

Title (en)

METHOD FOR PRODUCING ATOMIZED METAL POWDER

Title (de)

VERFAHREN ZUR HERSTELLUNG VON ZERSTÄUBTEM METALLPULVER

Title (fr)

PROCÉDÉ DE PRODUCTION DE POUDRE MÉTALLIQUE ATOMISÉE

Publication

EP 3722028 A4 20201118 (EN)

Application

EP 18885010 A 20181205

Priority

- JP 2017234739 A 20171207
- JP 2018044727 W 20181205

Abstract (en)

[origin: EP3722028A1] [Object] Provided is a method for manufacturing atomized metal powder having a high amorphous material fraction by using a water atomizing method.[Solution] A method for manufacturing atomized metal powder in which atomized metal powder having an amorphous material fraction of 90% or more is obtained, the method including ejecting high-pressure water so as to collide with a molten metal stream flowing vertically downward, separating the molten metal stream into metal powder, and cooling the metal powder, in which the high-pressure water collides with the molten metal with a collision pressure of 20 MPa or higher, and in which a temperature of the molten metal and/or a temperature of the high-pressure water are controlled so that the high-pressure water is in a subcritical state or a supercritical state on a collision surface with the molten metal.

IPC 8 full level

B22F 9/08 (2006.01); **B22F 9/00** (2006.01); **C22C 33/02** (2006.01); **C22C 38/00** (2006.01)

CPC (source: EP KR US)

B22F 9/002 (2013.01 - EP); **B22F 9/082** (2013.01 - EP KR US); **C22C 1/0433** (2013.01 - KR); **C22C 1/1042** (2013.01 - KR); **C22C 33/0207** (2013.01 - EP); **C22C 33/0278** (2013.01 - EP); **C22C 33/0285** (2013.01 - EP); **C22C 38/002** (2013.01 - EP); **C22C 38/02** (2013.01 - EP); **C22C 38/10** (2013.01 - EP); **C22C 38/105** (2013.01 - EP); **C22C 38/16** (2013.01 - EP); **B22F 2009/0828** (2013.01 - EP US); **B22F 2009/0832** (2013.01 - KR); **B22F 2009/086** (2013.01 - US); **B22F 2009/0872** (2013.01 - EP); **B22F 2009/0888** (2013.01 - EP KR); **B22F 2301/15** (2013.01 - US); **B22F 2301/35** (2013.01 - KR US); **C22C 2200/02** (2013.01 - EP); **C22C 2202/02** (2013.01 - EP)

Citation (search report)

- [X] WO 2017175831 A1 20171012 - SINTOKOGIO LTD [JP] & EP 3441160 A1 20190213 - SINTOKOGIO LTD [JP]
- [X] JP 2017031464 A 20170209 - JFE STEEL CORP
- [X] JP 2008240041 A 20081009 - SEIKO EPSON CORP
- [X] US 2015114178 A1 20150430 - ISHIGAMI HIDEKI [JP], et al
- [A] EP 0131969 A2 19850123 - NIPPON KINZOKU CO LTD [JP]
- See references of WO 2019111951A1

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 3722028 A1 20201014; **EP 3722028 A4 20201118**; CA 3084963 A1 20190613; CA 3084963 C 20220503; CN 111432964 A 20200717; JP 6575723 B1 20190918; JP WO2019111951 A1 20191212; KR 102455104 B1 20221014; KR 20200078630 A 20200701; US 2020316688 A1 20201008; WO 2019111951 A1 20190613

DOCDB simple family (application)

EP 18885010 A 20181205; CA 3084963 A 20181205; CN 201880078464 A 20181205; JP 2018044727 W 20181205; JP 2019507867 A 20181205; KR 20207016126 A 20181205; US 201816769611 A 20181205