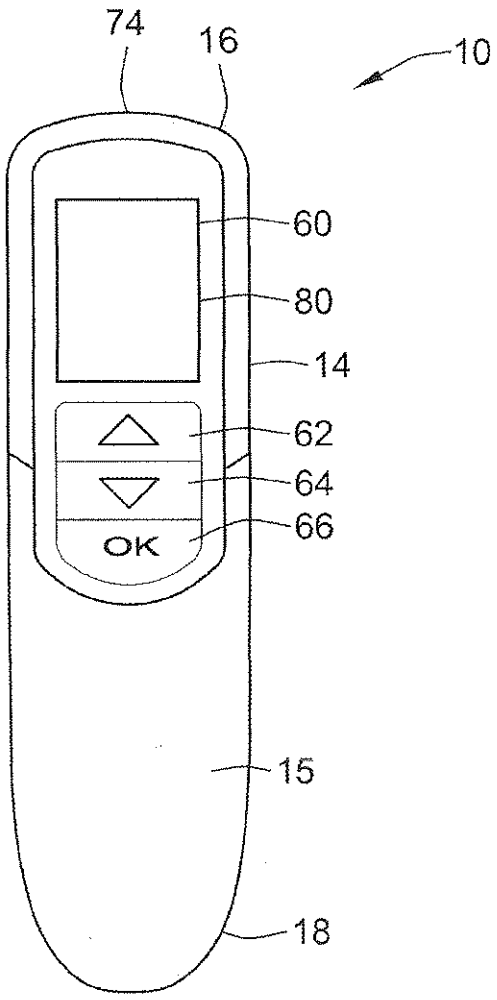


FIG. 1A

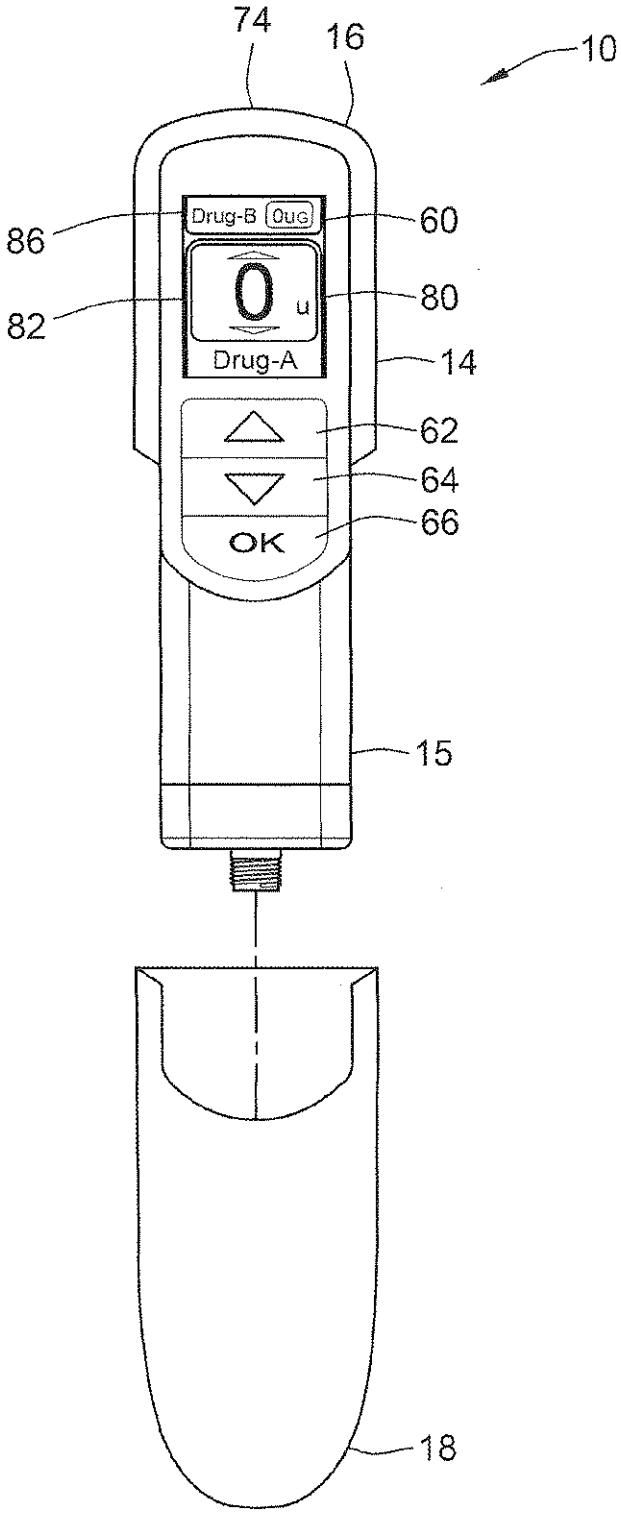


FIG. 1B

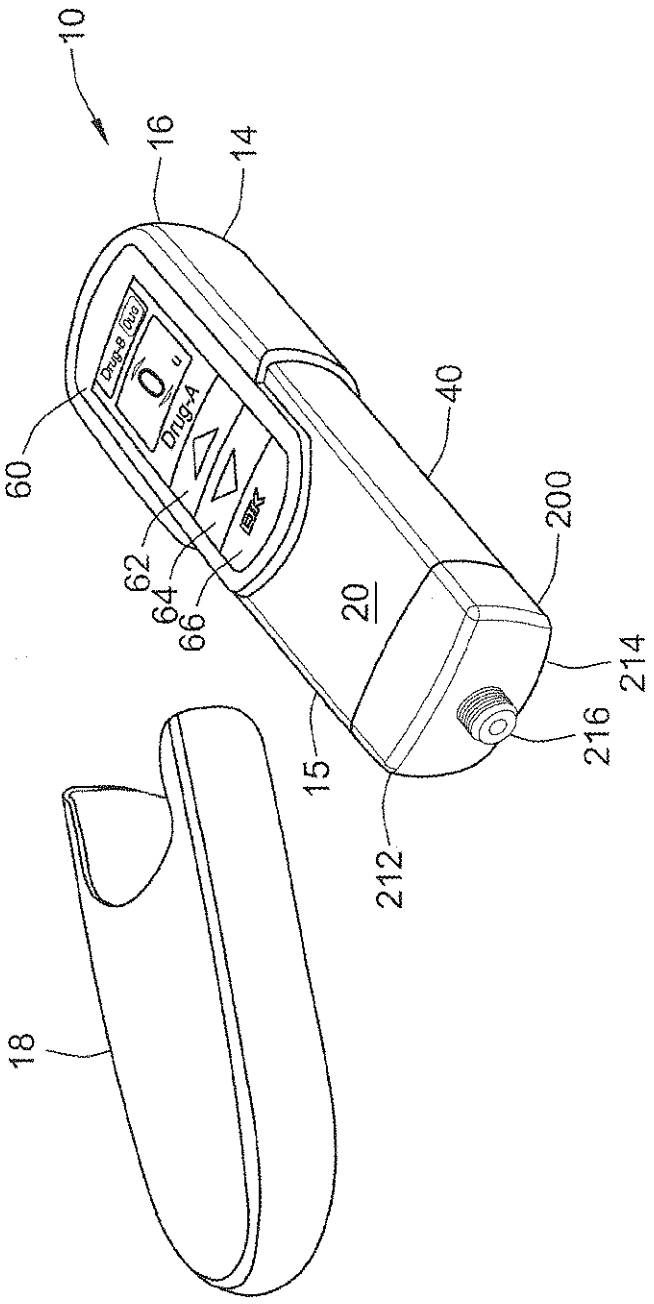


FIG. 2

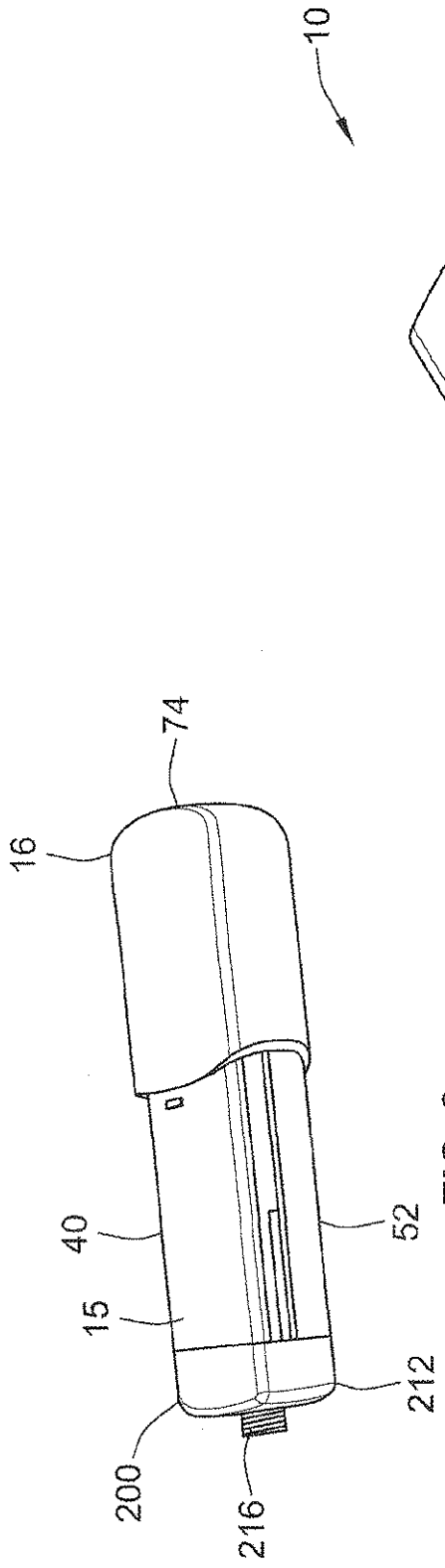

10
74
16
40
15
52
212
200
216

FIG. 3

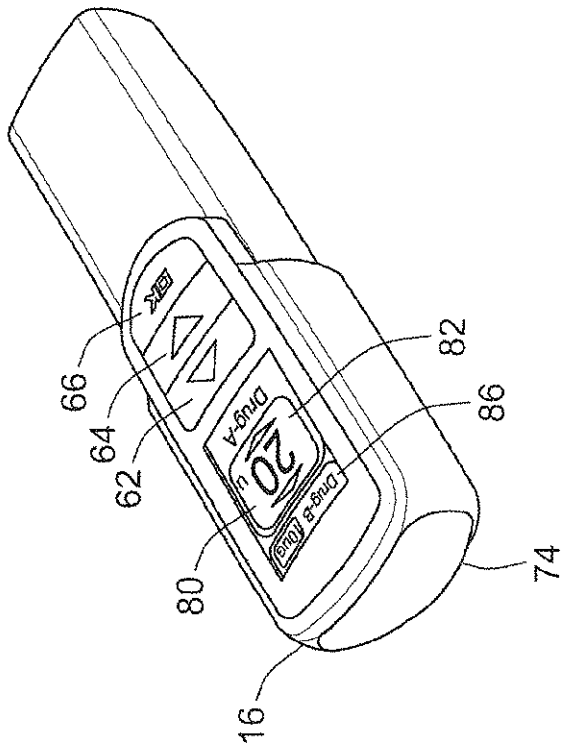

10
66
64
62
82
86
80
74
16
Drug-A
20
Drug-B fluid

FIG. 4

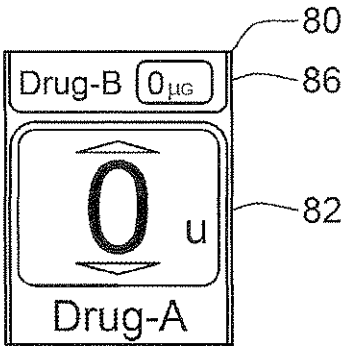


FIG. 5A

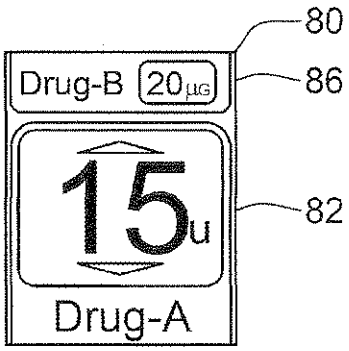


FIG. 5B

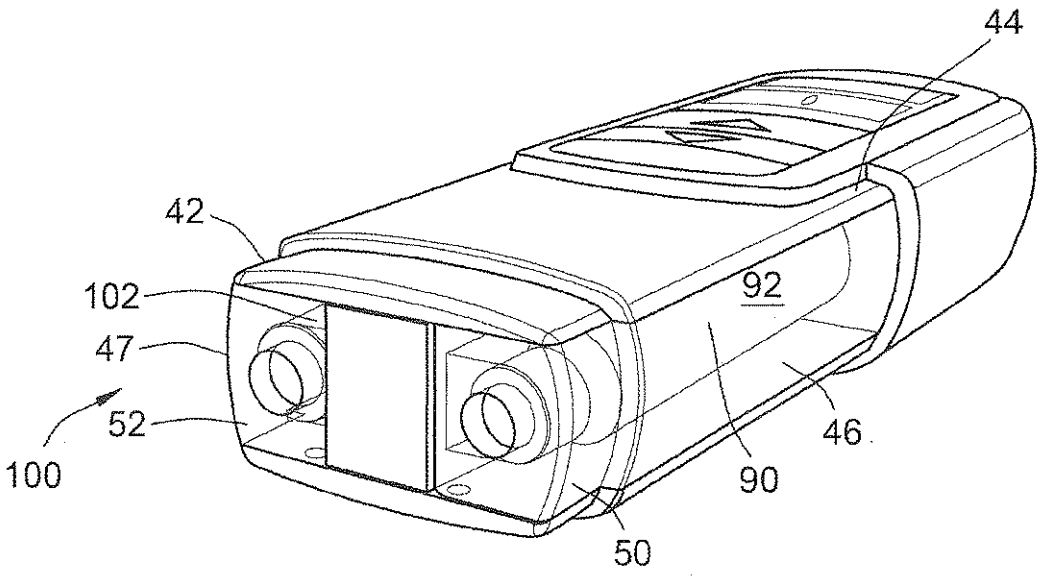


FIG. 6

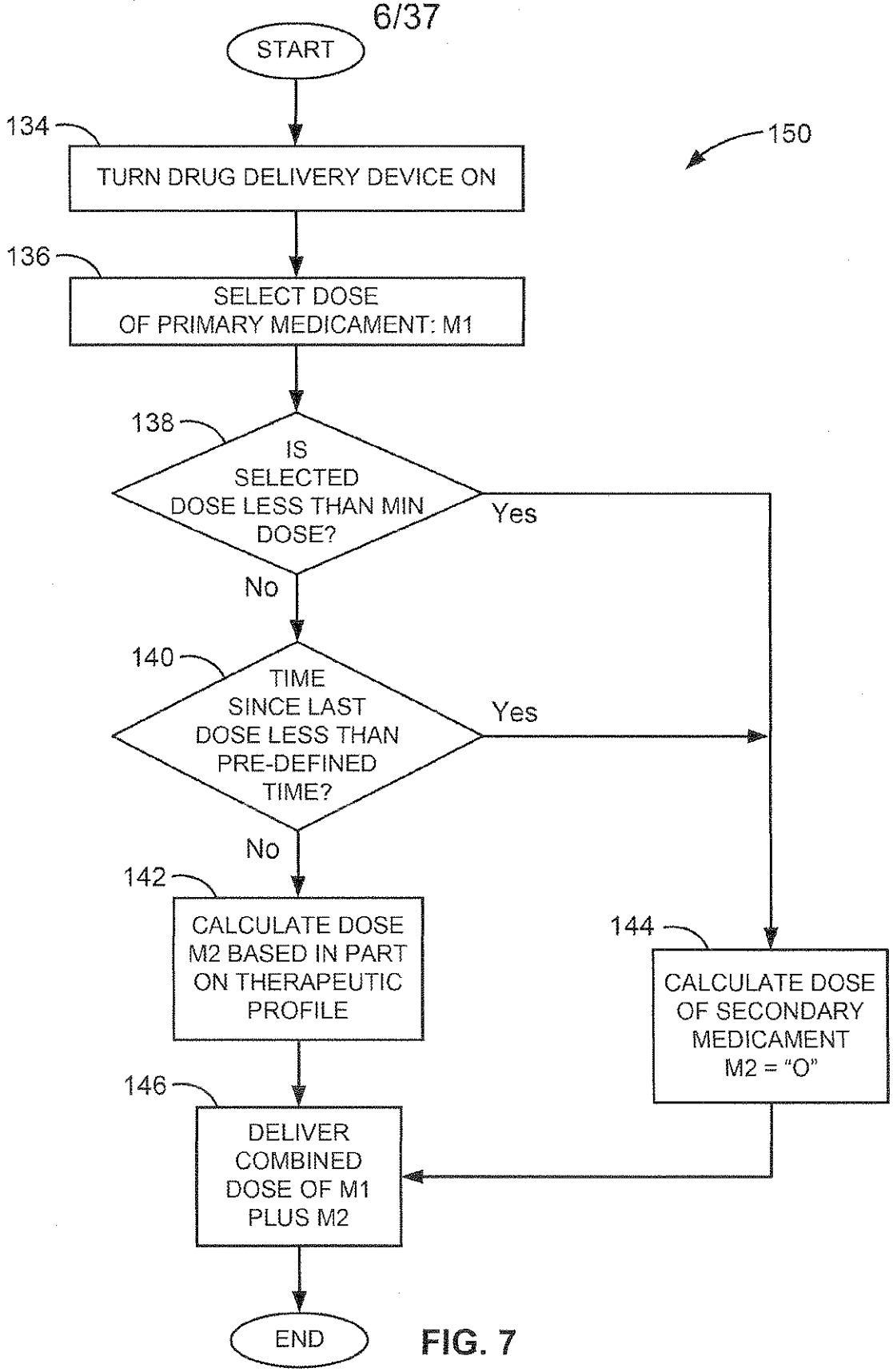

START
134
TURN DRUG DELIVERY DEVICE ON
150
136
SELECT DOSE OF PRIMARY MEDICAMENT: M1
138
IS SELECTED DOSE LESS THAN MIN DOSE?
Yes
No
140
TIME SINCE LAST DOSE LESS THAN PRE-DEFINED TIME?
Yes
No
142
CALCULATE DOSE M2 BASED IN PART ON THERAPEUTIC PROFILE
144
CALCULATE DOSE OF SECONDARY MEDICAMENT M2 = "O"
146
DELIVER COMBINED DOSE OF M1 PLUS M2
END

