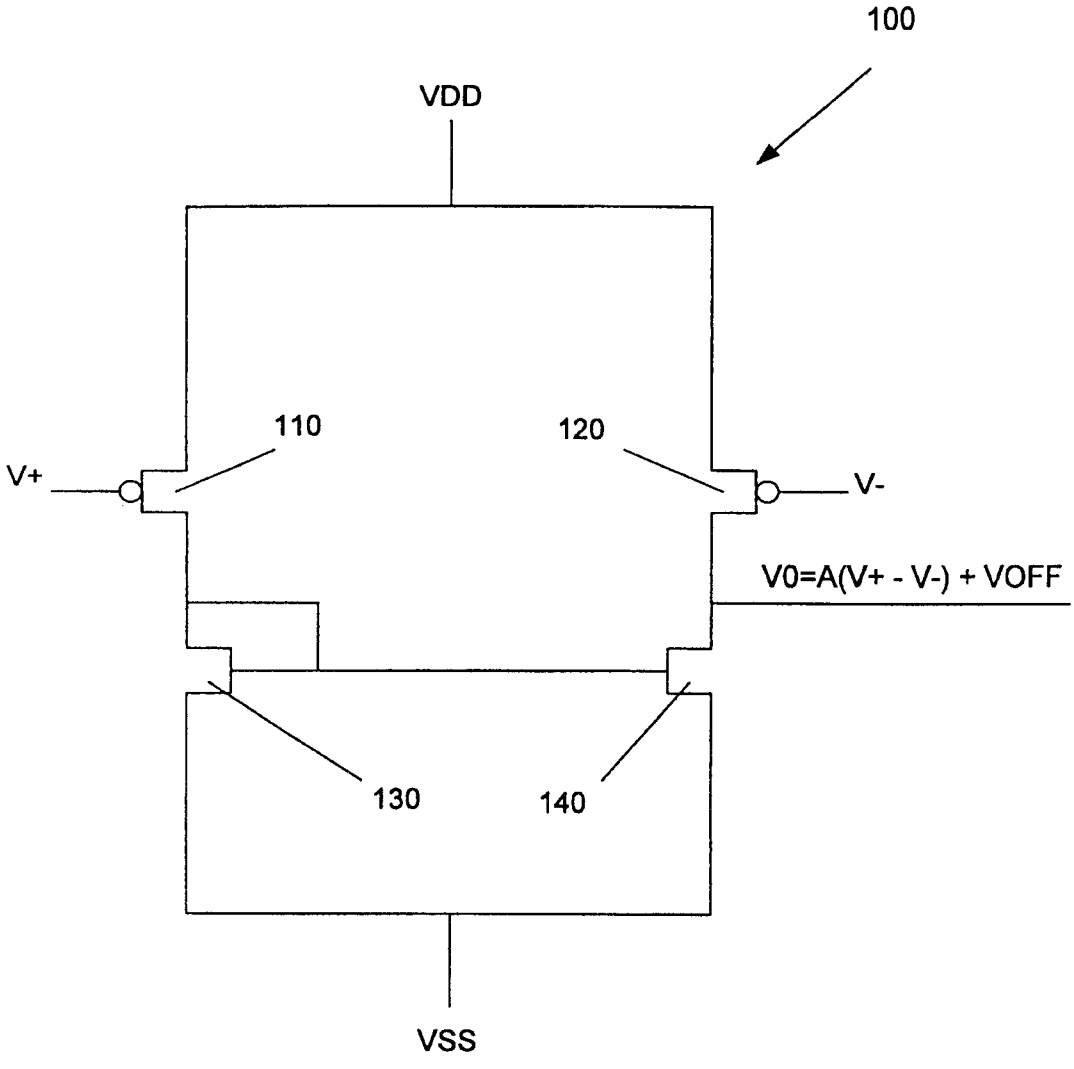


FIGURE 1 (PRIOR ART)

