

Title (en)

METHOD AND SYSTEM FOR LOCALLY REGULATING AND CONTROLLING METAL MEMBER RESIDUAL STRESS

Title (de)

VERFAHREN UND SYSTEM ZUR LOKALEN REGELUNG UND STEUERUNG DER RESTSPANNUNG EINES METALLELEMENTS

Title (fr)

PROCÉDÉ ET SYSTÈME PERMETTANT DE RÉGULER ET DE CONTRÔLER LOCALEMENT UNE CONTRAINTE RÉSIDUELLE D'ÉLÉMENT MÉTALLIQUE

Publication

EP 2918690 A1 20150916 (EN)

Application

EP 13871844 A 20130311

Priority

- CN 201310026962 A 20130121
- CN 201310026285 A 20130121
- CN 201310027192 A 20130121
- CN 201310026970 A 20130121
- CN 2013072423 W 20130311

Abstract (en)

A method and system for locally regulating and controlling a metal member residual stress, the method comprising: arranging one or more high-energy ultrasonic wave transducers (1) in or around a metal member area that the residual stress needs to be regulated and controlled, fixing the ultrasonic wave transducers (1) and controlling the ultrasonic wave transducers to emit high-energy ultrasonic waves, regulating and controlling the magnitude and direction of the residual stress value in the area by adjusting the parameters such as frequency, amplitude, phase and energy. The method and system effectively eliminate, inhibit and reestablish in situ local metal member residual stress, and have simple structure, easy operation, high efficiency, low cost, and reduced pollution.

IPC 8 full level

C21D 10/00 (2006.01); **C22F 3/00** (2006.01); **G05D 15/01** (2006.01)

CPC (source: EP)

C21D 10/00 (2013.01); **C22F 3/00** (2013.01)

Cited by

CN107202987A; RU2724209C1; US2021347095A1; US11745396B2

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2918690 A1 20150916; **EP 2918690 A4 20160720**; JP 2016505856 A 20160225; JP 2017071860 A 20170413; JP 6373935 B2 20180815; WO 2014110864 A1 20140724

DOCDB simple family (application)

EP 13871844 A 20130311; CN 2013072423 W 20130311; JP 2015552971 A 20130311; JP 2016218163 A 20161108