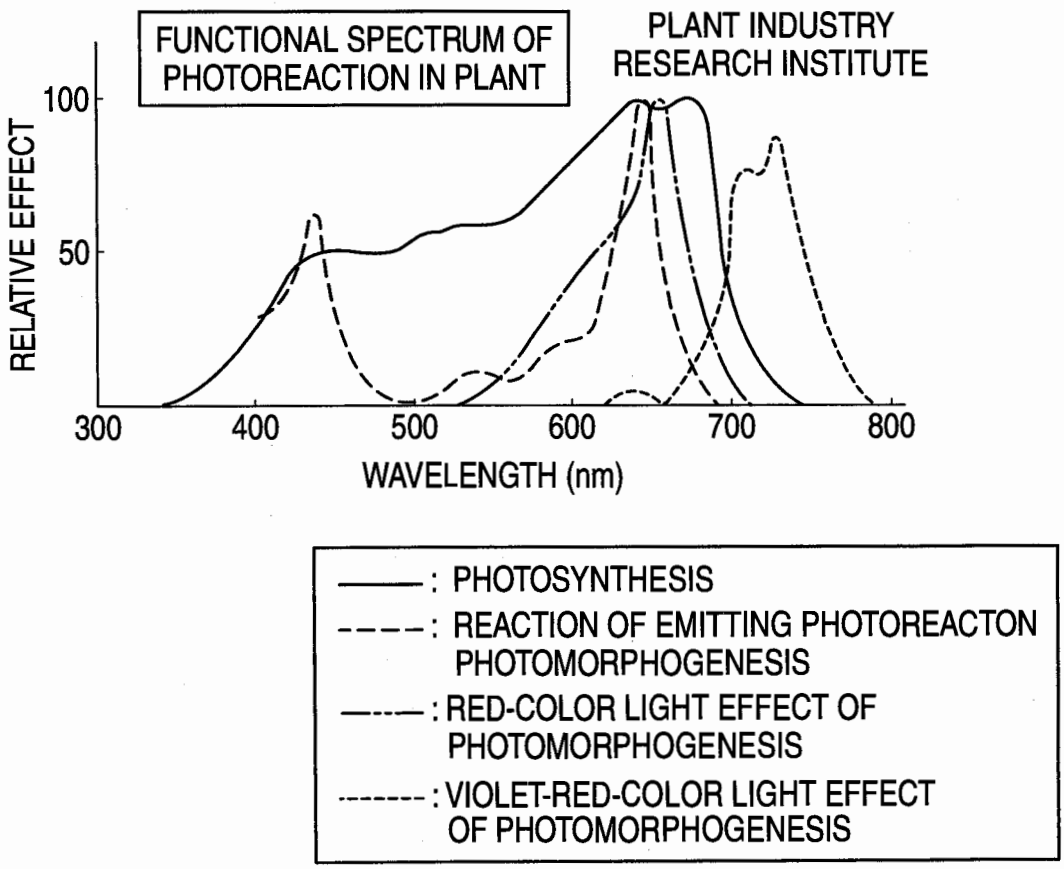


FIG. 7

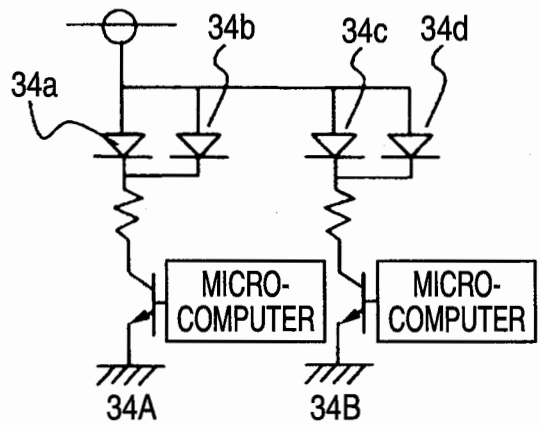

34b
34c
34d
34a
MICRO-
COMPUTER
MICRO-
COMPUTER
34A
34B

FIG. 8

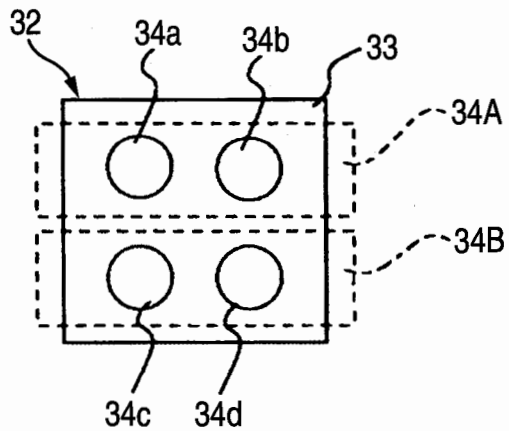

32
34a
34b
33
34A
34B
