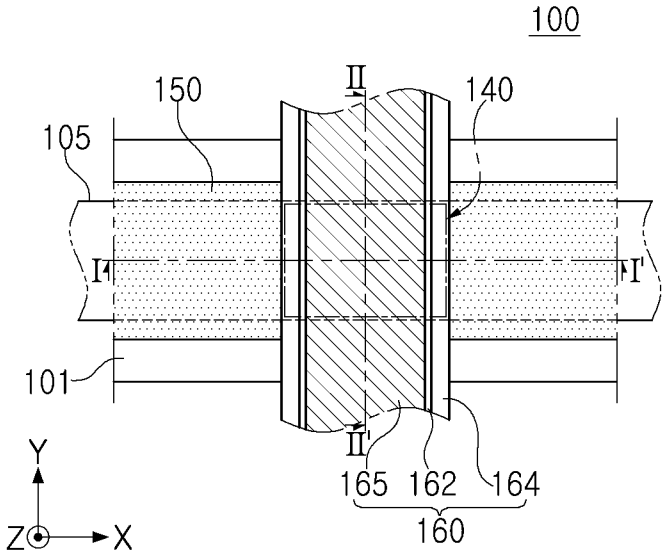


FIG. 1

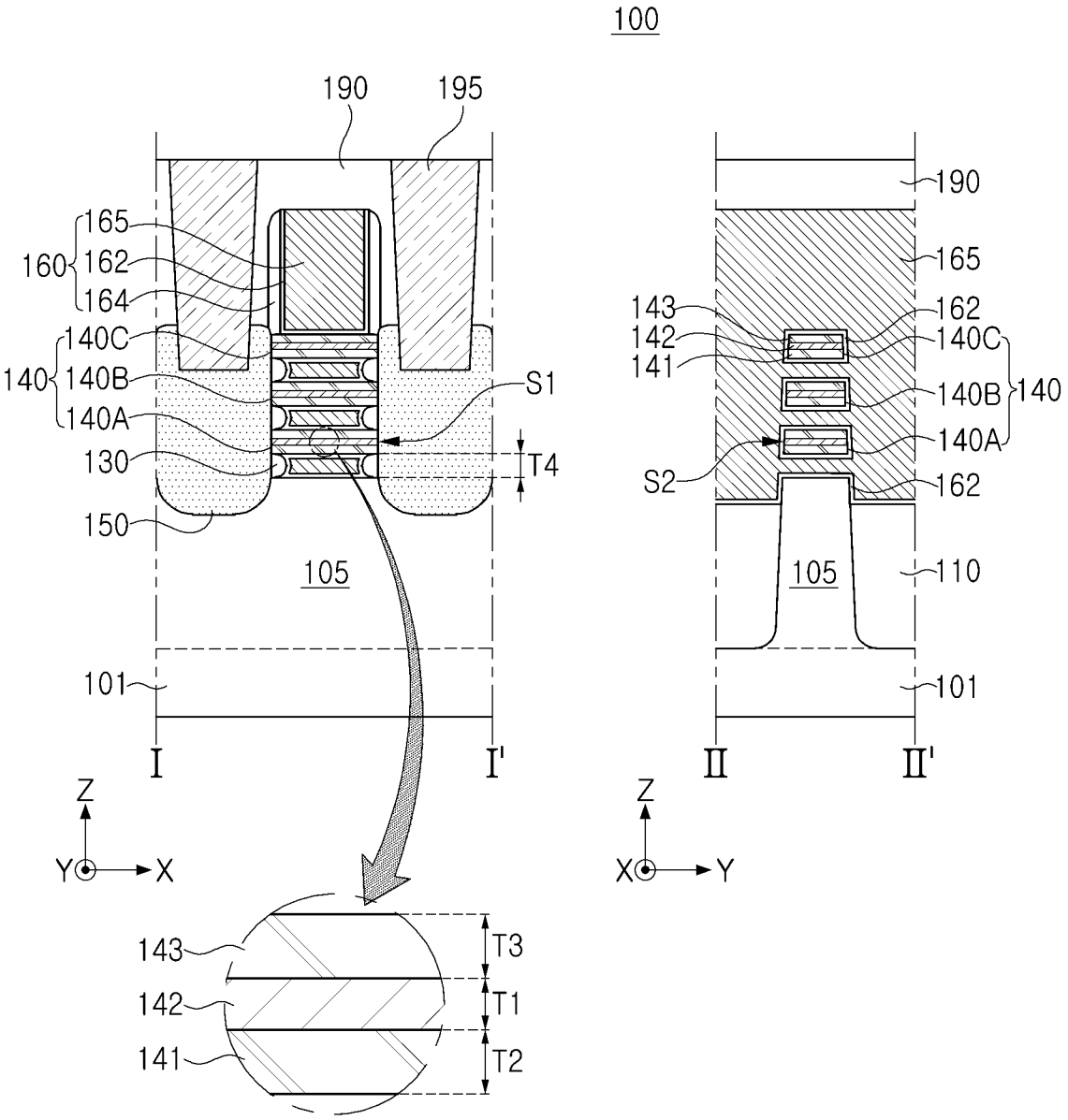

100
190
195
165
160
162
164
140C
140
140B
140A
130
150
S1
T4
105
101
I
I'
Z
Y
X
143
142
141
T3
T1
T2
190
165
143
162
142
140C
141
140
140B
140A
S2
162
105
110
101
II
II'
Z
X
Y

FIG. 2

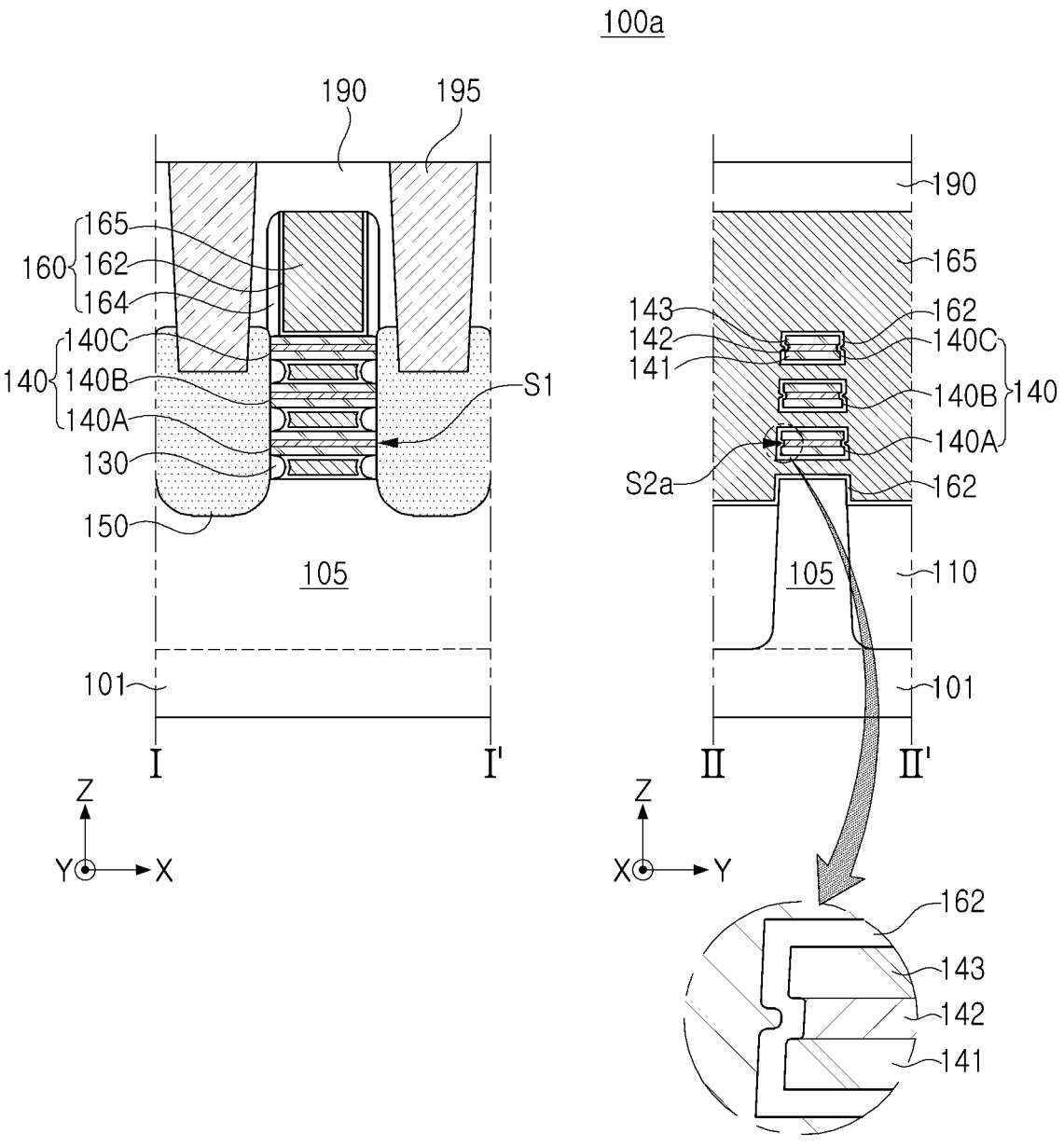

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190
195
165
160
162
164
140C
140
140B
140A
130
150
S1
105
101
I
I'
Z
Y
X
190
165
143
142
141
162
140C
140B
140
140A
S2a
162
105
110
101
II
II'
Z
X
Y
162
143
142
141

