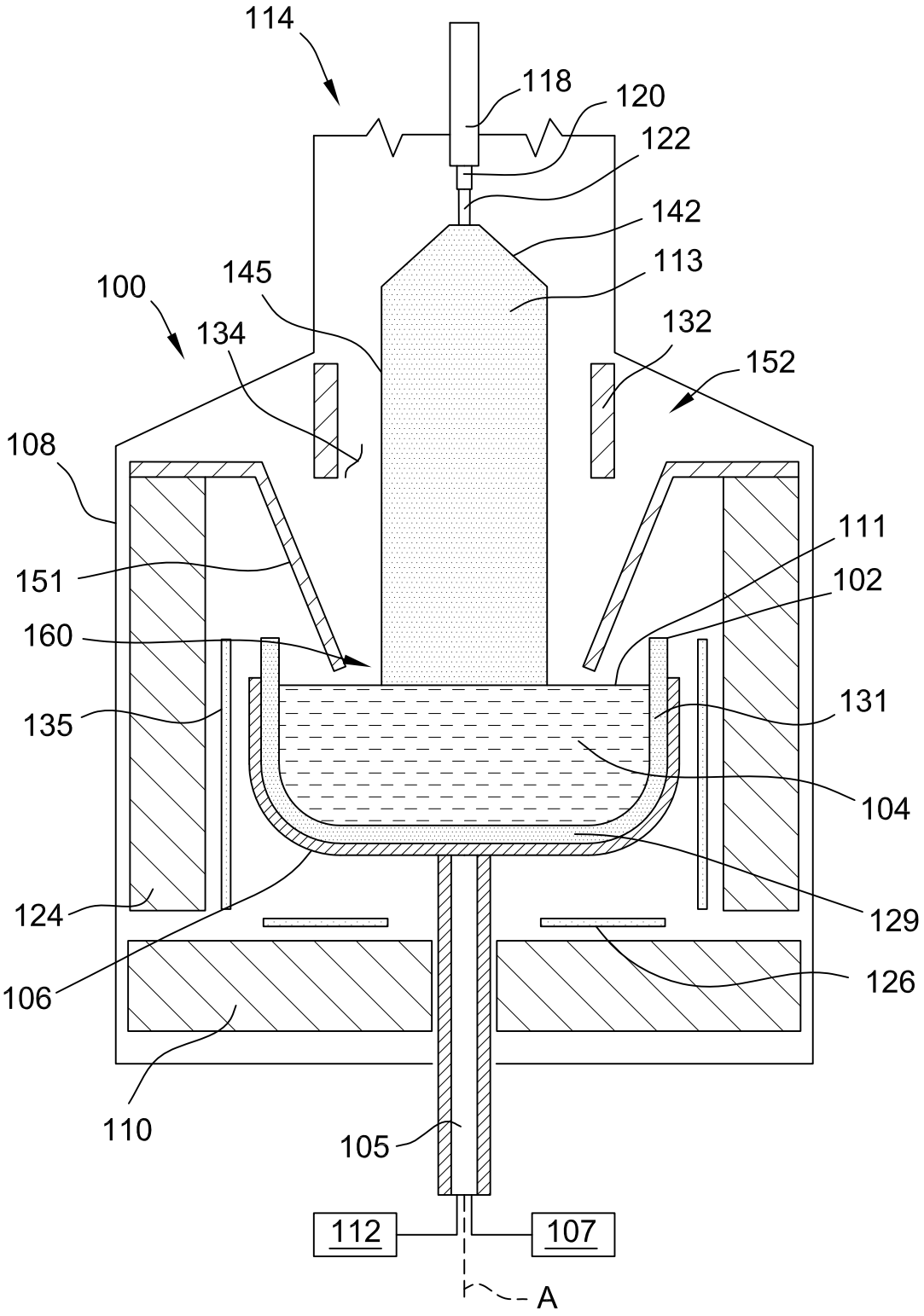

114
118
120
122
142
113
145
100
134
132
152
108
111
