

Title (en)
PIERCER PLUG

Title (de)
LOCHDORN

Title (fr)
PERCEUR-MANDRINEUR

Publication
EP 3767002 A1 20210120 (EN)

Application
EP 19767149 A 20190118

Priority
• JP 2018047307 A 20180314
• JP 2019001486 W 20190118

Abstract (en)
A piercer plug with increased wear resistance is provided. A piercer plug (10) includes: a plug body (11); and a sprayed coating (12) formed on the surface of the plug body (11). The sprayed coating (12) contains an iron-based alloy and oxides thereof. The chromium concentration determined by analyzing the sprayed coating (12) with X-ray fluorescence analysis is 3 to 20 mass %.

IPC 8 full level
C23C 4/06 (2016.01); **B21B 19/04** (2006.01); **B21B 25/00** (2006.01); **C22C 38/00** (2006.01); **C22C 38/12** (2006.01); **C23C 4/11** (2016.01); **C23C 4/123** (2016.01); **C23C 4/129** (2016.01); **C23C 4/131** (2016.01); **C23C 30/00** (2006.01); **G01N 23/223** (2006.01)

CPC (source: EP US)
B21B 25/00 (2013.01 - US); **C22C 38/00** (2013.01 - EP); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/08** (2013.01 - EP US); **C22C 38/12** (2013.01 - EP US); **C23C 4/06** (2013.01 - EP US); **C23C 4/11** (2016.01 - EP US); **C23C 4/123** (2016.01 - EP); **C23C 4/129** (2016.01 - EP); **C23C 4/131** (2016.01 - EP US); **C23C 30/00** (2013.01 - EP); **B21B 19/04** (2013.01 - EP US)

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 3767002 A1 20210120; **EP 3767002 A4 20210120**; BR 112020014527 A2 20201208; CN 111836911 A 20201027; JP 6954447 B2 20211027; JP WO2019176279 A1 20210107; MX 2020007617 A 20200914; US 2021101194 A1 20210408; WO 2019176279 A1 20190919

DOCDB simple family (application)
EP 19767149 A 20190118; BR 112020014527 A 20190118; CN 201980018646 A 20190118; JP 2019001486 W 20190118; JP 2020505625 A 20190118; MX 2020007617 A 20190118; US 201916971149 A 20190118