FIG. 3A

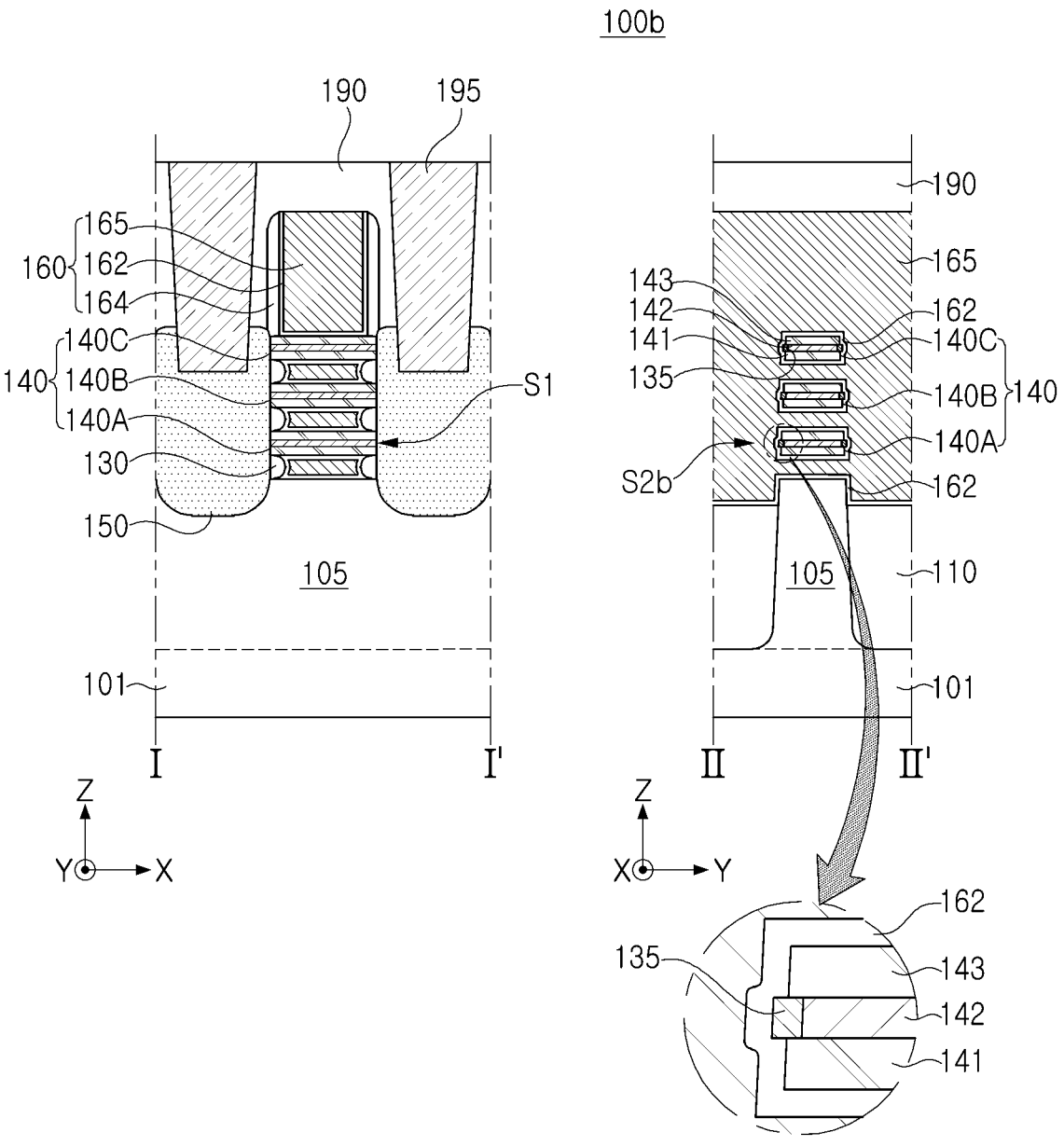

100b
190
195
165
160
162
164
140C
140
140B
140A
130
150
105
101
I
I'
Z
Y
X
S1
190
165
143
142
141
135
162
140C
140B
140
140A
S2b
162
105
110
101
II
II'
Z
X
Y
162
135
143
142
141

FIG. 3B

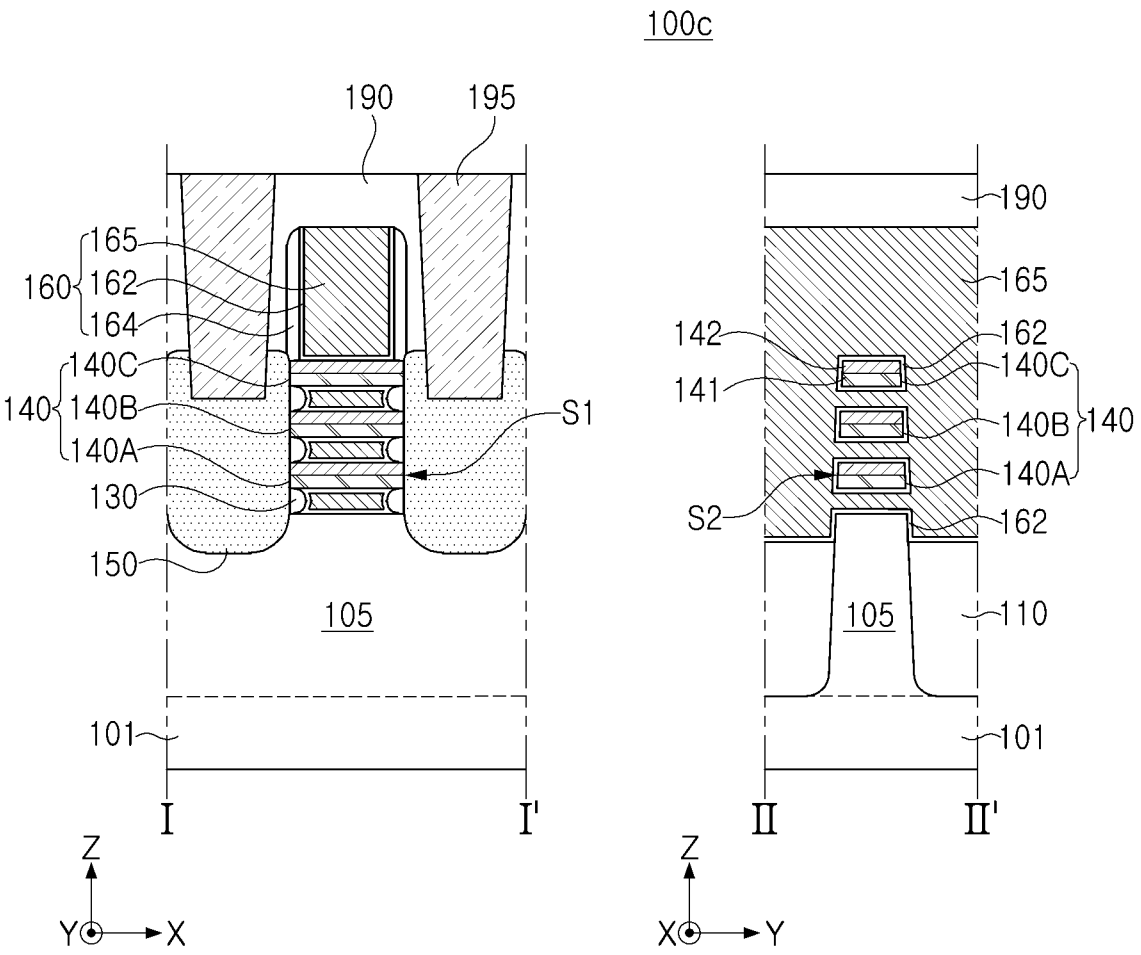

100c
190
195
165
160
162
164
140C
140
140B
140A
130
150
S1
105
101
I
I'
Z
Y
X
190
165
142
162
141
140C
140B
140
140A
S2
162
105
110
101
II
II'
Z
X
Y