151
102
160
131
135
104
129
124
126
106
110
105
112
107
A

FIG. 1

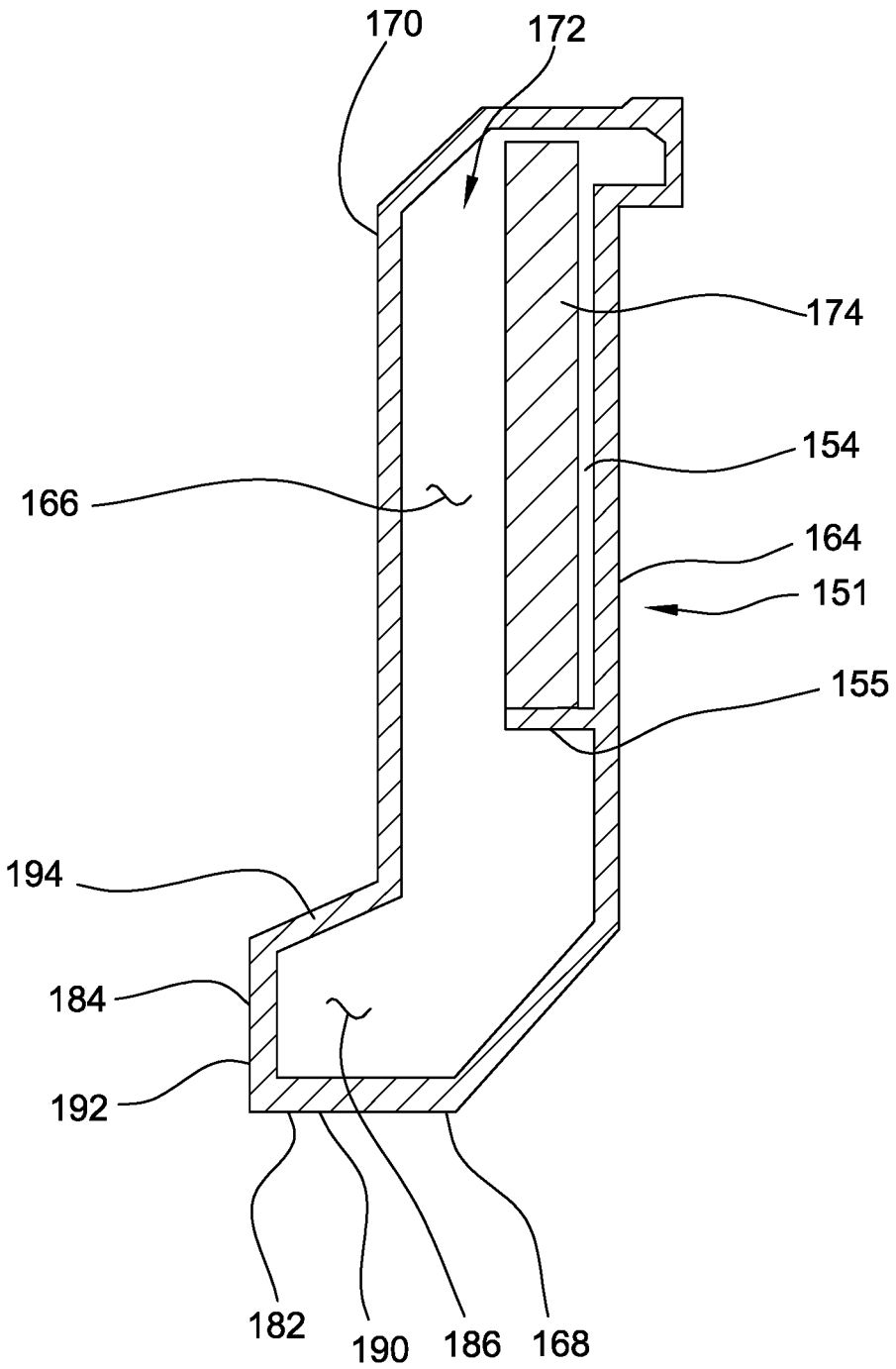


