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Theuer et al.

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(54) **METHOD AND APPARATUS FOR GAS TURBINE COMBUSTOR INNER CAP AND HIGH FREQUENCY ACOUSTIC DAMPERS**

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See application file for complete search history.

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(57) **ABSTRACT**

A method of making a combustor cap assembly uses an additive manufacturing process of consecutively adding material in layers along an upstream axial build direction starting from a base side positioned transverse to the upstream axial build direction. The base side has at least one acoustic port. A bump side extends from the base side in the upstream axial build direction and has at least one damper projecting from the bump side. The damper has at least one inclined face forming an angle with the upstream axial build direction of less than or equal to 45 degrees. The resulting cap assembly includes a hot side with an acoustic port and a cold side with at least one damper with an inclined face and a damper chamber in communication with the acoustic port.

17 Claims, 13 Drawing Sheets

