FIG. 1A

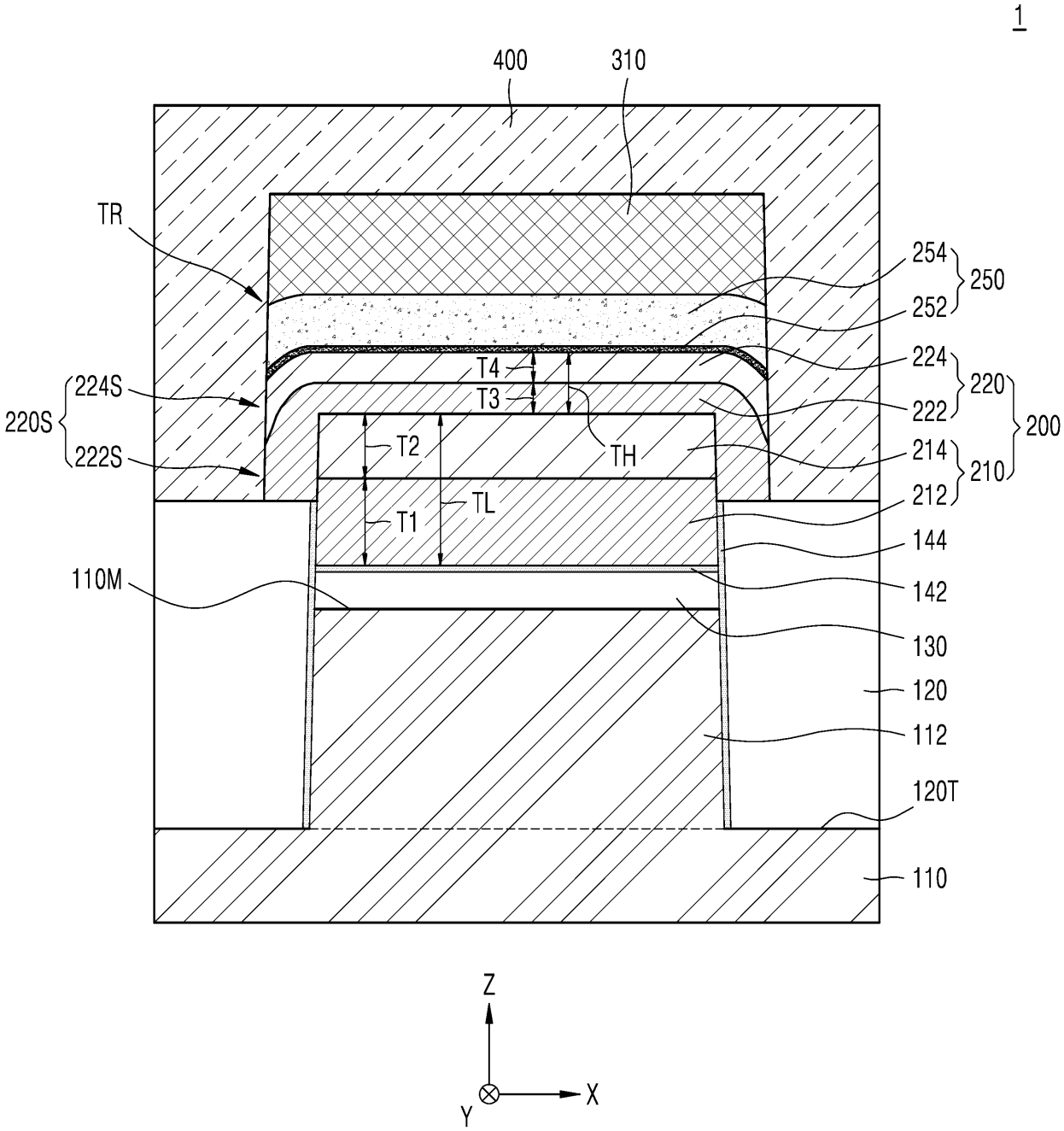

1
400
310
TR
254
250
252
224
220
222
200
224S
220S
222S
T4
T3
T2
TH
214
210
212
T1
TL
144
110M
142
130
120
112
120T
110
Z
Y
X