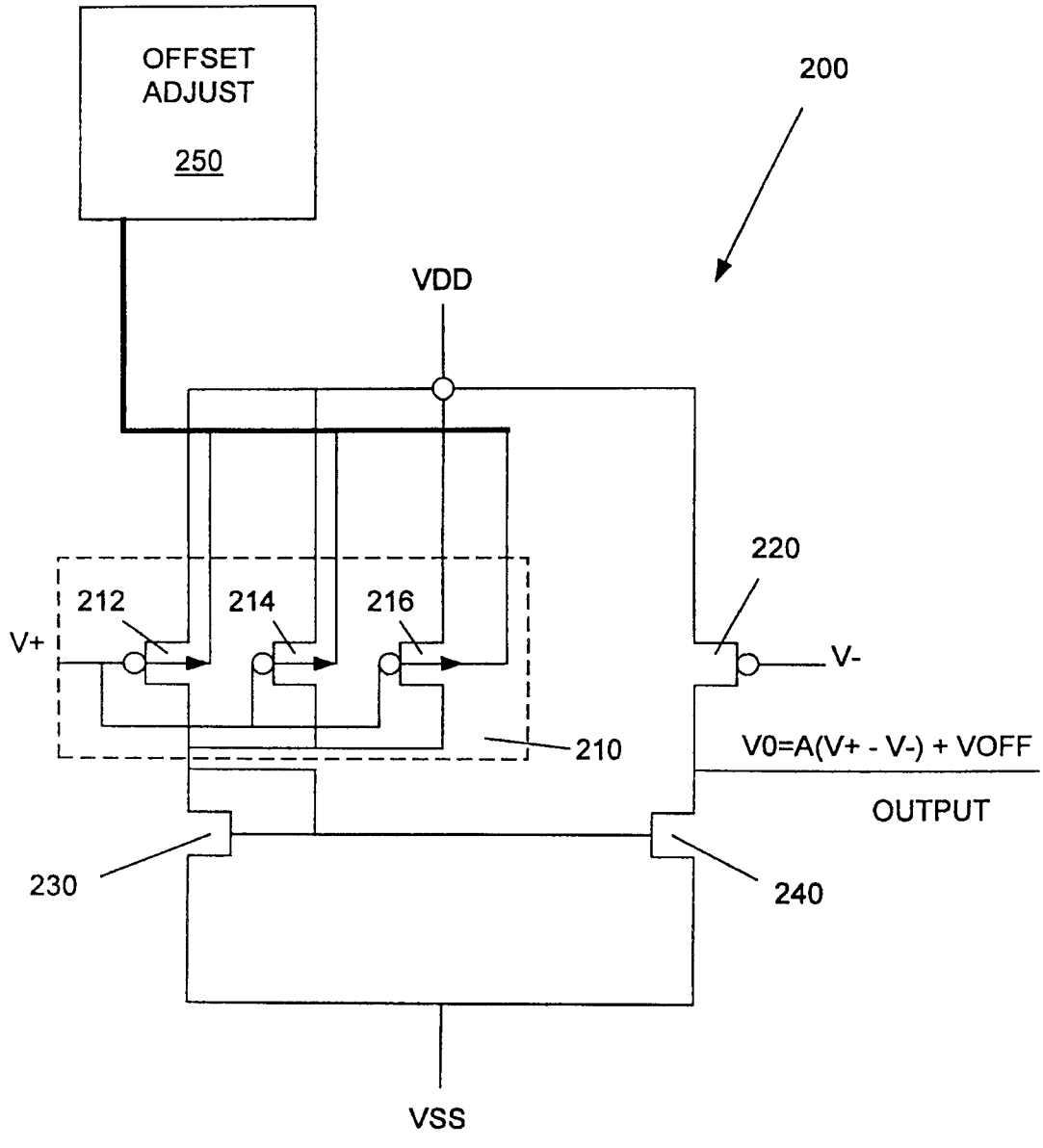

OFFSET
ADJUST
250
200
VDD
220
212
214
216
V+
V-
210
V0=A(V+ - V-) + VOFF
OUTPUT
230
240
VSS

FIGURE 2

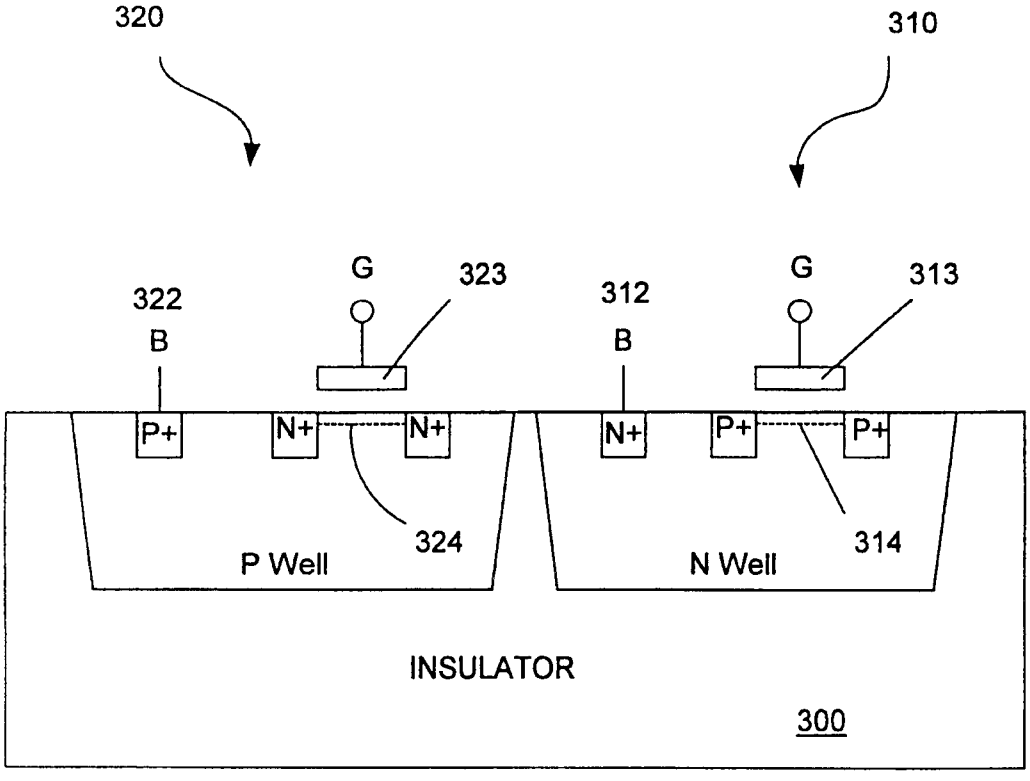

320
310
G
323
G
313
322
B
312
B
P+
N+
N+
N+
P+
P+
324
314
P Well
N Well
INSULATOR
300

