FIG. 1

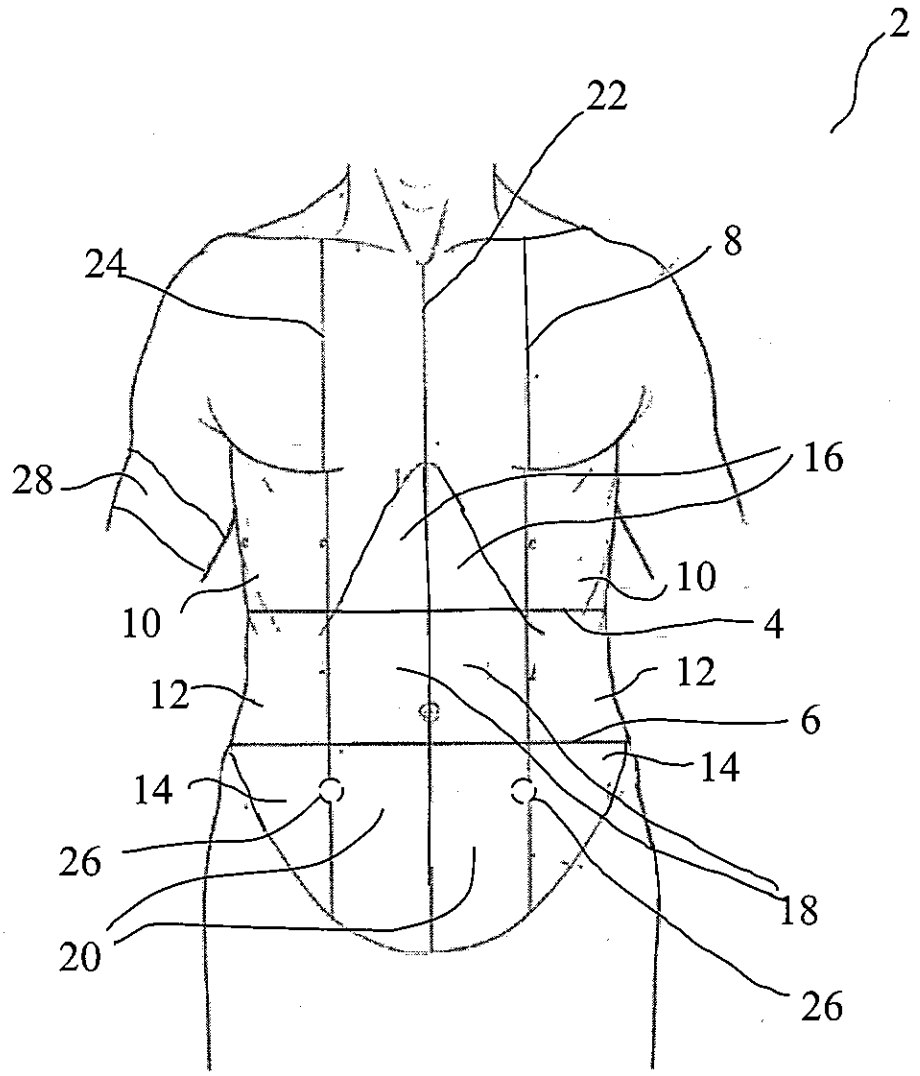


FIG. 2

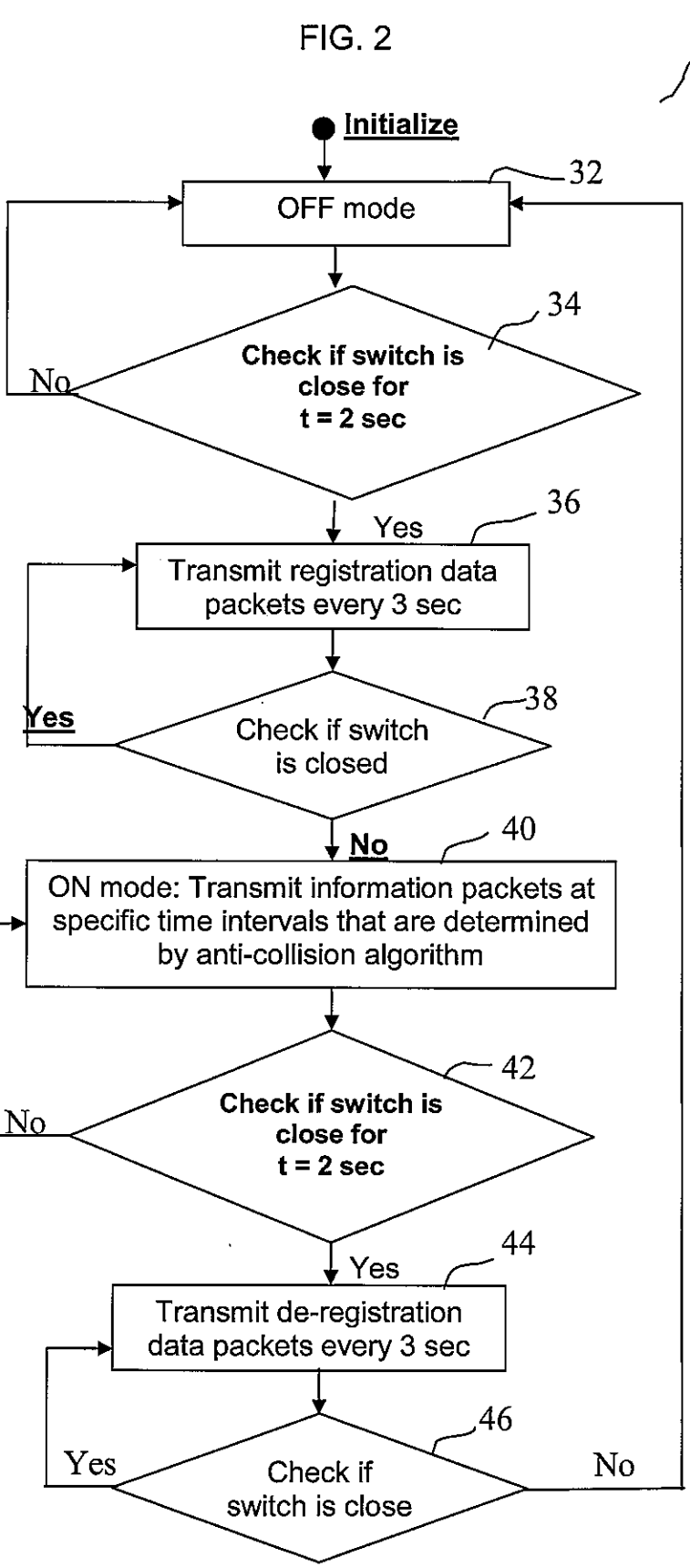

30
Initialize
32
OFF mode
34
Check if switch is close for t = 2 sec
No
Yes
36
Transmit registration data packets every 3 sec
Yes
38
Check if switch is closed
No
40
ON mode: Transmit information packets at specific time intervals that are determined by anti-collision algorithm
42
Check if switch is close for t = 2 sec
No
Yes
44
Transmit de-registration data packets every 3 sec
46
Check if switch is close
Yes
No

