

Title (en)

METHOD FOR PROCESSING ADVANCED HIGH STRENGTH STEEL

Title (de)

VERFAHREN ZUR VERARBEITUNG VON FORTSCHRITTLICHEM HOCHFESTEM STAHL

Title (fr)

PROCÉDÉ POUR LE TRAITEMENT D'UN ACIER À HAUTE RÉSISTANCE AVANCÉ

Publication

**EP 4153791 A1 20230329 (EN)**

Application

**EP 21809887 A 20210518**

Priority

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- US 2021032936 W 20210518

Abstract (en)

[origin: WO2021236619A1] A method of manufacturing an energy absorbing component for a vehicle is provided. The method includes heating a bainitic GENS steel material which has a microstructure including ferrite and bainite to a temperature above the Ac3 temperature to convert a portion of the ferrite and bainite to austenite. The method further includes forming while cooling the heated steel blank into a component in a temperature controlled steel die. During the cooling step, the steel material is cooled to a temperature below the Ms temperature to form retained austenite. A portion of the austenite transforms to martensite and bainite during the forming and cooling step. The method can further include heating the component to a temperature above the Ms temperature after the forming and cooling step to increase energy absorption characteristics. During a crash event, the strain imposed on the component converts retained austenite present in the component to martensite.

IPC 8 full level

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CPC (source: EP US)

**C21D 1/25** (2013.01 - EP); **C21D 1/673** (2013.01 - EP); **C21D 6/002** (2013.01 - EP); **C21D 7/13** (2013.01 - EP); **C21D 8/005** (2013.01 - US); **C21D 9/0068** (2013.01 - US); **C21D 9/48** (2013.01 - EP); **C22C 38/02** (2013.01 - EP); **C22C 38/04** (2013.01 - EP); **C22C 38/06** (2013.01 - EP); **C22C 38/20** (2013.01 - EP); **C22C 38/34** (2013.01 - EP US); **C22C 38/38** (2013.01 - EP US); **C22C 38/58** (2013.01 - EP); **C21D 2211/001** (2013.01 - EP US); **C21D 2211/002** (2013.01 - EP US); **C21D 2211/005** (2013.01 - EP US); **C21D 2211/008** (2013.01 - EP US)

Designated contracting state (EPC)

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