FIG. 4A

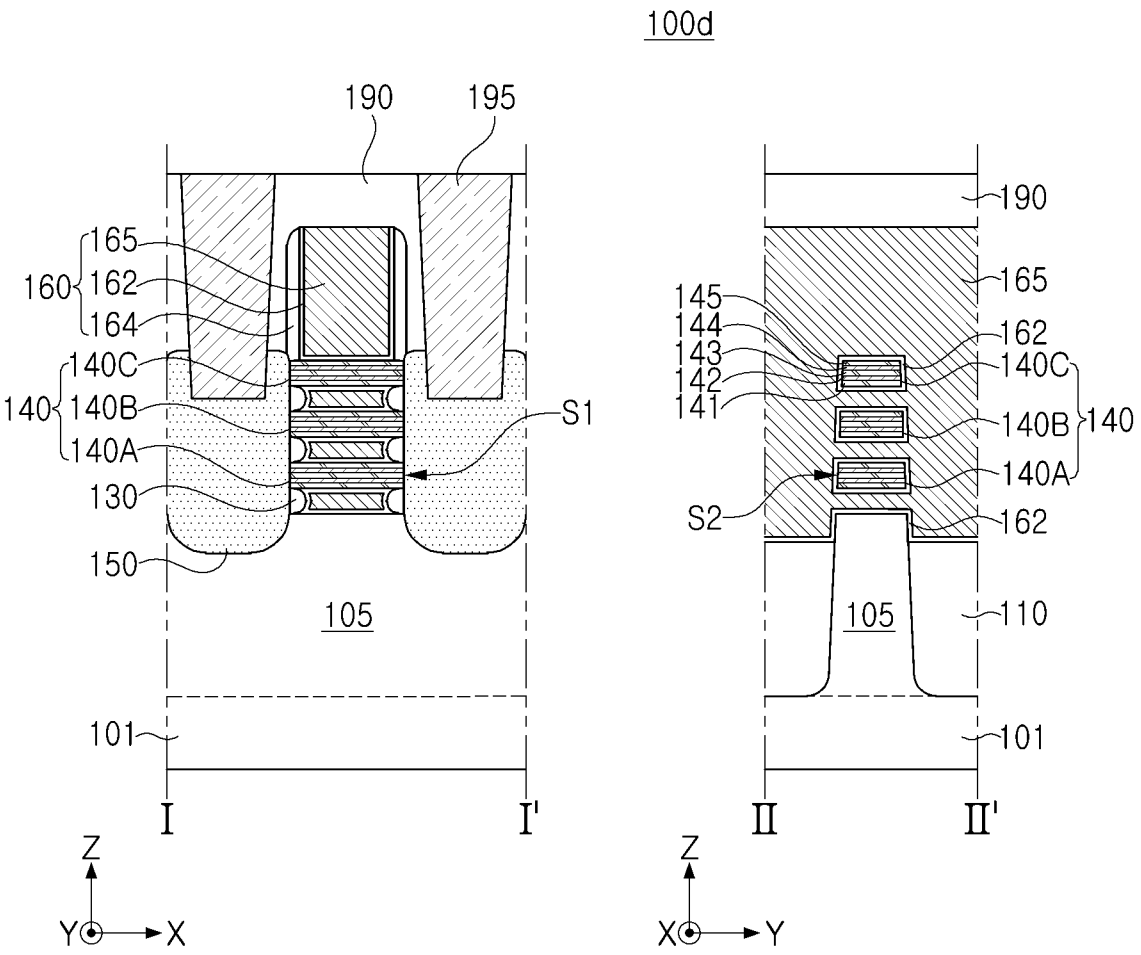

100d
190
195
165
160
162
164
140C
140
140B
140A
130
150
S1
105
101
I
I'
Z
Y
X
190
165
145
144
143
142
141
162
140C
140
140B
140A
S2
162
105
110
101
II
II'
Z
X
Y

FIG. 4B

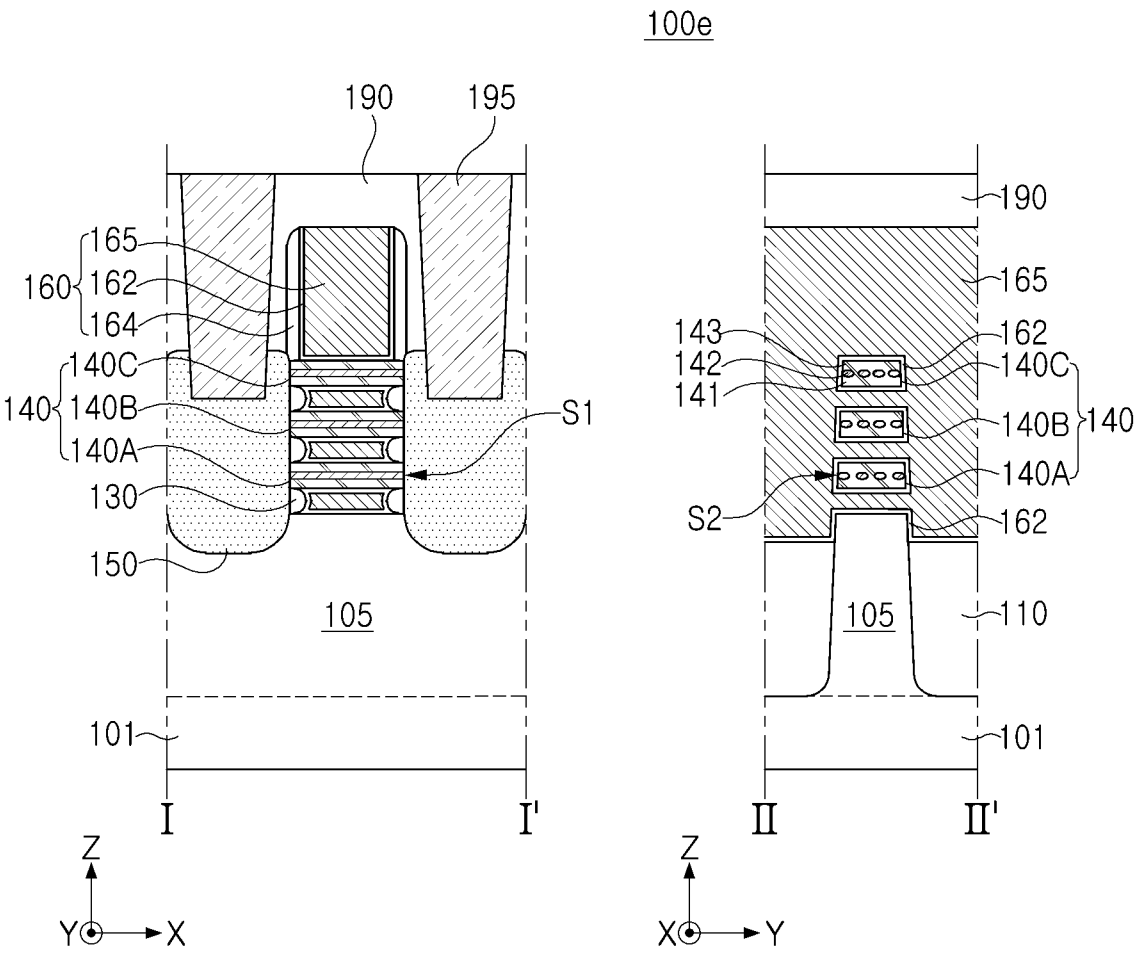

100e
190
195
165
160
162
164
140C
140
140B
140A
130
150
105
101
I
I'
S1
Z
Y
X
190
165
143
142
141
162
140C
140B
140
140A
S2
162
105
110
101
II
II'
Z
X
Y