FIG. 3

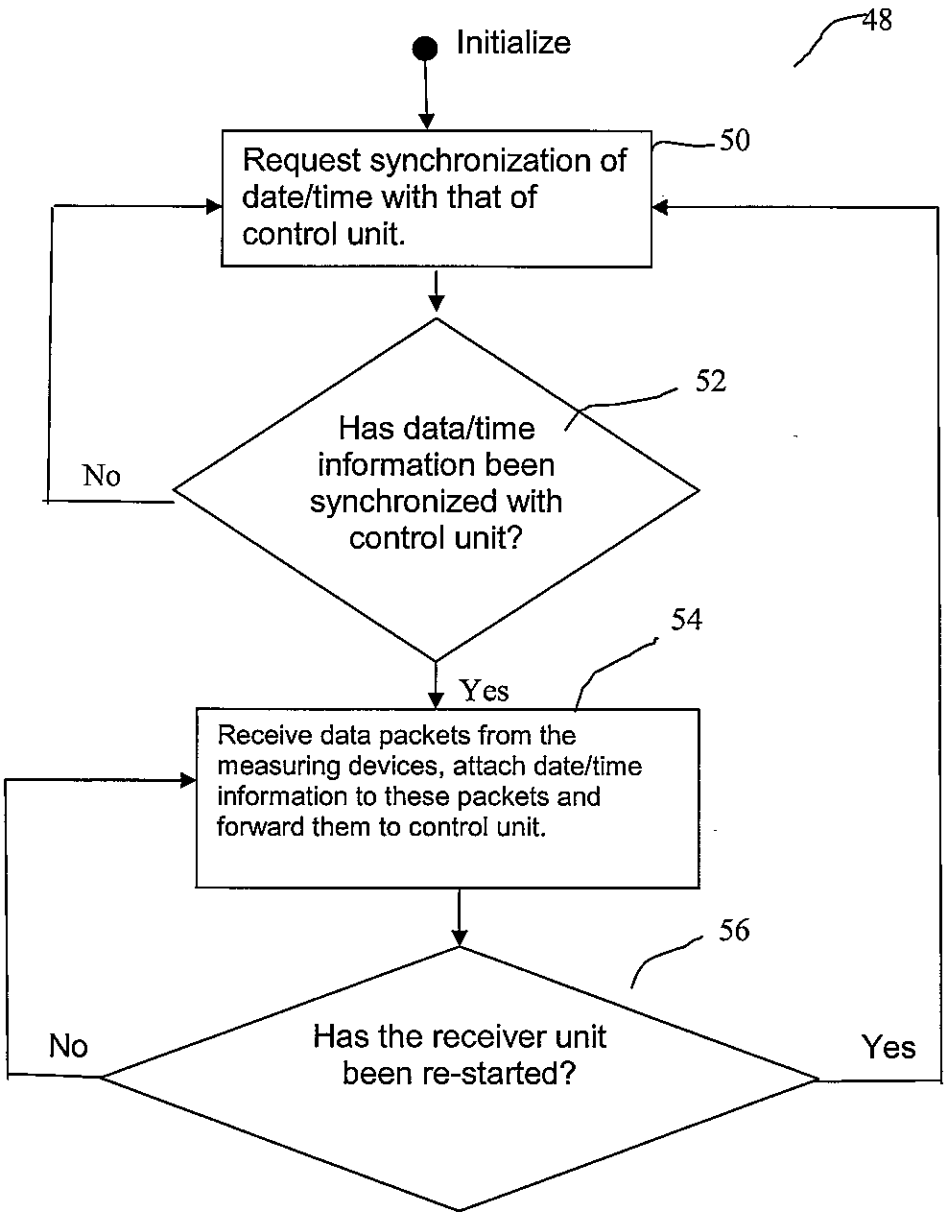

Initialize
48
Request synchronization of date/time with that of control unit.
50
Has data/time information been synchronized with control unit?
52
No
Yes
54
Receive data packets from the measuring devices, attach date/time information to these packets and forward them to control unit.
56
Has the receiver unit been re-started?
No
Yes

