



US009410220B2

(12) **United States Patent**  
**Batiste et al.**

(10) **Patent No.:** **US 9,410,220 B2**  
(45) **Date of Patent:** **\*Aug. 9, 2016**

(54) **METHOD AND APPARATUS FOR TREATING A STEEL ARTICLE**

(58) **Field of Classification Search**

CPC ..... C21D 1/18; C21D 1/42  
USPC ..... 148/529  
See application file for complete search history.

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 532 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **13/838,693**

(22) Filed: **Mar. 15, 2013**

(65) **Prior Publication Data**

US 2013/0333811 A1 Dec. 19, 2013

**Related U.S. Application Data**

(60) Provisional application No. 61/661,540, filed on Jun. 19, 2012.

(51) **Int. Cl.**  
**C21D 1/78** (2006.01)  
**C21D 1/18** (2006.01)

(Continued)

(52) **U.S. Cl.**  
CPC . **C21D 1/78** (2013.01); **B23K 31/02** (2013.01);  
**C21D 1/18** (2013.01); **C21D 1/42** (2013.01);  
**Y02P 10/253** (2015.11)

(57) **ABSTRACT**

A method for forming and treating a steel article of a high strength and high ductility alloy particularly suited for use as armor plate. The method includes the steps of providing a starting material for the steel article, heating the starting material to a peak temperature range in less than ten seconds, holding the heated steel composition at the peak temperature range for between two and six seconds, quenching the heated steel composition from the peak temperature range to below 100° C. (212° F.) at a temperature rate reduction of 400 and 3000° C./sec (752 and 5432° F./sec), removing residual quench media from the surface of the quenched steel composition, tempering the quenched steel composition at a temperature of 100 to 260° C. (212 to 500° F.); and air cooling the tempered steel composition to less than 100° C. (212° F.) to form a steel having desired mechanical properties.

**110 Claims, 9 Drawing Sheets**

