

Title (en)

PROCESS FOR INCREASING THE FATIGUE STRENGTH AND DECREASING THE CRACKING SUSCEPTIBILITY AT A HIGH TEMPERATURE OF A WORK PIECE MADE FROM AN OXIDE DISPERSION-HARDENED NICKEL-BASE SUPER ALLOY

Publication

EP 0318887 B1 19930811 (DE)

Application

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Priority

CH 467487 A 19871201

Abstract (en)

[origin: EP0318887A1] The fatigue strength at high temperatures and during the temperature cycle of a workpiece (2) consisting of an oxide dispersion-hardened nickel-based superalloy is increased by improving the ductility of its surface zone (5) by cold-working the latter at room temperature to a depth of at least 100 μm by at least an amount which corresponds to a plastic extension of 2%. The susceptibility to cracking at high temperatures is simultaneously reduced. <IMAGE>

IPC 1-7

C22F 1/10

IPC 8 full level

C22F 1/10 (2006.01)

CPC (source: EP)

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Citation (examination)

- Z. MATALLKDE., Band 77, Nr. 5, Mai 1986, Seiten 322-337; B. SCHOLTES et al.: "Auswirkungen mechanischer Randschichtverformungen auf das Festigkeitsverhalten metallischer Werkstoffe" * Zusammenfassung; Figur 1 *
- J.O. ALMEN et al.: "Residual stresses and fatigue in metals", 1963, McGRAW-Hill Book Co., Inc., Seiten 46-58, New York, US; Kapitel 5 "Methods of producing residual stresses", Seiten 59-80: Kapitel 6 "Mechanical proceeding" * Seiten 64-65: "Shot peening"

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