FIG. 4

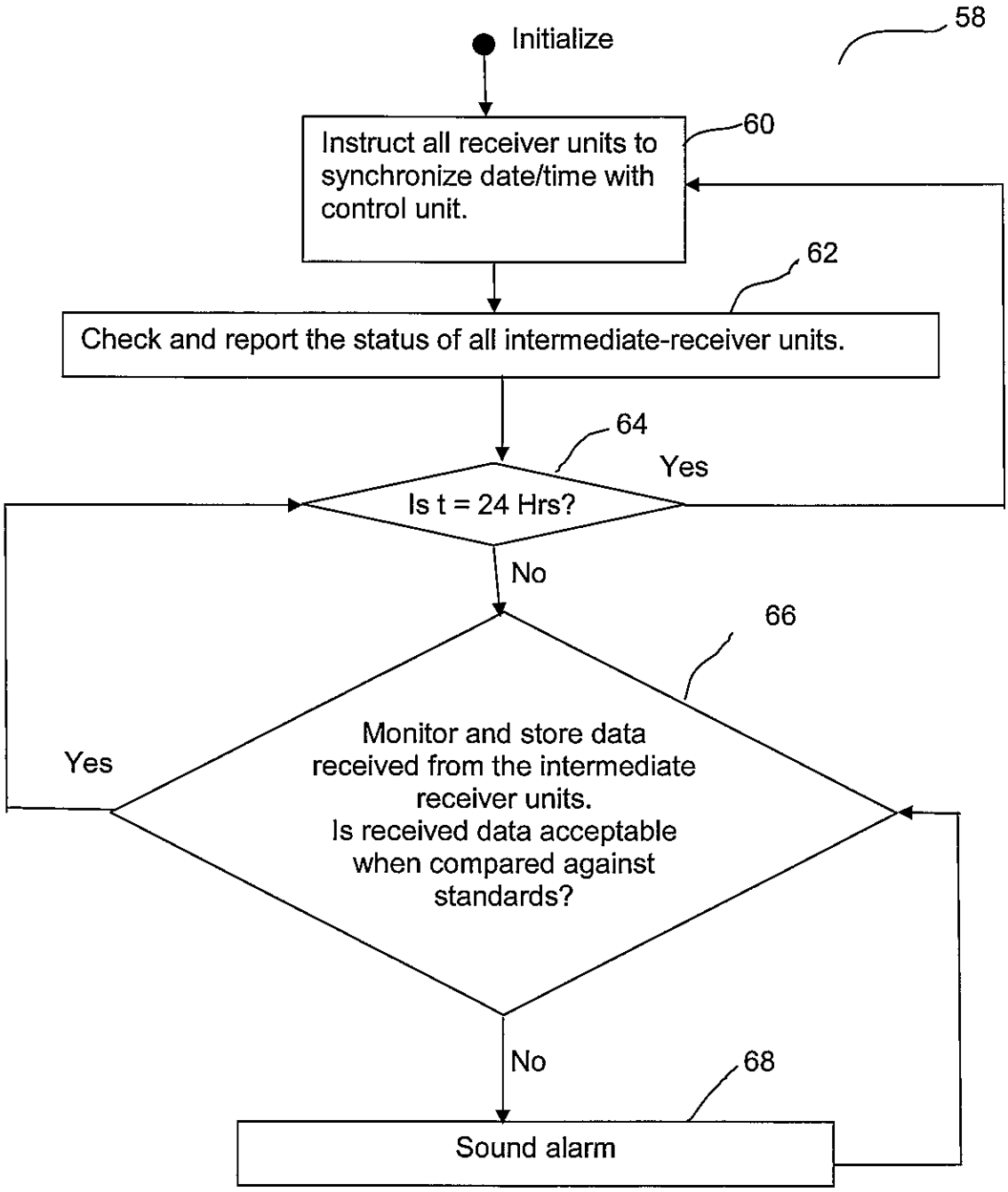

Initialize
58
Instruct all receiver units to synchronize date/time with control unit.
60
Check and report the status of all intermediate-receiver units.
62
Is t = 24 Hrs?
64
Yes
No
Monitor and store data received from the intermediate receiver units. Is received data acceptable when compared against standards?
66
Yes
No
Sound alarm
68