FIGURE 3

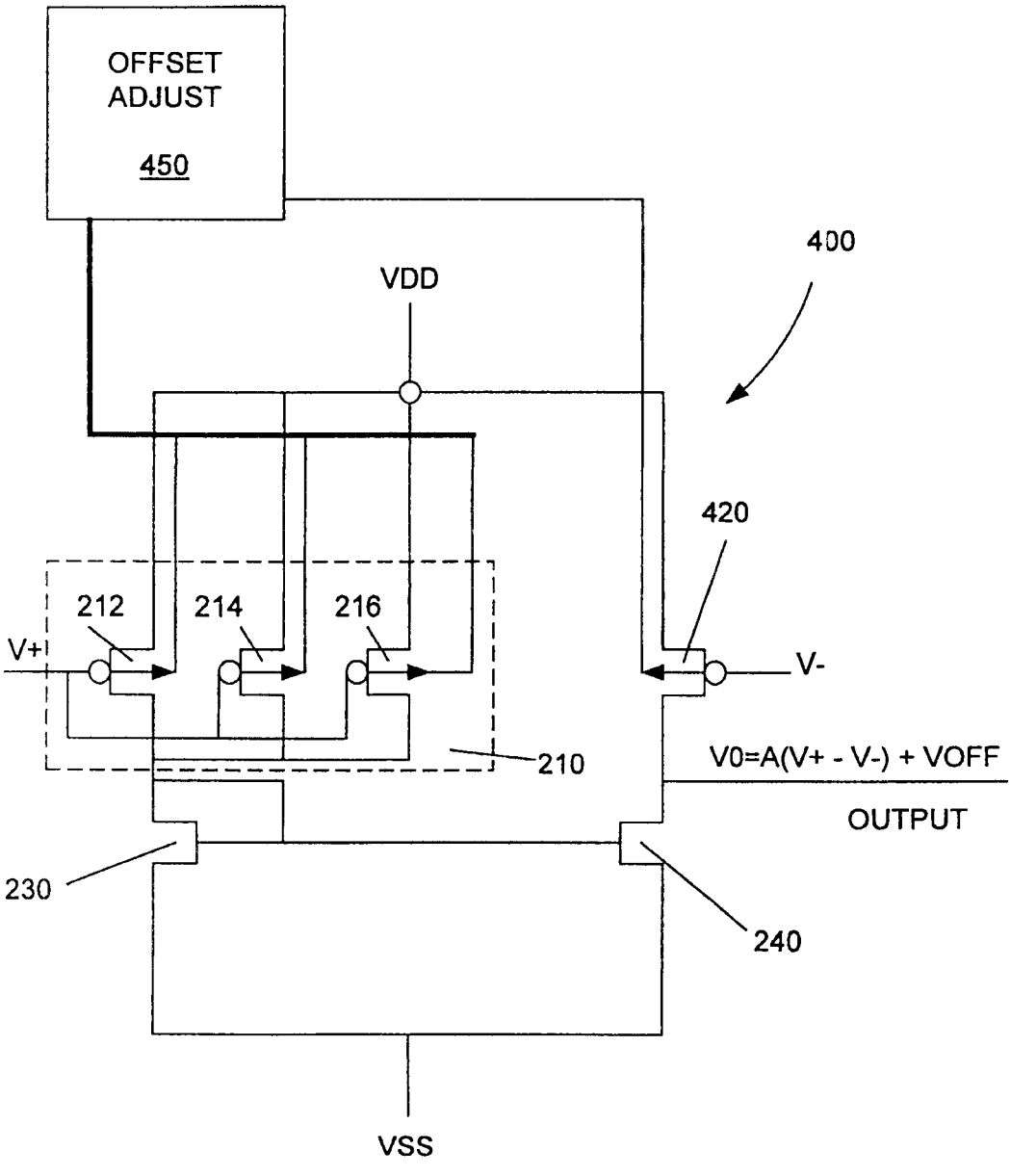

OFFSET
ADJUST
450
400
VDD
420
212
214
216
V+
V-
210
V0=A(V+ - V-) + VOFF
OUTPUT
230
240
VSS

FIGURE 4

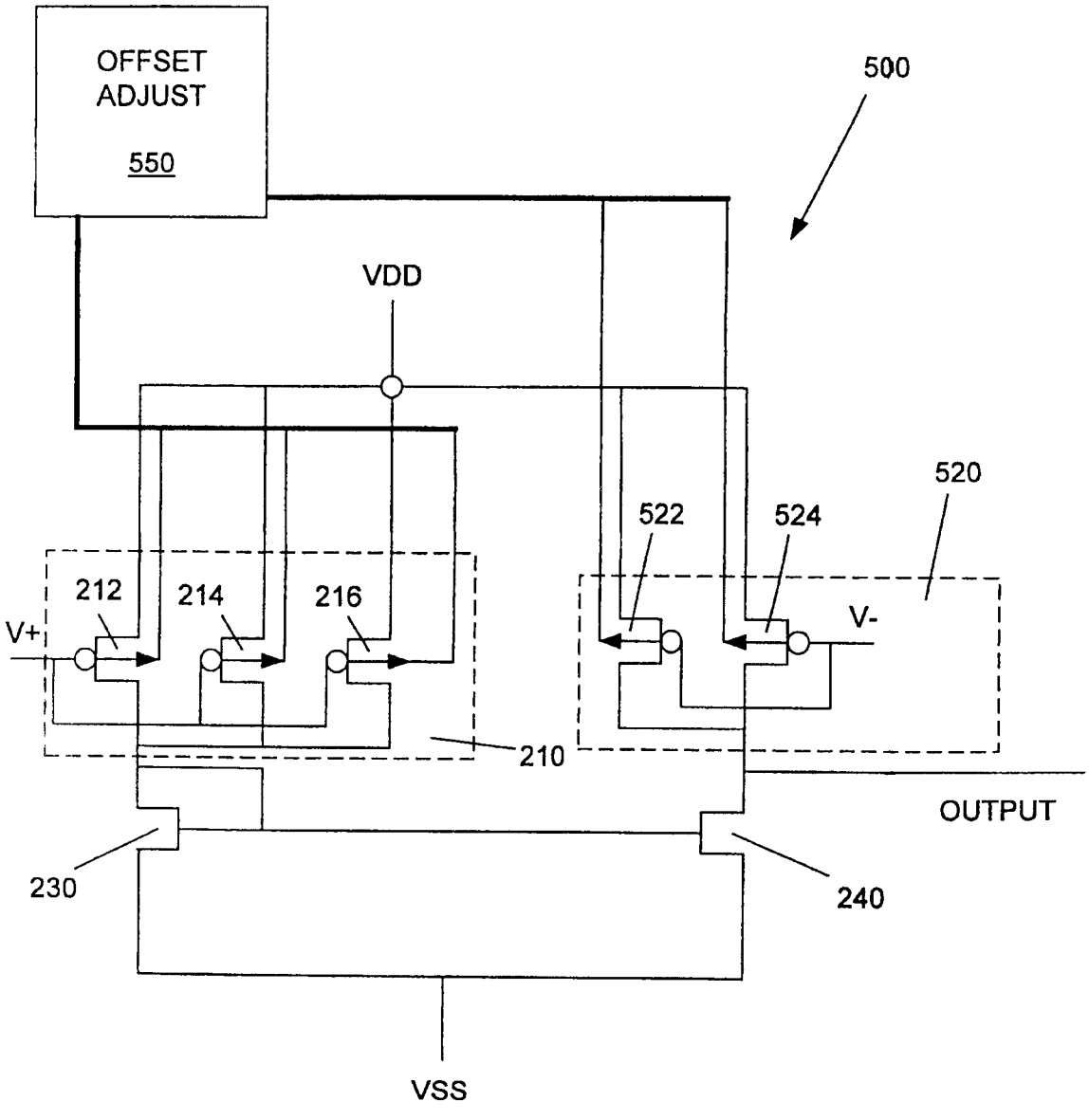

OFFSET
ADJUST
550
500
VDD
520
522