34c
34d

FIG. 9

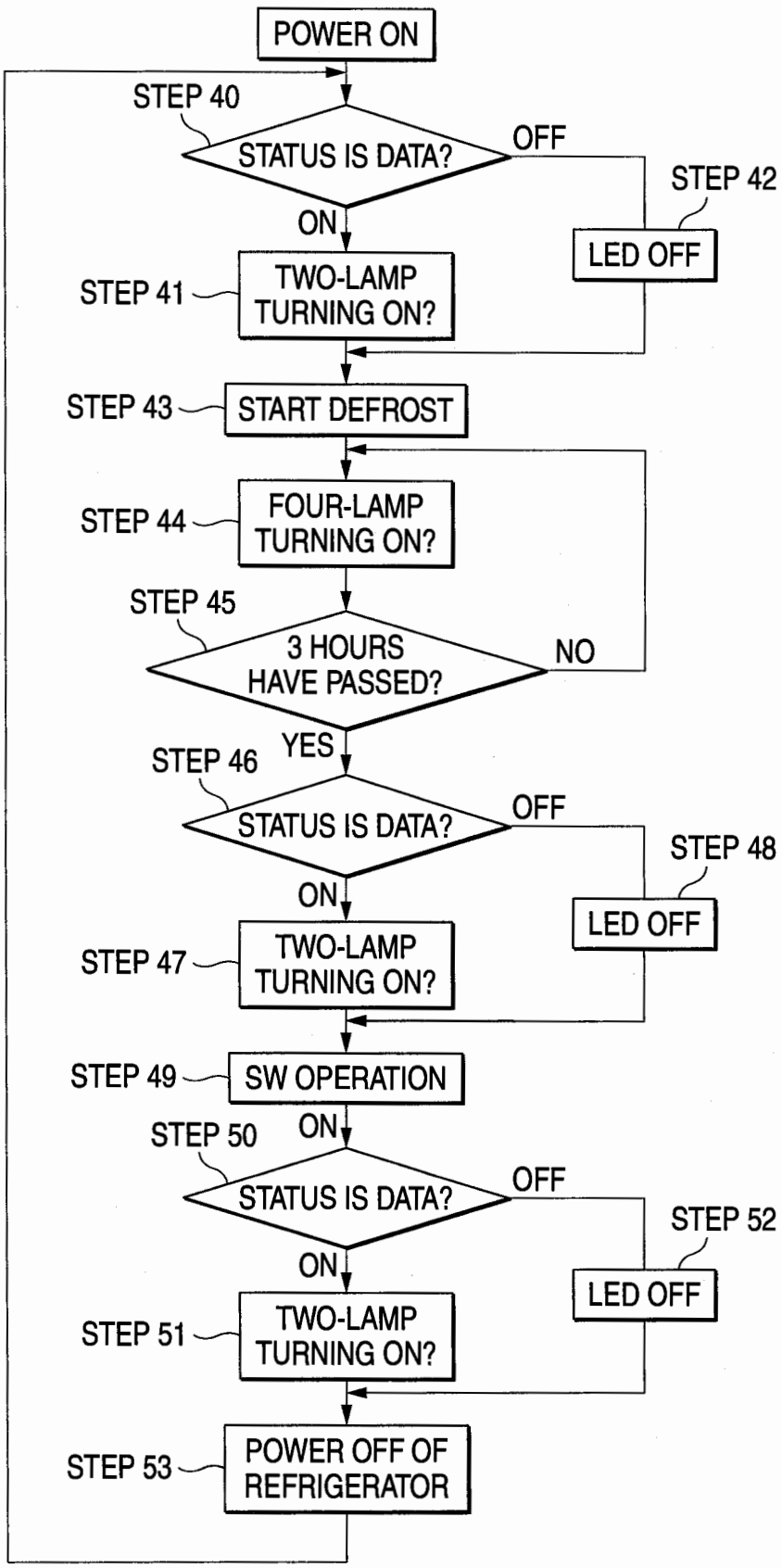

POWER ON
STEP 40
STATUS IS DATA?
OFF
STEP 42
LED OFF
ON
STEP 41
TWO-LAMP TURNING ON?
STEP 43
START DEFROST
STEP 44
FOUR-LAMP TURNING ON?
STEP 45
3 HOURS HAVE PASSED?
NO
YES
STEP 46
STATUS IS DATA?
OFF
STEP 48
LED OFF
ON
STEP 47
TWO-LAMP TURNING ON?
STEP 49
SW OPERATION
STEP 50
ON
STATUS IS DATA?
OFF
STEP 52
LED OFF
ON
STEP 51
TWO-LAMP TURNING ON?
STEP 53
POWER OFF OF REFRIGERATOR