FIG. 1B

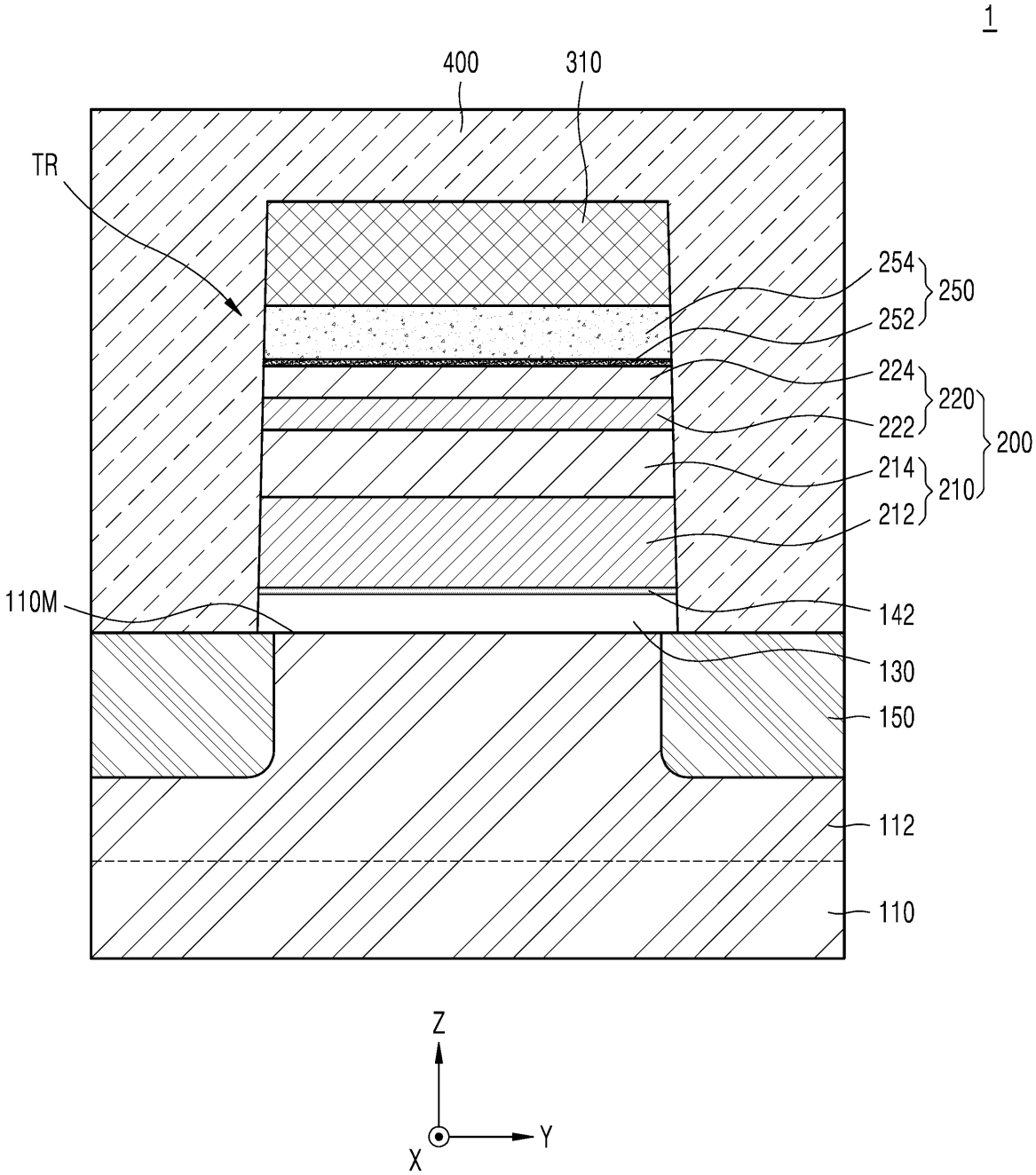

1
400
310
TR
254
252
250
224
222
220
200
214
212
210
110M
142
130
150
112
110
Z
Y
X

FIG. 2

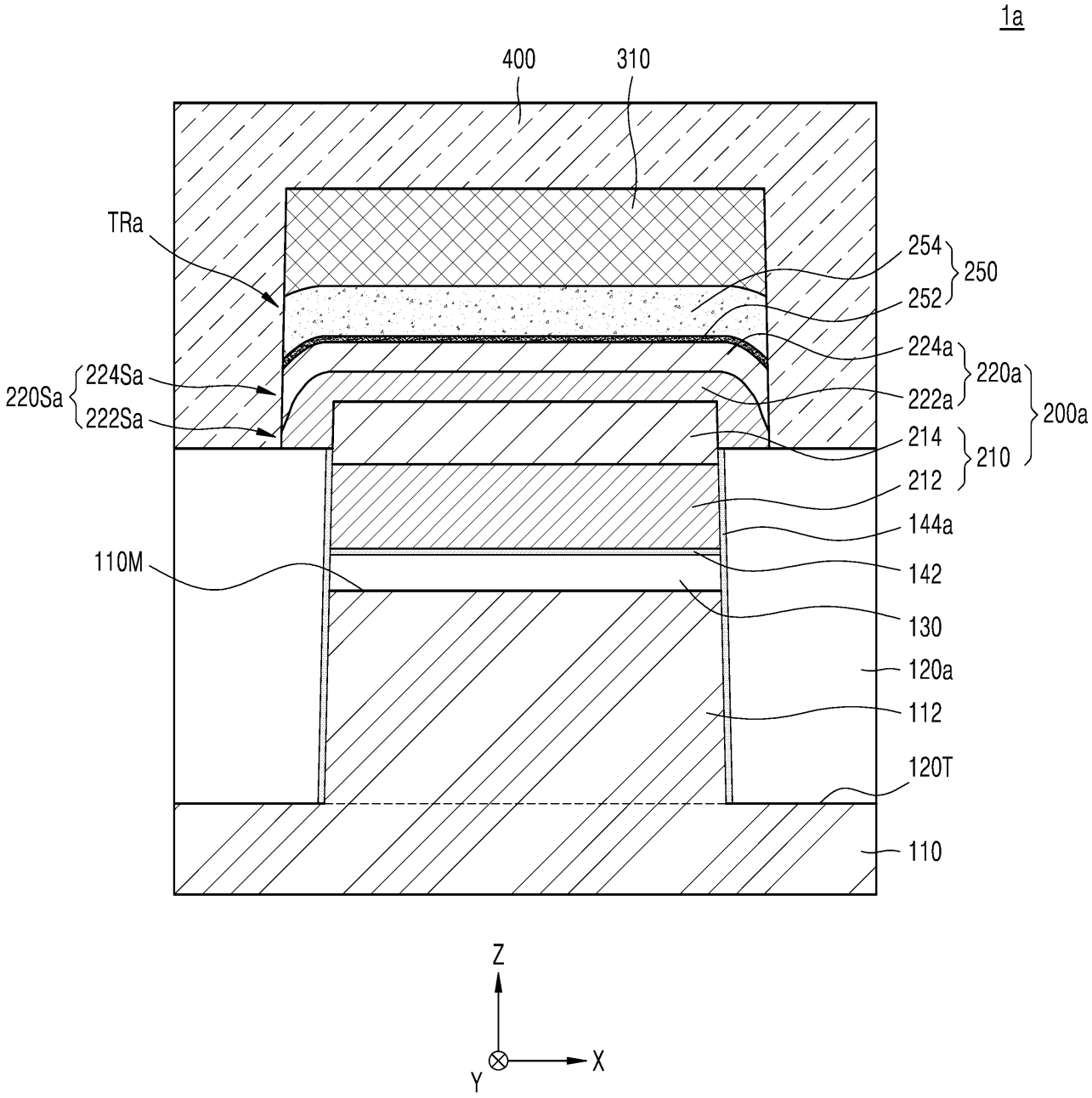

1a
400
310
TRa
254
250
252
224a
220a
222a
200a
220Sa
224Sa
222Sa
214
210
212
144a
110M
142
130
120a
112
120T
110
Z
Y
X

FIG. 3

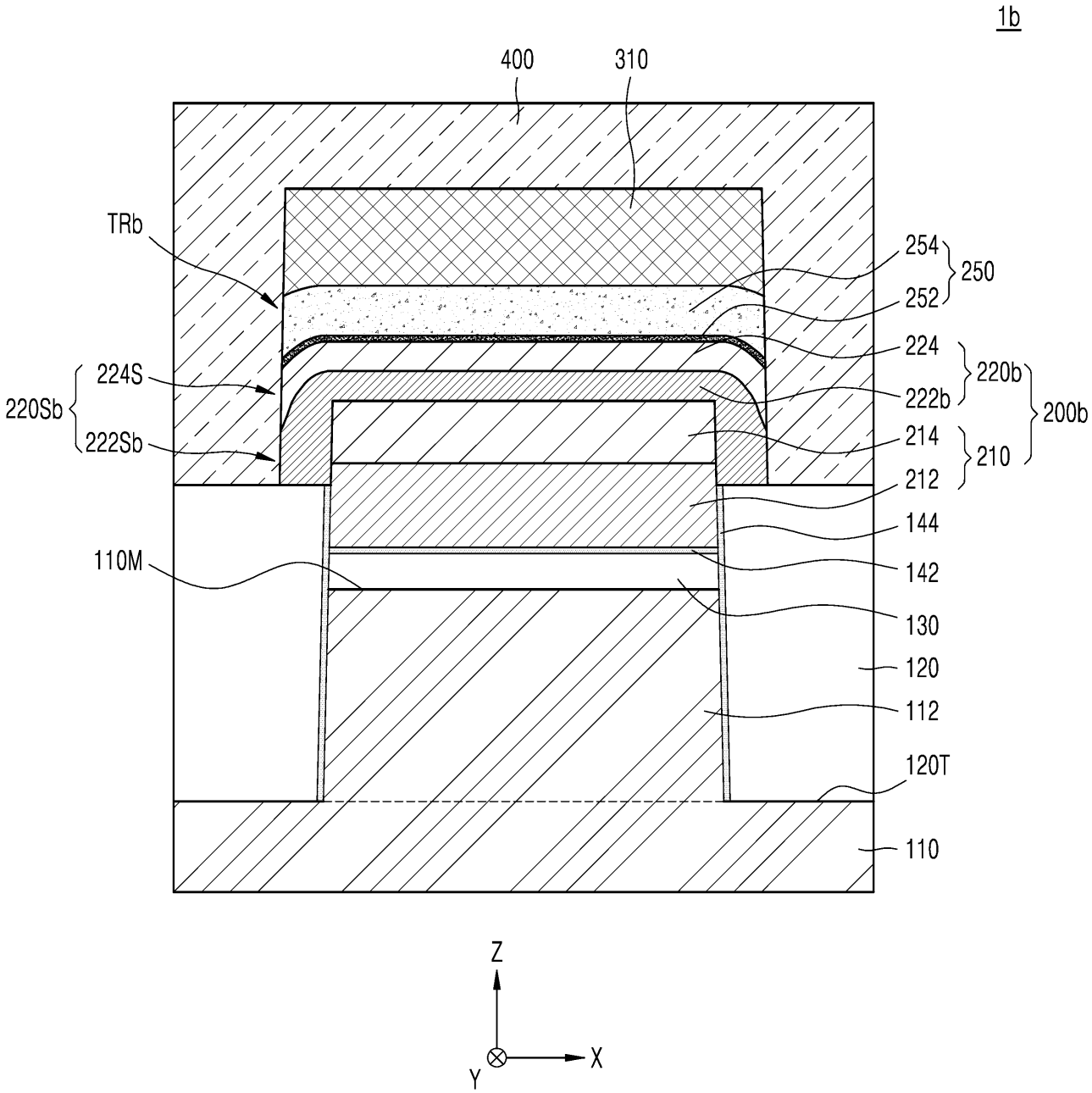

1b
400
310
TRb
254
250
252
224
220b
222b
200b
224S
220Sb
222Sb
214
210
212
144
110M
142
130
120
112
120T
110
Z
Y
X

FIG. 4

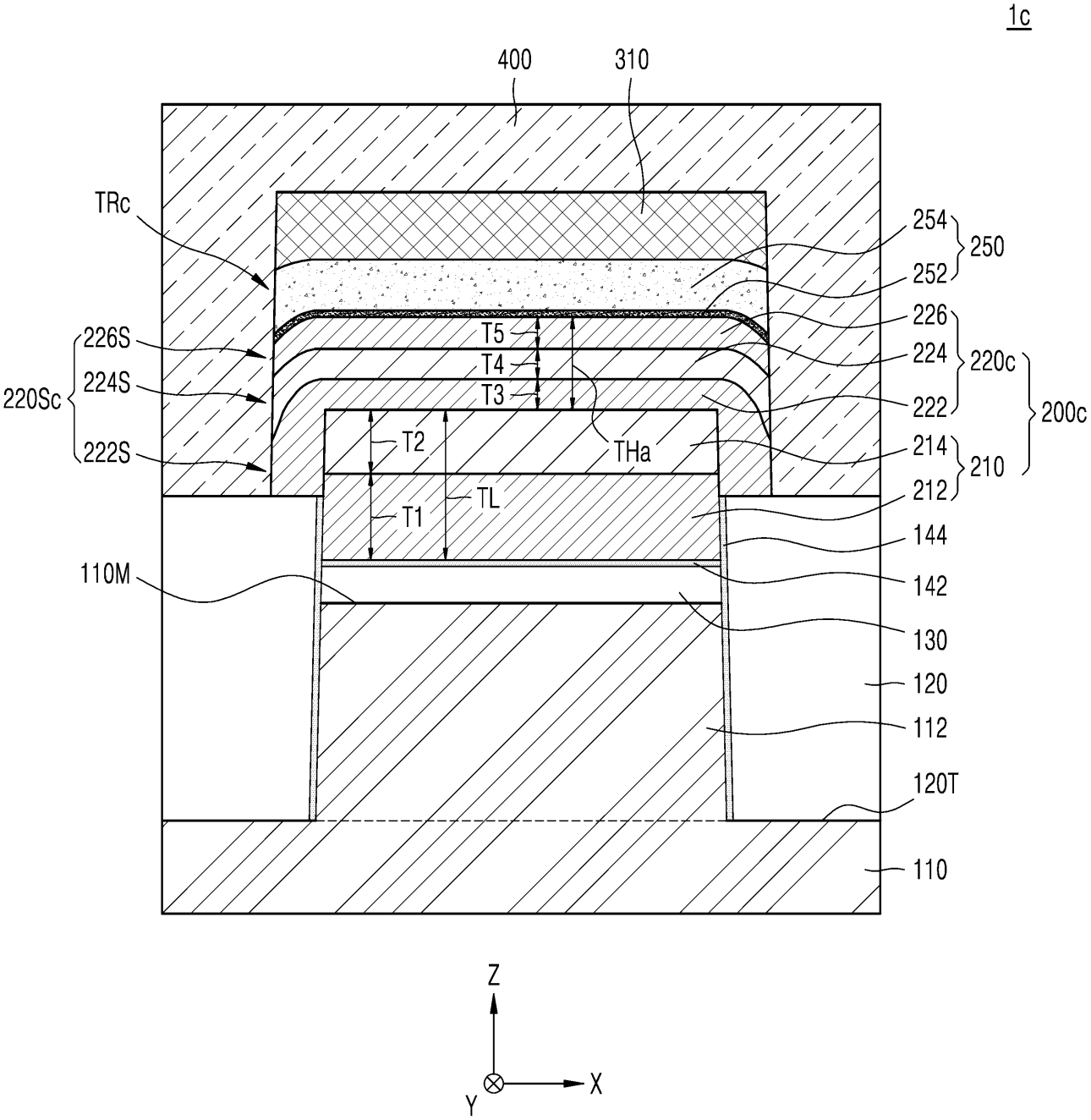

1c
400
310
TRc
254
250
252
226
226S
T5
224
220c
T4
224S
220Sc
T3
222
200c
T2
THa
214
222S
210
212
TL
T1
144
110M
142
130
120
112
120T
110
Z
X
Y

