Title (en)

METHOD FOR ENHANCING FRETTING FATIGUE RESISTANCE OF ALLOYS

Title (de)

VEFAHREN ZUR ERHÖHUNG DER KONTAKTERMÜDUNGSBESTÄNDIGKEIT VON LEGIERUNGEN

Title (fr)

PROCÉDÉ POUR AMÉLIORER LA RÉSISTANCE À LA FATIGUE PAR FROTTEMENT D'ALLIAGES

Publication

EP 2342364 A1 20110713 (EN)

Application

EP 09792182 A 20090902

Priority

- US 2009055753 W 20090902
- US 9359508 P 20080902

Abstract (en)

[origin: US2010051141A1] A method for increasing the fretting fatigue resistance of an alloy by prehardened a surface of the alloy followed by laser shock peening the prehardened surface. In one exemplary embodiment, an orthopedic prosthesis is formed from a titanium alloy and subjected to surface nitriding followed by laser shock peening. By nitriding the titanium alloy, the hardness of the alloy's surface is increased. Then, by subjecting the nitrided surface of the alloy to laser shock peening, the fretting fatigue of the nitrided surface may be increased by more than 100%.

IPC 8 full level

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CPC (source: EP US)

C21D 1/78 (2013.01 - EP US); **C21D 10/005** (2013.01 - EP US); **C22F 1/10** (2013.01 - EP US); **C23C 8/24** (2013.01 - EP US); **C23C 8/36** (2013.01 - EP US); **C23C 8/80** (2013.01 - EP US)

Citation (search report)

See references of WO 2010028060A1

Citation (examination)

US 2008154369 A1 20080626 - BARR GEORGE A [US], et al

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