FIG. 7

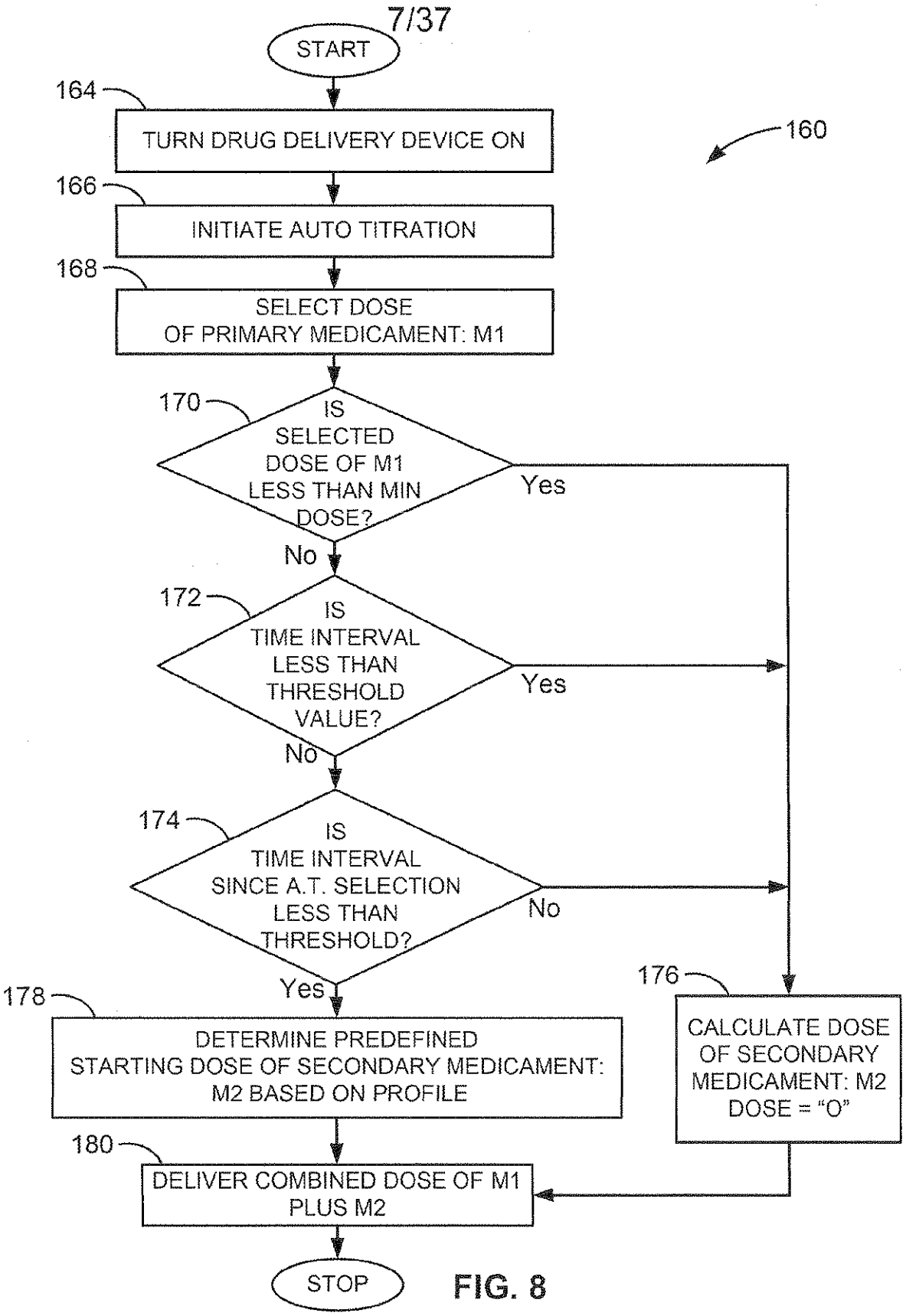

START
164
TURN DRUG DELIVERY DEVICE ON
160
166
INITIATE AUTO TITRATION
168
SELECT DOSE OF PRIMARY MEDICAMENT: M1
170
IS SELECTED DOSE OF M1 LESS THAN MIN DOSE?
Yes
No
172
IS TIME INTERVAL LESS THAN THRESHOLD VALUE?
Yes
No
174
IS TIME INTERVAL SINCE A.T. SELECTION LESS THAN THRESHOLD?
No
Yes
176
CALCULATE DOSE OF SECONDARY MEDICAMENT: M2 DOSE = "O"
178
DETERMINE PREDEFINED STARTING DOSE OF SECONDARY MEDICAMENT: M2 BASED ON PROFILE
180
DELIVER COMBINED DOSE OF M1 PLUS M2
STOP

