

Title (en)

IMPROVED EDGE FORMABILITY IN METALLIC ALLOYS

Title (de)

VERBESSERTE KANTENFORMBARKEIT IN METALLISCHEN LEGIERUNGEN

Title (fr)

FORMABILITÉ DE BORD AMÉLIORÉE DANS LES ALLIAGES MÉTALLIQUES

Publication

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Application

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Abstract (en)

[origin: WO2018160387A1] This disclosure is directed at methods for mechanical property improvement in a metallic alloy that has undergone one or more mechanical property losses as a consequence of shearing, such as in the formation of a sheared edge portion or a punched hole. Methods are disclosed that provide the ability to improve mechanical properties of metallic alloys that have been formed with one or more sheared edges which may otherwise serve as a limiting factor for industrial applications.

IPC 8 full level

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CPC (source: EP KR)

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Citation (search report)

- [X] US 2016303635 A1 20161020 - BRANAGAN DANIEL JAMES [US], et al
- [X] EP 1264911 A2 20021211 - KAWASAKI STEEL CO [JP]
- [X] US 2014377584 A1 20141225 - HASEGAWA HIROSHI [JP], et al
- [X] US 2008000555 A1 20080103 - NONAKA TOSHIKI [JP], et al
- [X] F.G. CABALLERO ET AL: "Design of cold rolled and continuous annealed carbide-free bainitic steels for automotive application", MATERIALS & DESIGN, vol. 49, 1 August 2013 (2013-08-01), pages 667 - 680, XP055090881, ISSN: 0261-3069, DOI: 10.1016/j.matdes.2013.02.046

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DOCDB simple family (application)

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