FIG. 4C

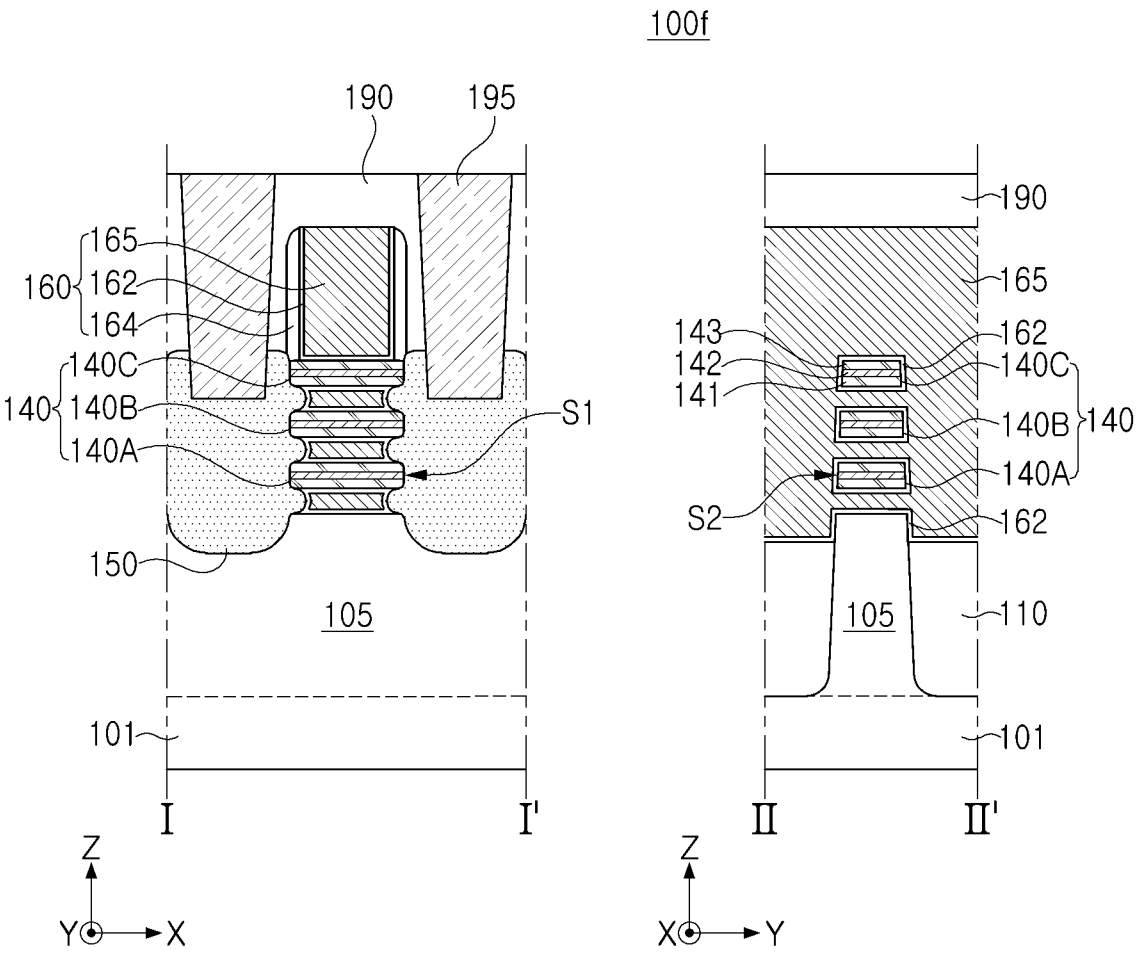

100f
190
195
165
160
162
164
140C
140
140B
140A
S1
150
105
101
I
I'
Z
Y
X
190
165
143
162
142
140C
141
140
140B
140A
S2
162
105
110
101
II
II'
Z
X
Y

FIG. 5

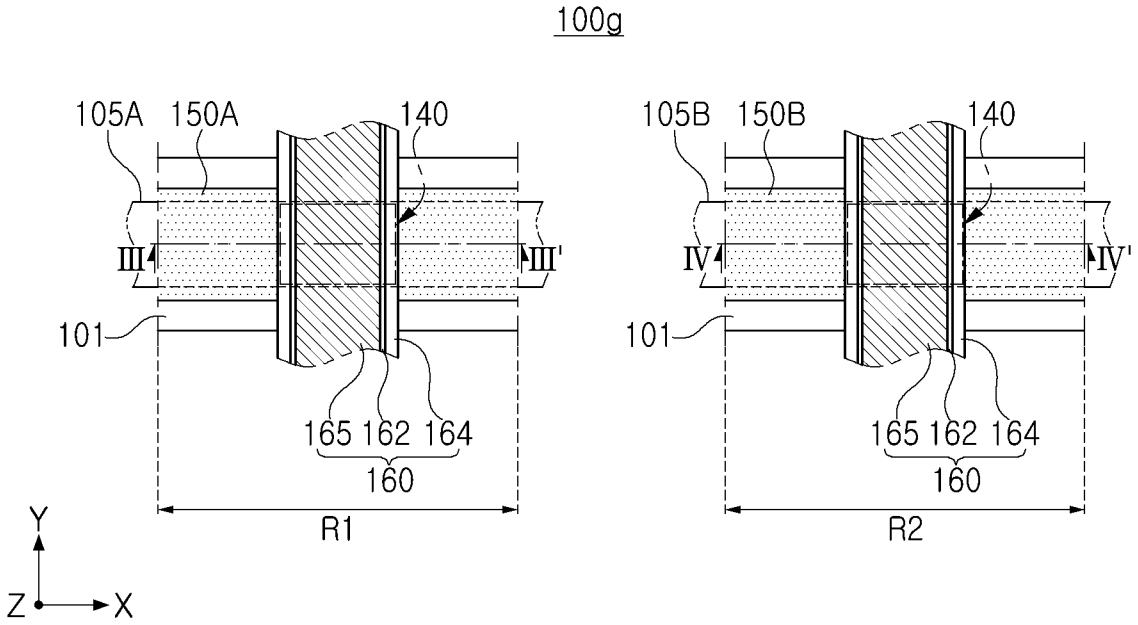

100g
105A
150A
140
III
III'
101
165 162 164
160
R1
105B
150B
140
IV
IV'
101
165 162 164
160
R2
Y
Z
X

FIG. 6

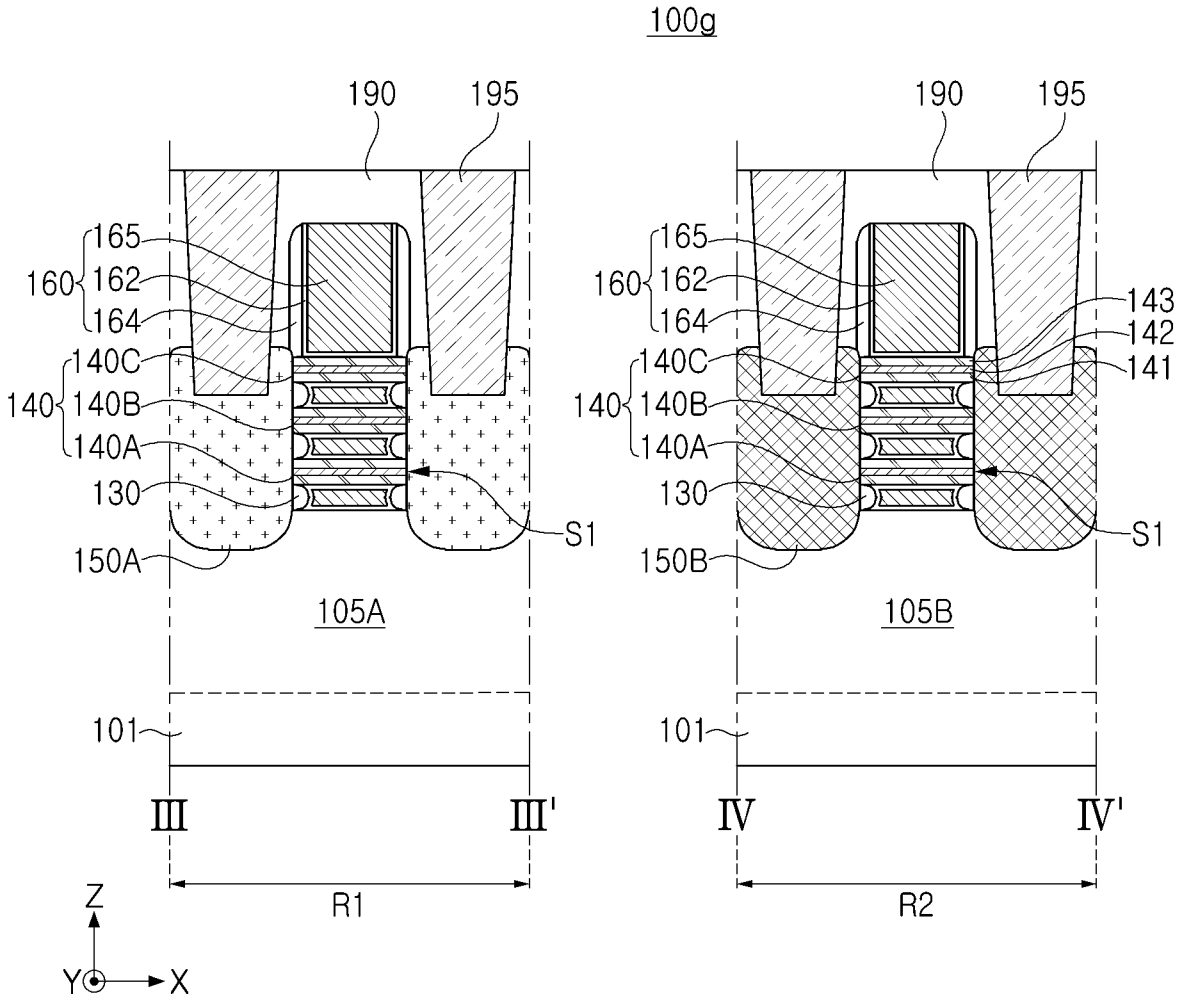

100g
190
195
165
160
162
164
140C
140
140B
140A
130
S1
150A
105A
101
III
III'
R1
Z
Y
X
190
195
165
160
162
164
143
142
141
140C
140
140B
140A
130
S1
150B
105B
101
IV
IV'
R2