FIG. 8

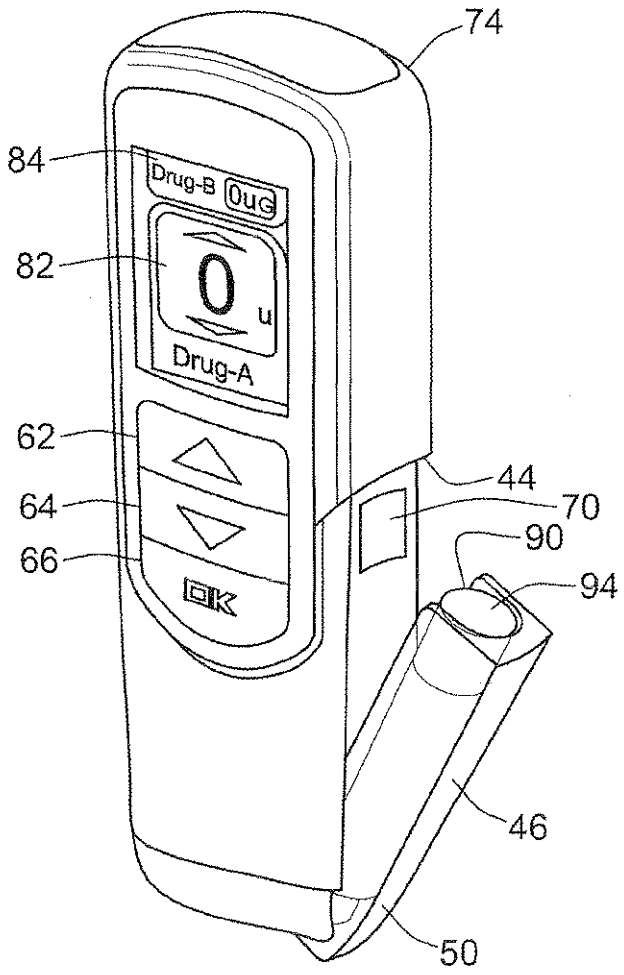


FIG. 9

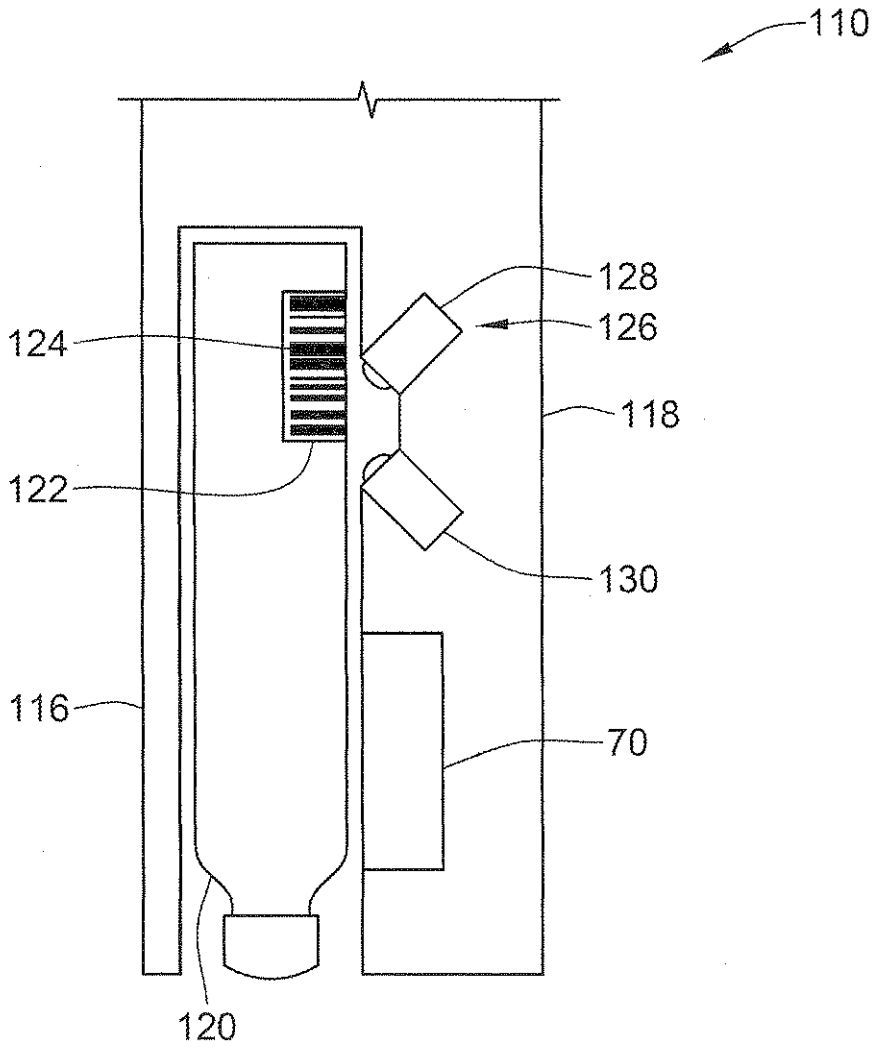


FIG. 10

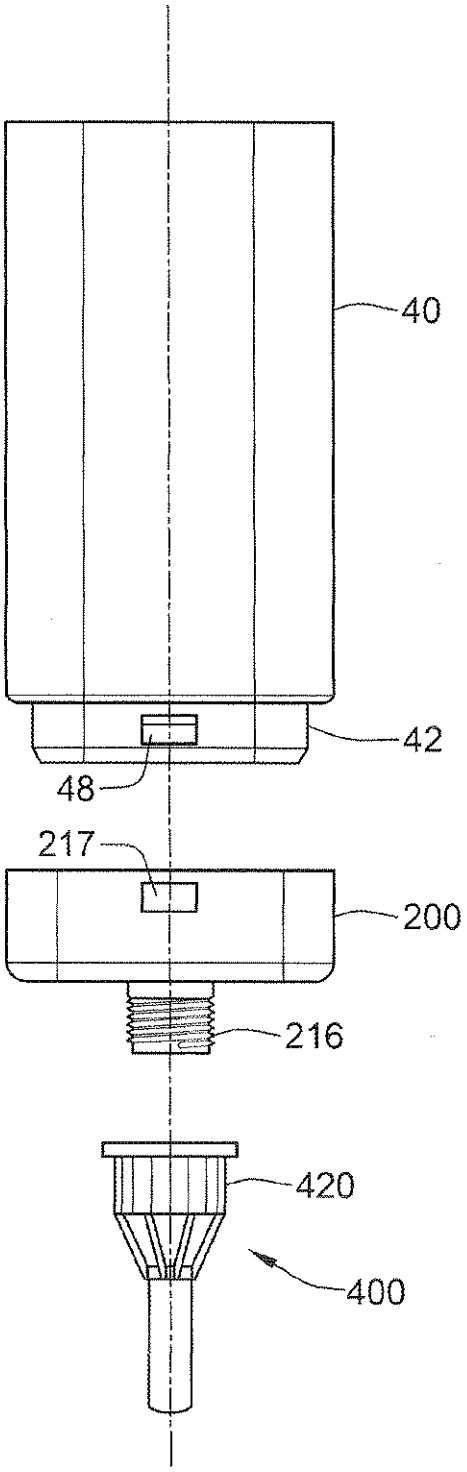


FIG. 11

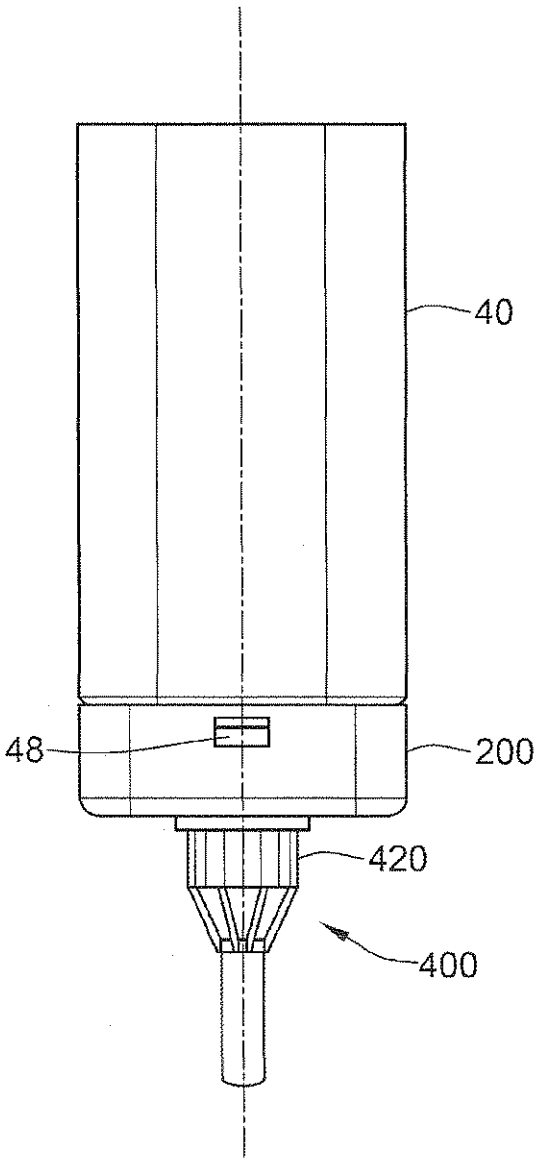


FIG. 12

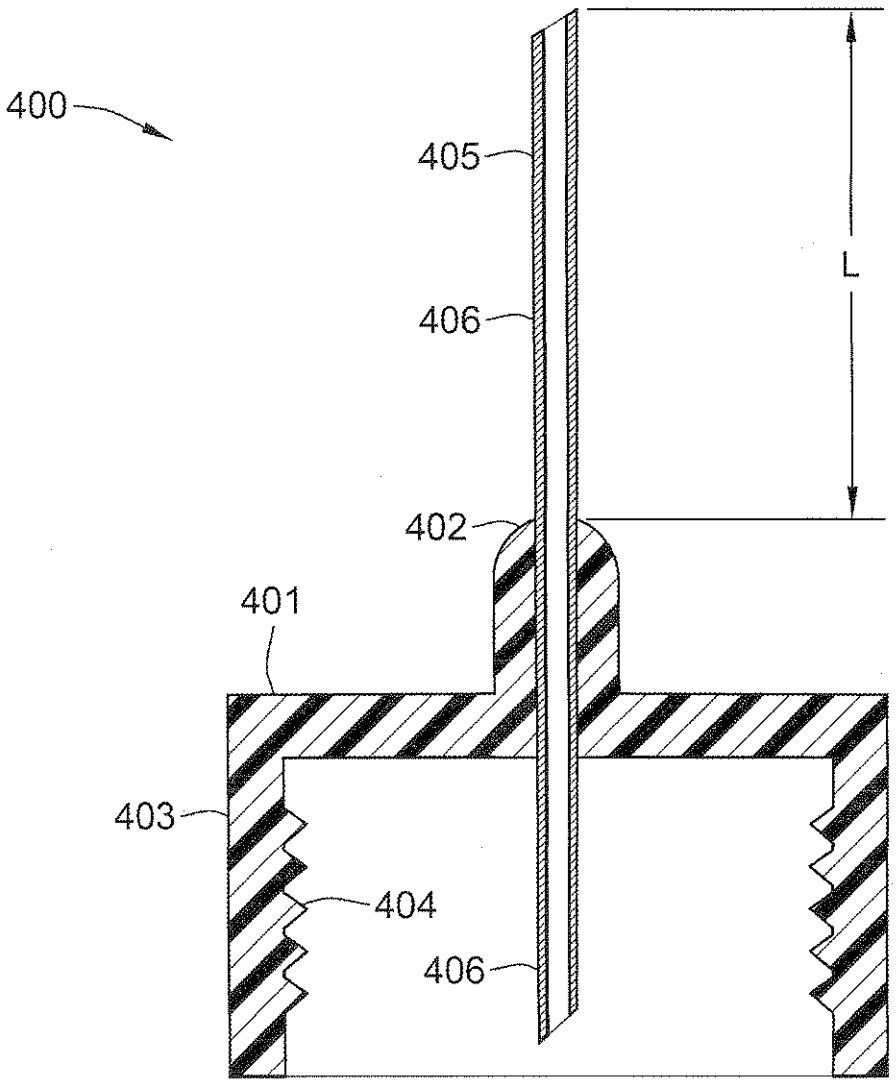


FIG. 13

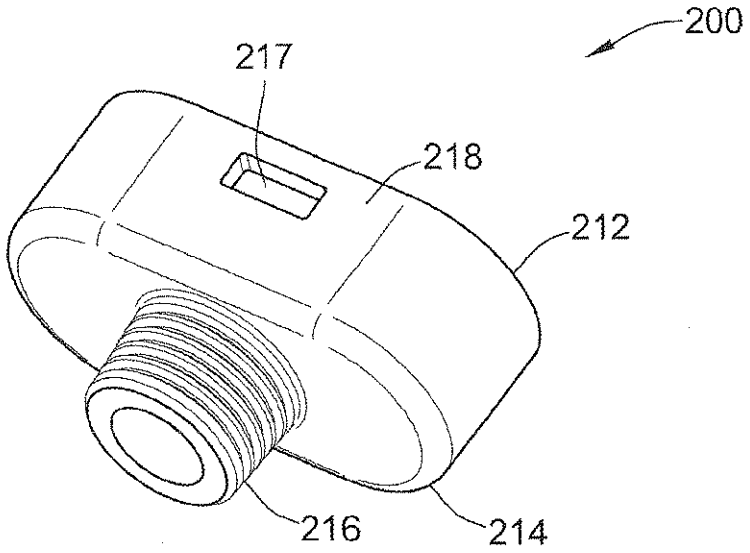

200
217
218
212
216
214

FIG. 14

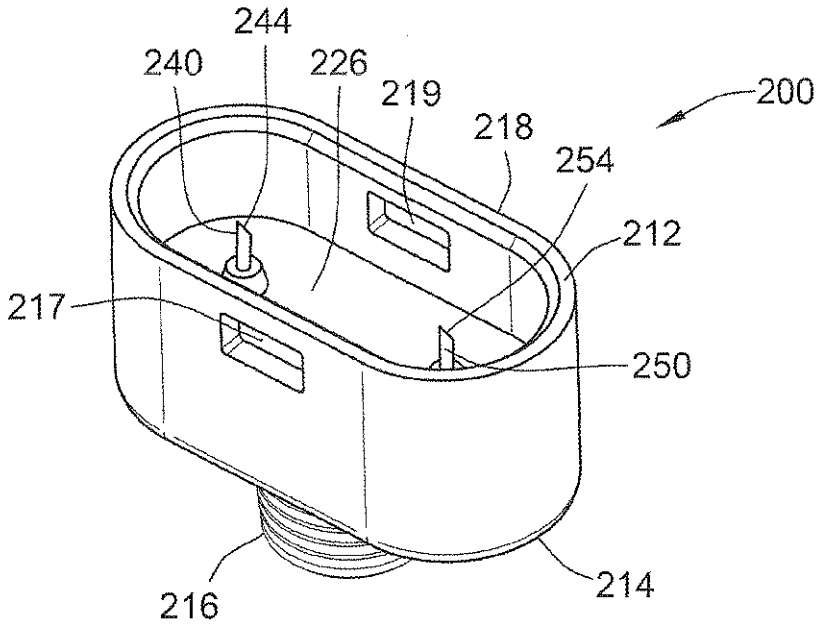

244
240
226
219
218
254
200
212
217
250
216
214

FIG. 15

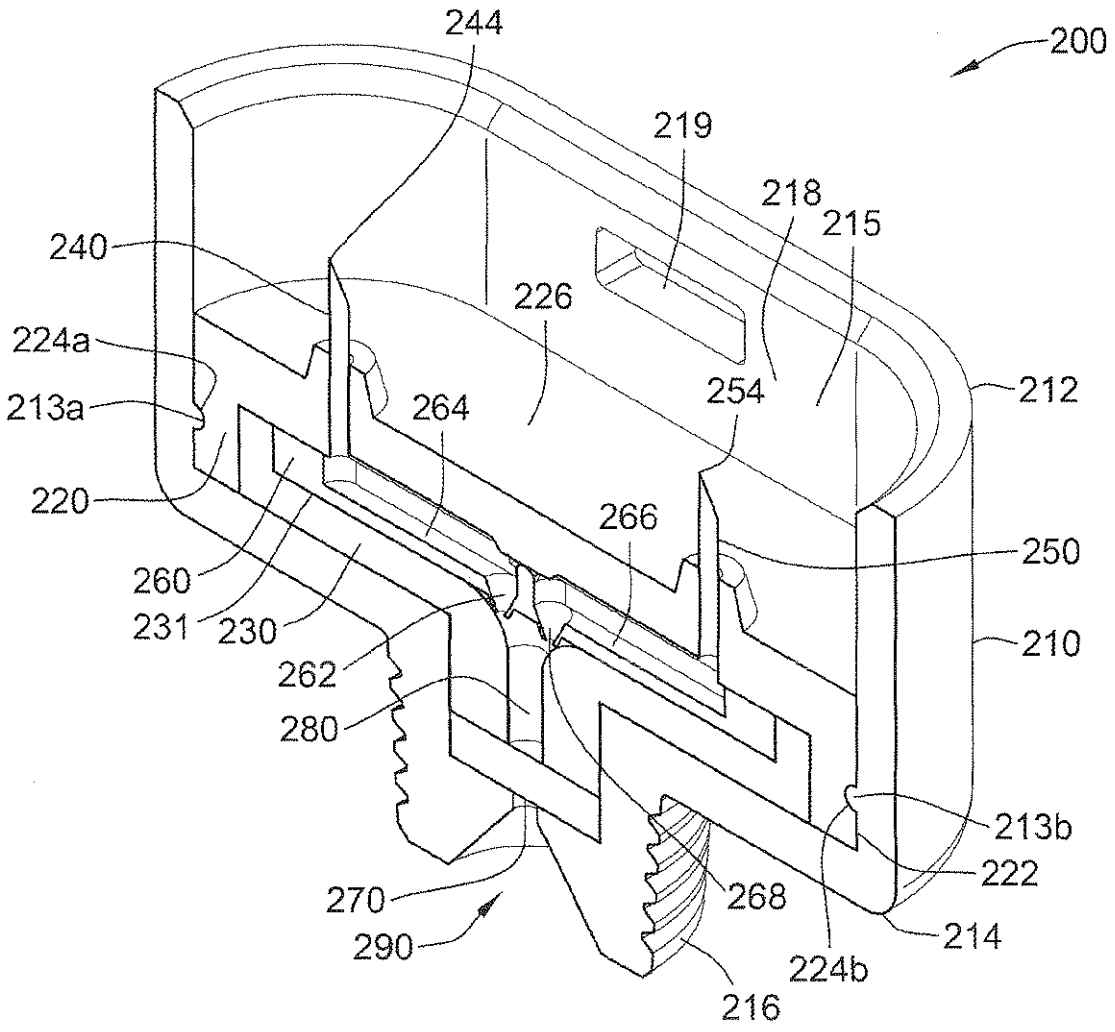

244
200
219
218
215
240
226
224a
213a
264
254
212
220
266
250
260
231
230
262
210
280
213b
222
270
268
290
214
224b
216

FIG. 16

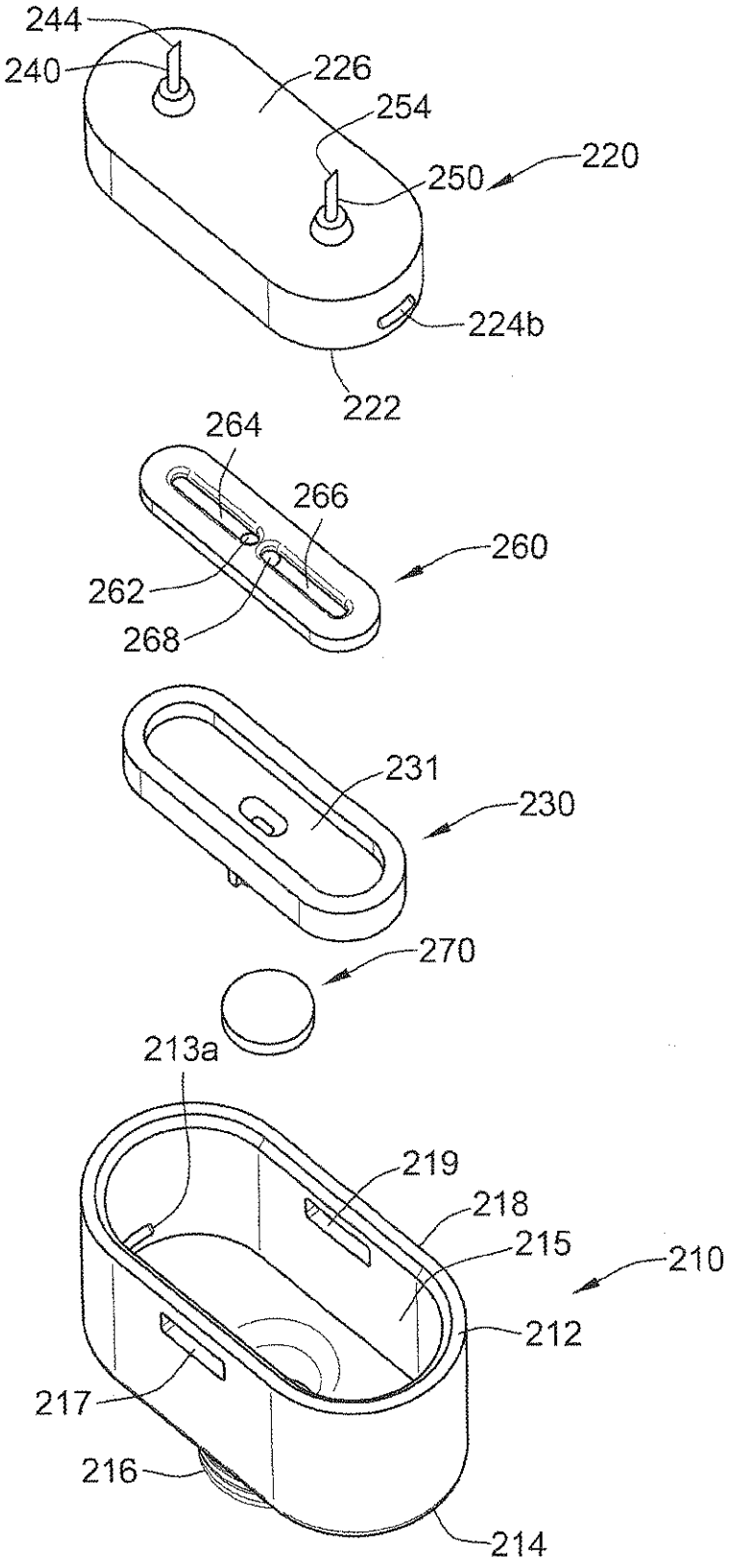

244
240
226
254
250
220
224b
222
264
266
260
262
268
231
230
270
213a
219
218
215
210
212
217
216
214

FIG. 17

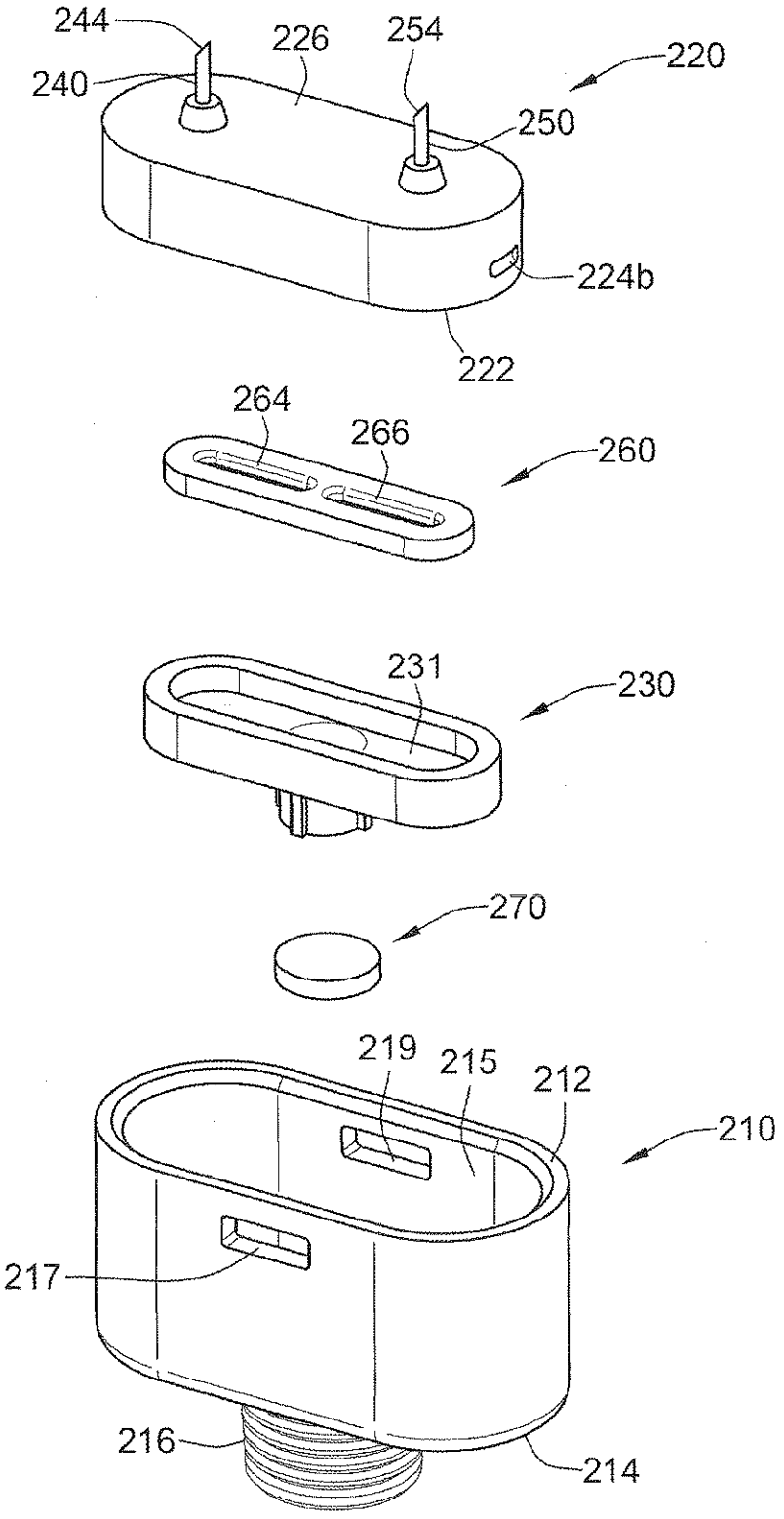

244
226
254
220
240
250
224b
222
264
266
260
231
230
270
219
215
212
210
217
216
214

