

Title (en)  
LUBRICATION WITH SPRAY NOZZLES WITH MULTIPLE OIL INLET OPENINGS

Title (de)  
SCHMIERUNG MIT SPRITZDÜSEN MIT MEHREREN ÖLEINTRITTSÖFFNUNGEN

Title (fr)  
LUBRIFICATION À L'AIDE DE BUSES D'INJECTION DOTÉES DE PLUSIEURS ORIFICES D'ENTRÉE D'HUILE

Publication  
**EP 3092088 A1 20161116 (DE)**

Application  
**EP 14806199 A 20141118**

Priority  
• EP 14150400 A 20140108  
• EP 2014074844 W 20141118  
• EP 14806199 A 20141118

Abstract (en)  
[origin: WO2015104082A1] During the rolling of a metallic flat rolling stock (1) in a roll stand (2), lubricating oil (5) is sprayed onto the rolling stock (1) and/or at least one roll (3, 4) of the roll stand (2) by means of multiple spray nozzles (7) arranged beside one another. In each case, a mixing chamber (8) of a spray nozzle (7) is fed with a respective quantity of lubricating oil (5) via respective multiple oil inlet openings (9). The respective mixing chamber (8) is fed with compressed air (11) via respectively one air inlet opening (10). By means of the compressed air (11), the lubricating oil (5) is atomized in the respective mixing chamber (8) to form an aerosol and, via respectively at least one nozzle outlet (12), is sprayed onto the rolling stock (1) and/or the at least one roll (3, 4) of the roll stand (2).

IPC 8 full level  
**B21B 45/02** (2006.01)

CPC (source: EP RU US)  
**B05B 7/0483** (2013.01 - EP US); **B05B 7/0846** (2013.01 - EP US); **B05B 7/0876** (2013.01 - US); **B05B 13/0278** (2013.01 - US); **B21B 45/02** (2013.01 - RU); **B21B 45/0251** (2013.01 - EP US); **B21B 45/0233** (2013.01 - EP US)

Cited by  
EP3733317A1; WO2020221654A1; US11529660B2

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

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 2893986 A1 20150715**; CN 106029245 A 20161012; CN 106029245 B 20190531; EP 3092088 A1 20161116; EP 3092088 B1 20180502; JP 2017501889 A 20170119; JP 6321185 B2 20180509; RU 2016132146 A 20180213; RU 2016132146 A3 20180629; RU 2675413 C2 20181219; TR 201808864 T4 20180723; US 10780475 B2 20200922; US 2016325327 A1 20161110; WO 2015104082 A1 20150716

DOCDB simple family (application)  
**EP 14150400 A 20140108**; CN 201480072774 A 20141118; EP 14806199 A 20141118; EP 2014074844 W 20141118; JP 2016545279 A 20141118; RU 2016132146 A 20141118; TR 201808864 T 20141118; US 201415109067 A 20141118