FIG. 7

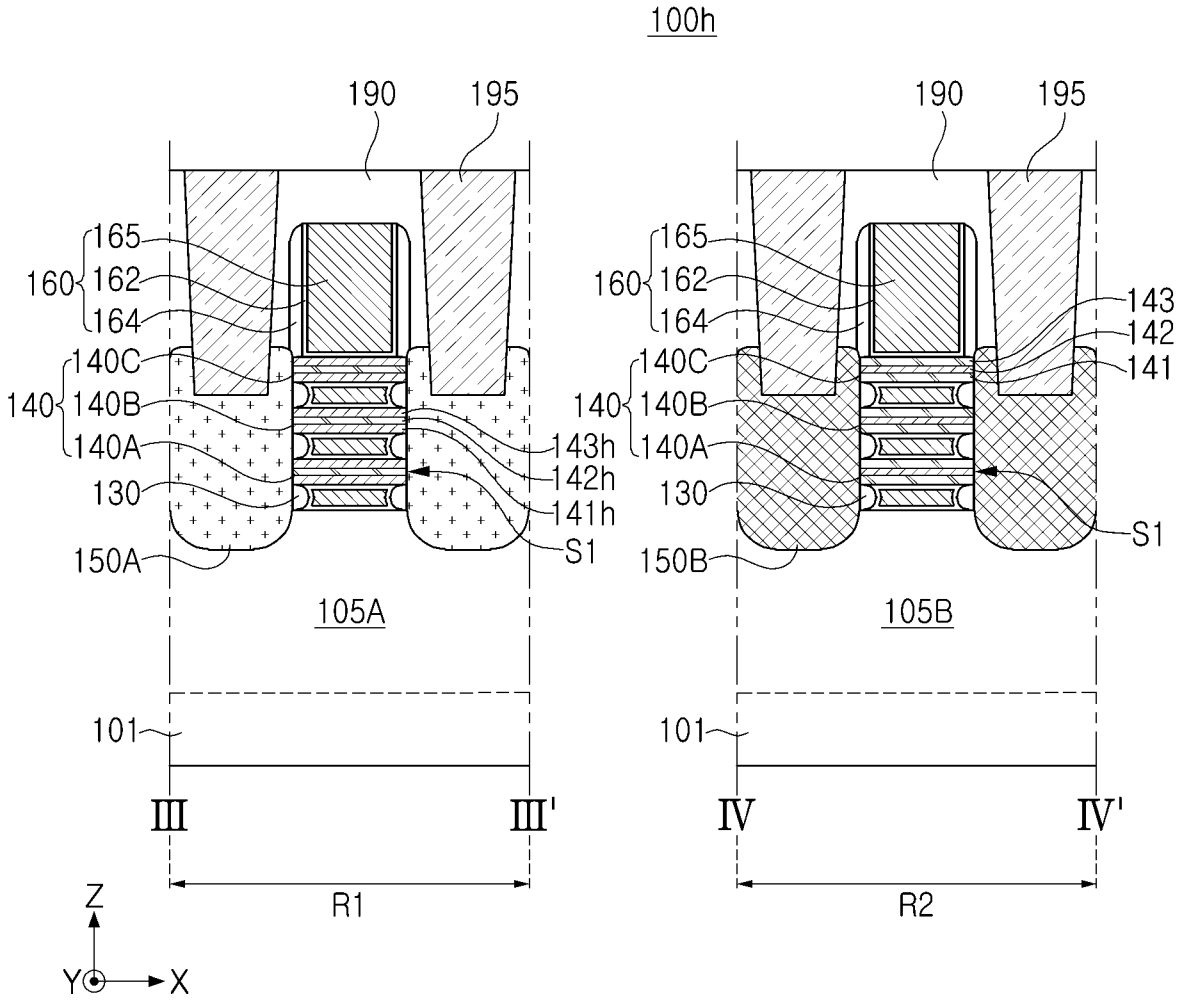

100h
190
195
165
160
162
164
140C
140
140B
140A
130
150A
143h
142h
141h
S1
105A
101
III
III'
R1
143
142
141
150B
105B
IV
IV'
R2
Z
Y
X

FIG. 8A

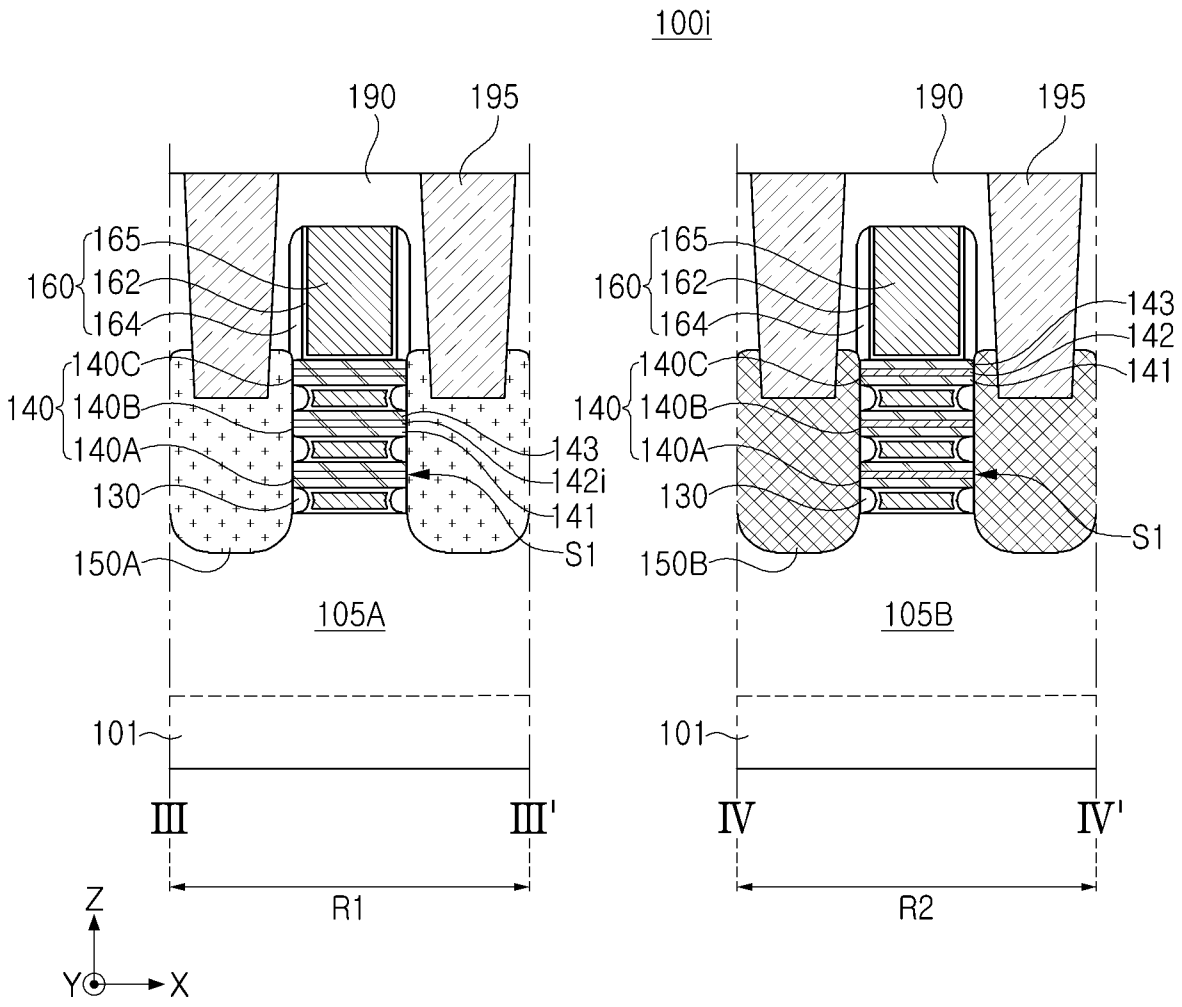

100i
190
195
165
160
162
164
140C
140
140B
140A
130
150A
143
142i
141
S1
105A
101
III
III'
R1
190
195
165
160
162
164
140C
140
140B
140A
130
150B
143
142
141
S1
105B
101
IV
IV'
R2
Z
Y
X

