

Abstract

Method of Repairing Metallic Alloy Articles, Such as Gas Turbine Engine Components

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A method of repairing a metallic alloy article having a defect cavity greater than about 0.010 inches (2.5×10^{-4} m) in maximum width is disclosed. One aspect of the invention includes providing a first metallic filler material (10) in the defect cavity such that the first metallic filler material (10) substantially fills the cavity. The composition of the first metallic filler material (10) corresponds substantially to that of the metallic article. A second metallic filler material (12) is provided over the first metallic filler material (10). The second metallic filler material (12) includes between about 0 wt. % and about 40 wt. % metallic filler material of a composition corresponding substantially to the metallic article, and between about 100 wt. % and about 60 wt. % metallic filler material having the same basis as the composition of the metallic alloy article and including a melting point depressant in an amount substantially in excess of that in the metallic alloy article. The article is thermally processed through a heat treatment to effect an isothermal solidified repair.

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