FIG. 5

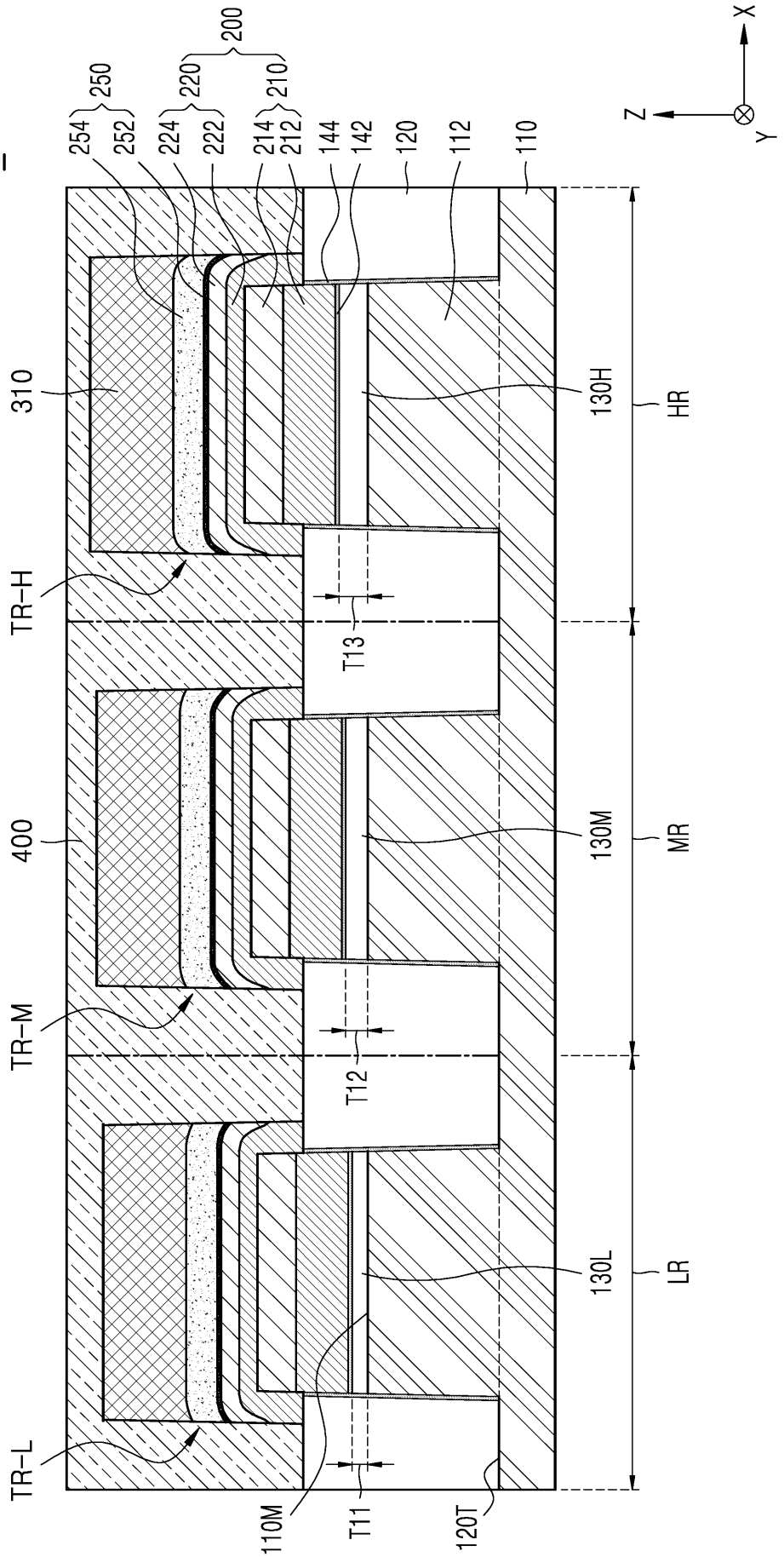

2
200
250
220
210
254
252
224
222
214
212
144
142
120
112
110
310
400
TR-H
TR-M
TR-L
T13
T12
T11
110M
120T
130H
130M
130L
HR
MR
LR
Z
X
Y

FIG. 6

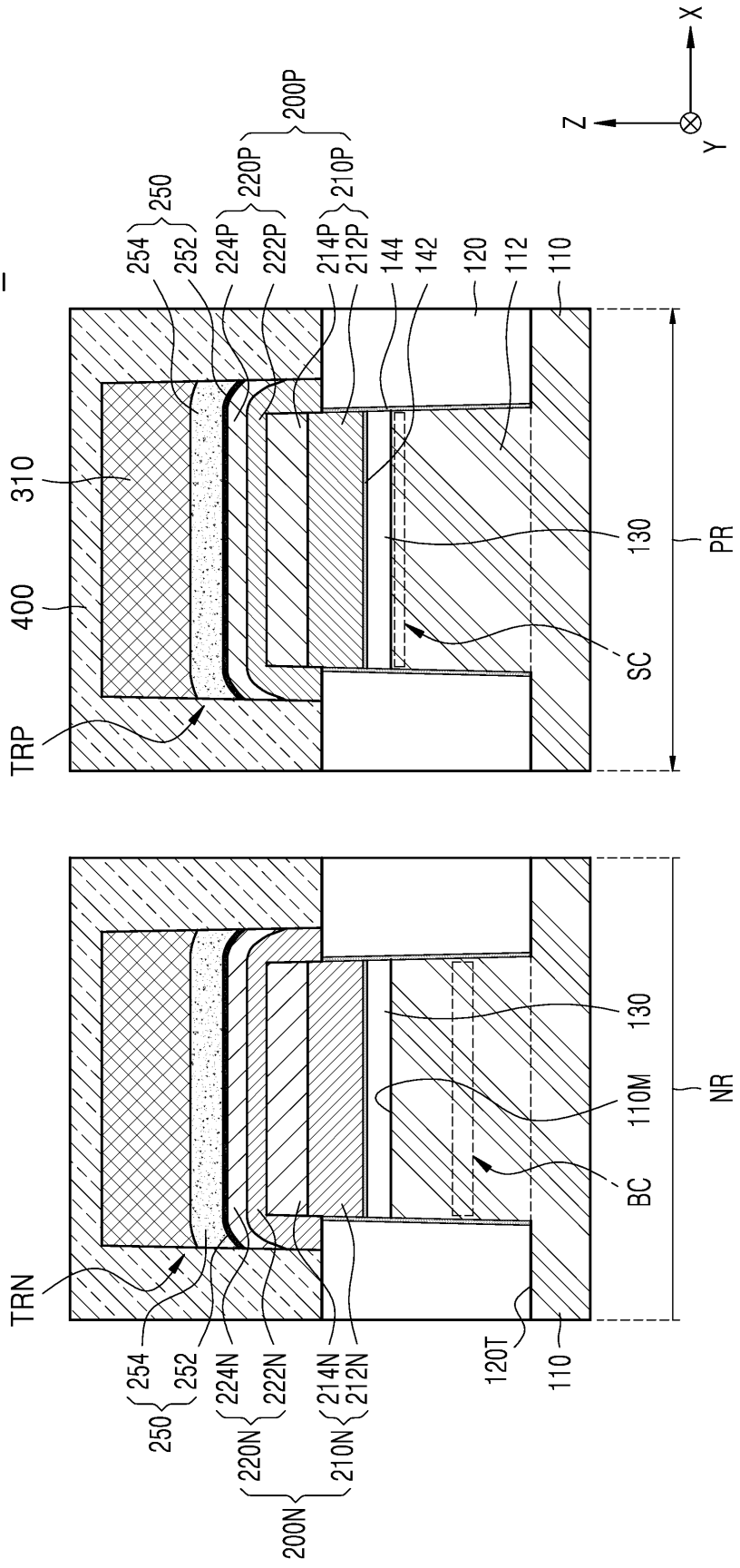

3
TRP
400
310
254
252
250
224P
222P
220P
214P
212P
210P
200P
144
142
120
112
110
130
SC
PR
TRN
254
252
250
224N
222N
220N
214N
212N
210N
200N
120T
110
130
110M
BC
NR
Z
X
Y