FIG. 8B

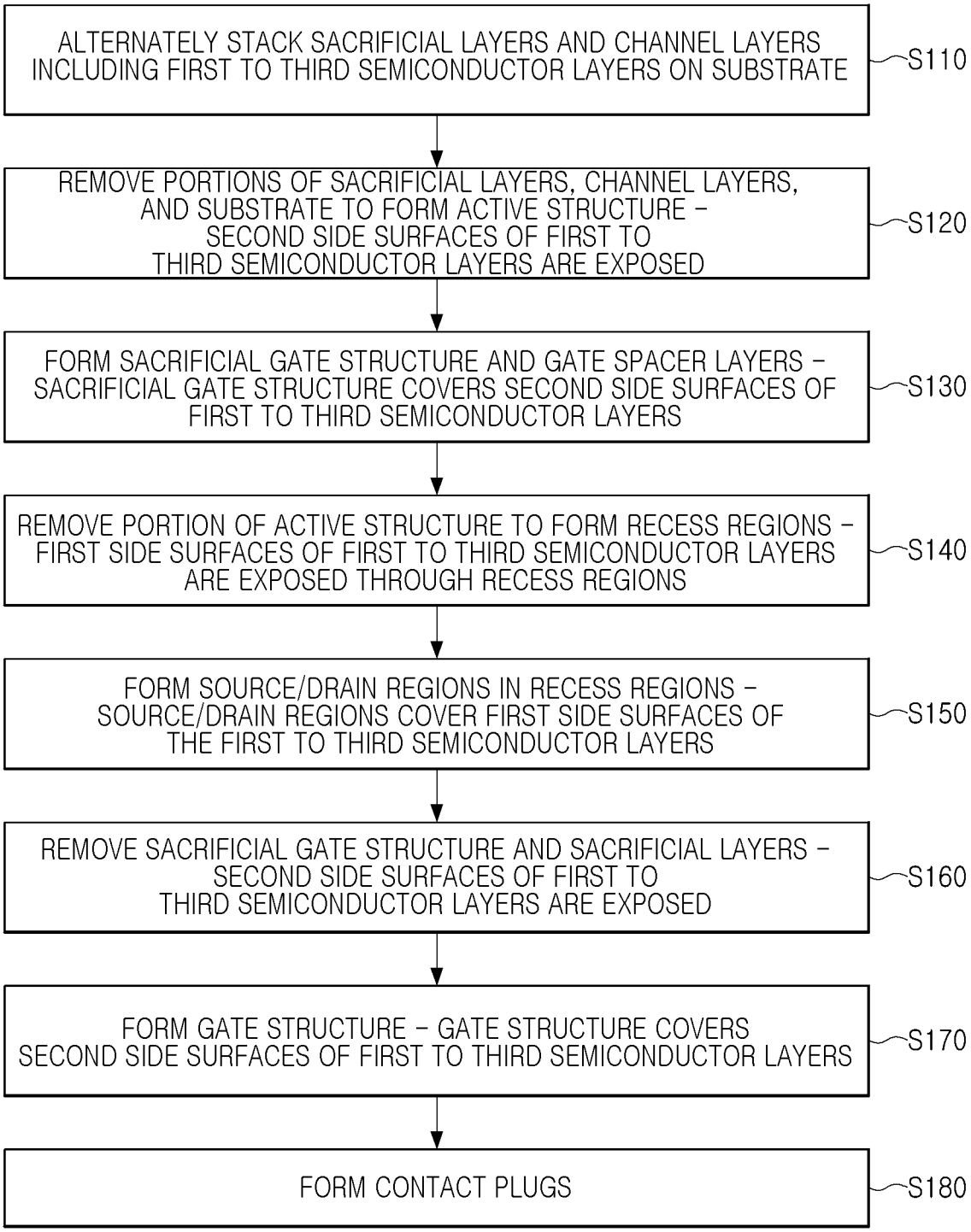

ALTERNATELY STACK SACRIFICIAL LAYERS AND CHANNEL LAYERS INCLUDING FIRST TO THIRD SEMICONDUCTOR LAYERS ON SUBSTRATE
S110
REMOVE PORTIONS OF SACRIFICIAL LAYERS, CHANNEL LAYERS, AND SUBSTRATE TO FORM ACTIVE STRUCTURE - SECOND SIDE SURFACES OF FIRST TO THIRD SEMICONDUCTOR LAYERS ARE EXPOSED
S120
FORM SACRIFICIAL GATE STRUCTURE AND GATE SPACER LAYERS - SACRIFICIAL GATE STRUCTURE COVERS SECOND SIDE SURFACES OF FIRST TO THIRD SEMICONDUCTOR LAYERS
S130
REMOVE PORTION OF ACTIVE STRUCTURE TO FORM RECESS REGIONS - FIRST SIDE SURFACES OF FIRST TO THIRD SEMICONDUCTOR LAYERS ARE EXPOSED THROUGH RECESS REGIONS
S140
FORM SOURCE/DRAIN REGIONS IN RECESS REGIONS - SOURCE/DRAIN REGIONS COVER FIRST SIDE SURFACES OF THE FIRST TO THIRD SEMICONDUCTOR LAYERS
S150
REMOVE SACRIFICIAL GATE STRUCTURE AND SACRIFICIAL LAYERS - SECOND SIDE SURFACES OF FIRST TO THIRD SEMICONDUCTOR LAYERS ARE EXPOSED
S160
FORM GATE STRUCTURE - GATE STRUCTURE COVERS SECOND SIDE SURFACES OF FIRST TO THIRD SEMICONDUCTOR LAYERS
S170
FORM CONTACT PLUGS
S180

FIG. 9

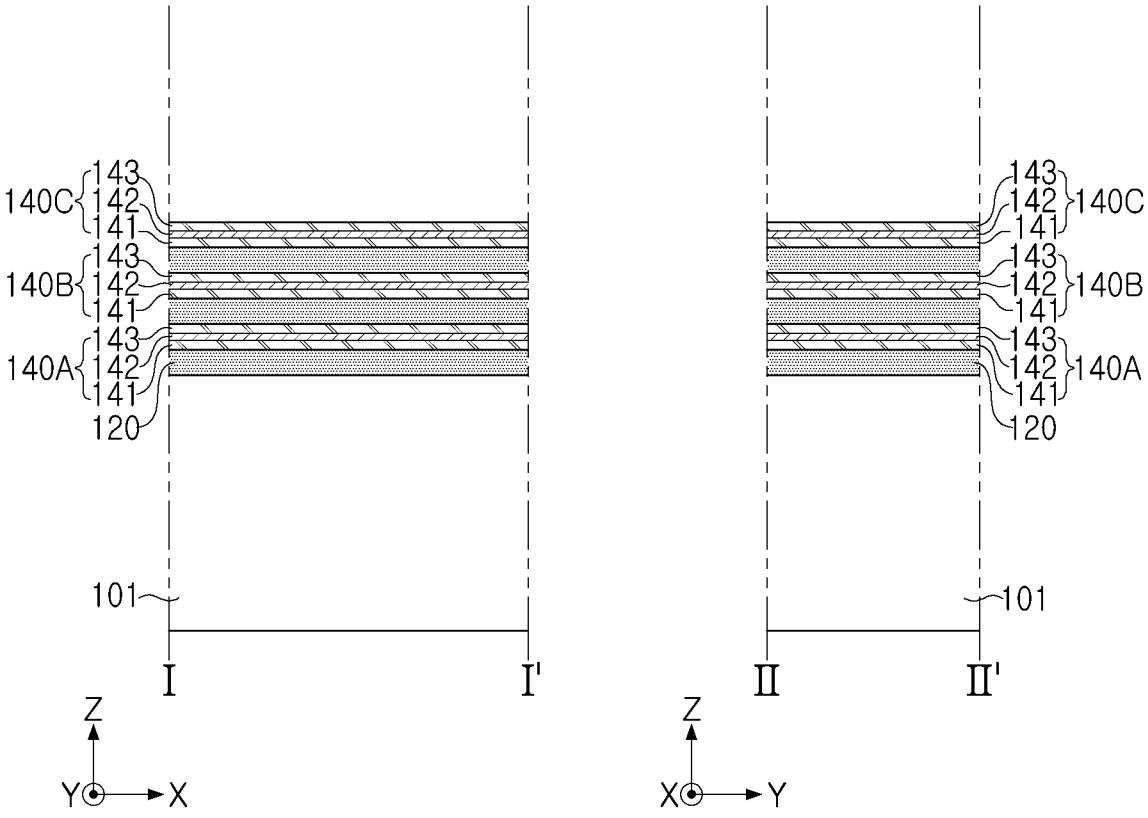

140C
143
142
141
140B
143
142
141
140A
143
142
141
120
101
I
I'
Z
Y
X
140C
143
142
141
140B
143
142
141
140A
143
142
141
120
101
II
II'
Z
X
Y