FIG. 5

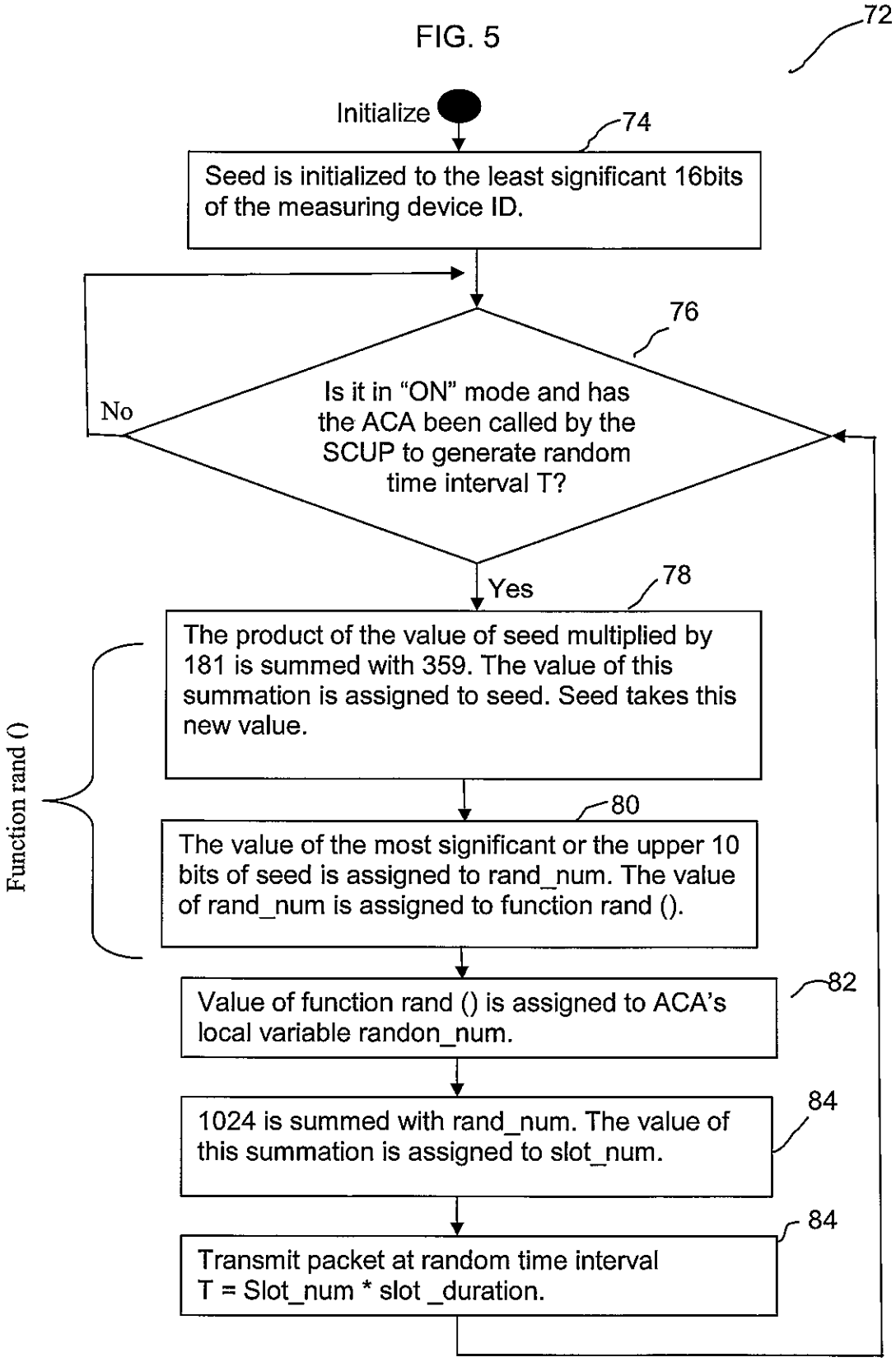

72
Initialize
74
Seed is initialized to the least significant 16bits of the measuring device ID.
76
Is it in "ON" mode and has the ACA been called by the SCUP to generate random time interval T?
No
Yes
78
The product of the value of seed multiplied by 181 is summed with 359. The value of this summation is assigned to seed. Seed takes this new value.
80
The value of the most significant or the upper 10 bits of seed is assigned to rand_num. The value of rand_num is assigned to function rand ().
Function rand ()
82
Value of function rand () is assigned to ACA's local variable randon_num.
84
1024 is summed with rand_num. The value of this summation is assigned to slot_num.
84
Transmit packet at random time interval T = Slot_num * slot _duration.