FIG. 7A

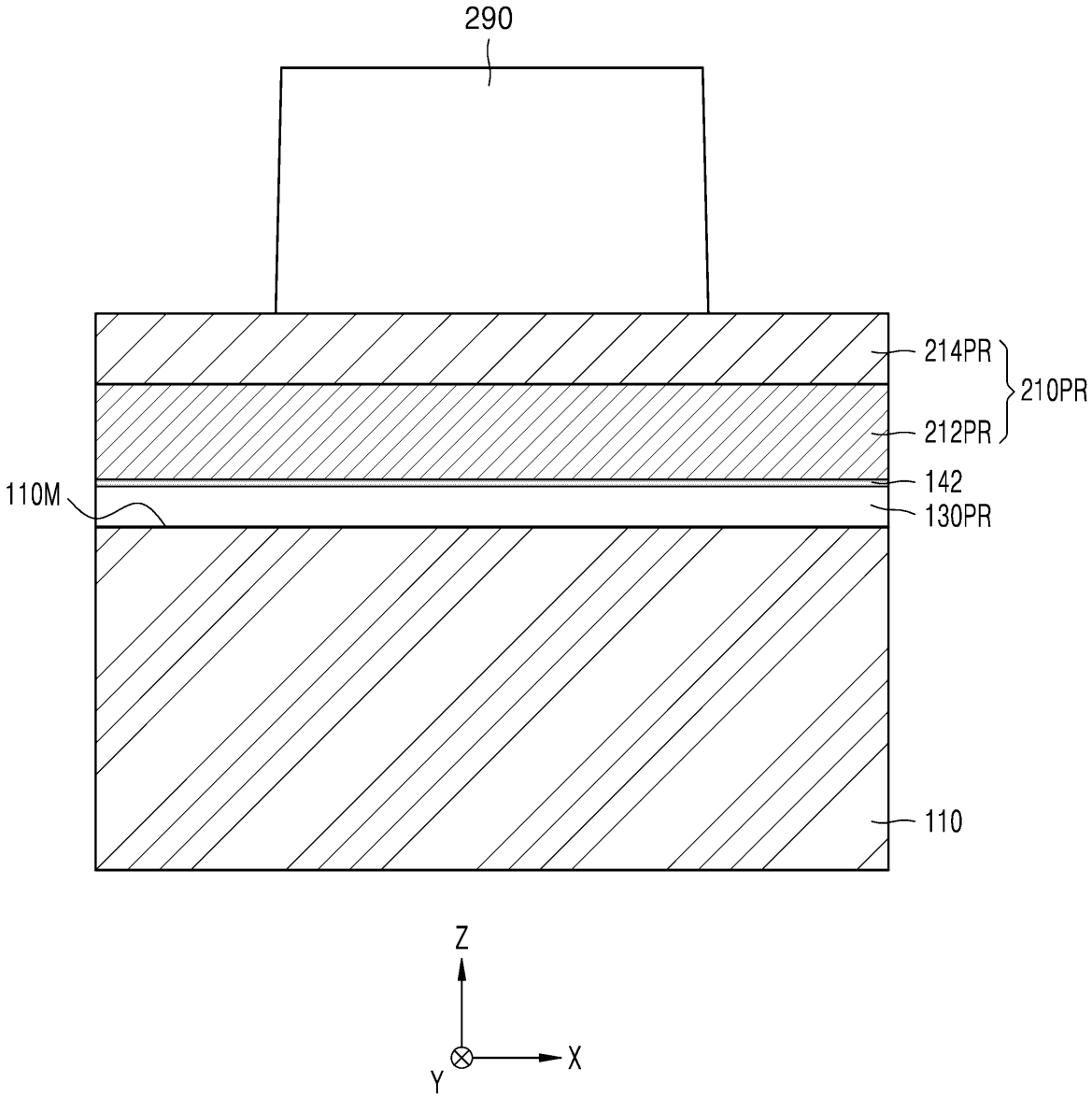


FIG. 7B

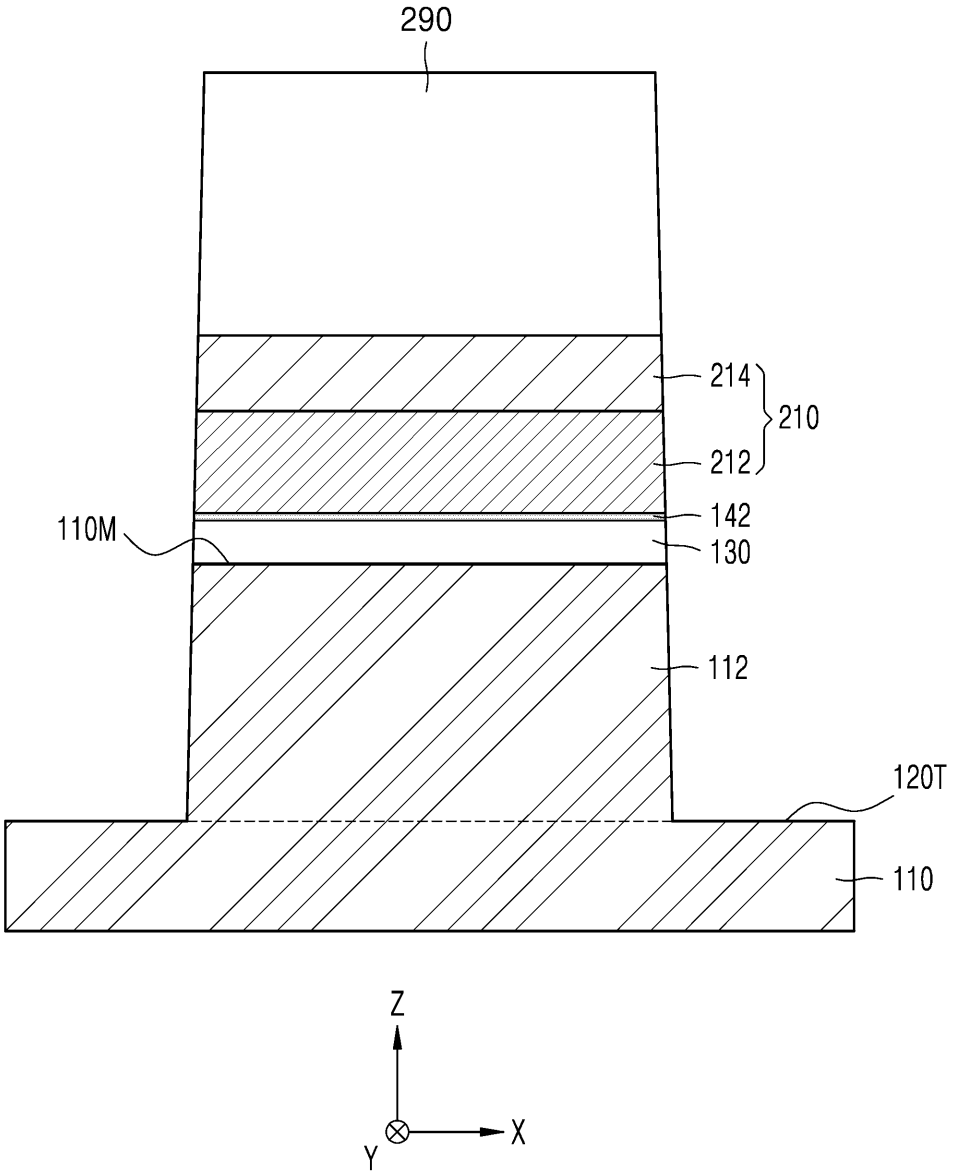


FIG. 7C

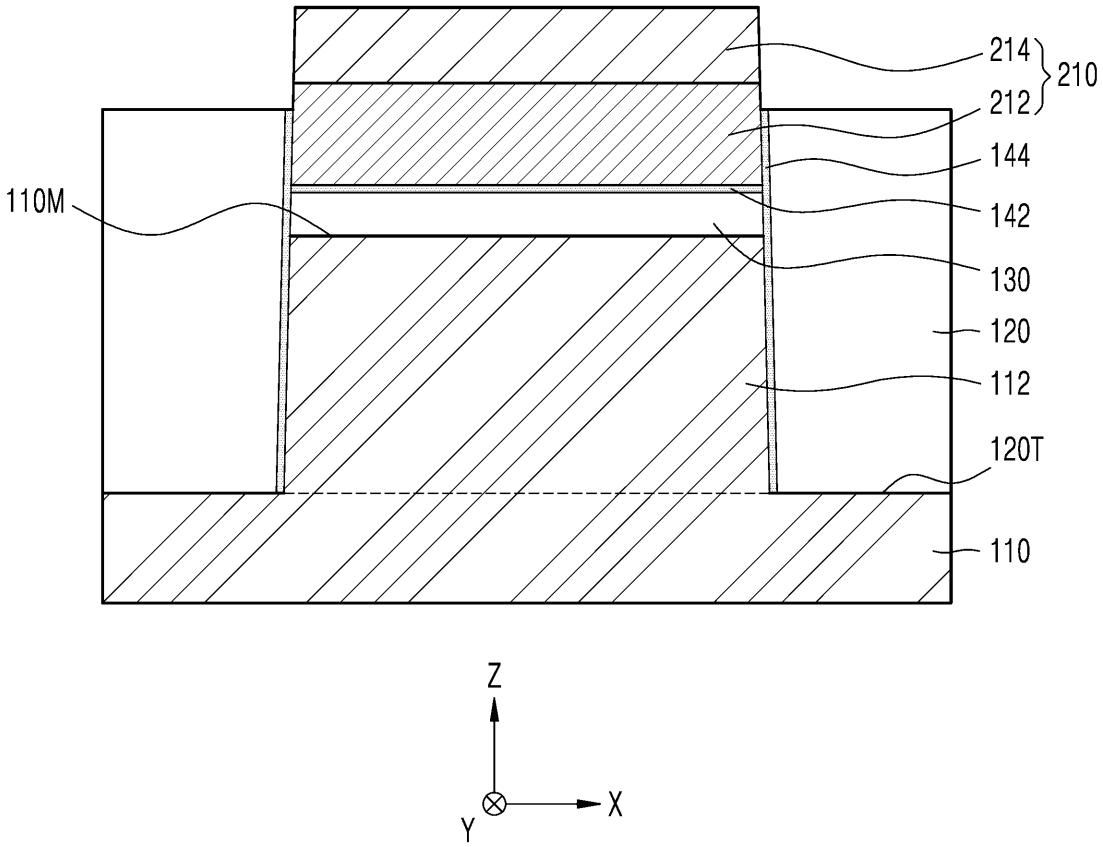


FIG. 7D

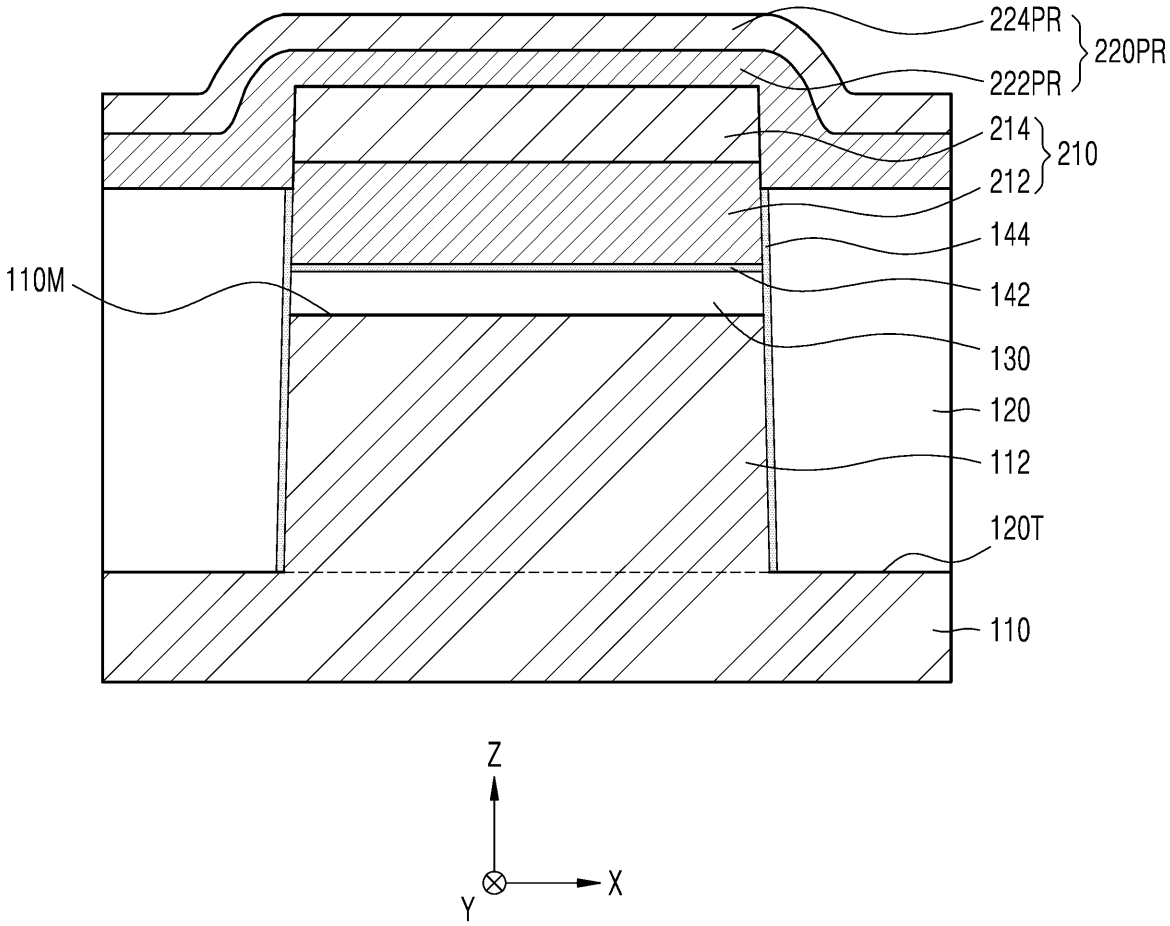

224PR
220PR
222PR
214
210
212
144
110M
142
130
120
112
120T
110
Z
Y
X

FIG. 7E

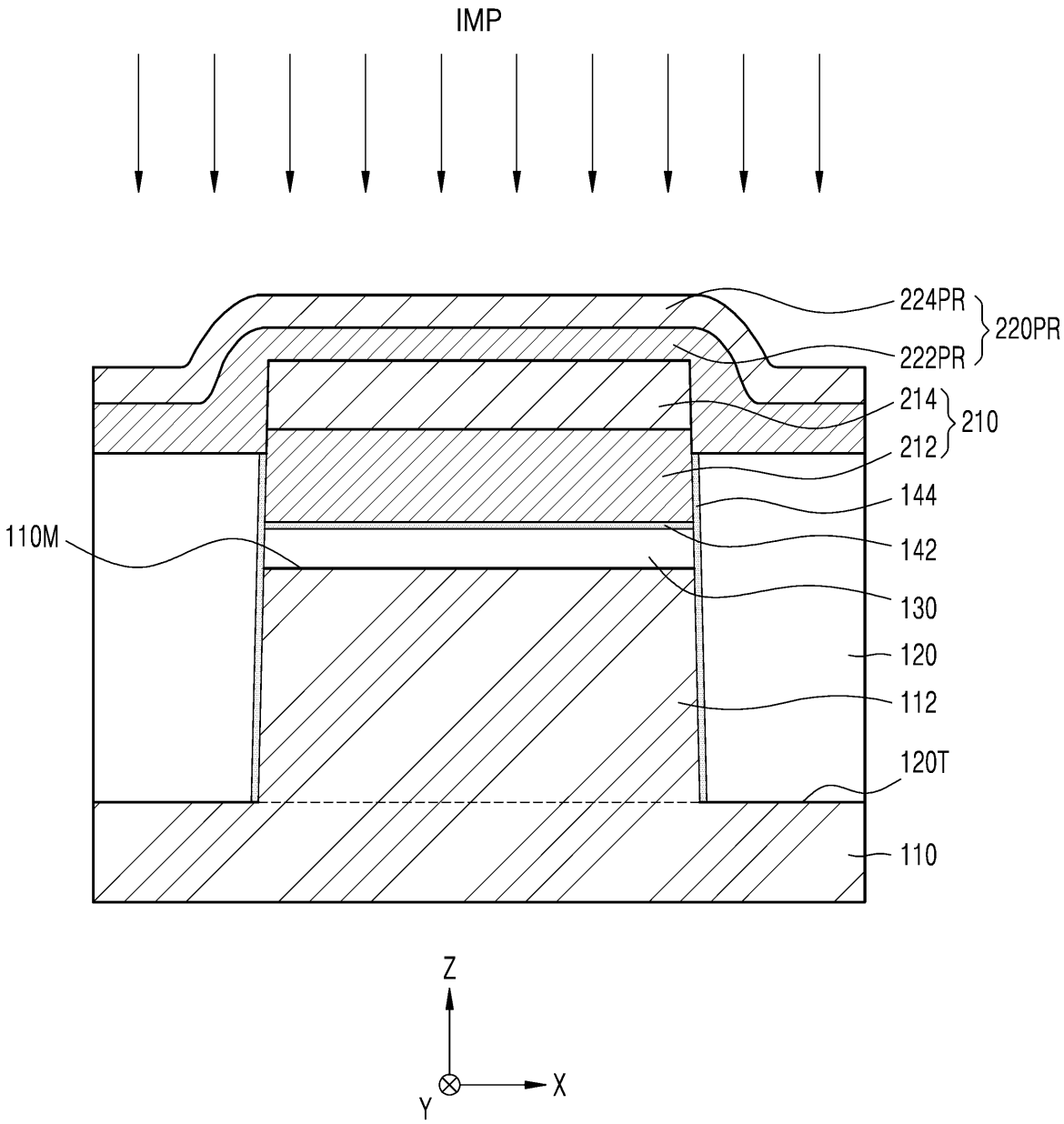

IMP
224PR
220PR
222PR
214
210
212
144
110M
142
130
120
112
