

Title (en)

TITANIUM ALLOY BOLT MANUFACTURING FACILITY AND METHOD FOR MANUFACTURING TITANIUM ALLOY BOLT USING SAME

Title (de)

ANLAGE ZUR HERSTELLUNG EINER TITANLEGIERTEN SCHRAUBE UND VERFAHREN ZUR HERSTELLUNG EINER TITANLEGIERTEN SCHRAUBE

Title (fr)

INSTALLATION POUR FABRIQUER UN BOULON EN ALLIAGE DE TITANE ET PROCÉDÉ DE FABRICATION D'UN BOULON EN ALLIAGE DE TITANE L'UTILISANT

Publication

EP 2543453 A1 20130109 (EN)

Application

EP 09852089 A 20091209

Priority

- KR 2009007354 W 20091209
- KR 20090121529 A 20091209
- KR 20090121534 A 20091209

Abstract (en)

This invention relates to a method and apparatus for manufacturing a titanium alloy bolt through a warm forging process. The apparatus includes a feeding device (100) for supplying raw material (W) which is cut into a fixed length from a titanium alloy rod, a loader (200) for carrying the raw material (W) supplied from the feeding device (100), a heating device (300) for heating the raw material (W), a forging device (400) provided with a forging die (420) which fabricates a forging (F) from the heated raw material (W), a guiding device (500) for conducting the heated raw material (W) into the forging die (420), a heat-treating device for heat-treating the forging (F), a peeling device for removing the oxidized layer on the hear-treated forging (F), a machining device for machining the desired portions of the forging (F) from which the oxidized layer is peeled, a form rolling device for forming a thread on an outer surface of the machined forging (F) in order to obtain the titanium alloy bolt, and a cleaning device for cleaning the entire surface of the titanium alloy bolt. Dimensional accuracy and mechanical properties of the titanium bolt, and productivity are improved by the present invention.

IPC 8 full level

B21K 1/44 (2006.01); **B21H 3/02** (2006.01); **B21J 1/06** (2006.01); **B21K 27/02** (2006.01); **B21K 29/00** (2006.01)

CPC (source: EP)

B21H 3/02 (2013.01); **B21K 1/44** (2013.01); **B21K 27/02** (2013.01); **B21K 29/00** (2013.01); **C22F 1/183** (2013.01); **B21J 1/06** (2013.01); **B21J 3/00** (2013.01); **B21J 5/02** (2013.01)

Cited by

IT201900018347A1; CN103128506A; CN106734796A; CN113714440A; US2023330739A1; WO2021069961A1

Designated contracting state (EPC)

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 SE SI SK SM TR

DOCDB simple family (publication)

WO 2011071196 A1 20110616; EP 2543453 A1 20130109; EP 2543453 A4 20170719; EP 2543453 B1 20200205

DOCDB simple family (application)

KR 2009007354 W 20091209; EP 09852089 A 20091209