FIG. 18

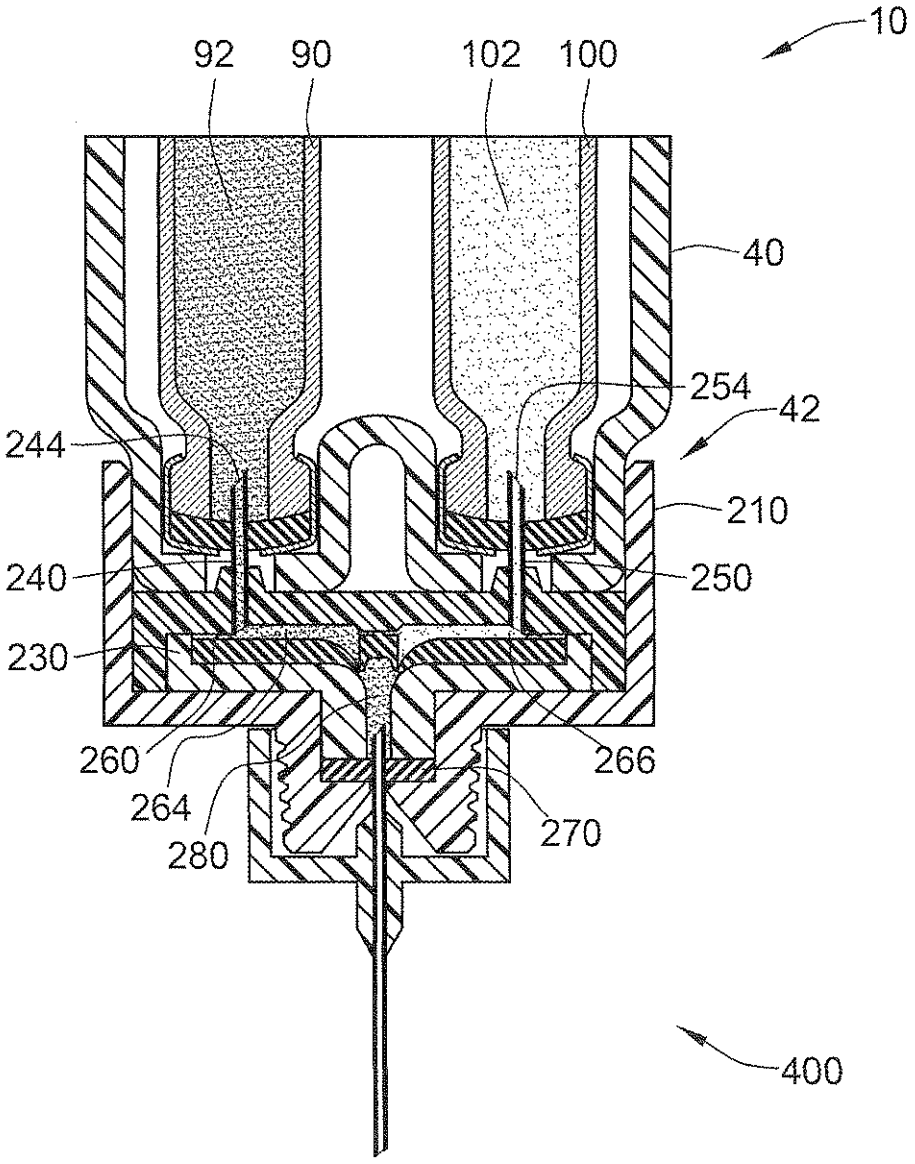

10
92
90
102
100
40
254
42
244
210
240
250
230
260
266
264
270
280
400

FIG. 19

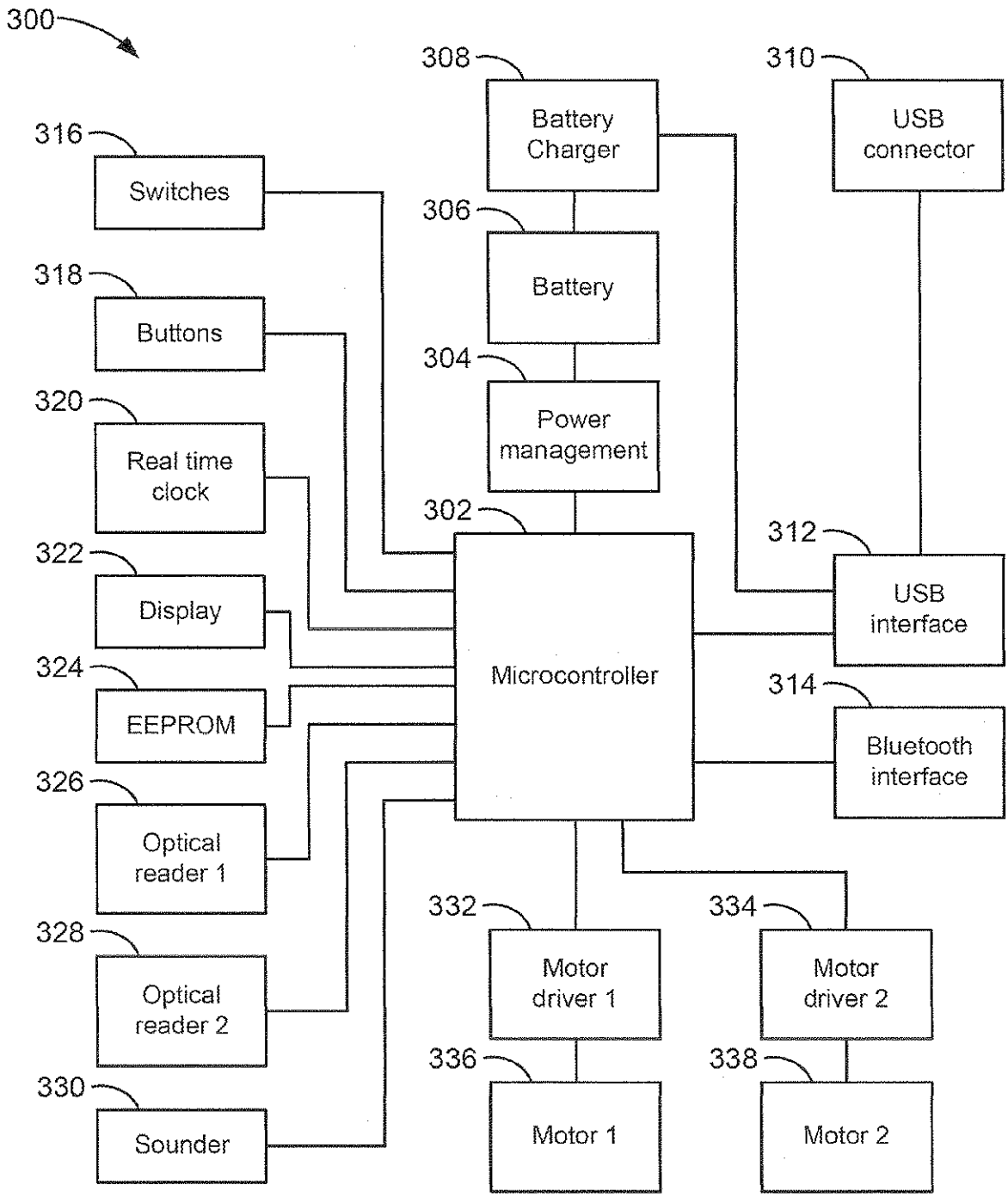

300
308
Battery Charger
310
USB connector
316
Switches
306
Battery
318
Buttons
304
Power management
320
Real time clock
302
312
USB interface
322
Display
Microcontroller
324
EEPROM
314
Bluetooth interface
326
Optical reader 1
332
Motor driver 1
334
Motor driver 2
328
Optical reader 2
336
Motor 1
338
Motor 2
330
Sounder