120T
110
Z
Y
X

FIG. 7F

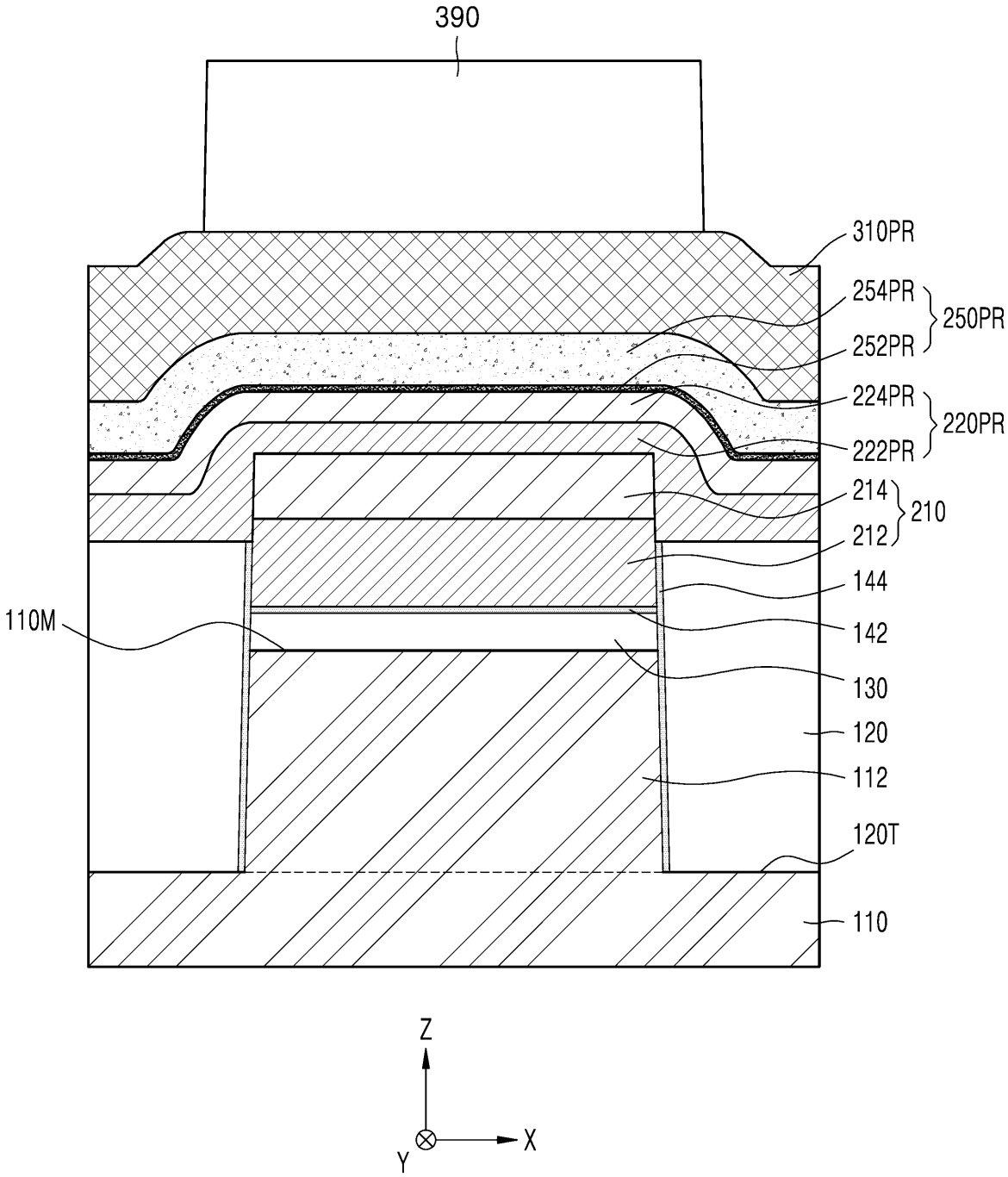

390
310PR
254PR
252PR
250PR
224PR
222PR
220PR
214
212
210
144
142
130
120
112
120T
110
110M
Z
X
Y

FIG. 7G

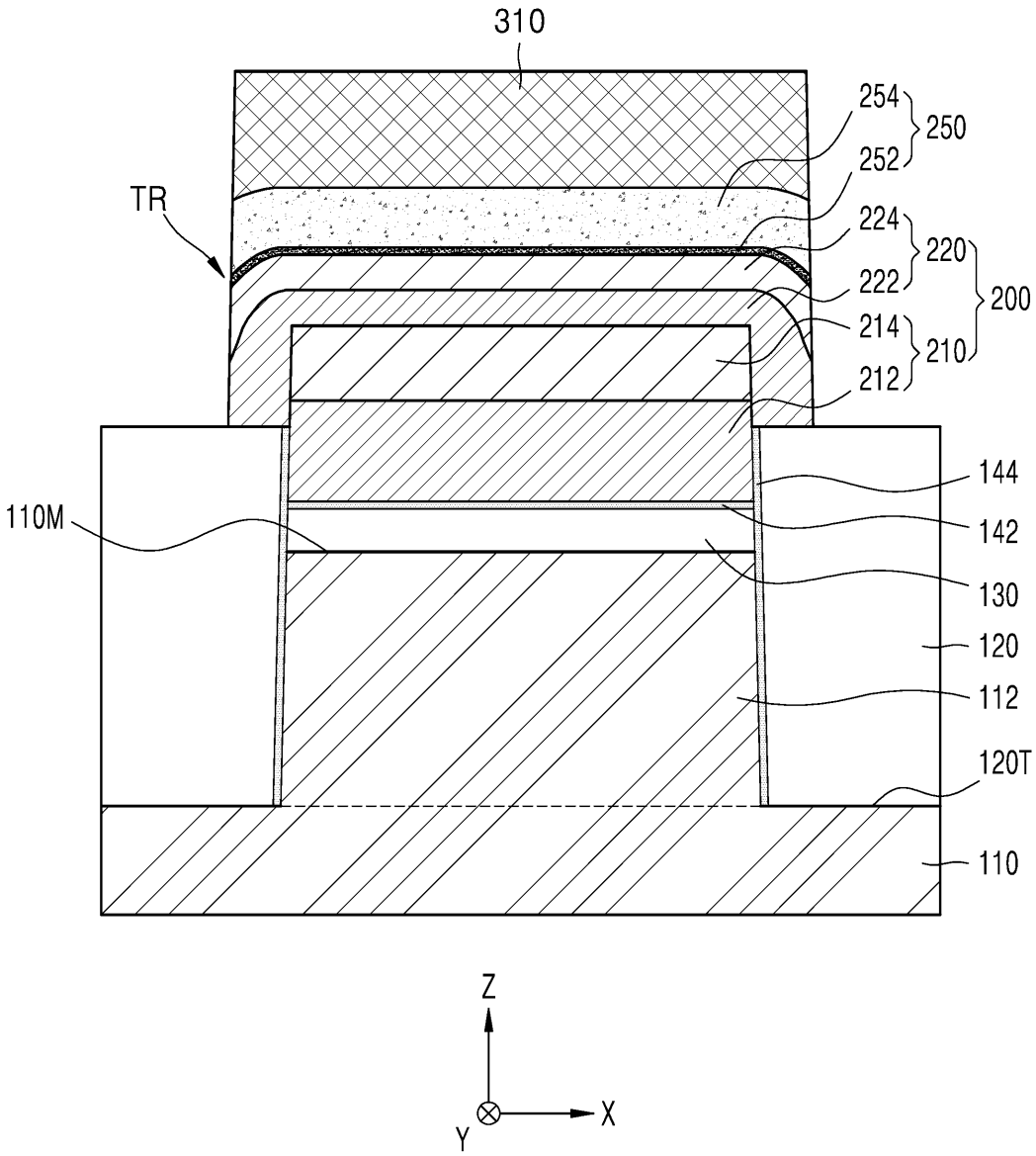

310
254
250
252
TR
224
220
222
200
214
210
212
144
110M
142
130
120
112
120T
110
Z
Y
X

FIG. 8

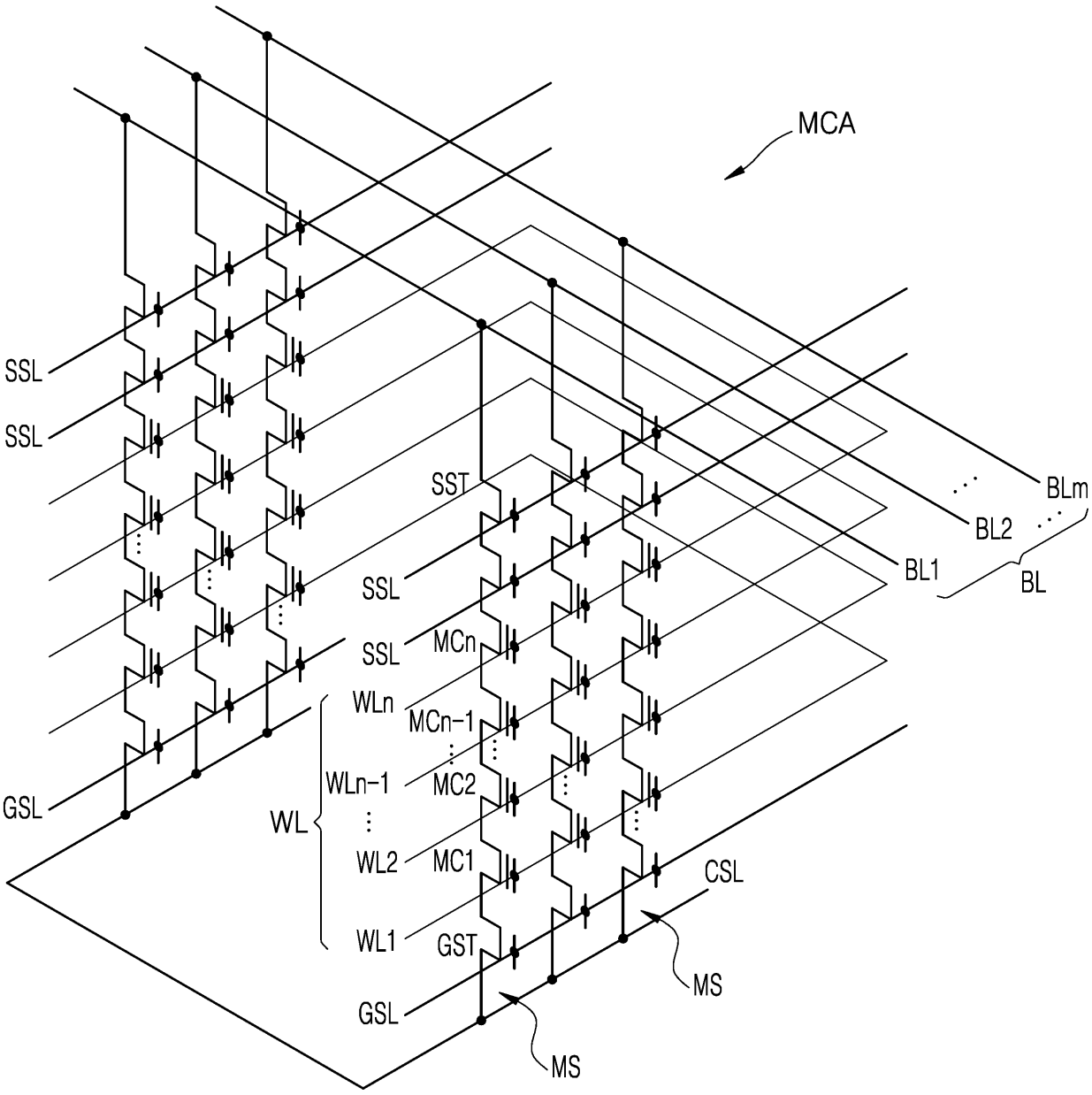

MCA
SSL
SSL
GSL
SST
SSL
SSL
MCn