FIG. 6

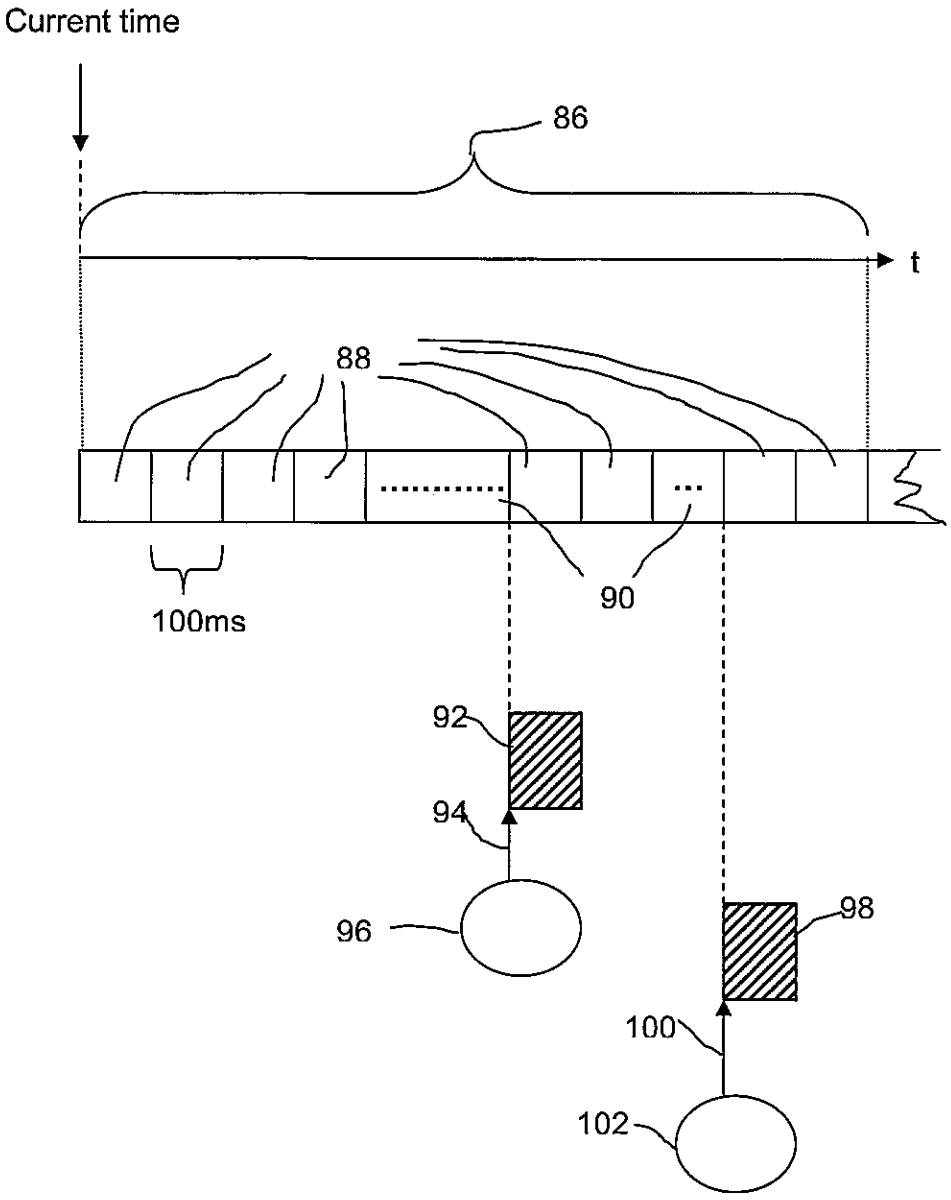


Fig. 7

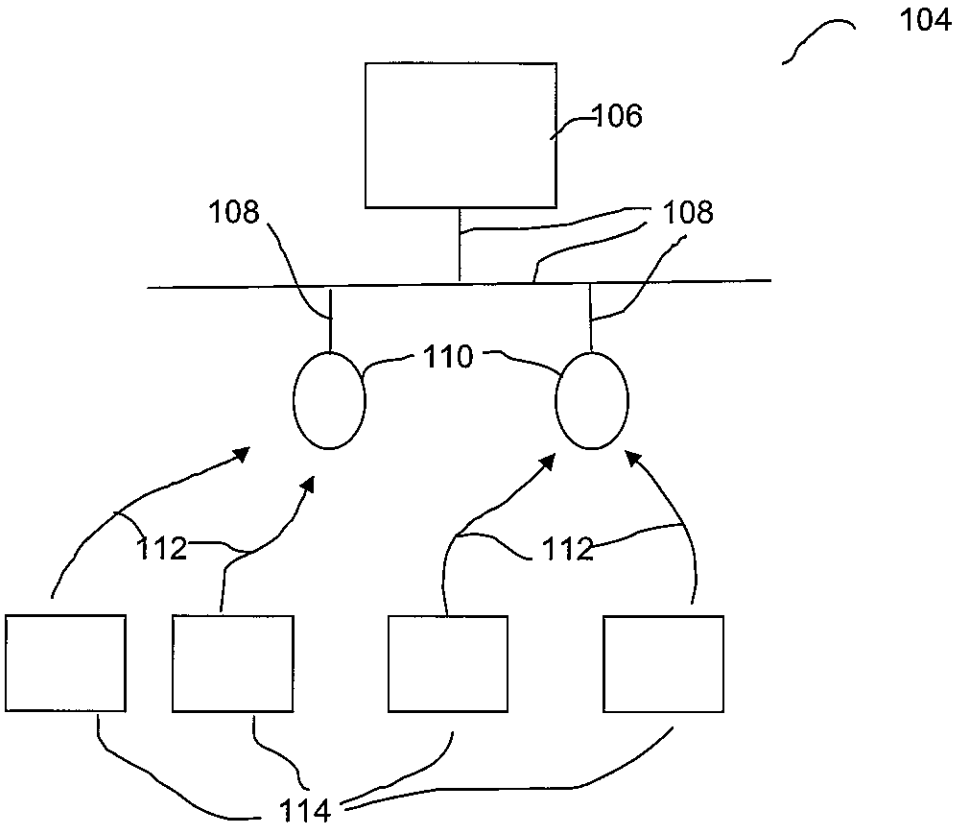