FIG. 2

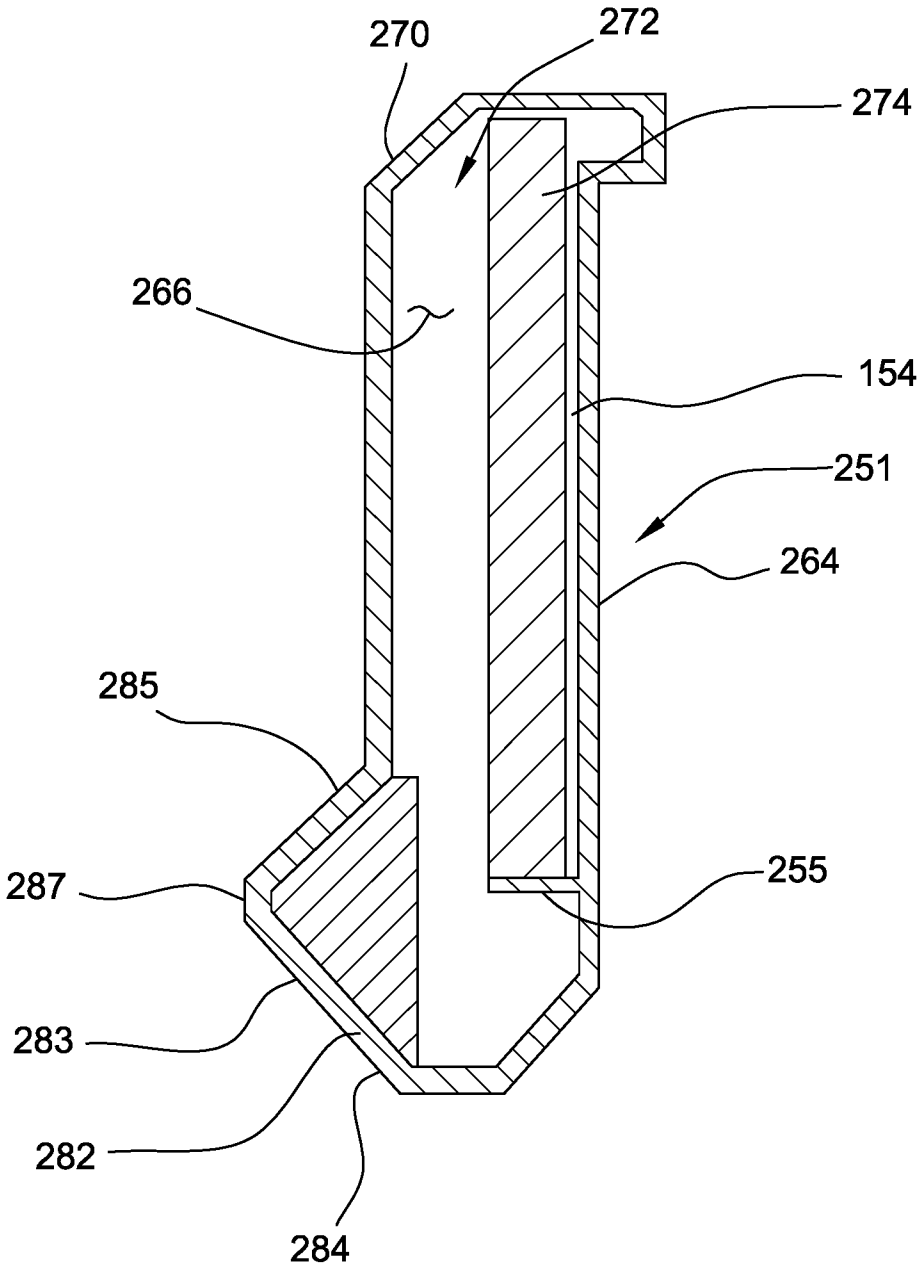


FIG. 3

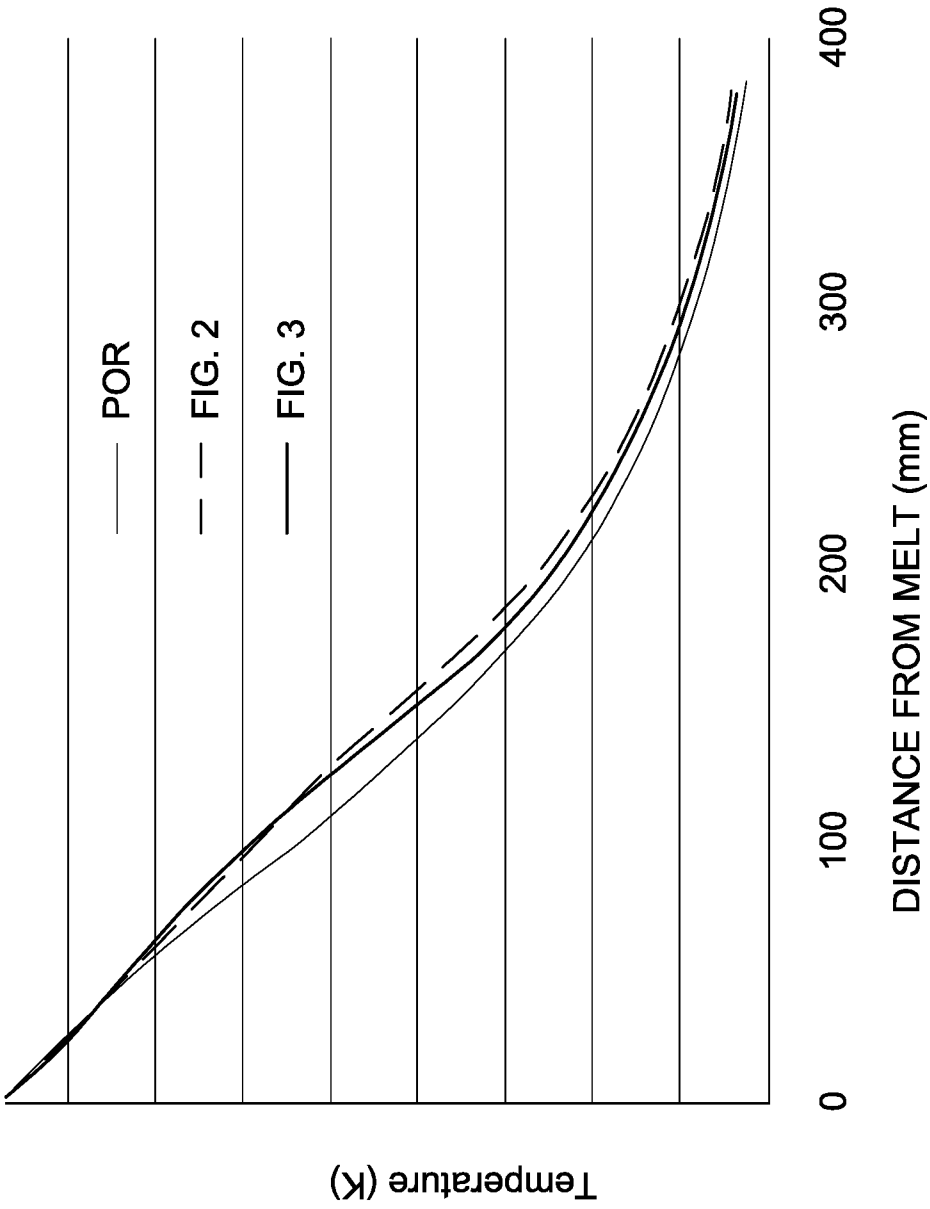

POR
FIG. 2
FIG. 3
0
100
200
300
400
DISTANCE FROM MELT (mm)
Temperature (K)