524
212
214
216
V+
V-
210
OUTPUT
230
240
VSS

FIGURE 5

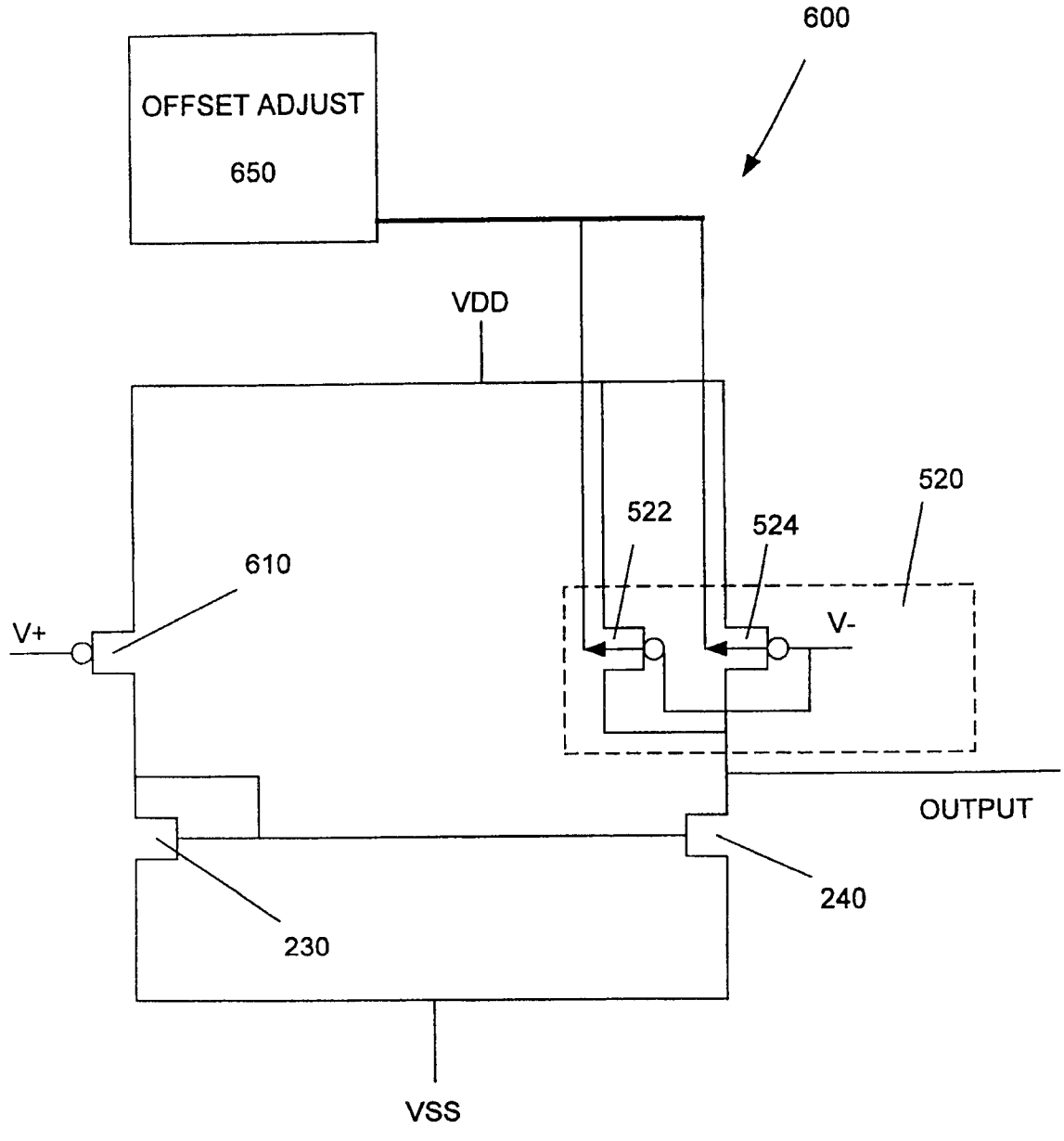

600
OFFSET ADJUST
650
VDD
520
522
524
610
V+
V-
OUTPUT
240
230
VSS

FIGURE 6

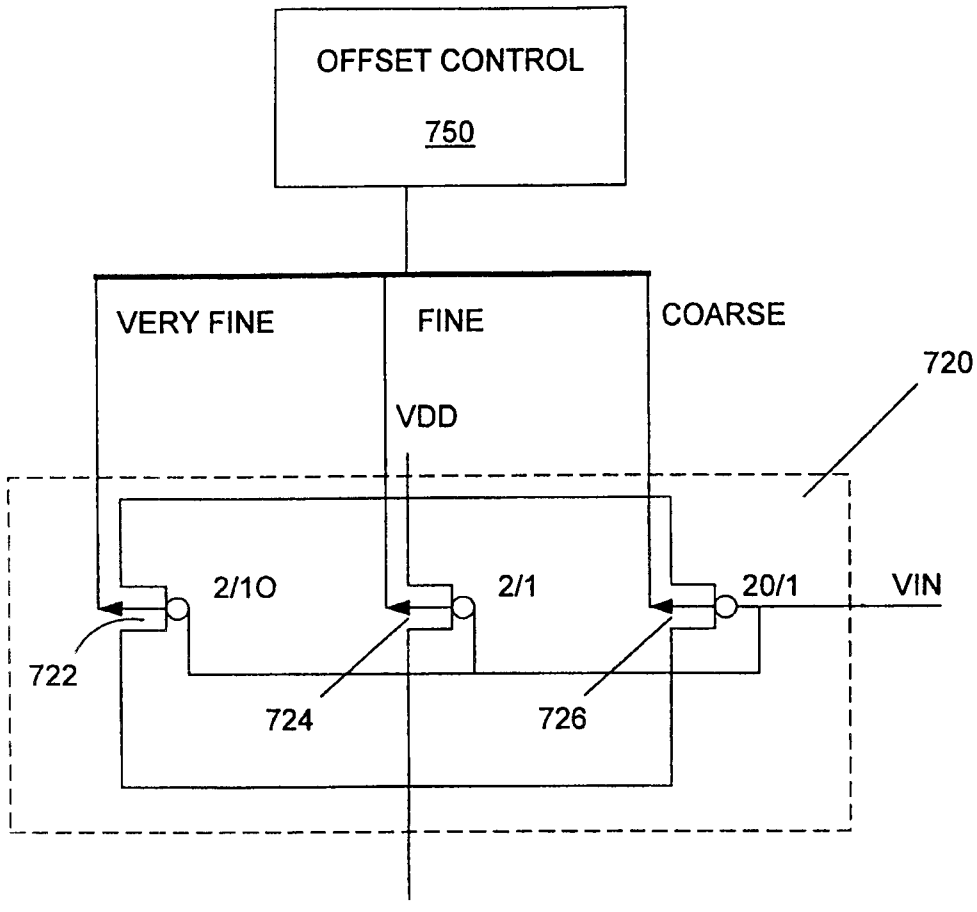

OFFSET CONTROL
