

ESTABLISHING A THROAT AREA OF A GAS TURBINE NOZZLE, AND A TECHNIQUE FOR MODIFYING THE NOZZLE VANES

ABSTRACT

A final throat area of a gas turbine nozzle circumferential structure is established by providing at least two gas turbine nozzle vanes (42), and determining a pairwise initial throat area between each pair of gas turbine nozzle vanes (42). For each pair of gas turbine nozzle vanes (42) whose pairwise initial throat area is not within the final pairwise throat area target range, a trailing edge (50) of at least one of the gas turbine nozzle vanes (42) is extended responsive to the step of determining the initial pairwise throat area, so that a final pairwise throat area is within a final pairwise throat area target range. A nozzle plurality of pairs of gas turbine nozzle vanes (42) that together comprise the gas turbine nozzle circumferential structure may be selected so that a sum of their final pairwise throat areas is within a final total throat area target range. The trailing edge (50) may be extended for this or other purposes by affixing an extension wire (100) to the trailing edge (50) extending lengthwise along the trailing edge (50), applying a braze material (104) to the extension wire (100) and the trailing edge (50), and heating the braze material (104) to a brazing temperature to melt at least a portion of the braze material (104) and, upon cooling, to bond the extension wire (100) and the braze material (104) to the trailing edge (50).

Fig. 6



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