FIG. 10

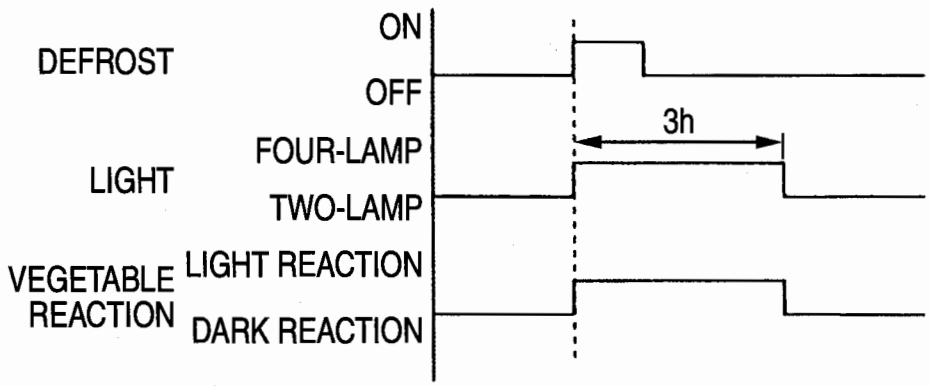

DEFROST
ON
OFF
3h
LIGHT
FOUR-LAMP
TWO-LAMP
VEGETABLE REACTION
LIGHT REACTION
DARK REACTION

FIG. 11

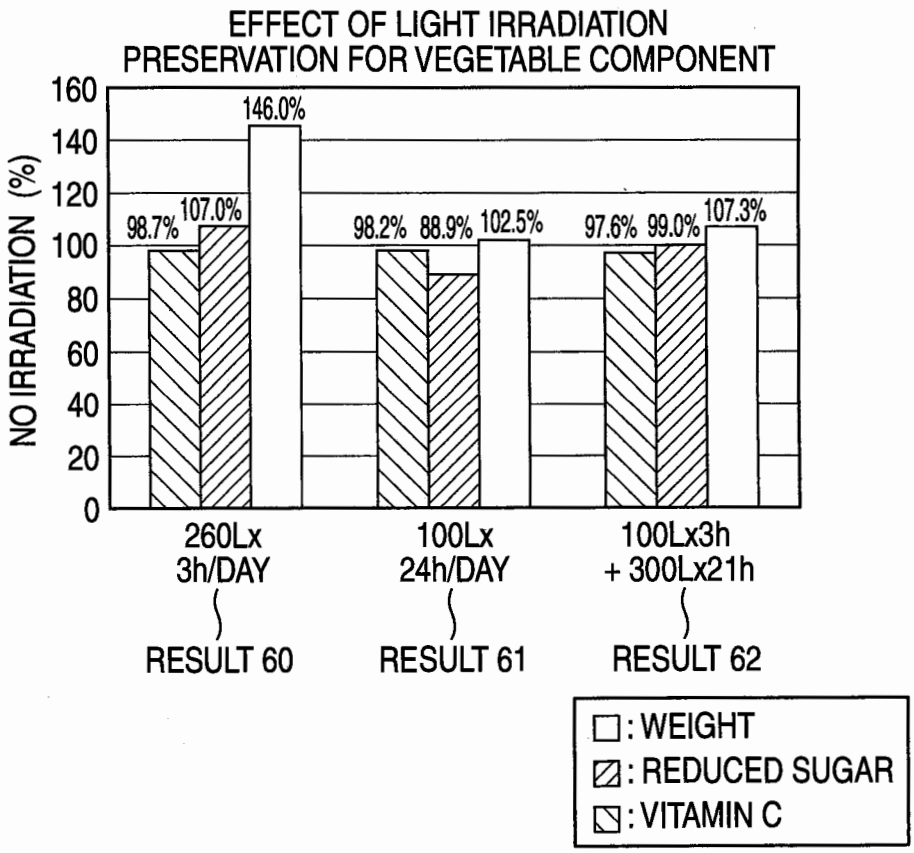

EFFECT OF LIGHT IRRADIATION PRESERVATION FOR VEGETABLE COMPONENT
NO IRRADIATION (%)
160
140
120
100
80
60
40
20
0
98.7%
107.0%
146.0%
98.2%
88.9%
102.5%
97.6%
99.0%
107.3%
260Lx 3h/DAY
100Lx 24h/DAY
100Lx3h + 300Lx21h
RESULT 60
RESULT 61
RESULT 62
□: WEIGHT
▨: REDUCED SUGAR
▧: VITAMIN C