750
VERY FINE
FINE
COARSE
720
VDD
2/1O
2/1
20/1
VIN
722
724
726

FIGURE 7

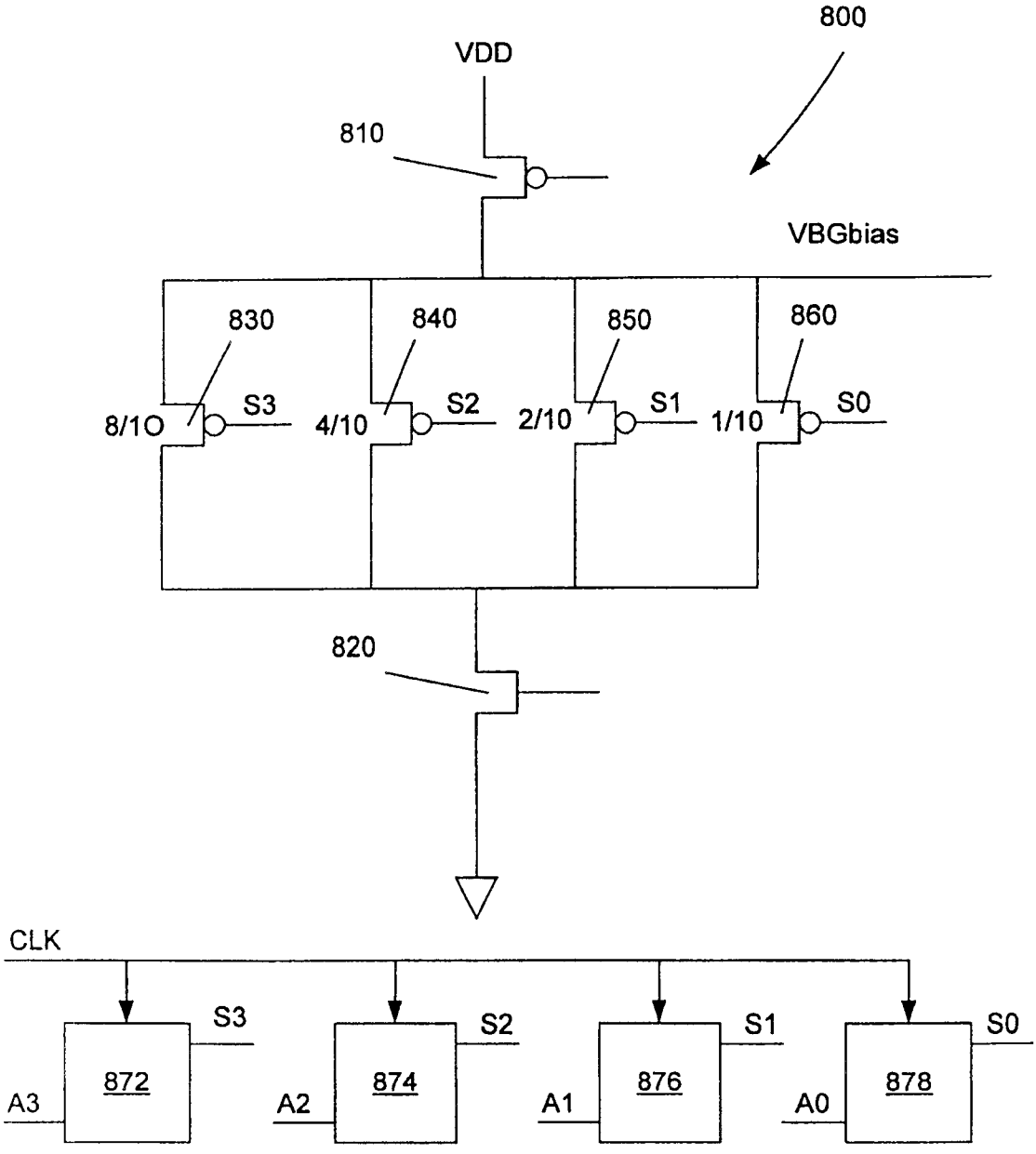

800
VDD
810
VBGbias
830
840
850
860
8/10
S3
4/10
S2
2/10
S1
1/10
S0
820
CLK
S3
S2
S1
S0
A3
872
A2
874
A1
876
A0
878

