

Title (en)  
SURFACE-TREATED STEEL SHEET MANUFACTURING METHOD

Title (de)  
HERSTELLUNGSVERFAHREN FÜR OBERFLÄCHENBEHANDELTES STAHLBLECH

Title (fr)  
PROCÉDÉ DE FABRICATION DE TÔLE D'ACIER TRAITÉE EN SURFACE

Publication  
**EP 2963159 A4 20161026 (EN)**

Application  
**EP 14756354 A 20140130**

Priority  
• JP 2013037451 A 20130227  
• JP 2014052051 W 20140130

Abstract (en)  
[origin: EP2963159A1] A method of producing a surface-treated steel sheet is provided. The method has a step of performing electrolytic treatment thereby to form a layer including a metal-oxygen compound on a surface of a steel sheet. The electrolytic treatment is performed so that the steel sheet is continuously fed into electrolytic treatment baths each including a treatment liquid and an electrode. The treatment liquid contains metal ions. The method is characterized in that: rolls provided for each of the electrolytic treatment baths (a roll for feeding the steel sheet into the electrolytic treatment bath and a roll for feeding the steel sheet out of the electrolytic treatment bath) comprise an energized roll that is electrically connected to a power source for flowing a direct current through the steel sheet and a non-energized roll that is not connected to a power source; and the energized roll is arranged such that, once the metal-oxygen compound has been formed by electrolytic treatment on a surface of the steel sheet to be in contact with the rolls, the metal-oxygen compound and the energized roll are not in contact with each other so as not to generate an arc spot.

IPC 8 full level  
**C25D 9/10** (2006.01); **C25D 9/04** (2006.01); **C25D 21/12** (2006.01); **C25D 17/10** (2006.01)

CPC (source: EP US)  
**C25D 3/44** (2013.01 - US); **C25D 3/54** (2013.01 - US); **C25D 5/04** (2013.01 - US); **C25D 7/00** (2013.01 - EP US); **C25D 9/04** (2013.01 - EP US); **C25D 9/10** (2013.01 - EP US); **C25D 21/12** (2013.01 - EP US); **C25D 17/10** (2013.01 - EP US)

Citation (search report)  
• [X] JP 2009084623 A 20090423 - NIPPON STEEL CORP  
• [X] US 6471848 B1 20021029 - ARAO KOZO [JP], et al  
• [A] JP S4916335 B1 19740422  
• See also references of WO 2014132734A1

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

DOCDB simple family (publication)  
**EP 2963159 A1 20160106**; **EP 2963159 A4 20161026**; CN 105102690 A 20151125; CN 105102690 B 20171212; JP 2014162978 A 20140908; JP 5671566 B2 20150218; US 2016002809 A1 20160107; WO 2014132734 A1 20140904

DOCDB simple family (application)  
**EP 14756354 A 20140130**; CN 201480011034 A 20140130; JP 2013037451 A 20130227; JP 2014052051 W 20140130; US 201414768657 A 20140130