WLn
MCn-1
WLn-1
MC2
WL
WL2
MC1
WL1
GST
GSL
BLm
BL2
BL1
BL
CSL
MS
MS

FIG. 9

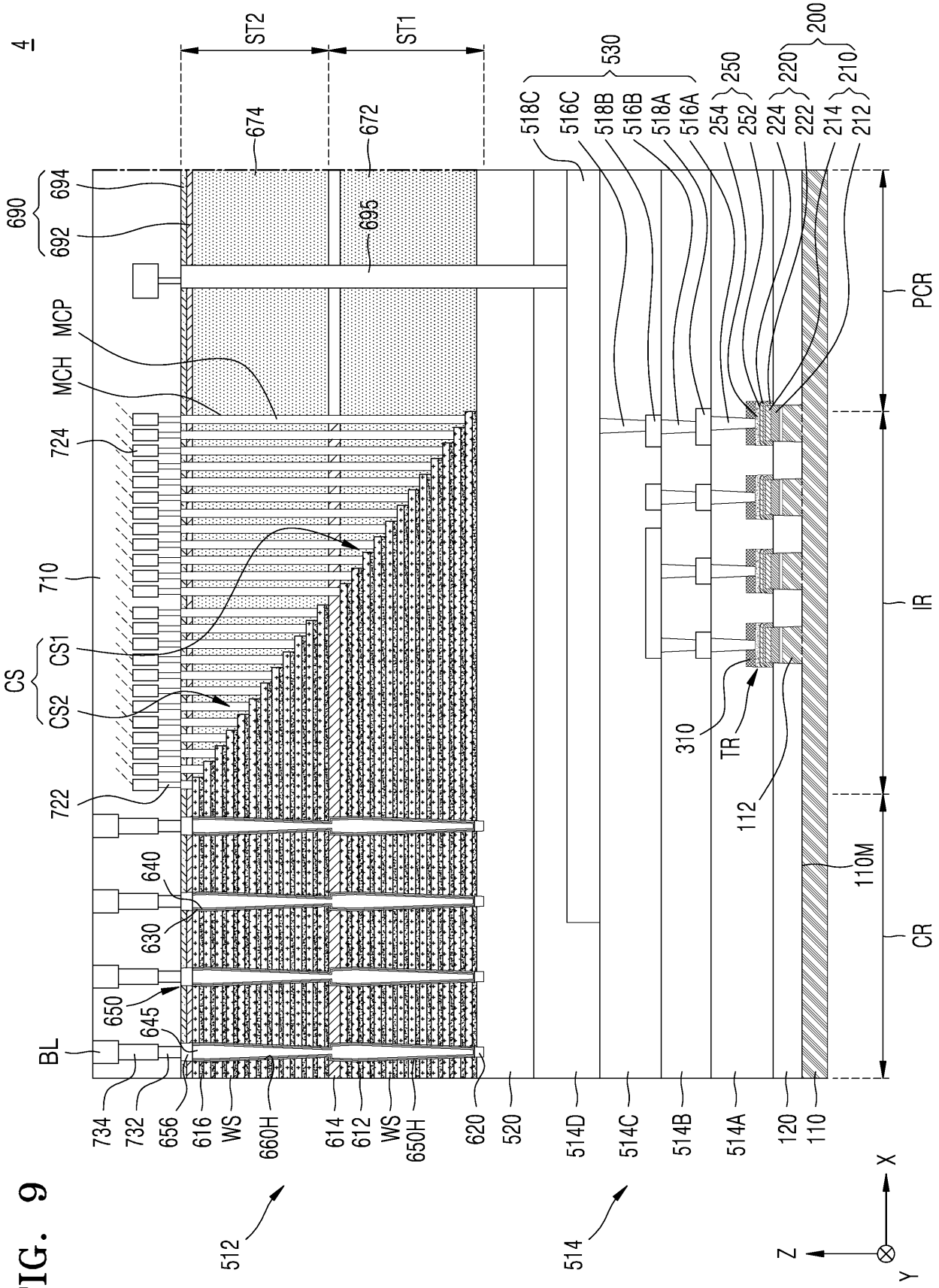

4
ST2
ST1
674
672
695
690
694
692
MCP
MCH
724
710
CS
CS1
CS2
722
640
630
650
645
BL
734
732
656
616
WS
660H
614
612
WS
650H
620
520
512
514
514D
514C
514B
514A
120
110
518C
516C
518B
516B
518A
516A
530
254
252
250
224
222
220
214
212
200
310
TR
112
110M
PCR
IR
CR
X
Y
Z