FIG. 8

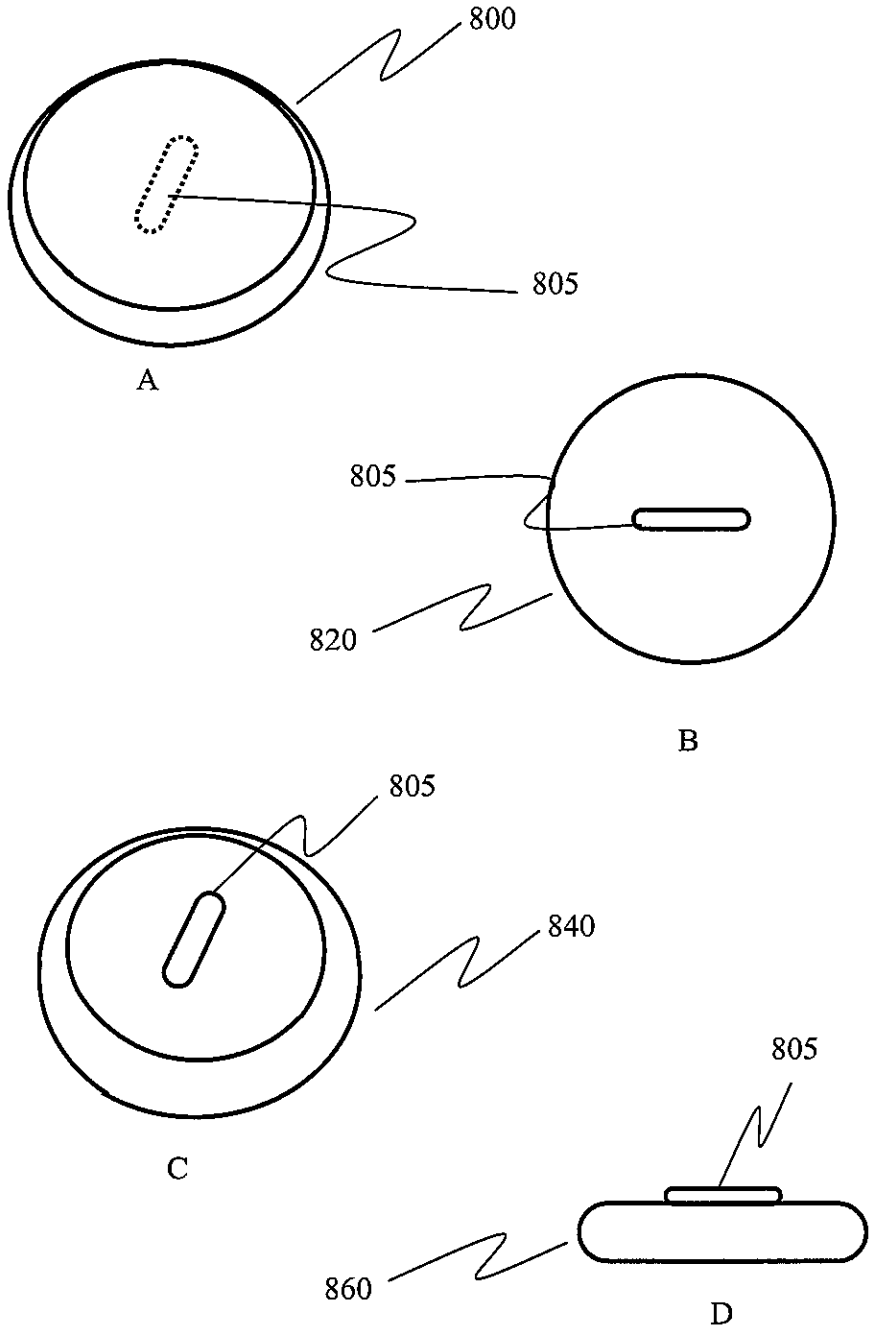


FIG. 9

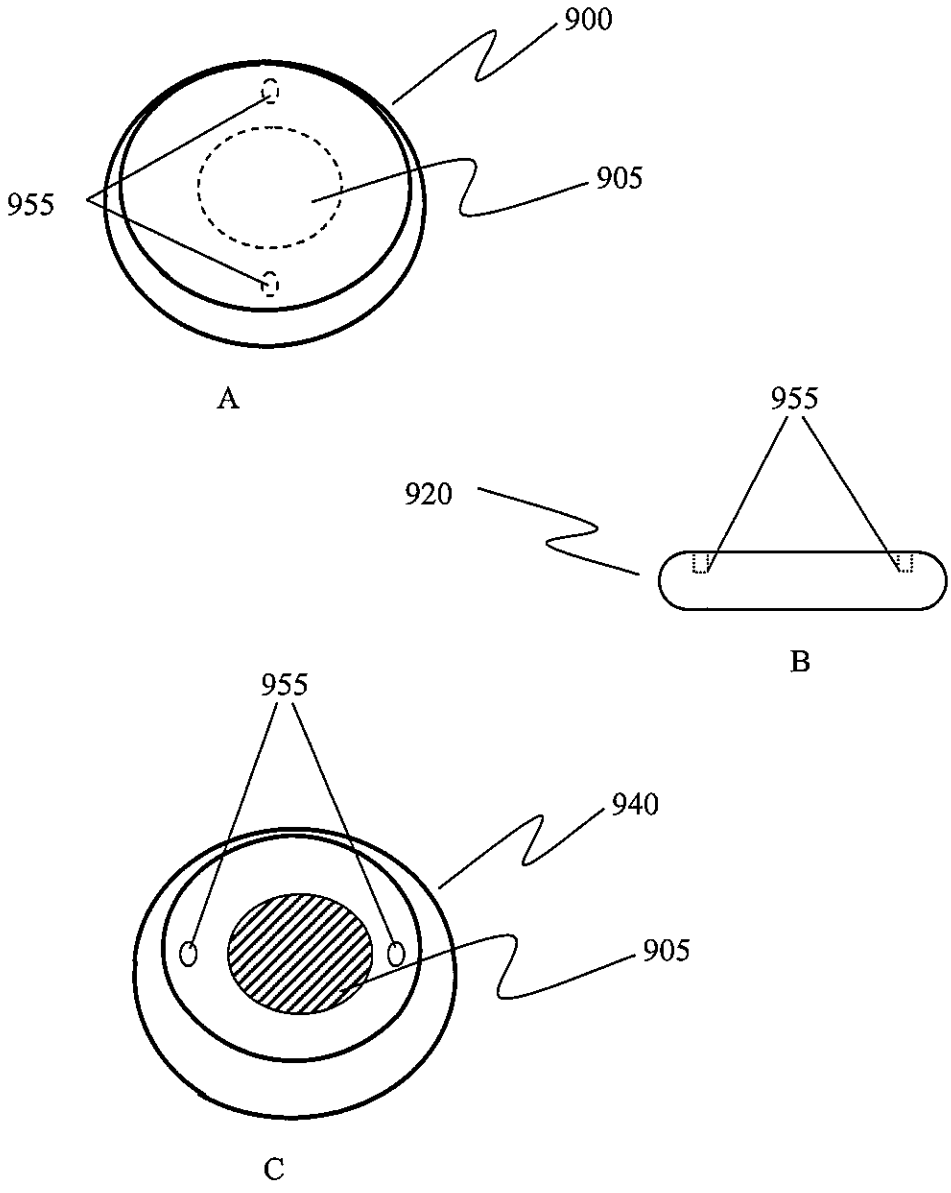