FIG. 12

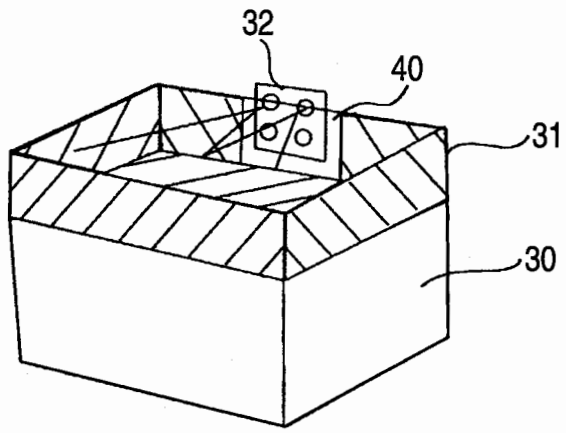


FIG. 13

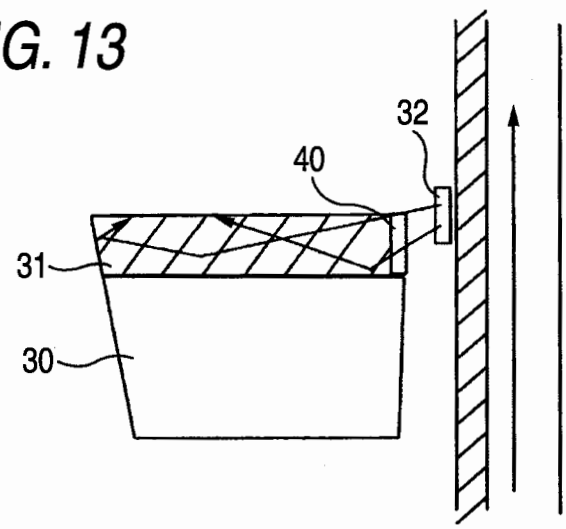


FIG. 14

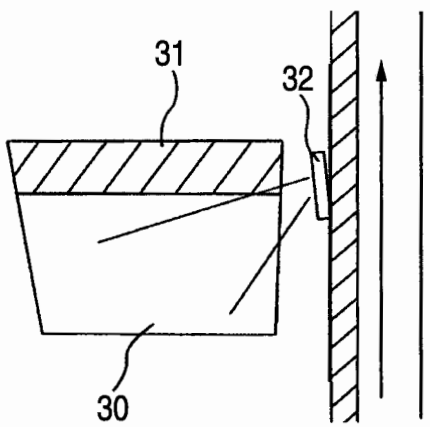


FIG. 15

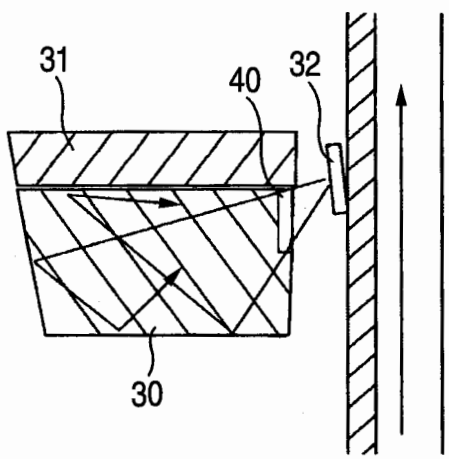


FIG. 16

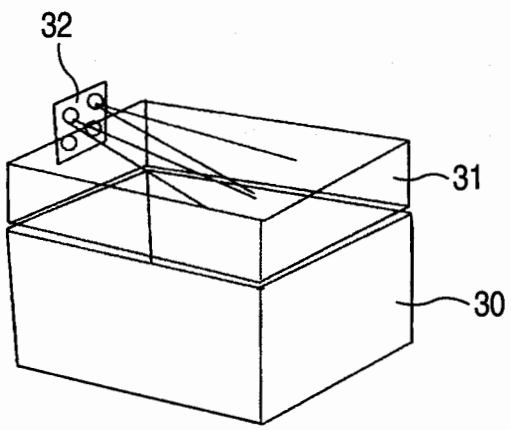


FIG. 17

