

SHROUD COOLING ASSEMBLY FOR GAS
TURBINE ENGINE

ABSTRACT OF THE DISCLOSURE

To cool the shroud assembly in the high pressure turbine section of a gas turbine engine, high pressure cooling air is directed in metered flow to baffle plenums and thence through baffle perforations to impingement cool the rails and back surfaces of the shroud. Impingement cooling air then flows through elongated, convection cooling passages in the shroud sections and exits to flow along the shroud front surface with the main gas stream to provide film cooling. The aft rail of the shroud sections is provided with one or more cooling holes to impingement cool the annular retaining ring or C-clip retaining the shroud sections on the shroud hangers. This cooling air then travels aftward on the inboard side of the C-clip to provide convection cooling of the C-clip. In an alternative embodiment, cooling air is directed at the aft corners of the shroud base to avoid overheating.

Figure 1