FIG. 1

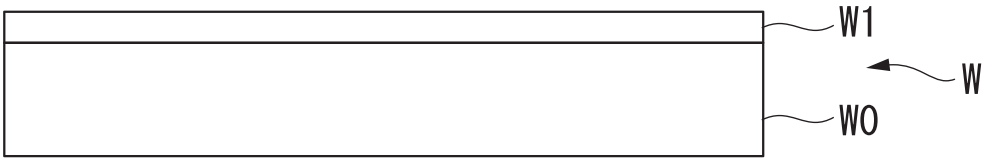


FIG. 2

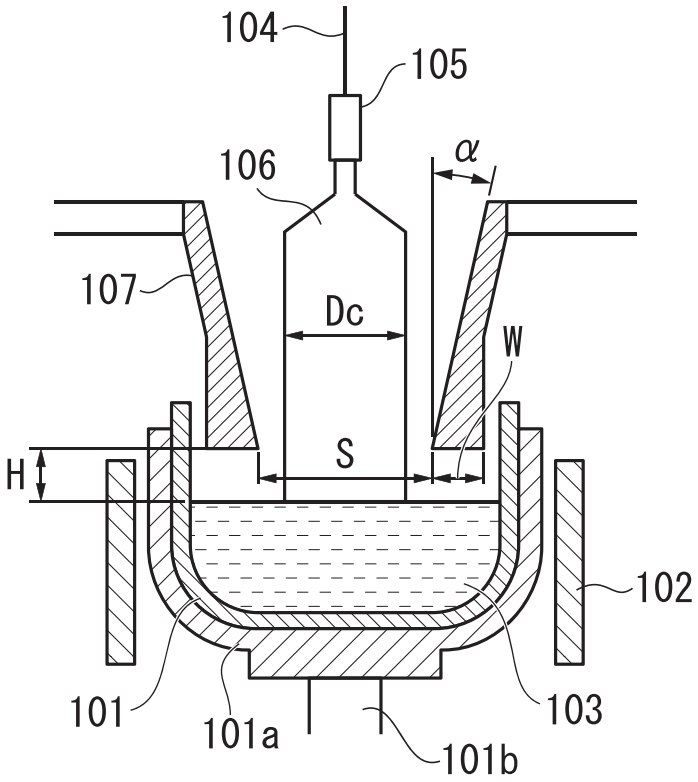


FIG. 3

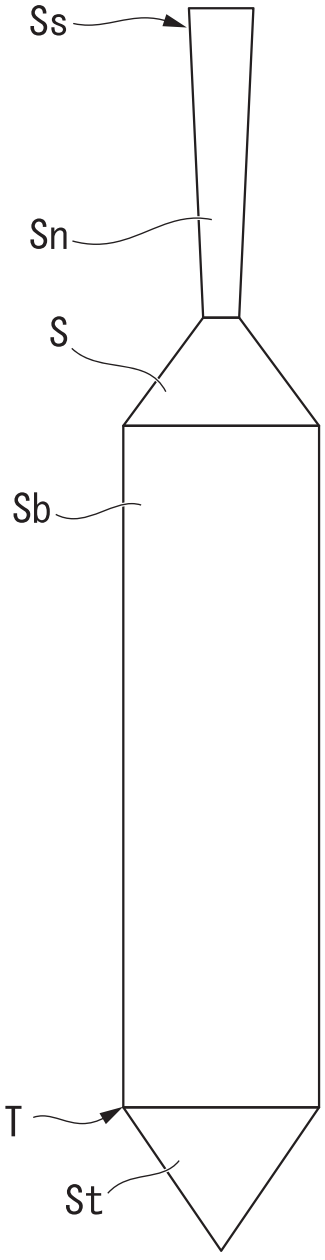


FIG. 4A

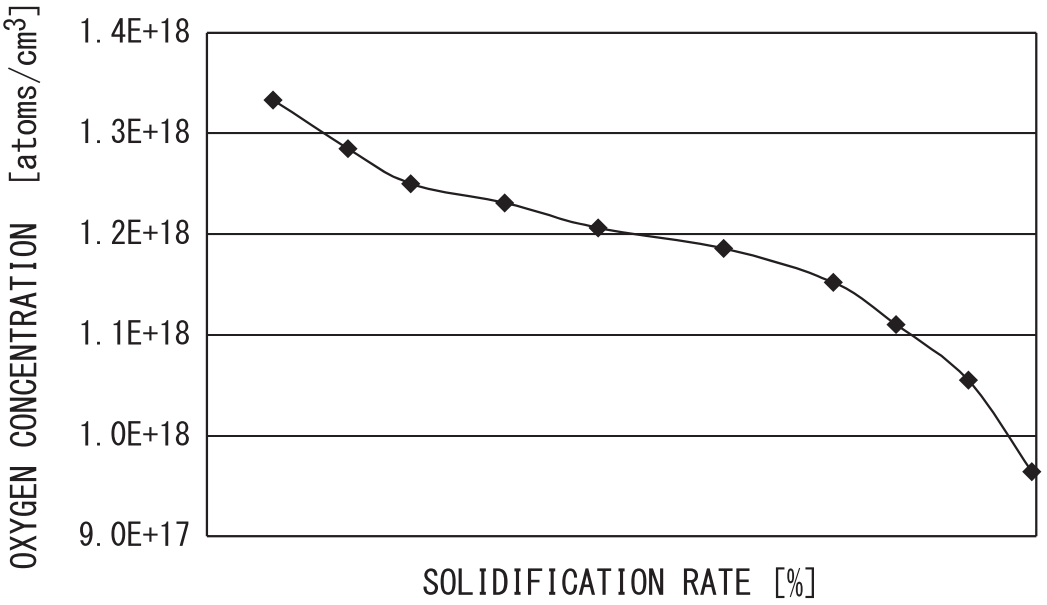
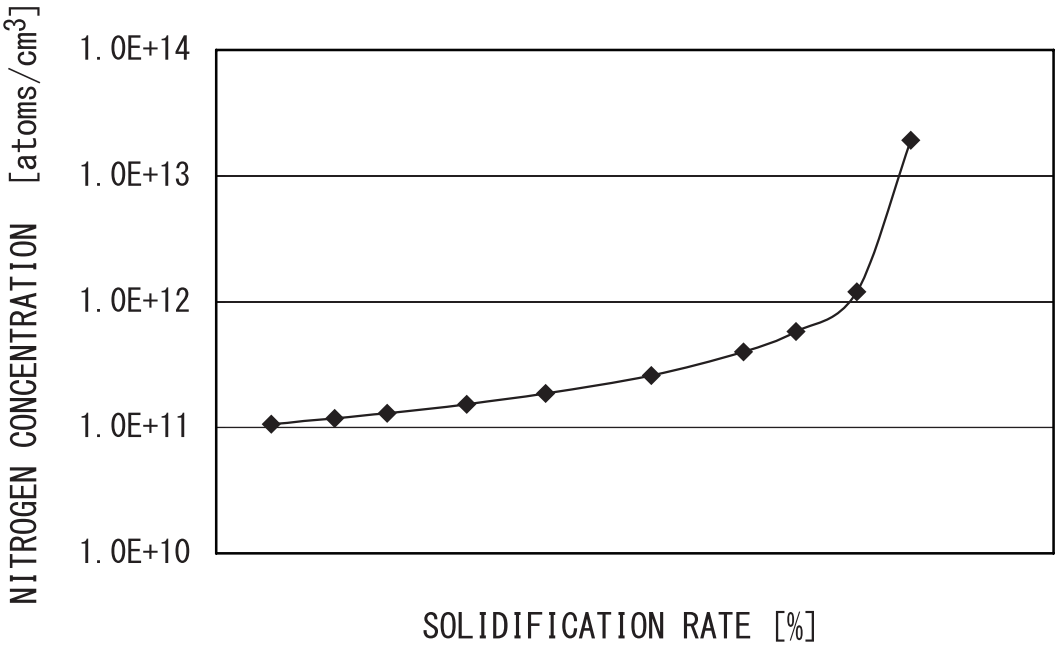

OXYGEN CONCENTRATION [atoms/cm3]
1.4E+18
1.3E+18
1.2E+18
1.1E+18
1.0E+18
9.0E+17
SOLIDIFICATION RATE [%]

FIG. 4B


NITROGEN CONCENTRATION [atoms/cm3]
1.0E+14
1.0E+13
1.0E+12
1.0E+11
1.0E+10
SOLIDIFICATION RATE [%]