FIGURE 8

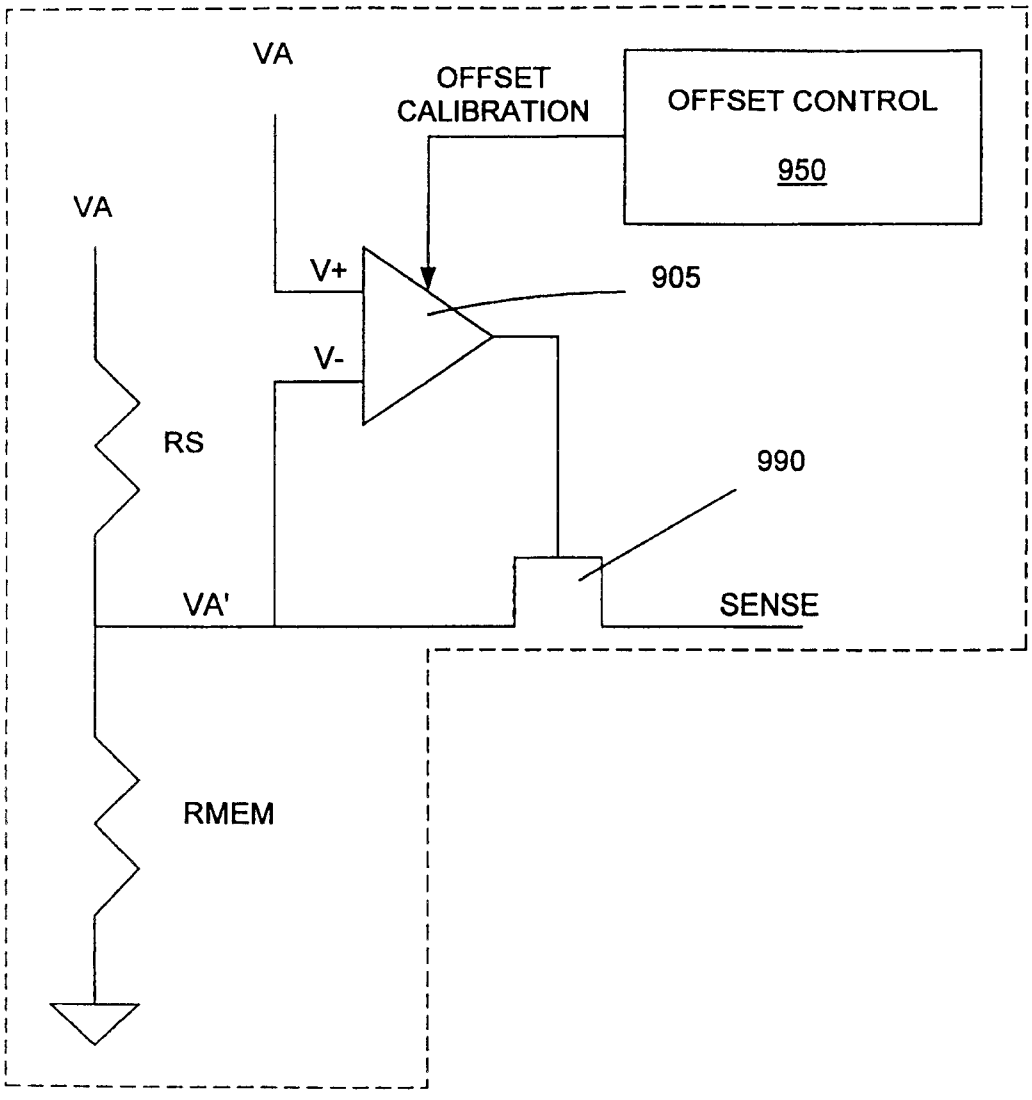

VA
OFFSET CALIBRATION
OFFSET CONTROL
950
VA
V+
905
V-
RS
990
VA'
SENSE
RMEM

FIGURE 9

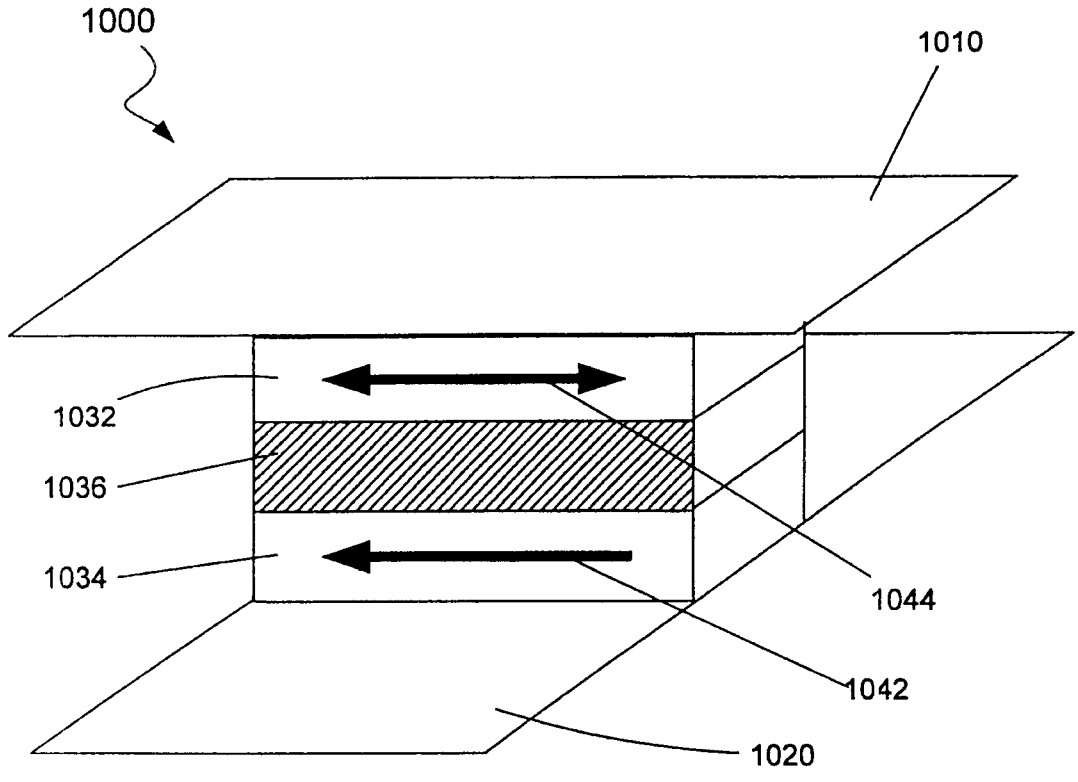


FIGURE 10

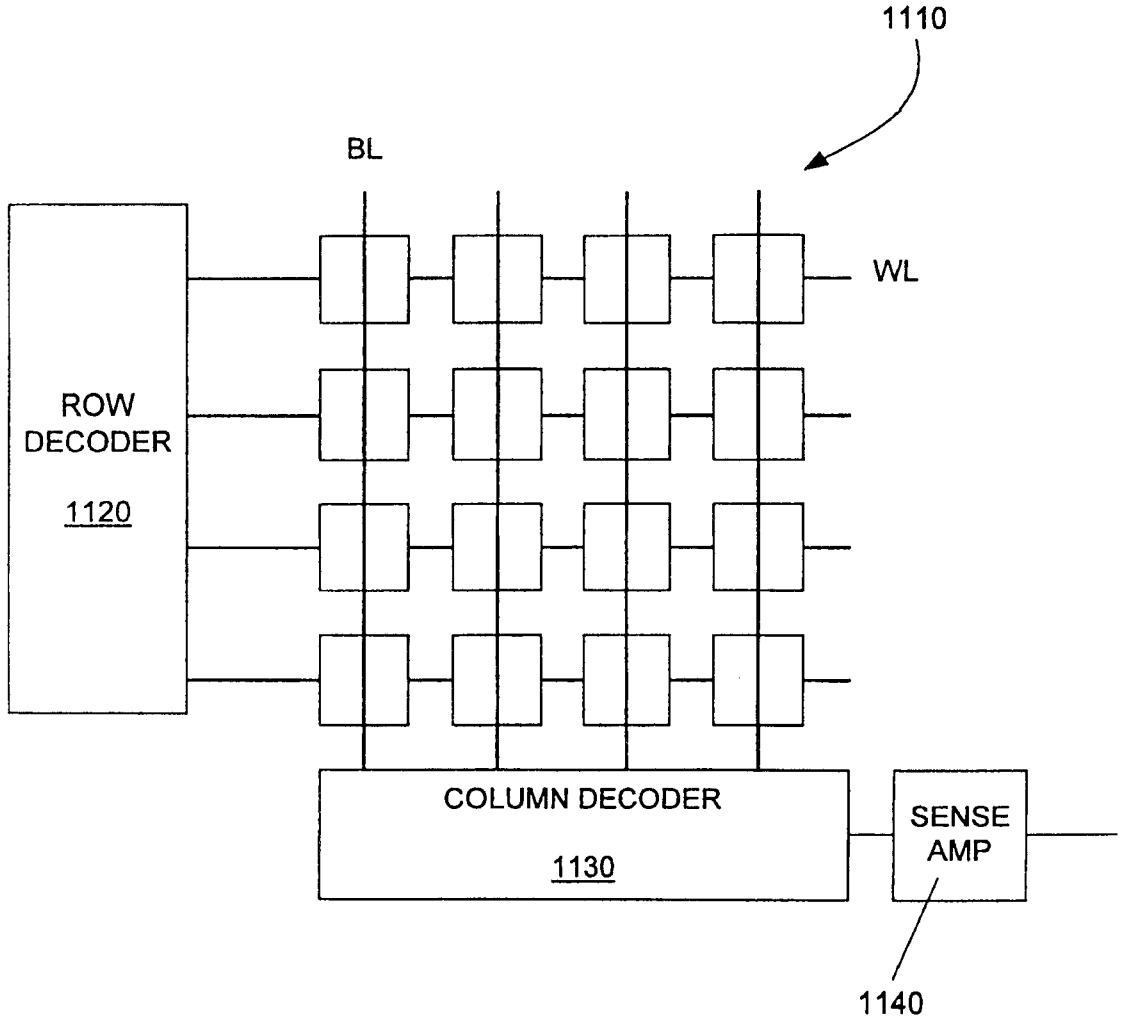