FIG. 20

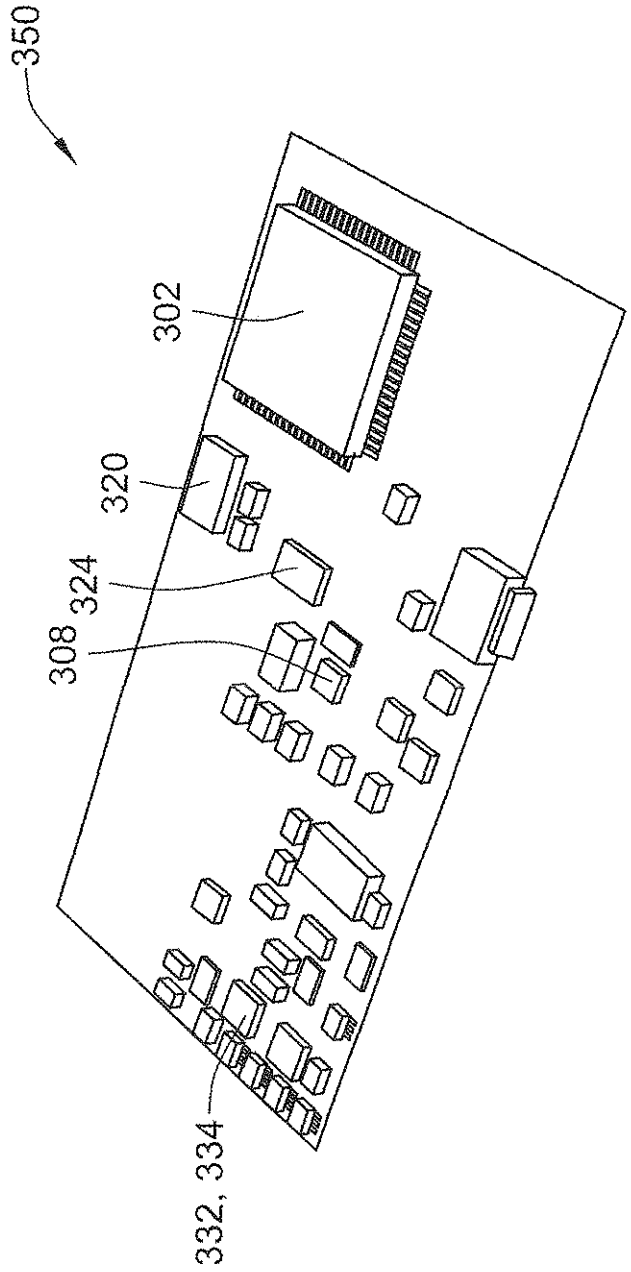


FIG. 21

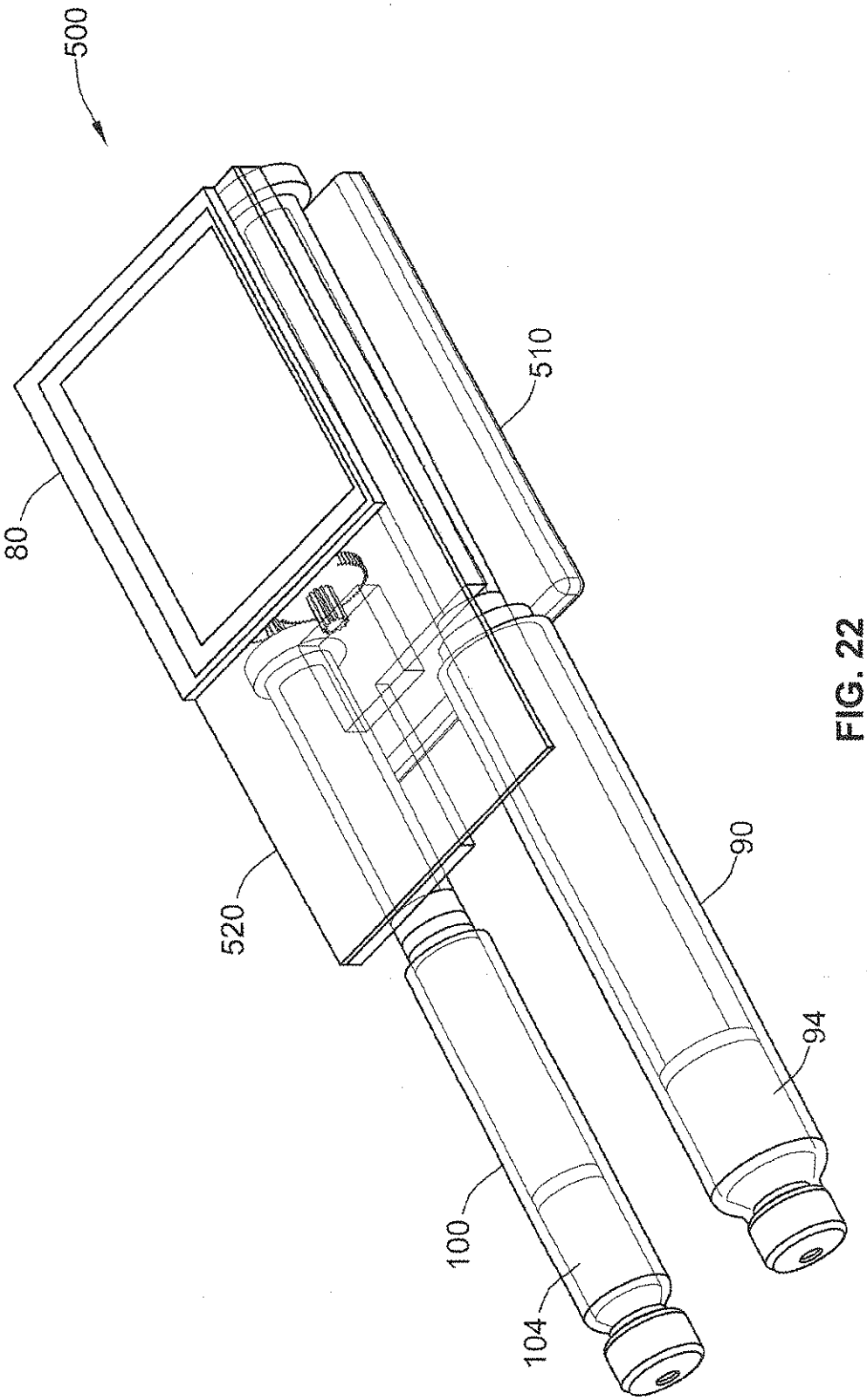


FIG. 22

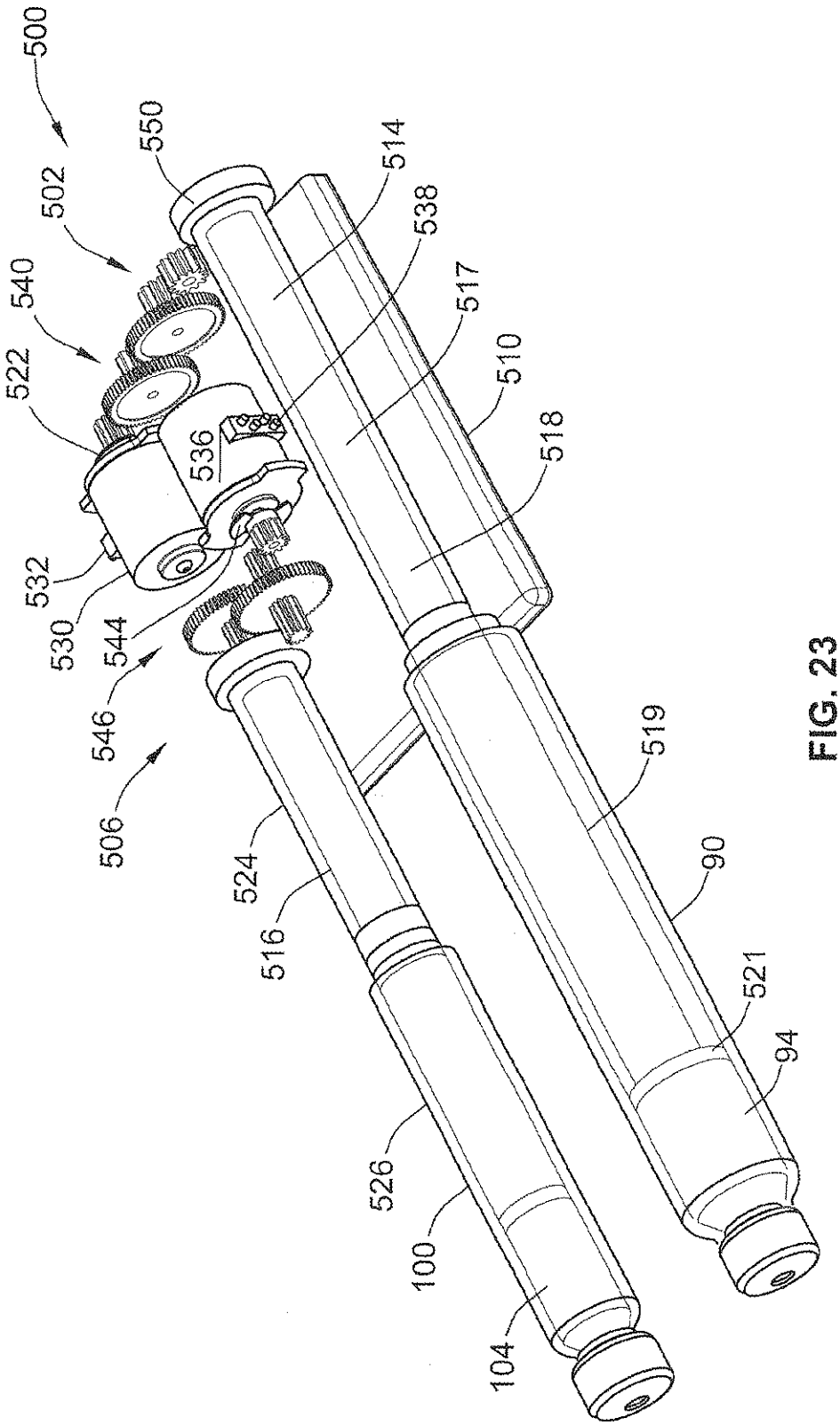

500
550
502
514
538
540
517
522
510
536
518
532
530
544
546
519
506
524
90
516
521
94
526
100
104

FIG. 23

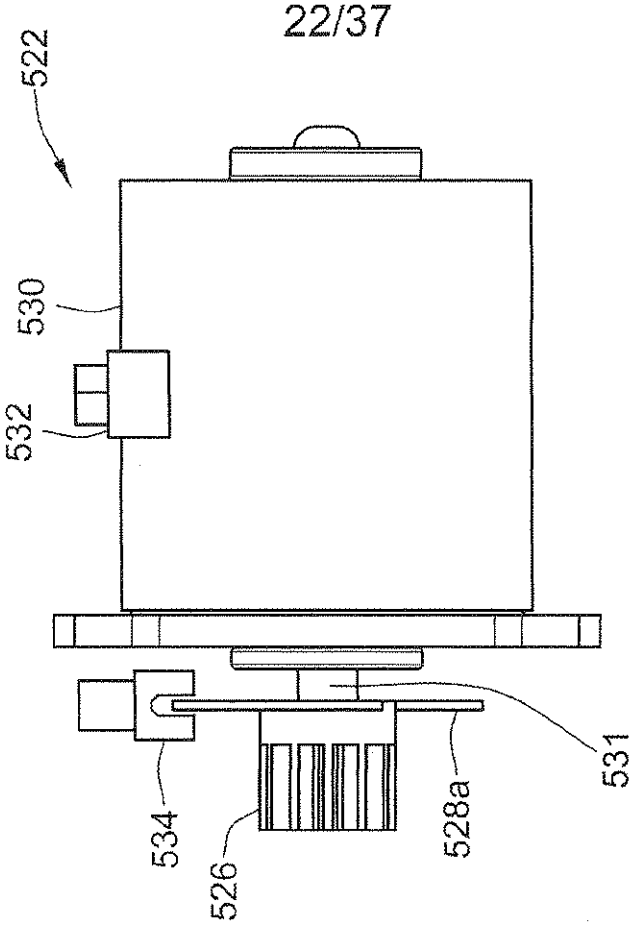


FIG. 24B

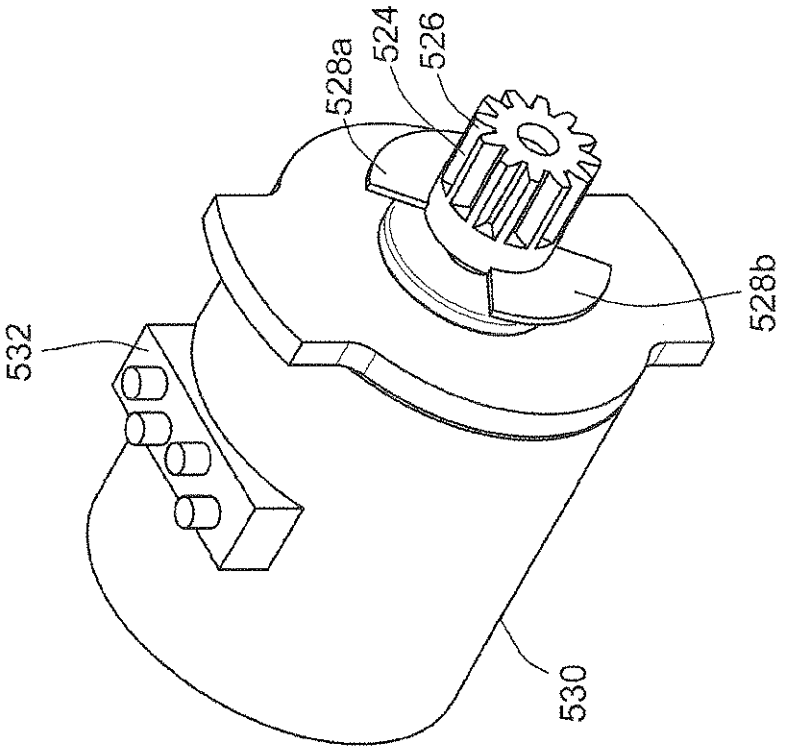


FIG. 24A

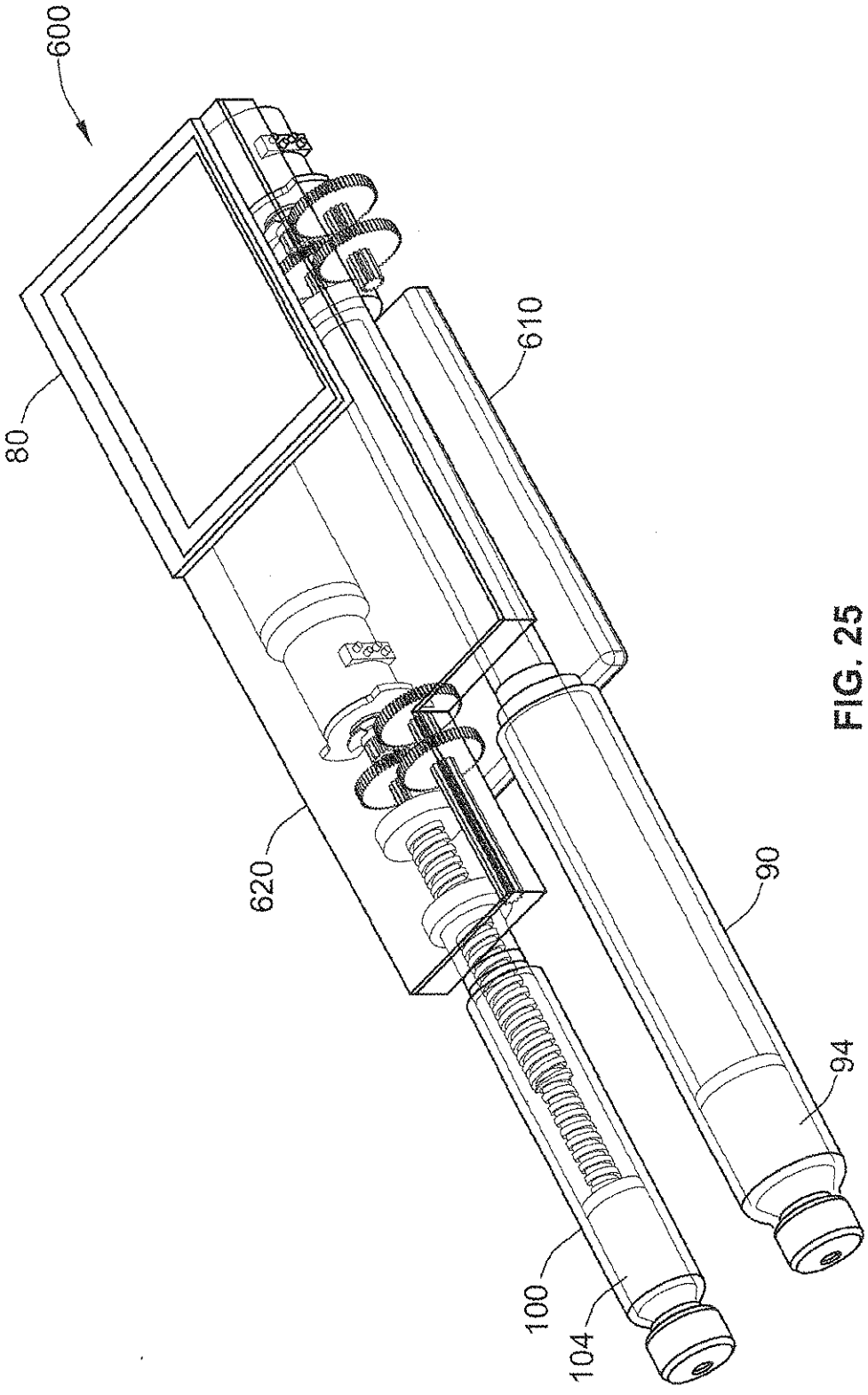


FIG. 25

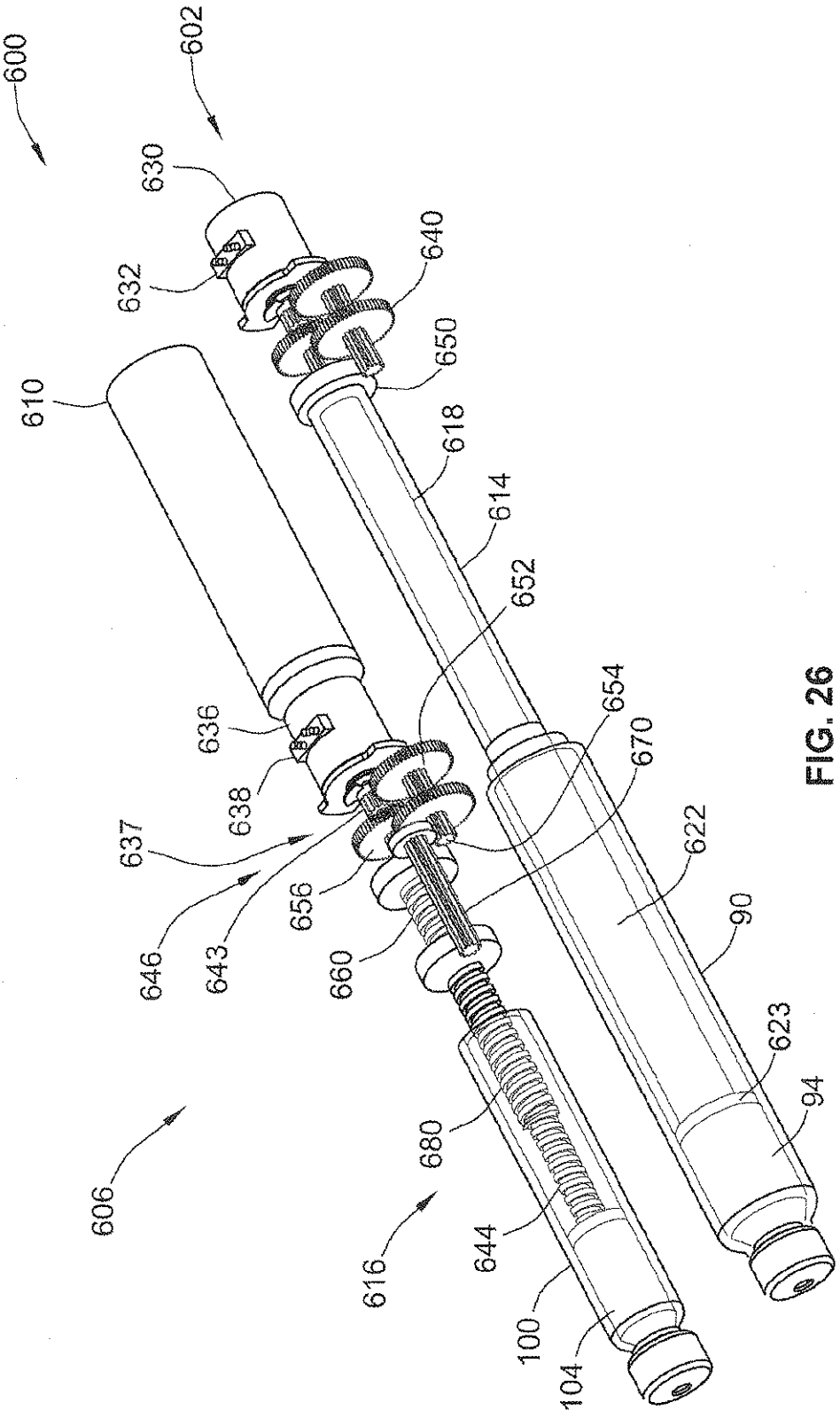

600
602
630
632
640
650
610
618
614
652
654
636
638
670
637
622
656
646
643
660
90
623
94
680
606
644
616
100
104