FIG. 10

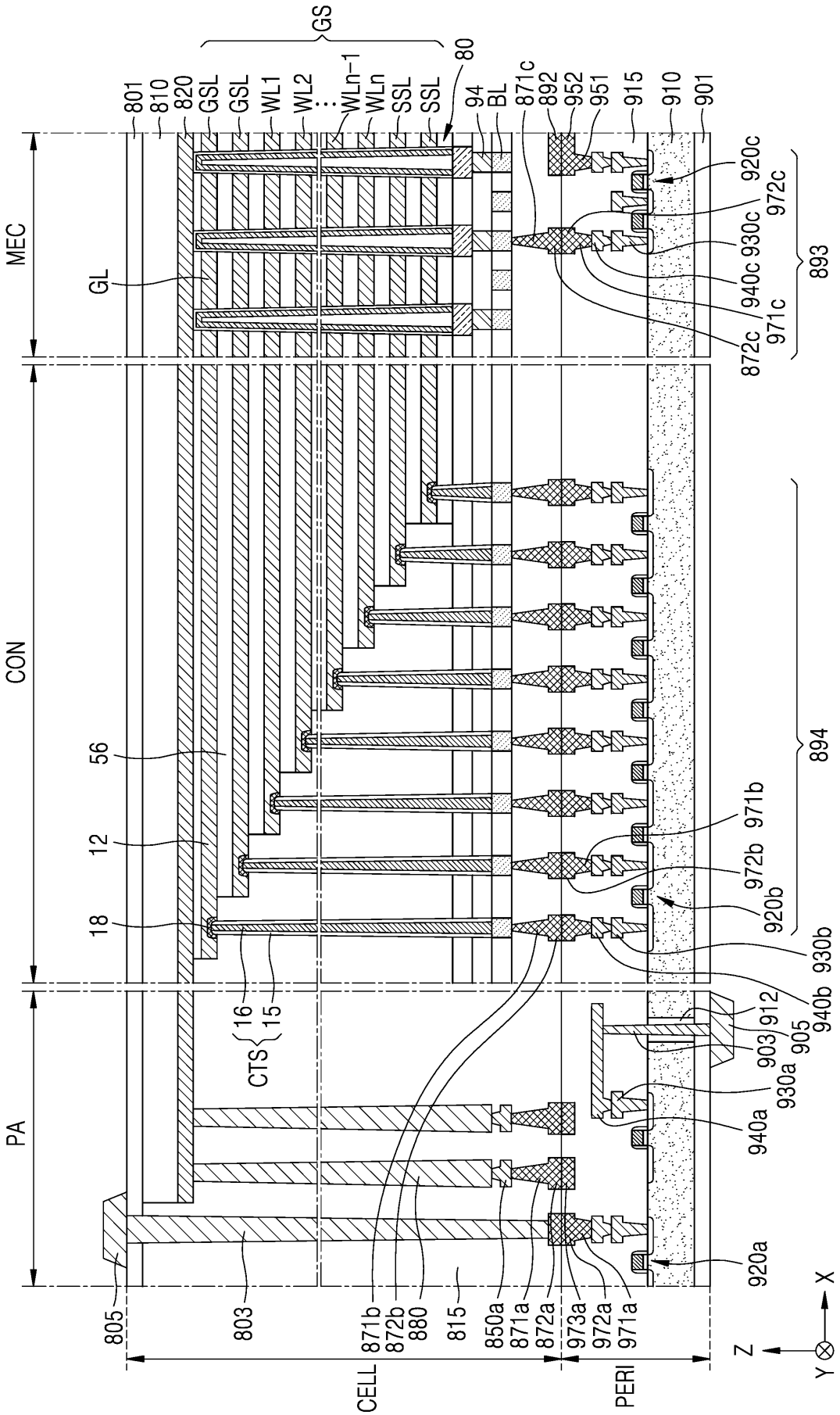

5
MEC
CON
PA
CELL
PERI
GS
GL
CTS
801
810
820
GSL
GSL
WL1
WL2
WLn-1
WLn
SSL
SSL
80
94
BL
871c
892
952
951
915
910
901
920c
972c
930c
940c
971c
872c
893
56
12
18
16
15
971b
972b
920b
930b
894
940b
912
903
905
930a
940a
920a
805
803
871b
872b
880
815
850a
871a
872a
973a
972a
971a
Z
X
Y

FIG. 11

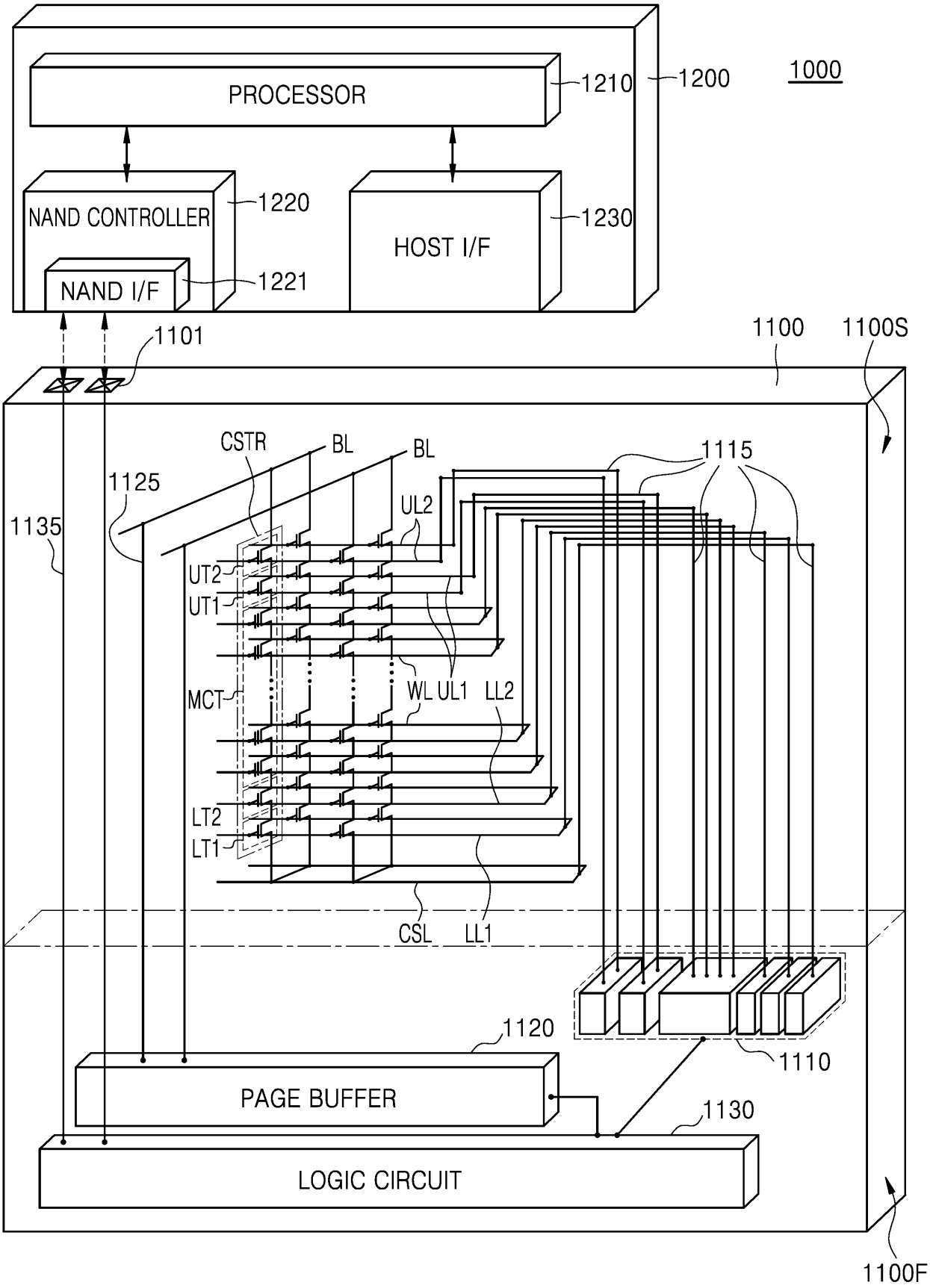

PROCESSOR
1210
1200
1000
NAND CONTROLLER
1220
NAND I/F
1221
HOST I/F
1230
1101
1100
1100S
CSTR
BL
BL
1115
1125
1135
UL2
UT2
UT1
MCT
WL
UL1
LL2
LT2
LT1
CSL
LL1
1120
1110
PAGE BUFFER
1130
LOGIC CIRCUIT
1100F