1110
BL
WL
ROW
DECODER
1120
COLUMN DECODER
1130
SENSE
AMP
1140

FIGURE 11

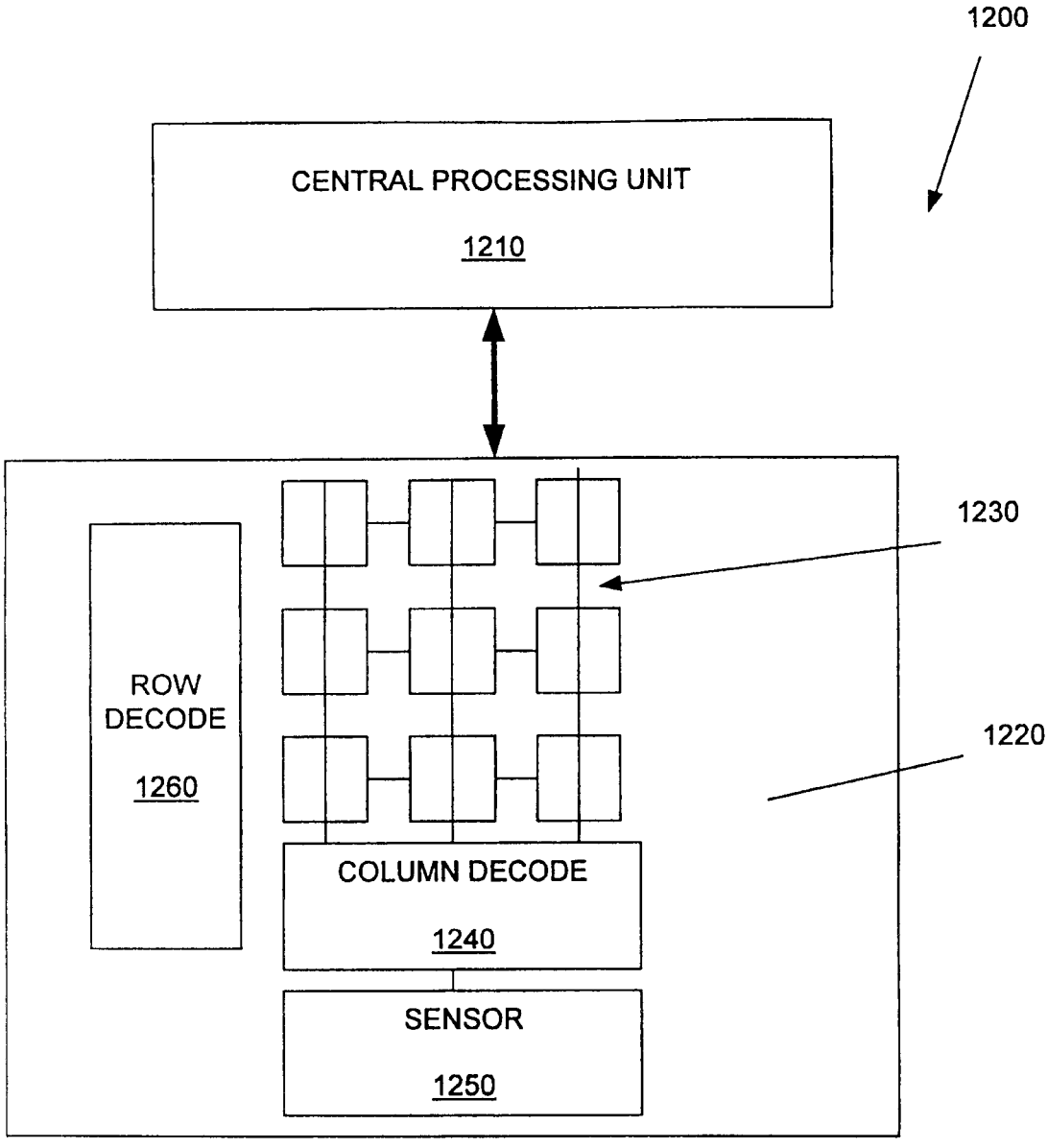

1200
CENTRAL PROCESSING UNIT
1210
1230
1220
ROW
DECODE
1260
COLUMN DECODE
1240
SENSOR
1250

FIGURE 12