FIG. 26

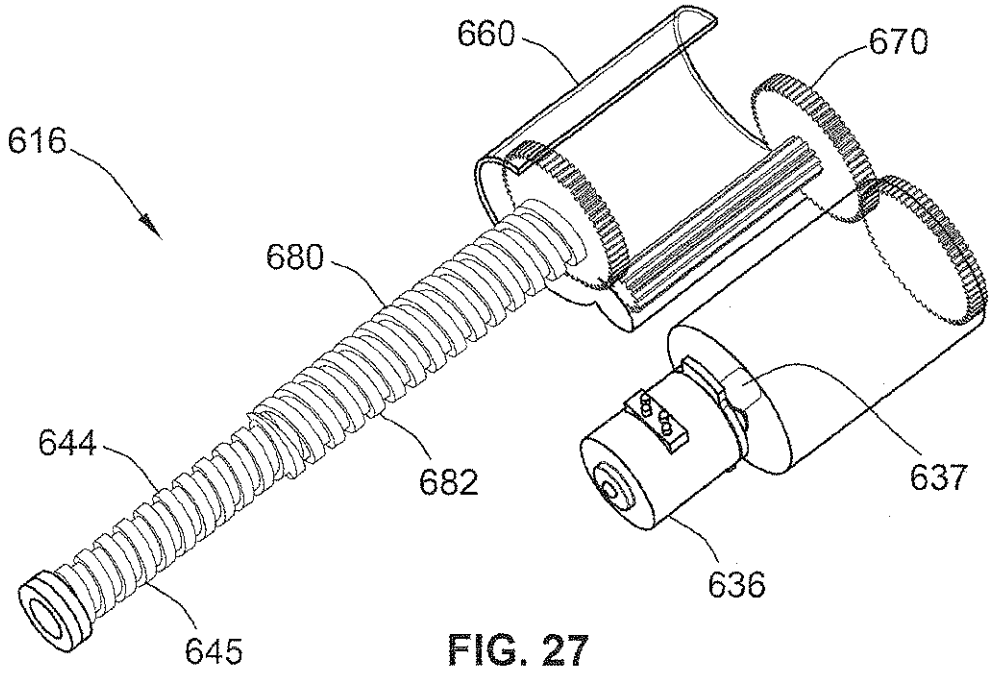


FIG. 27

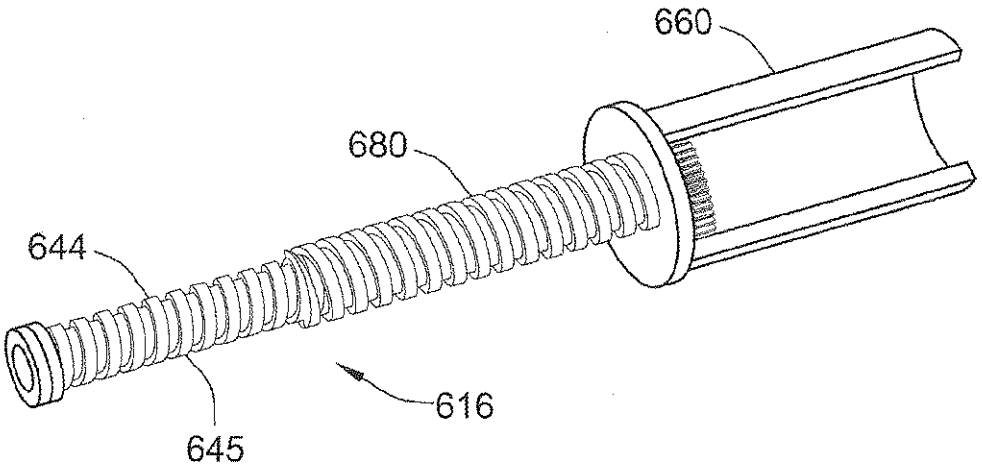


FIG. 28

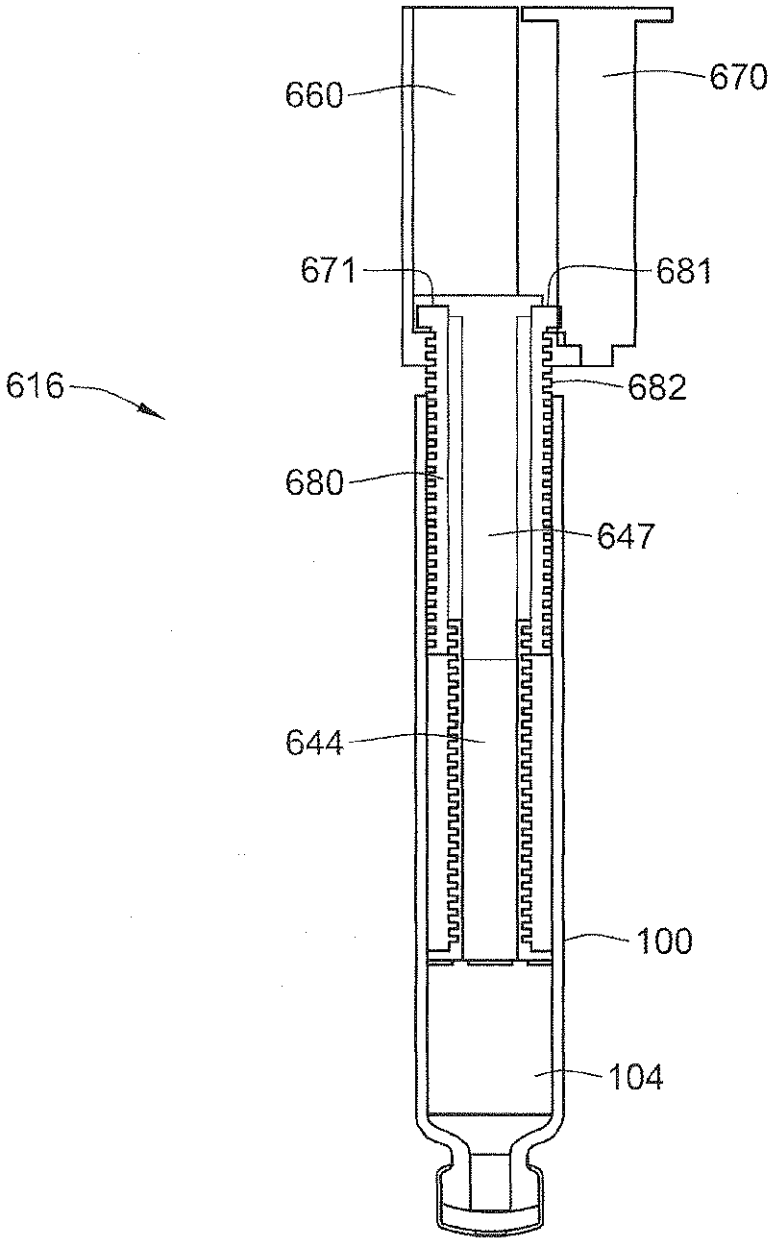


FIG. 29

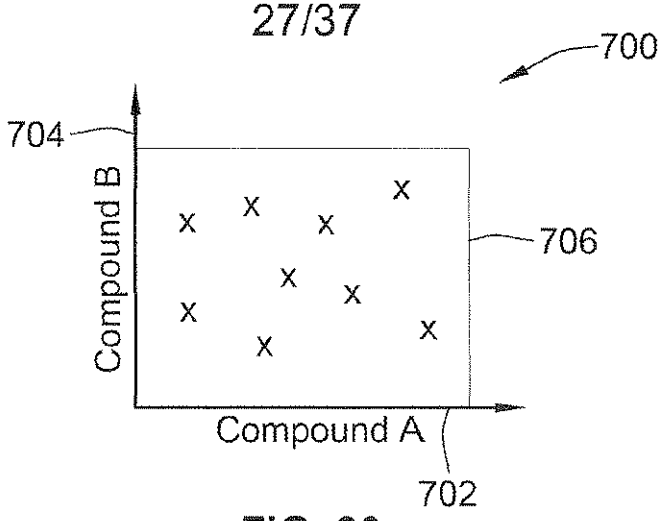


FIG. 30

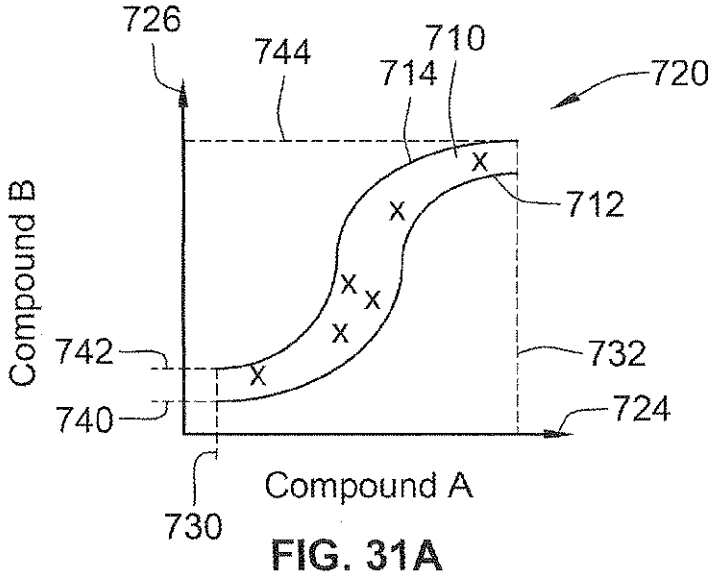


FIG. 31A

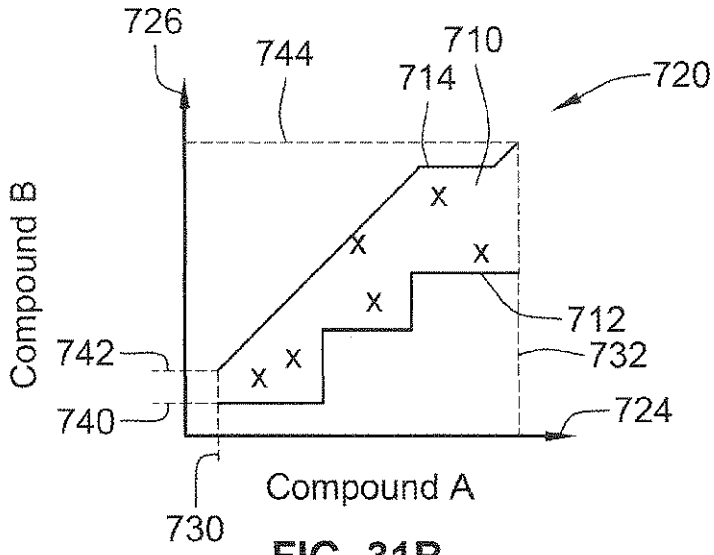


FIG. 31B

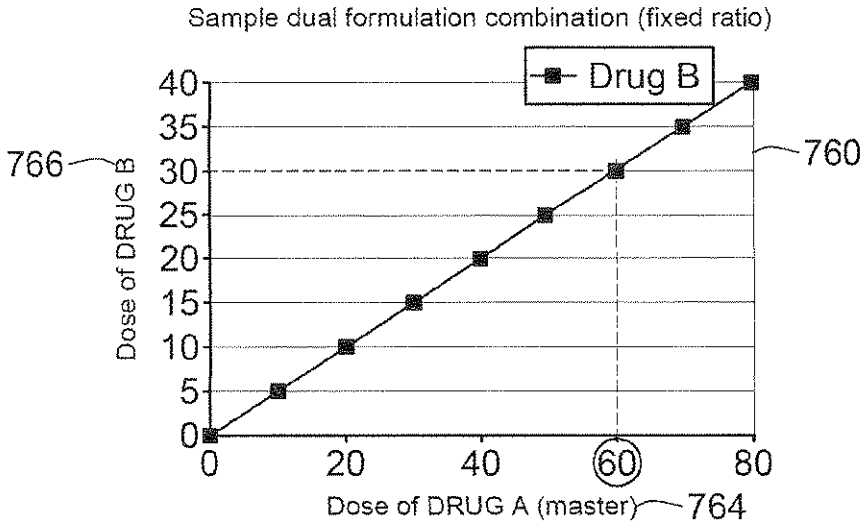

Sample dual formulation combination (fixed ratio)
Drug B
40
35
30
25
20
15
10
5
0
766
760
Dose of DRUG B
0
20
40
60
80
Dose of DRUG A (master)
764

FIG. 32

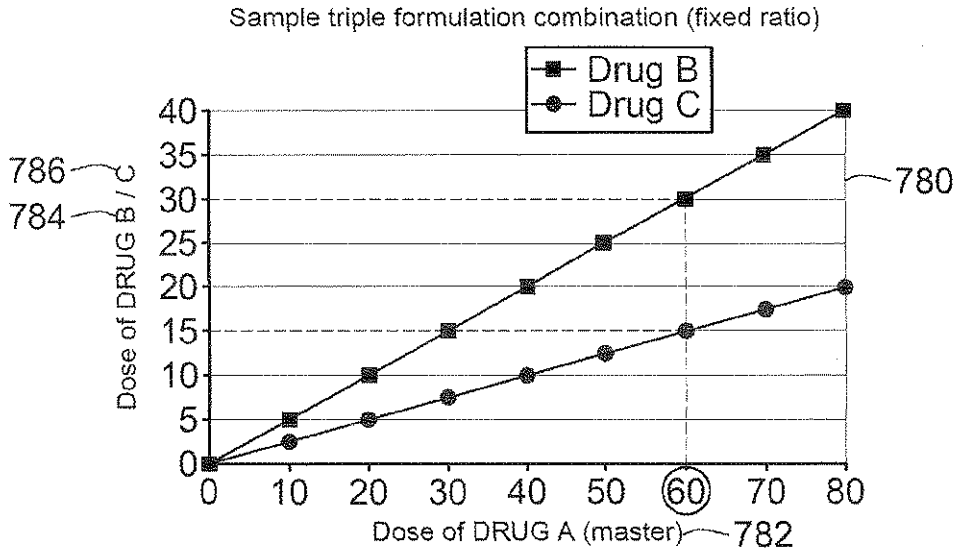

Sample triple formulation combination (fixed ratio)
Drug B
Drug C
40
35
30
25
20
15
10
5
0
786
784
780
Dose of DRUG B / C
0
10
20
30
40
50
60
70
80
Dose of DRUG A (master)
782

FIG. 33

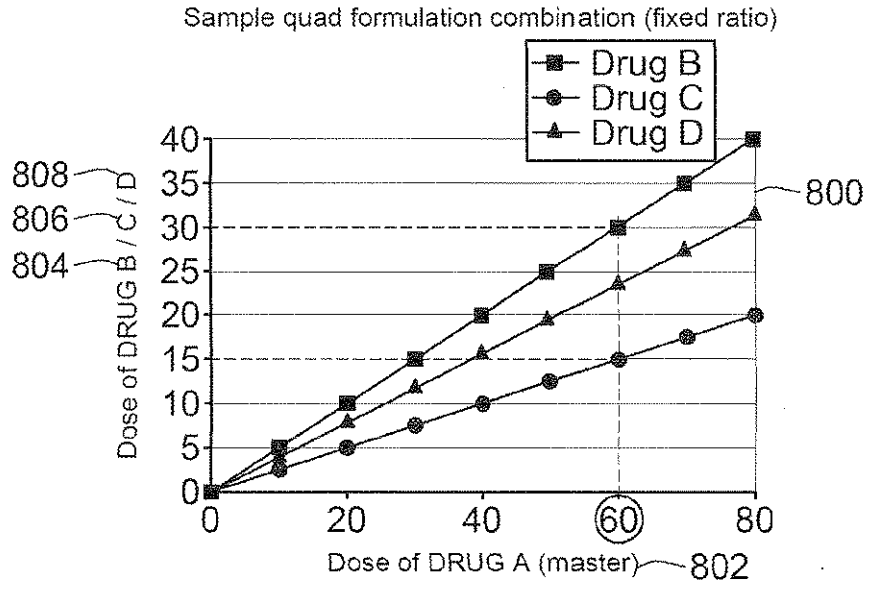

Sample quad formulation combination (fixed ratio)
Drug B
Drug C
Drug D
808
806
804
Dose of DRUG B / C / D
40
35
30
25
20
15
10
5
0
800
0
20
40
60
80
Dose of DRUG A (master)
802

FIG. 34

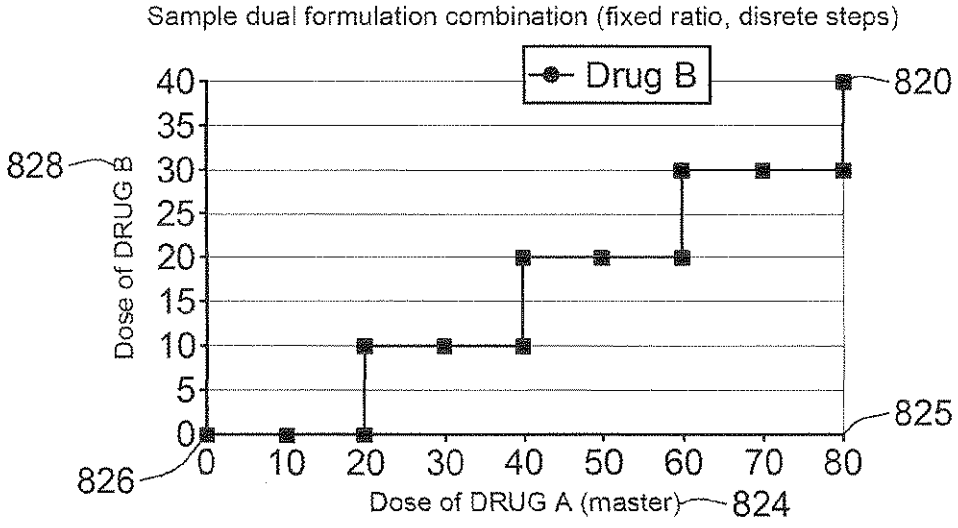

Sample dual formulation combination (fixed ratio, disrete steps)
Drug B
820
828
Dose of DRUG B
40
35
30
25
20
15
10
5
0
825
826
0
10
20
30
40
50
60
70
80
Dose of DRUG A (master)
824

