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Yamaguchi

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(54) **PLASMA CUTTING METHOD, DEVICE AND GAS SUPPLY SYSTEM FOR PLASMA CUTTING TORCH**

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(57) **ABSTRACT**

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(52) **U.S. Cl.** **219/121.39; 219/121.44; 219/121.55**

(58) **Field of Search** 219/121.5, 121.39, 219/121.44, 121.59, 121.55, 121.51, 74, 75, 121.46

In oxygen plasma cutting, wear of the nozzle and electrode is reduced. Hafnium and/or zirconium are employed for the electrode material. Pure nitrogen gas is employed as the working gas in pilot arc formation. During cutting, a mixed gas of oxygen and nitrogen of oxygen concentration 70 to 95 mol % (preferably at least 80 mol %) and of nitrogen concentration 30 to 5 mol % (preferably 5 to 10 mol %) is employed as the working gas. The electrode is nitrided by using pure nitrogen gas as working gas from the point where cutting is terminated and the arc about to be extinguished onwards.

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15 Claims, 12 Drawing Sheets