FIG. 4

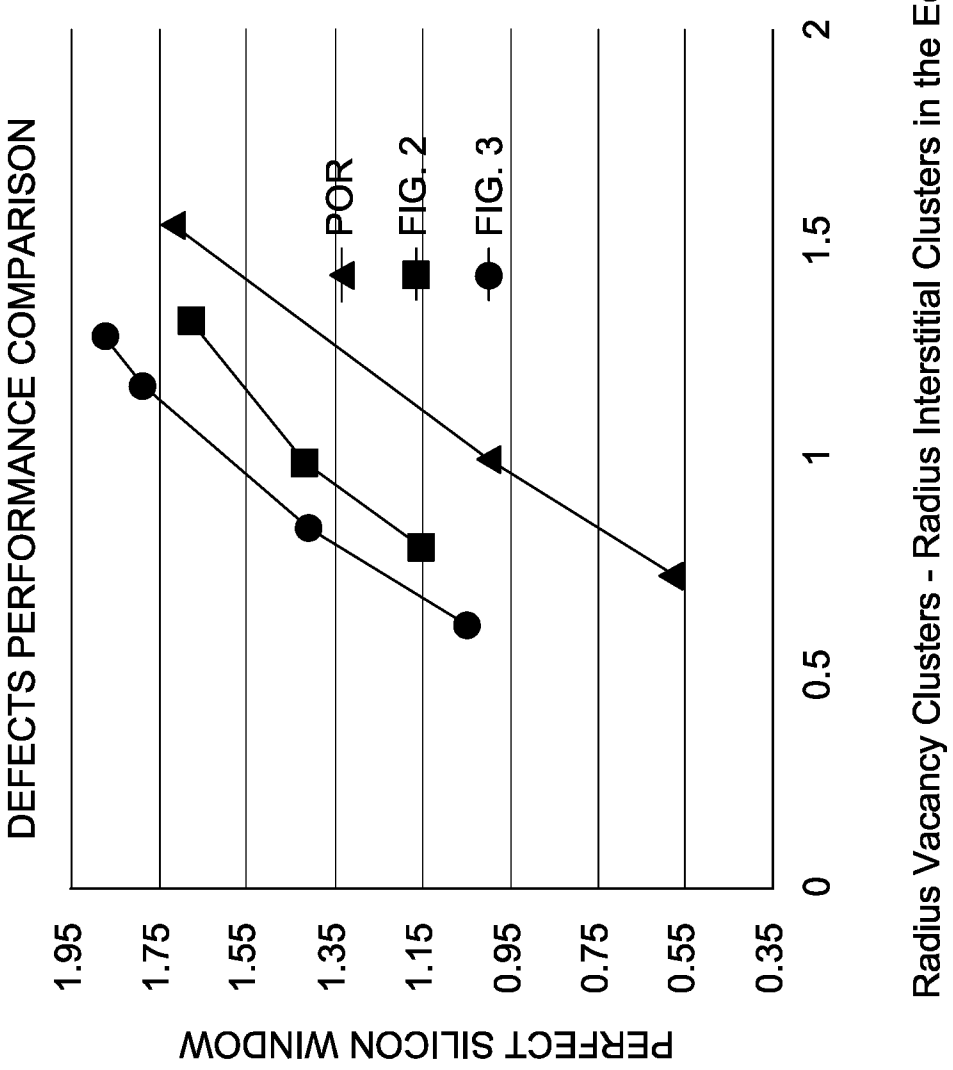

DEFECTS PERFORMANCE COMPARISON
POR
FIG. 2
FIG. 3
PERFECT SILICON WINDOW
1.95
1.75
1.55
1.35
1.15
0.95
0.75
0.55
0.35
0
0.5
1
1.5
2
Radius Vacancy Clusters - Radius Interstitial Clusters in the Edge Ring