FIG. 35

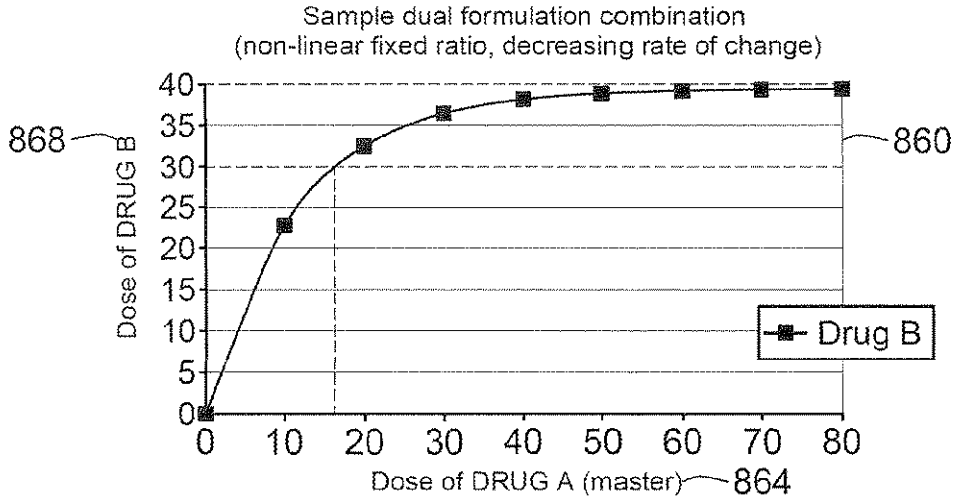

Sample dual formulation combination
(non-linear fixed ratio, decreasing rate of change)
868
860
Dose of DRUG B
40
35
30
25
20
15
10
5
0
Drug B
0 10 20 30 40 50 60 70 80
Dose of DRUG A (master)
864

FIG. 36

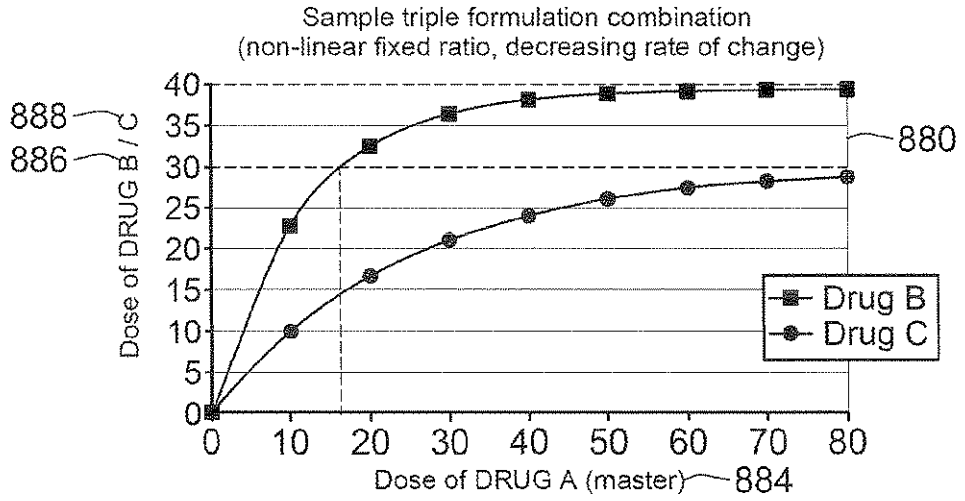

Sample triple formulation combination
(non-linear fixed ratio, decreasing rate of change)
888
886
880
Dose of DRUG B / C
40
35
30
25
20
15
10
5
0
Drug B
Drug C
0 10 20 30 40 50 60 70 80
Dose of DRUG A (master)
884

FIG. 37

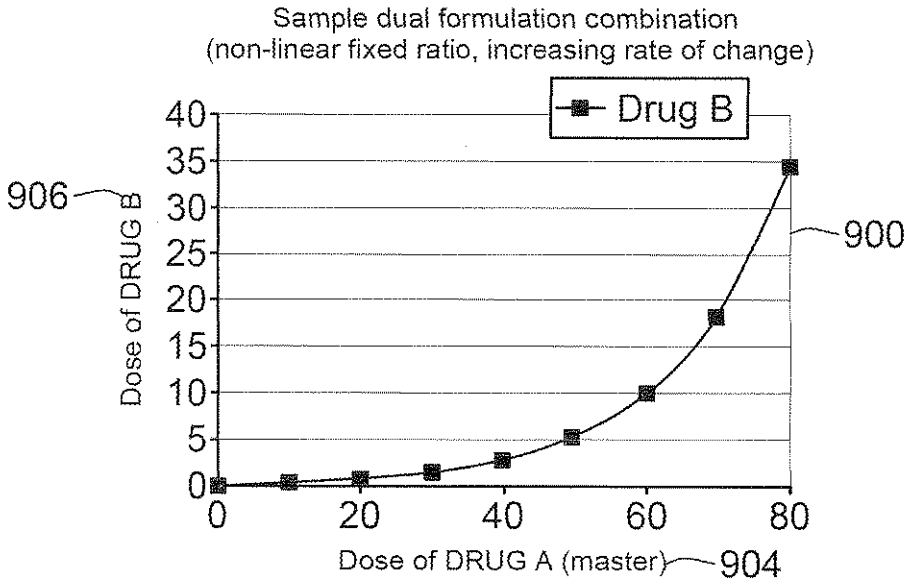

Sample dual formulation combination
(non-linear fixed ratio, increasing rate of change)
Drug B
906
Dose of DRUG B
900
0
5
10
15
20
25
30
35
40
0
20
40
60
80
Dose of DRUG A (master)
904

FIG. 38

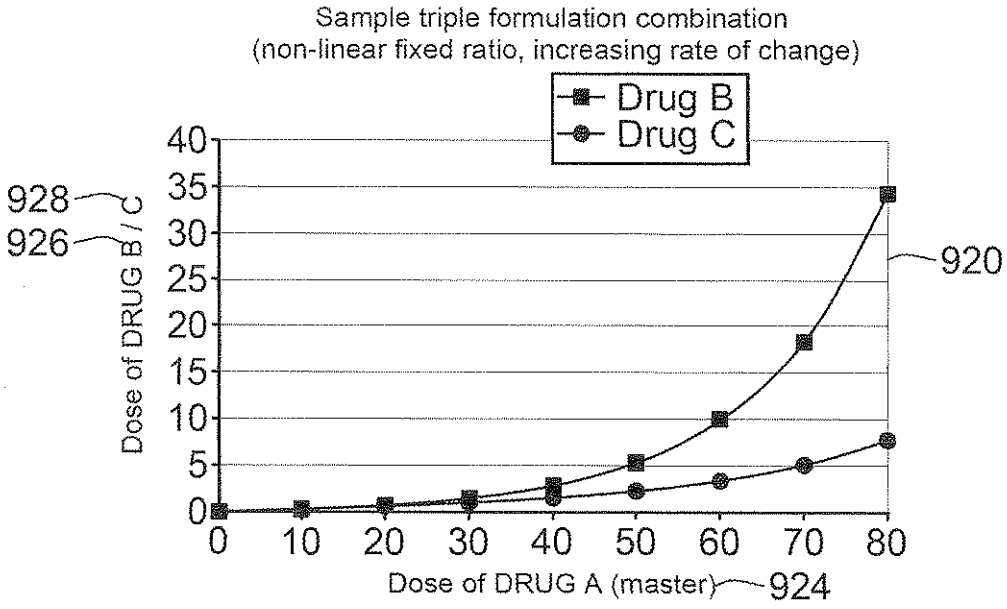

Sample triple formulation combination
(non-linear fixed ratio, increasing rate of change)
Drug B
Drug C
928
926
Dose of DRUG B / C
920
0
5
10
15
20
25
30
35
40
0
10
20
30
40
50
60
70
80
Dose of DRUG A (master)
924

FIG. 39

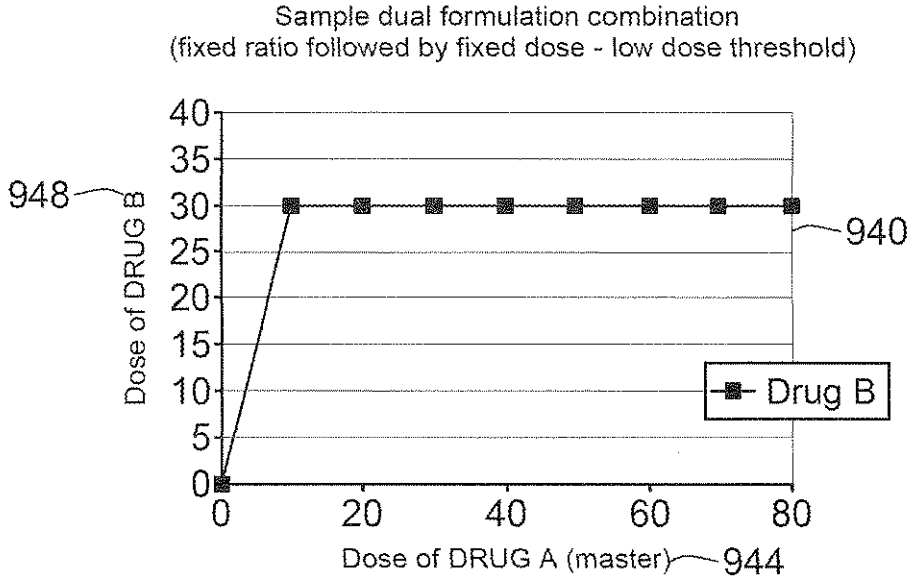

Sample dual formulation combination
(fixed ratio followed by fixed dose - low dose threshold)
948
940
Dose of DRUG B
40
35
30
25
20
15
10
5
0
0
20
40
60
80
Drug B
Dose of DRUG A (master)
944

FIG. 40

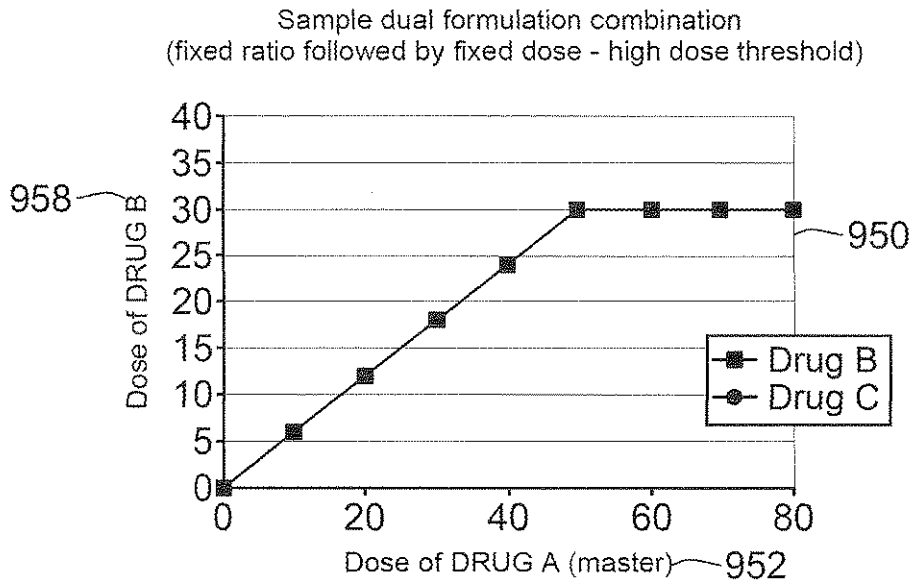

Sample dual formulation combination
(fixed ratio followed by fixed dose - high dose threshold)
958
950
Dose of DRUG B
40
35
30
25
20
15
10
5
0
0
20
40
60
80
Drug B
Drug C
Dose of DRUG A (master)
952

FIG. 41

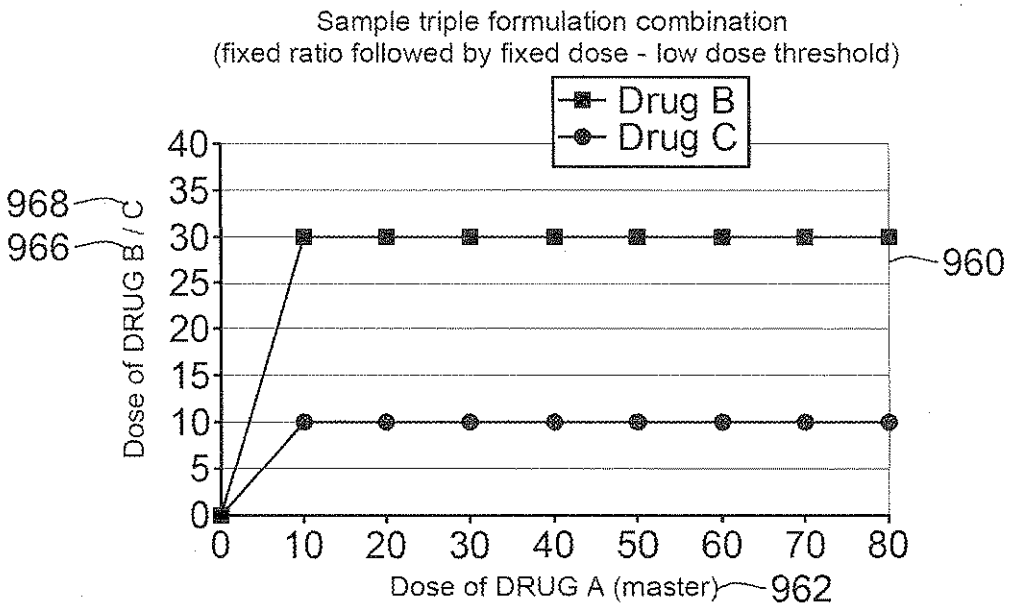

Sample triple formulation combination
(fixed ratio followed by fixed dose - low dose threshold)
Drug B
Drug C
968
966
Dose of DRUG B / C
40
35
30
25
20
15
10
5
0
960
0
10
20
30
40
50
60
70
80
Dose of DRUG A (master)
962

FIG. 42

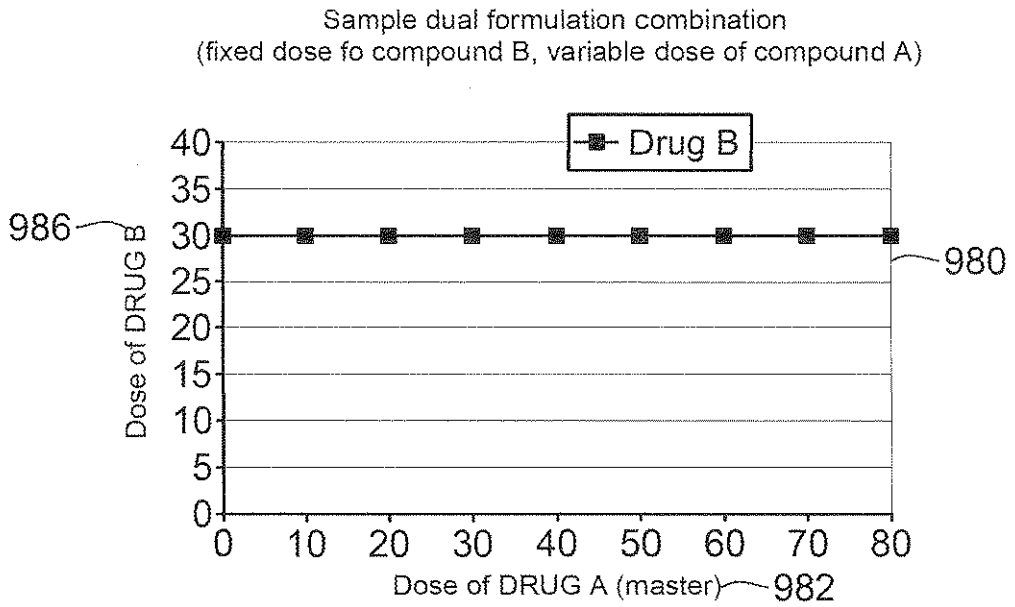

Sample dual formulation combination
(fixed dose fo compound B, variable dose of compound A)
Drug B
986
Dose of DRUG B
40
35
30
25
20
15
10
5
0
980
0
10
20
30
40
50
60
70
80
Dose of DRUG A (master)
982