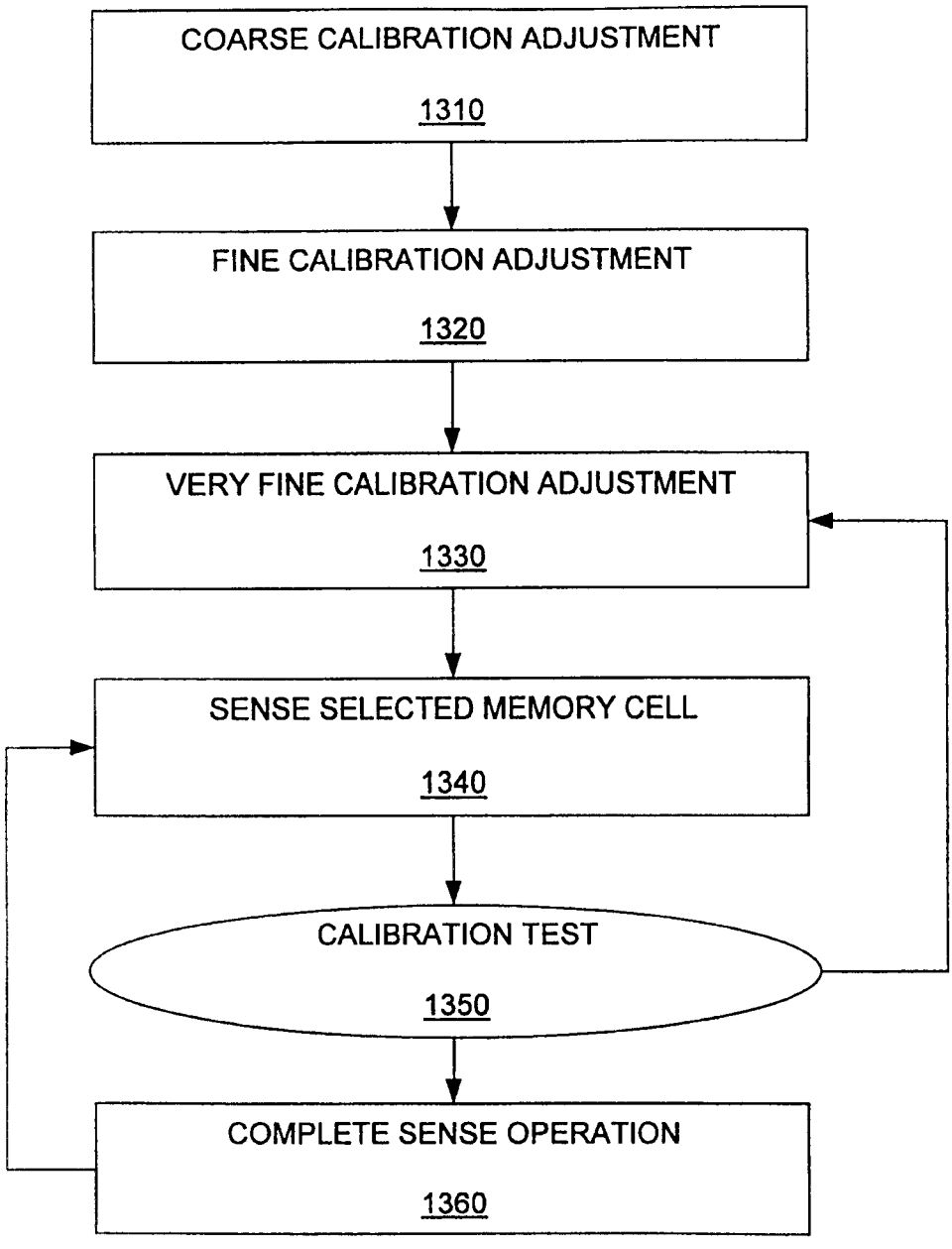

COARSE CALIBRATION ADJUSTMENT
1310
FINE CALIBRATION ADJUSTMENT
1320
VERY FINE CALIBRATION ADJUSTMENT
1330
SENSE SELECTED MEMORY CELL
1340
CALIBRATION TEST
1350
COMPLETE SENSE OPERATION
1360

FIGURE 13