FIG. 5

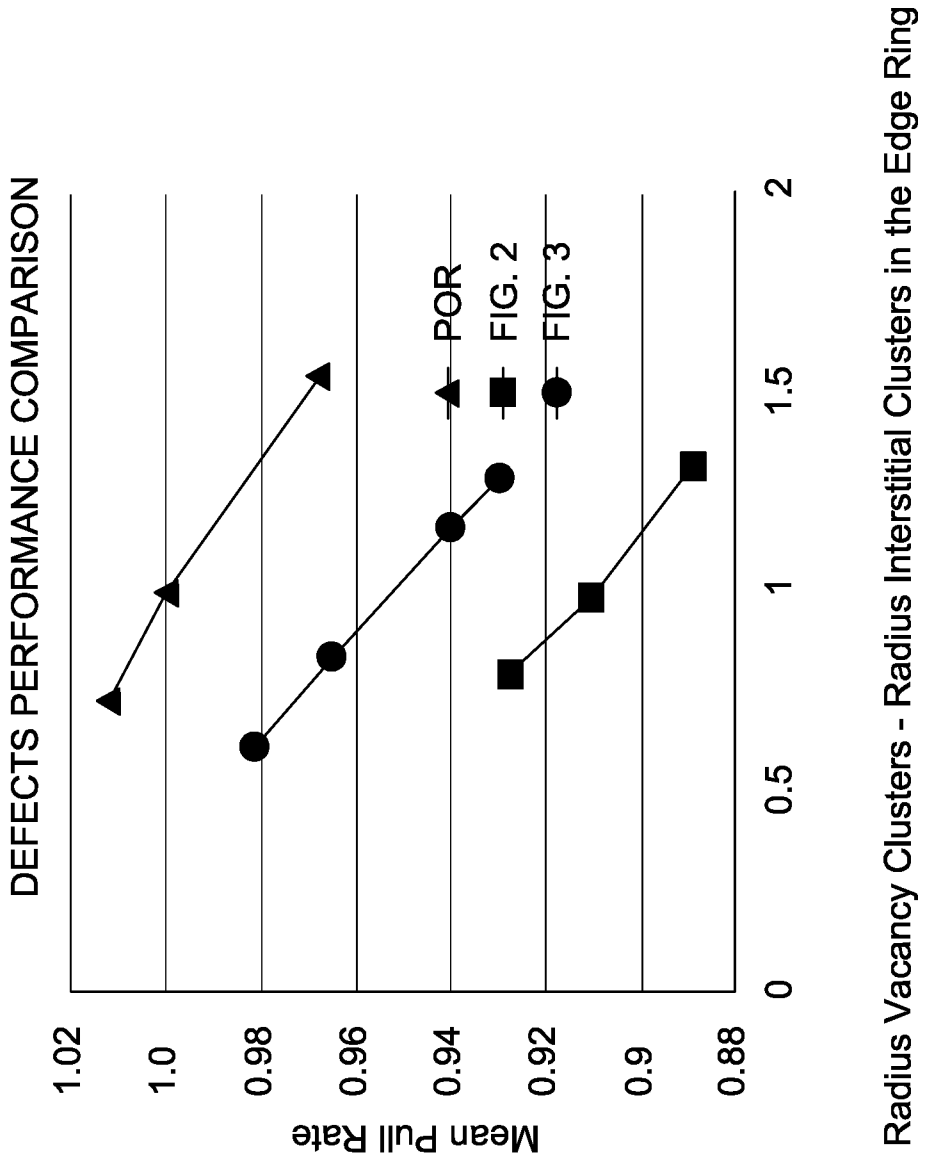

DEFECTS PERFORMANCE COMPARISON
Mean Pull Rate
1.02
1.0
0.98
0.96
0.94
0.92
0.9
0.88
0
0.5
1
1.5
2
POR
FIG. 2
FIG. 3
Radius Vacancy Clusters - Radius Interstitial Clusters in the Edge Ring

FIG. 6