FIG. 10A

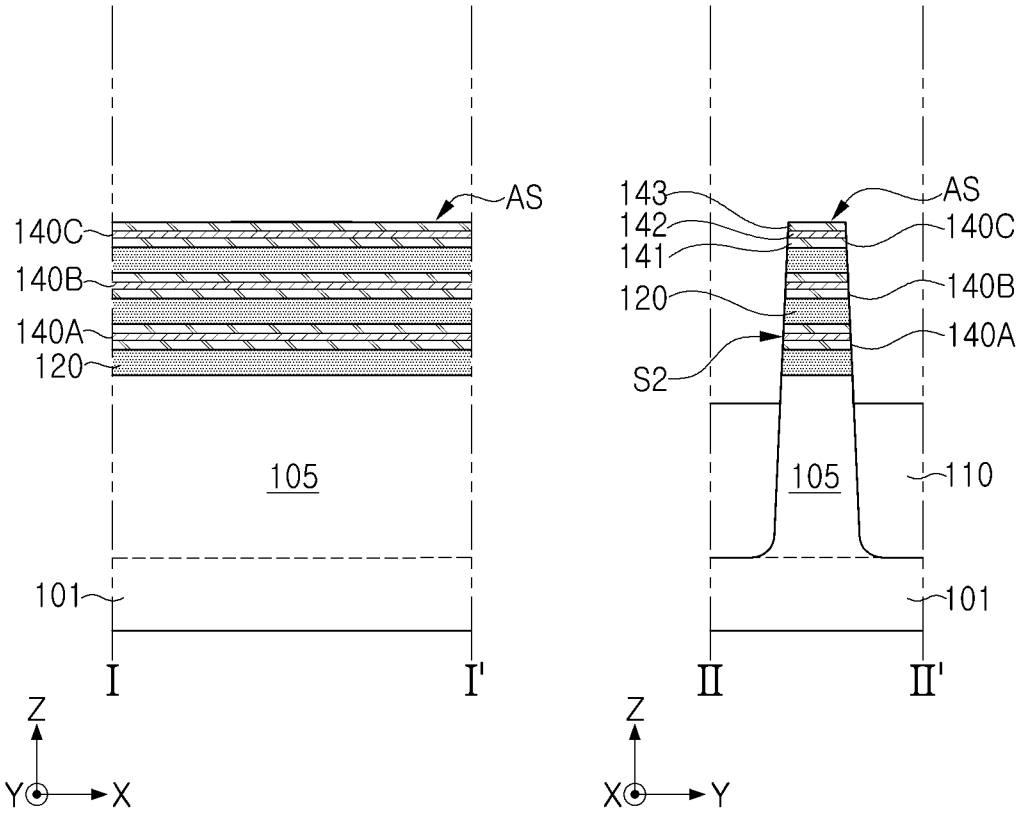

AS
140C
140B
140A
120
105
101
I
I'
Z
Y
X
143
142
141
120
S2
AS
140C
140B
140A
105
110
101
II
II'
Z
X
Y

FIG. 10B

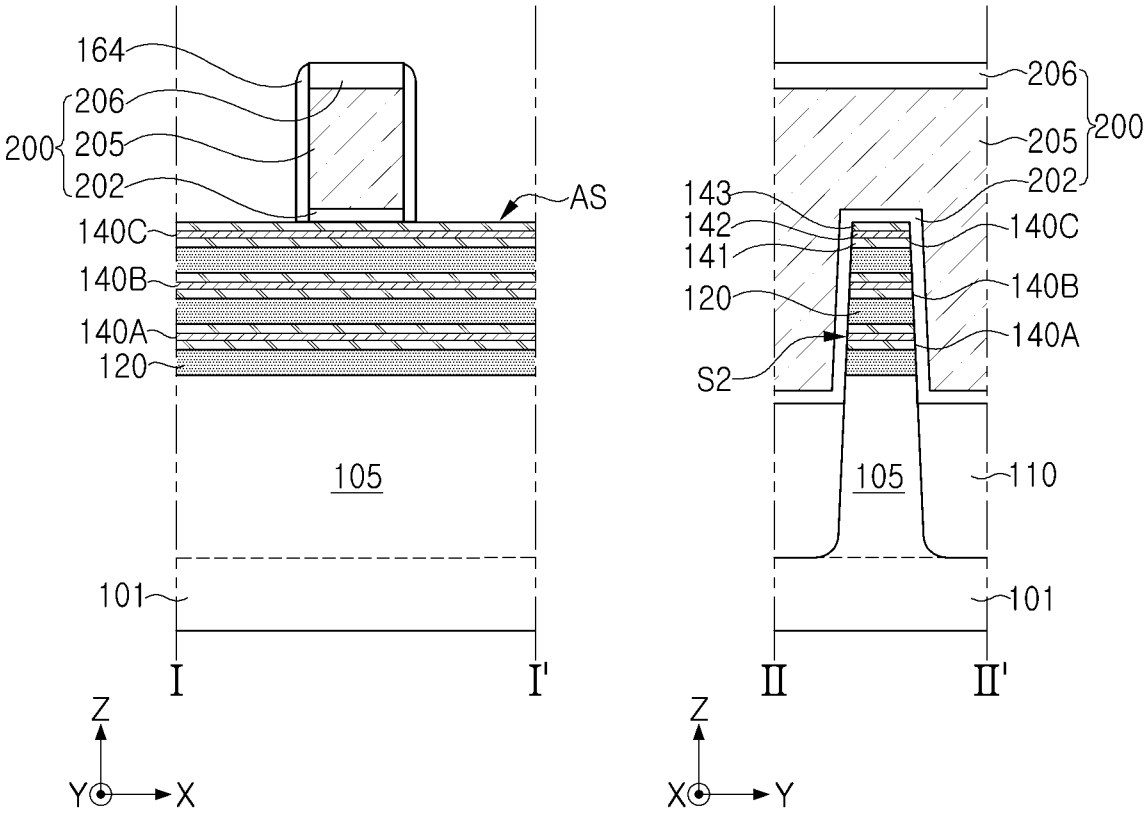

164
206
200
205
202
AS
140C
140B
140A
120
105
101
I
I'
Z
Y
X
206
200
205
202
143
142
141
140C
120
140B
140A
S2
105
110
101
II
II'
Z
X
Y

FIG. 10C

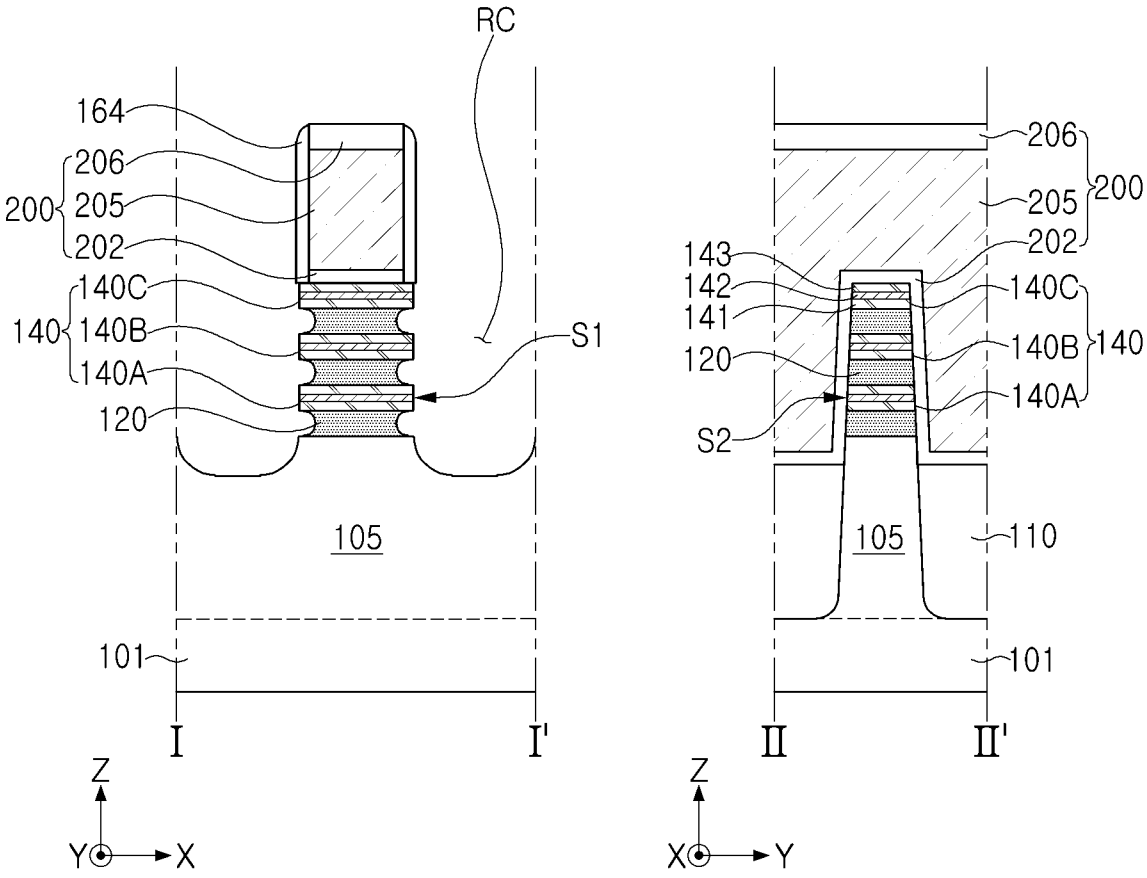

RC
164
206
200
205
202
140C
140
140B
140A
120
S1
105
101
I
I'
Z
Y
X
206
205
200
202
143
142
140C
141
140B
140
120
140A
S2
105
110
101
II
II'
Z
X
Y