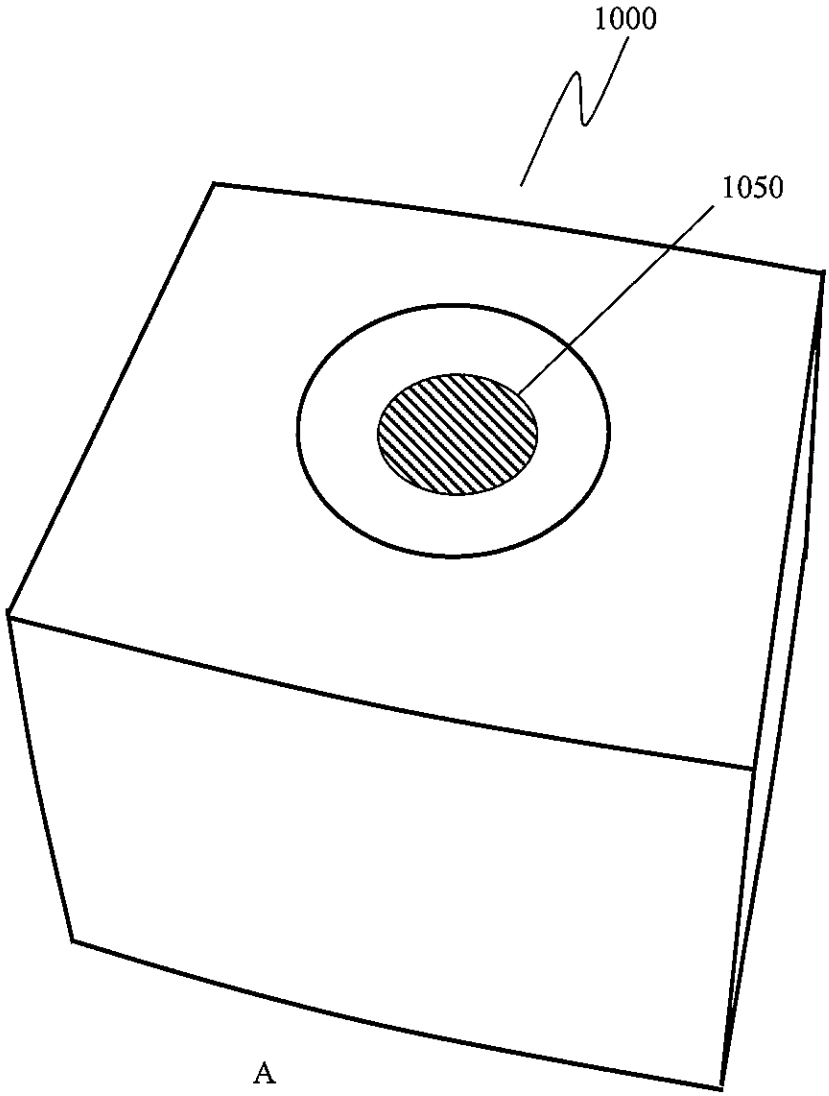
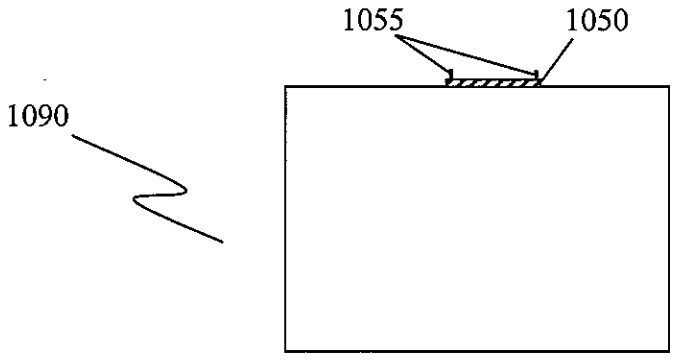