FIG. 43

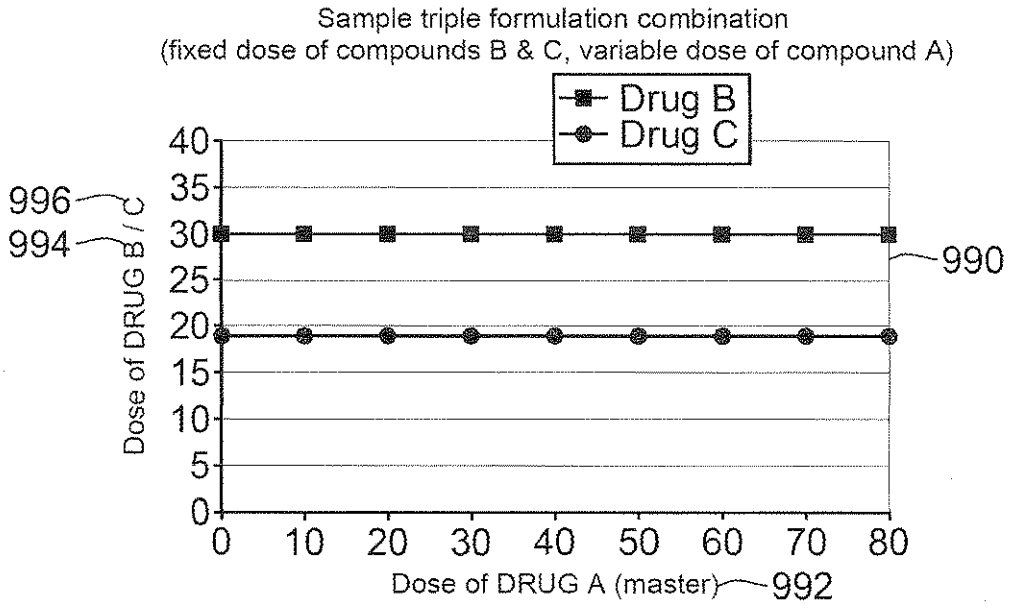

Sample triple formulation combination
(fixed dose of compounds B & C, variable dose of compound A)
Drug B
Drug C
996
994
990
Dose of DRUG B / C
40
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
Dose of DRUG A (master)
992

FIG. 44

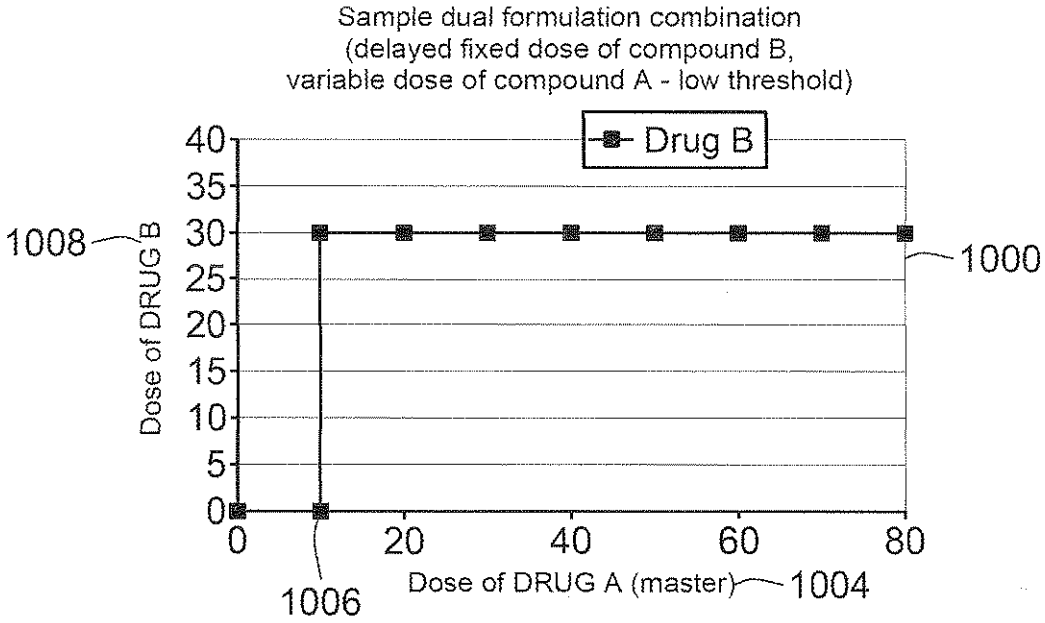

Sample dual formulation combination
(delayed fixed dose of compound B,
variable dose of compound A - low threshold)
Drug B
1008
1000
Dose of DRUG B
40
35
30
25
20
15
10
5
0
0
20
40
60
80
1006
Dose of DRUG A (master)
1004

FIG. 45

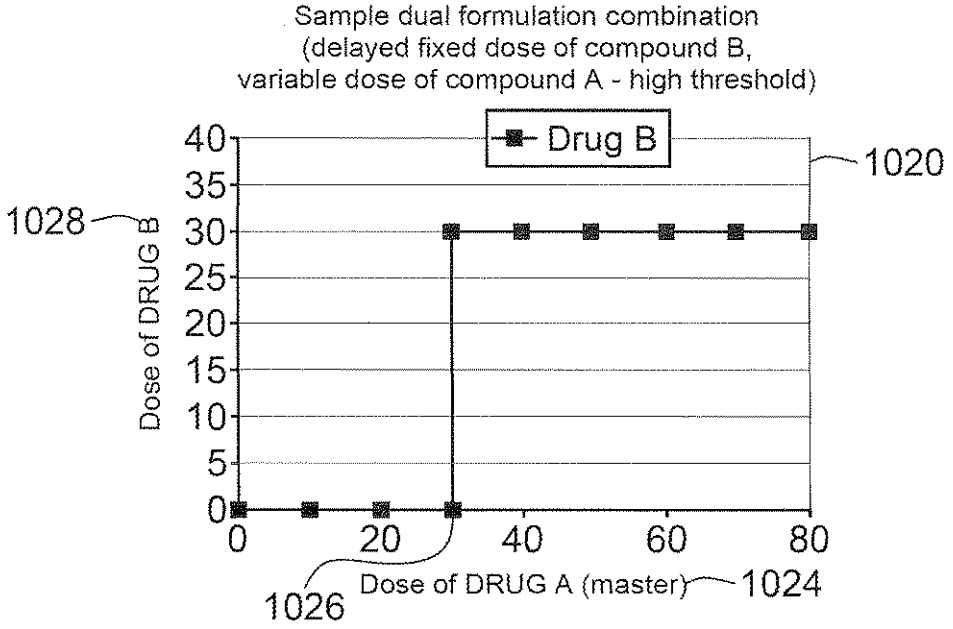

Sample dual formulation combination
(delayed fixed dose of compound B,
variable dose of compound A - high threshold)
Drug B
1020
1028
Dose of DRUG B
40
35
30
25
20
15
10
5
0
0
20
40
60
80
1026
Dose of DRUG A (master)
1024

FIG. 46

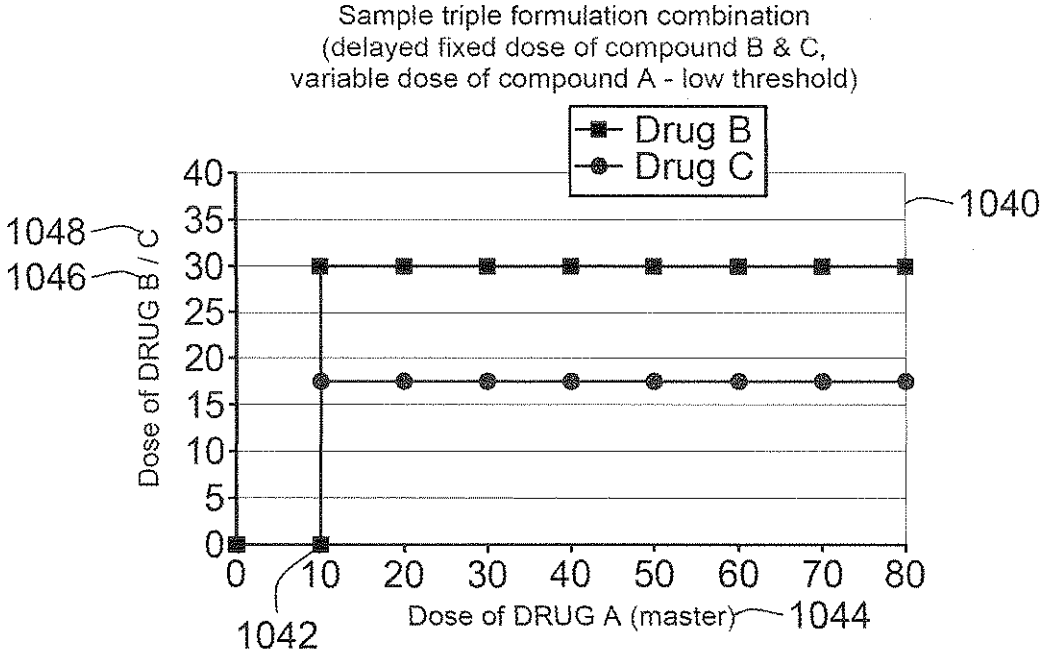

Sample triple formulation combination
(delayed fixed dose of compound B & C,
variable dose of compound A - low threshold)
Drug B
Drug C
1040
1048
1046
Dose of DRUG B / C
40
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
1042
Dose of DRUG A (master)
1044

FIG. 47

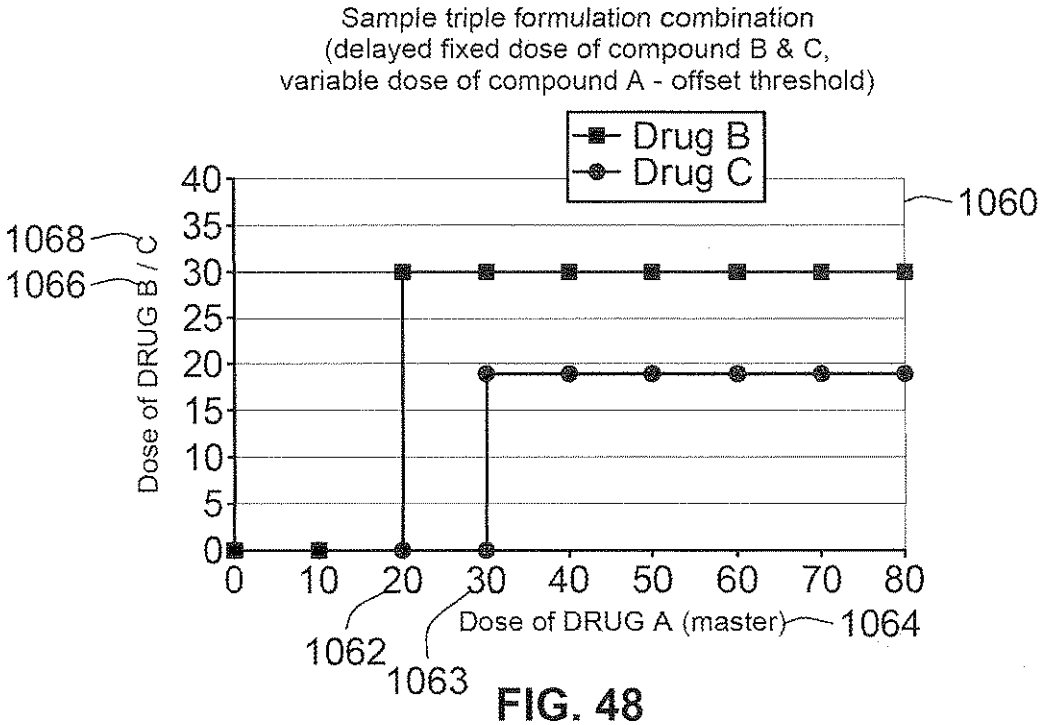

Sample triple formulation combination
(delayed fixed dose of compound B & C,
variable dose of compound A - offset threshold)
Drug B
Drug C
1060
1068
1066
Dose of DRUG B / C
40
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
Dose of DRUG A (master)
1064
1062
1063

FIG. 48

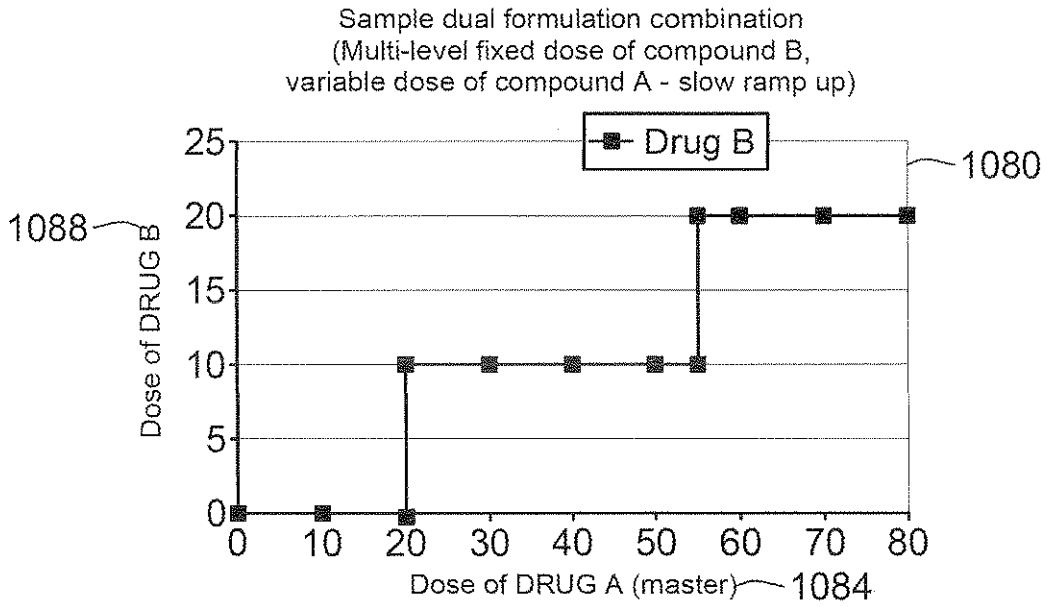

Sample dual formulation combination
(Multi-level fixed dose of compound B,
variable dose of compound A - slow ramp up)
Drug B
1080
1088
Dose of DRUG B
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
Dose of DRUG A (master)
1084

FIG. 49

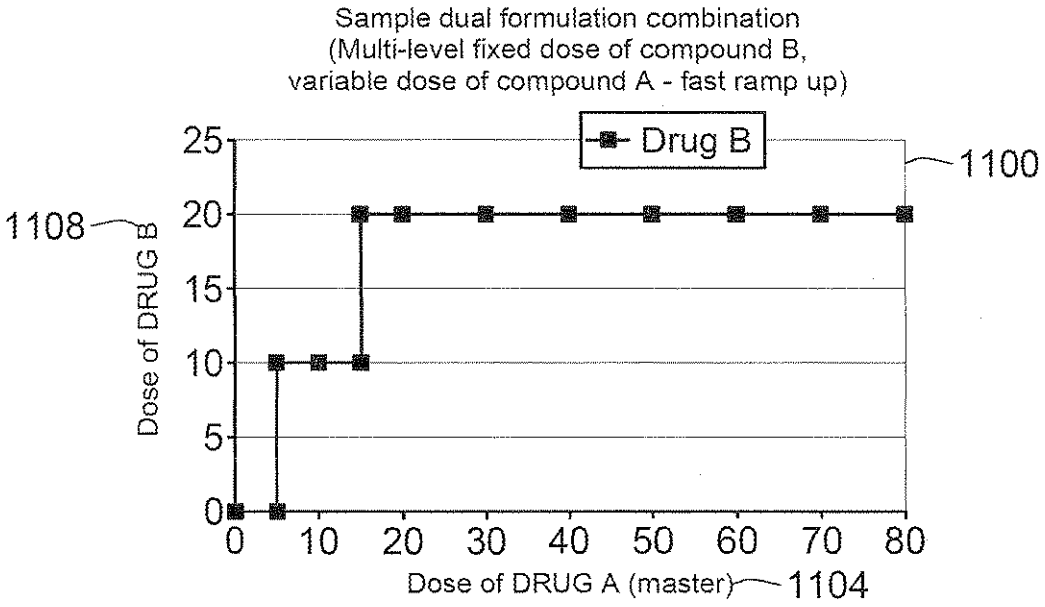

Sample dual formulation combination
(Multi-level fixed dose of compound B,
variable dose of compound A - fast ramp up)
Drug B
1100
1108
Dose of DRUG B
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
Dose of DRUG A (master)
1104

FIG. 50