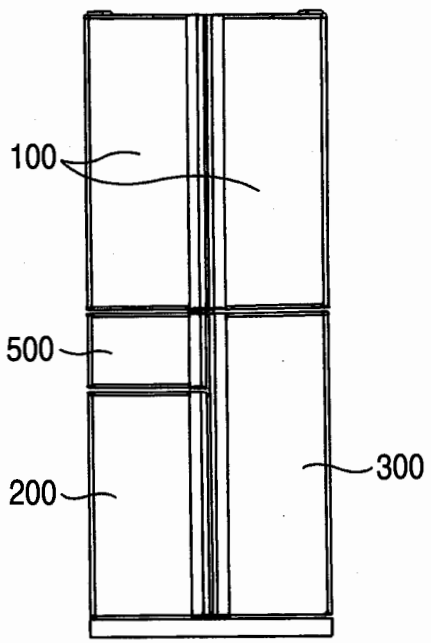


FIG. 18

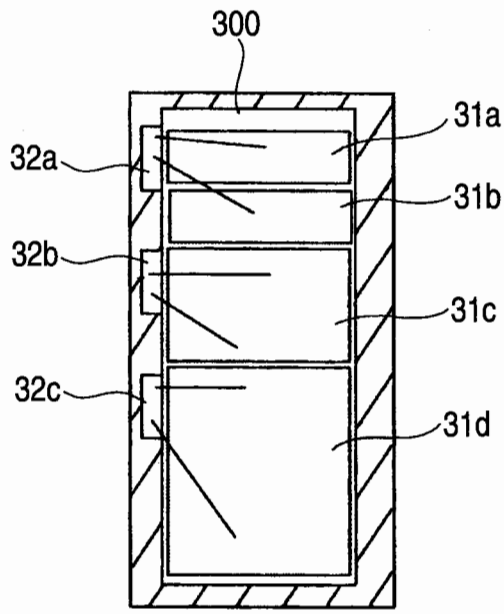


FIG. 19

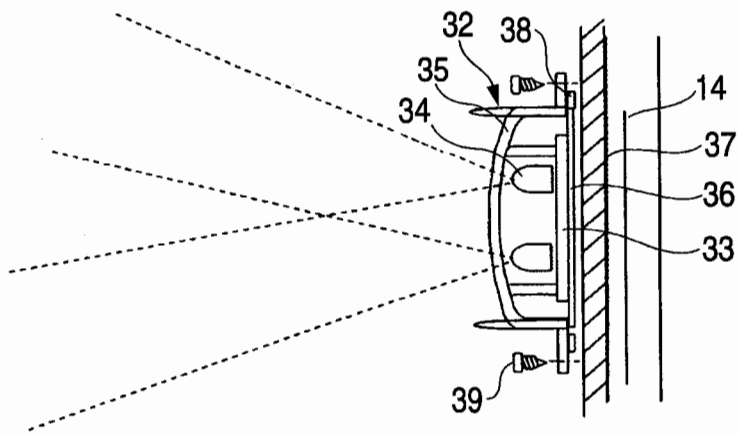


FIG. 20

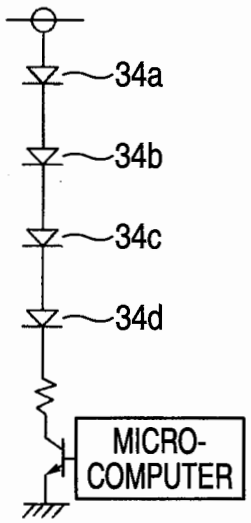


FIG. 21

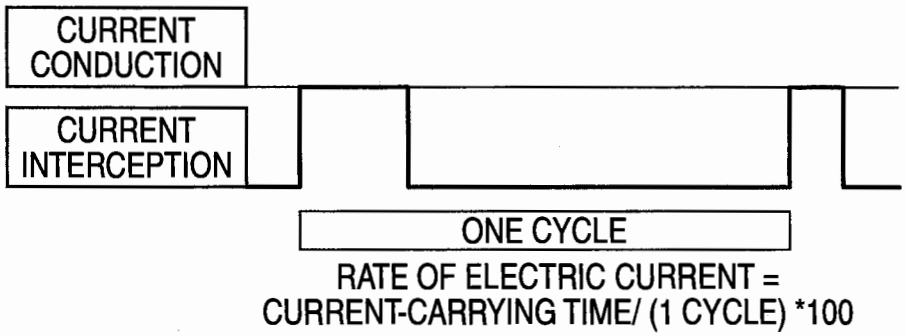


FIG. 22

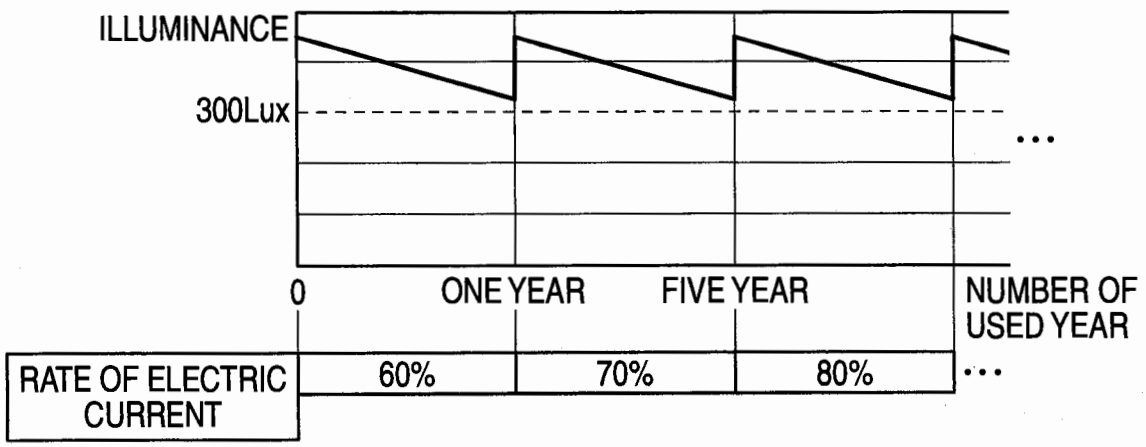