FIG. 10

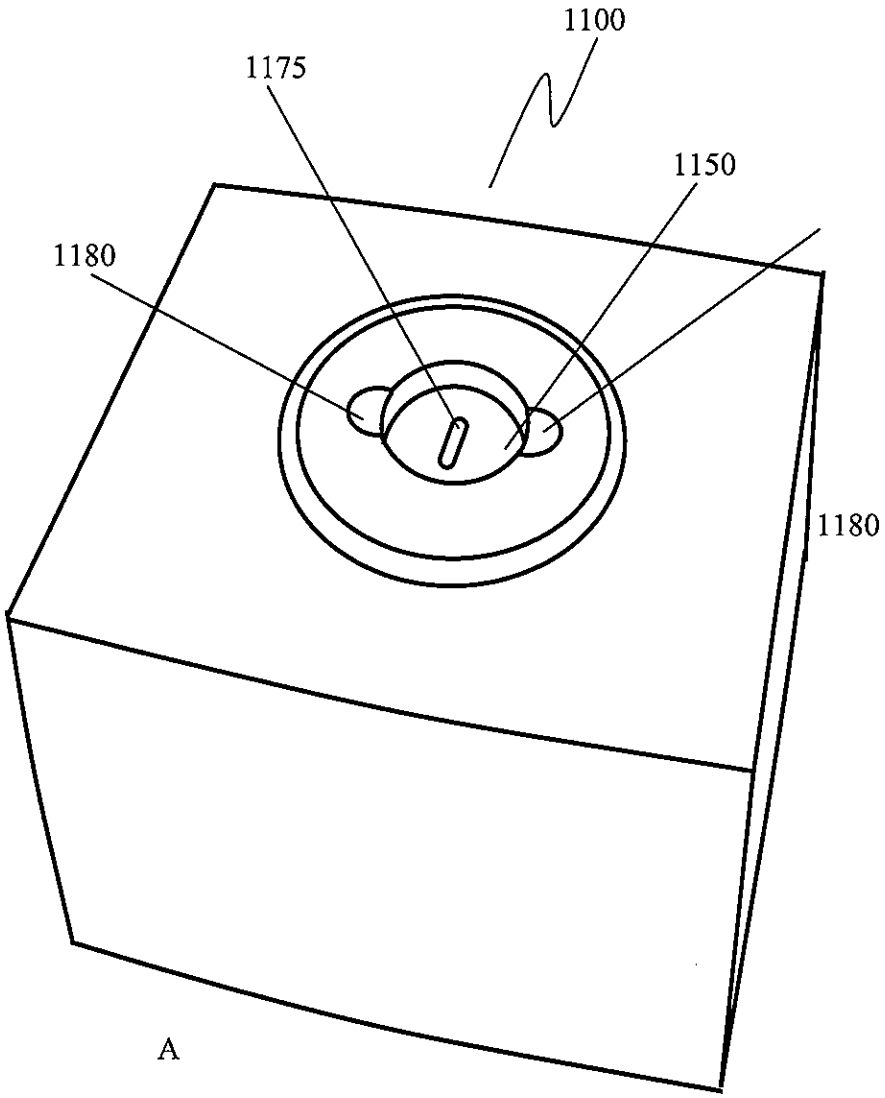


A

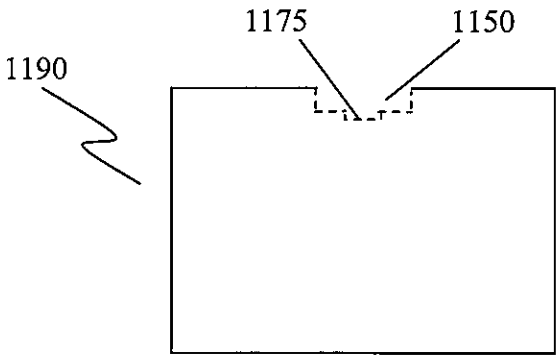


B

FIG. 11



A



B