FIG. 10D

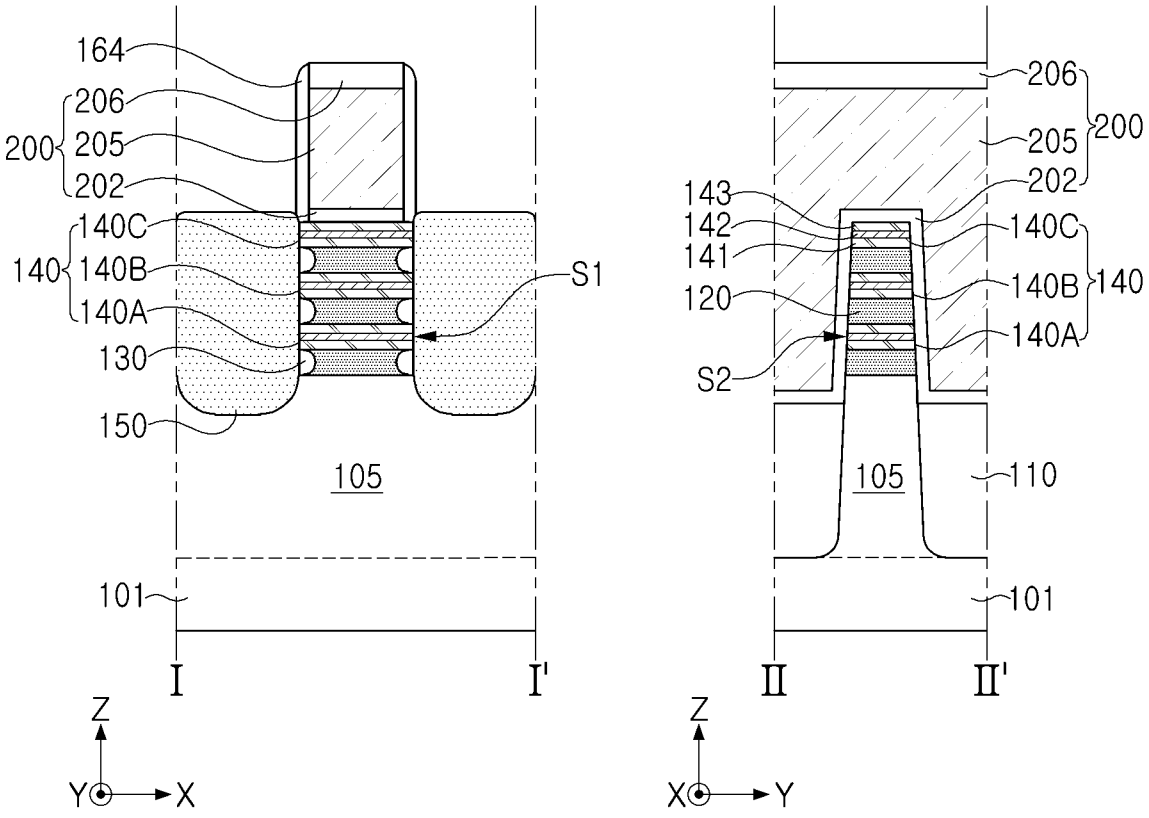

164
206
200
205
202
140C
140
140B
140A
130
150
S1
105
101
I
I'
Z
Y
X
206
205
200
202
143
142
141
140C
120
140B
140
140A
S2
105
110
101
II
II'
Z
X
Y

FIG. 10E

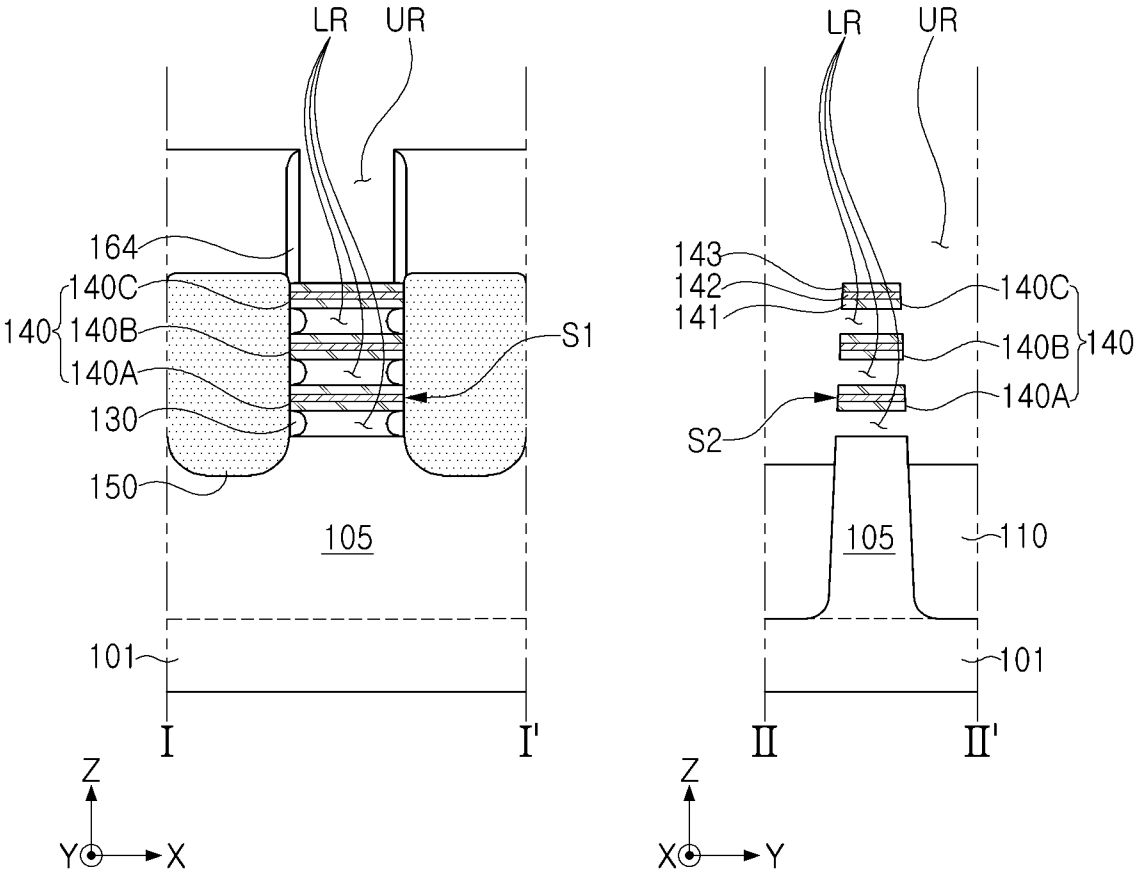

LR
UR
164
140C
140
140B
140A
130
150
S1
105
101
I
I'
Z
Y
X
LR
UR
143
142
141
140C
140B
140
140A
S2
105
110
101
II
II'
Z
X
Y

FIG. 10F

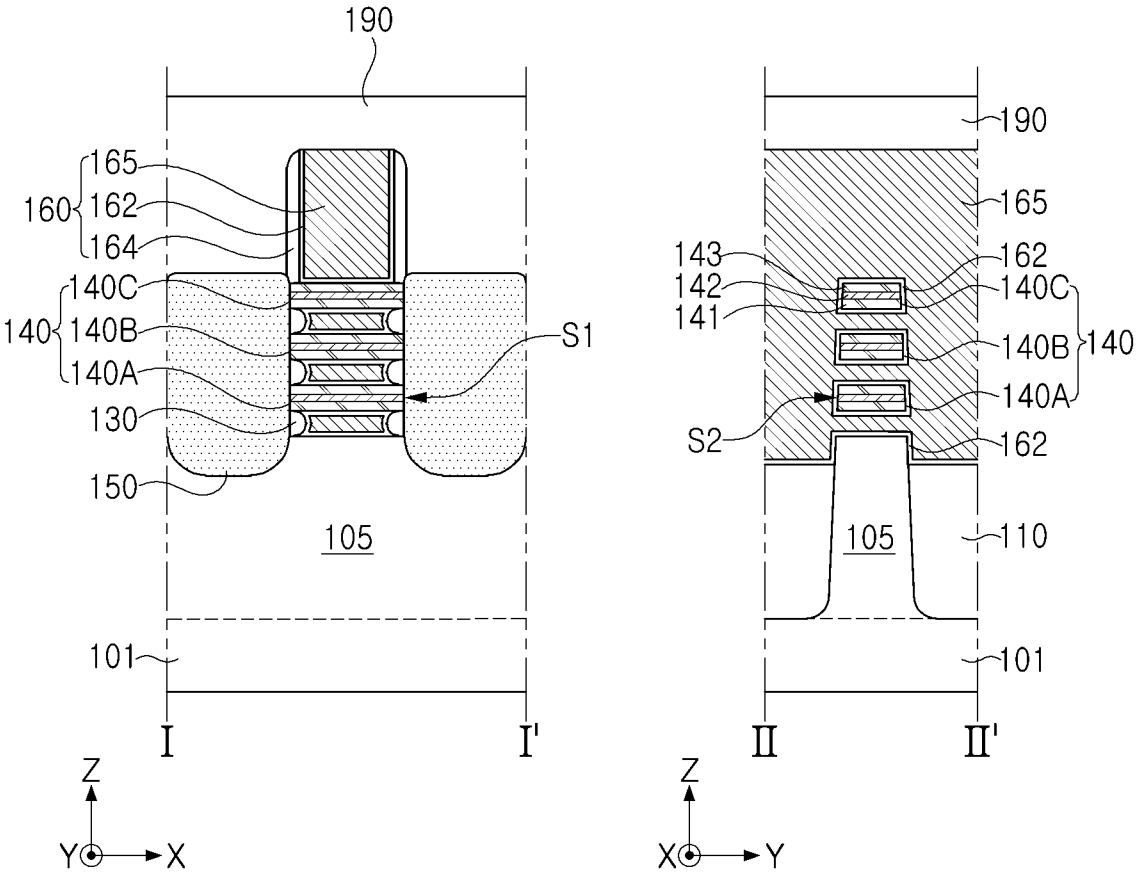

190
165
160
162
164
140C
140
140B
140A
130
150
S1
105
101
I
I'
Z
Y
X
190
165
143
142
141
162
140C
140B
140
140A
S2
162
105
110
101
II
II'
Z
X
Y

FIG. 10G