

Title (en)

APPARATUS AND METHOD FOR FORMING A WELD JOINT HAVING IMPROVED PHYSICAL PROPERTIES

Title (de)

VORRICHTUNG UND VERFAHREN ZUR HERSTELLUNG EINER SCHWEISSVERBINDUNG MIT VERBESSERTEN PHYSIKALISCHEN EIGENSCHAFTEN

Title (fr)

APPAREIL ET PROCEDE DE FORMATION DE SOUDURE AUX PROPRIETES PHYSIQUES AMELIOREES

Publication

**EP 1494832 A1 20050112 (EN)**

Application

**EP 03723799 A 20030325**

Priority

- US 0308747 W 20030325
- US 36762302 P 20020326
- US 0235214 W 20021101

Abstract (en)

[origin: WO03082512A1] The method and apparatus for performing the method of forming a weld joint of the present invention utilizes welding apparatus (100) having welded tool (102) and a compression tool (106) for inducing a layer of residual compressive stress along the surface of the weld line (18) and any heat affected regions with a controlled amount of cold working and surface hardening. In a preferred embodiment of the invention the compression tool (106) utilizes a single-point burnishing process to provide deep compression within the weld joint (20) with a minimal amount of cold working and surface hardening.

IPC 1-7

**B23K 31/02**; **B24B 39/00**

IPC 8 full level

**B23K 31/02** (2006.01); **B23K 20/12** (2006.01); **B23K 31/12** (2006.01); **B23K 37/08** (2006.01); **B24B 39/00** (2006.01); **C21D 7/04** (2006.01); **C21D 7/08** (2006.01)

CPC (source: EP)

**B23K 20/122** (2013.01); **B23K 31/12** (2013.01); **B24B 39/00** (2013.01); **C21D 7/04** (2013.01); **B23K 31/02** (2013.01)

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)

**WO 03082512 A1 20031009**; AU 2003230709 A1 20031013; CA 2480322 A1 20031009; EP 1494832 A1 20050112; EP 1494832 A4 20070404

DOCDB simple family (application)

**US 0308747 W 20030325**; AU 2003230709 A 20030325; CA 2480322 A 20030325; EP 03723799 A 20030325