FIG. 12

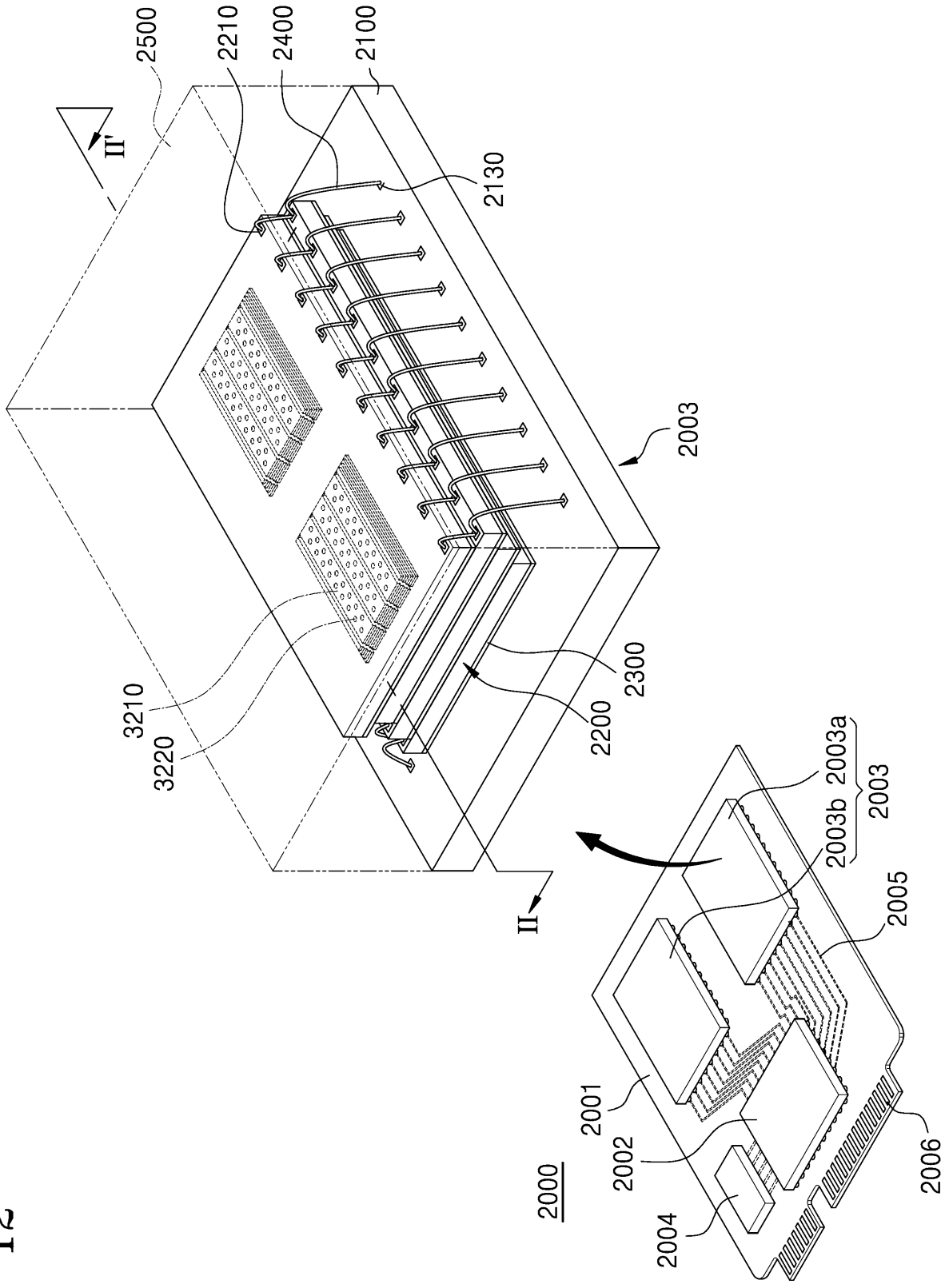

2500
2210
2400
2100
II'
2130
2003
3210
3220
2300
2200
II
2003a
2003b
2003
2005
2001
2002
2004
2006
2000

FIG. 13

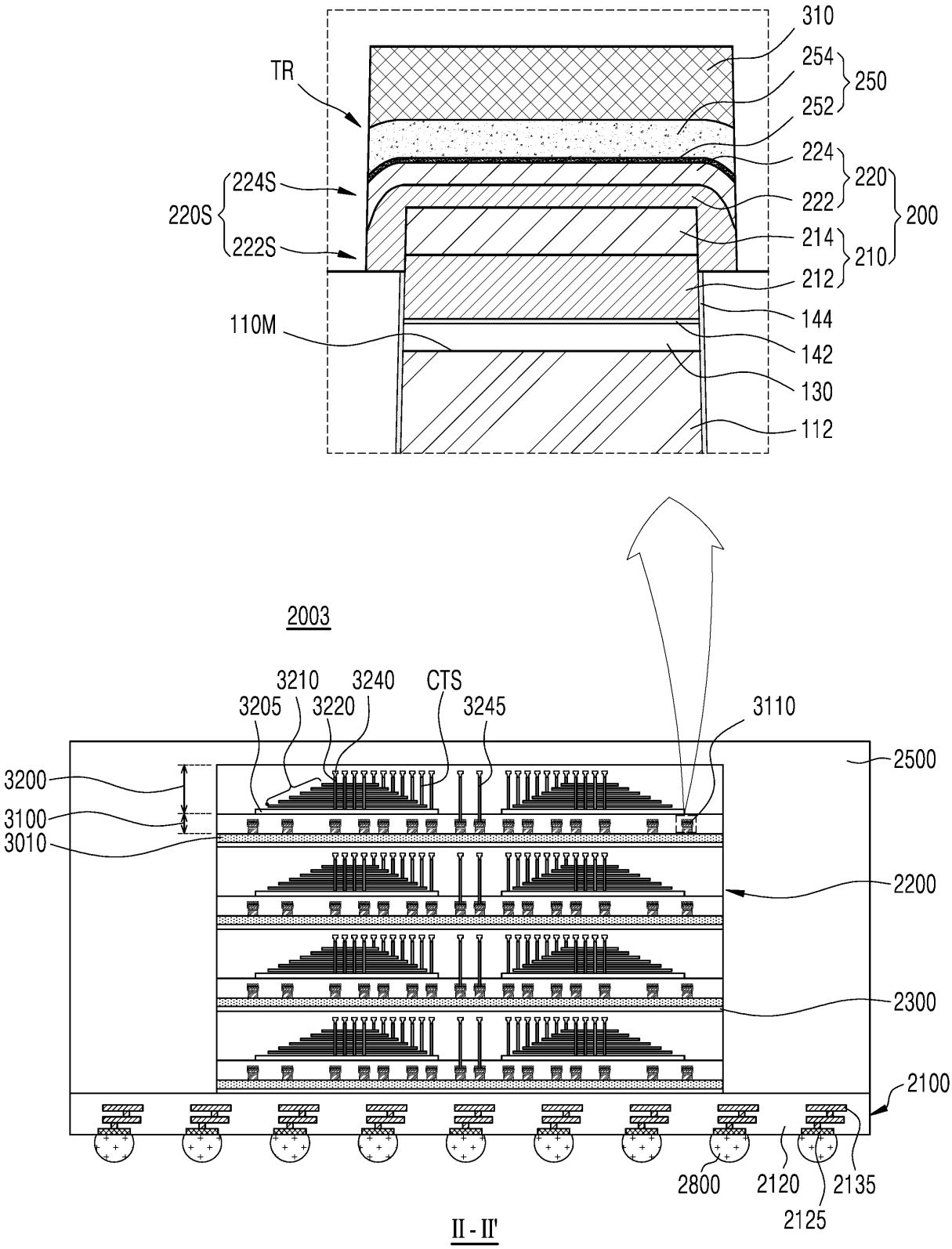
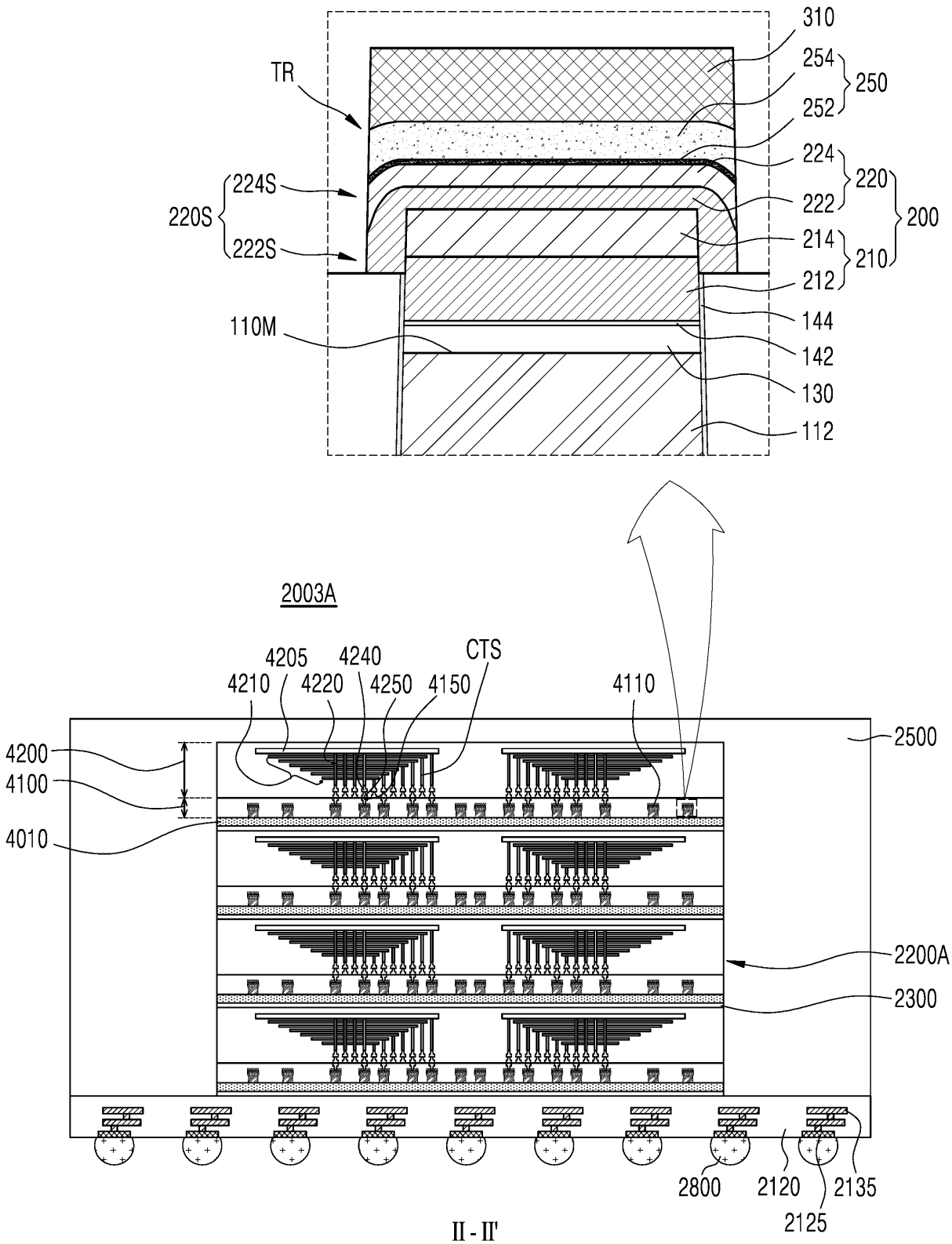

310
254
250
252
TR
224
220
222
200
224S
220S
222S
214
210
212
144
110M
142
130
112
2003
3210
3240
CTS
3205
3220
3245
3110
2500
3200
3100
3010
2200
2300
2100
2800
2120
2135
2125
II - II'

FIG. 14


310
254
250
252
TR
224
220
224S
222
200
220S
222S
214
210
212
144
110M
142
130
112
2003A
4205
4240
CTS
4210
4220
4250
4150
4110
2500
4200
4100
4010
2200A
2300
2800
2120
2135
2125
II - II'