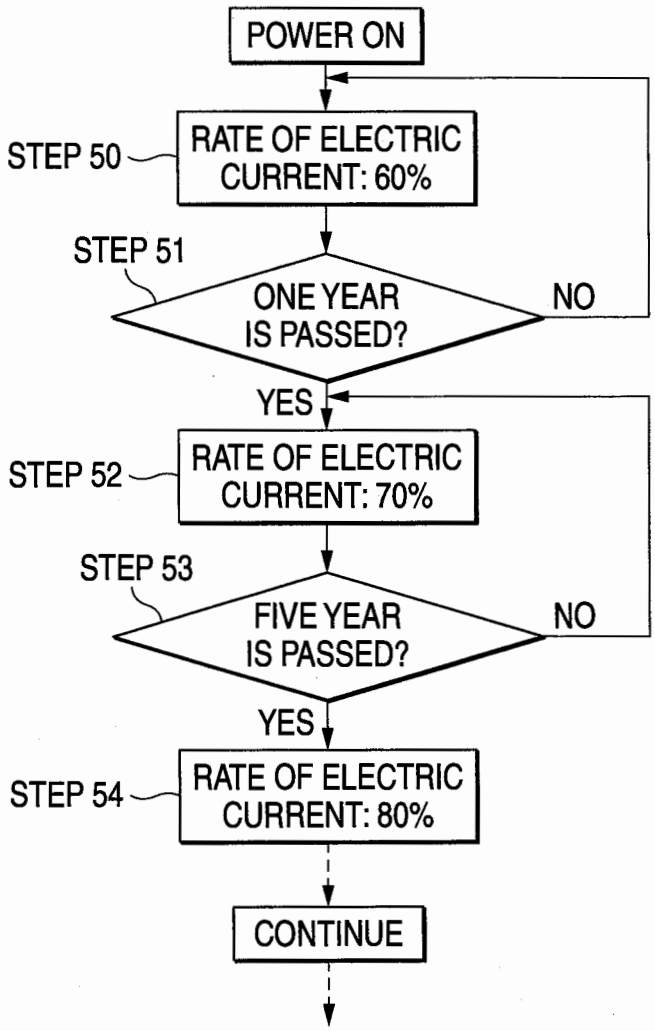


FIG. 23


POWER ON
STEP 50
RATE OF ELECTRIC CURRENT: 60%
STEP 51
ONE YEAR IS PASSED?
NO
YES
STEP 52
RATE OF ELECTRIC CURRENT: 70%
STEP 53
FIVE YEAR IS PASSED?
NO
YES
STEP 54
RATE OF ELECTRIC CURRENT: 80%
CONTINUE