

Title (en)

METHOD FOR MANUFACTURING METAL PARTS AND METAL PARTS OBTAINED USING SPS SINTERING

Title (de)

VERFAHREN ZUR HERSTELLUNG VON METALLTEILEN UND METALLTEILEN, DIE DURCH SPS-SINTERN ERHALTEN WERDEN

Title (fr)

PROCÉDÉ DE FABRICATION DE PIÈCES MÉTALLIQUES ET PIÈCES MÉTALLIQUES OBTENUES À BASE DE FRITTAGE SPS

Publication

EP 4313446 A1 20240207 (FR)

Application

EP 22718747 A 20220331

Priority

- FR 2103304 A 20210331
- FR 2022050614 W 20220331

Abstract (en)

[origin: WO2022208032A1] The invention relates to a method for manufacturing a metallurgical part, characterized by the following steps: - using a powder of a metallurgical material having a particle size of less than 400 micrometers, - reducing the size of the grains and/or crystallites of the powder so as to obtain clusters having a characteristic size of less than 1000 micrometers, and a mean crystallite size of less than 200 nanometers, - sintering the reduced powder using an SPS sintering method, so that the metallurgical part obtained has a Vickers hardness of greater than 320 Hv.

IPC 8 full level

B22F 1/05 (2022.01); **B22F 3/105** (2006.01); **B22F 3/24** (2006.01); **B22F 7/06** (2006.01); **B22F 7/08** (2006.01); **B22F 9/04** (2006.01);
B22F 9/08 (2006.01); **C22C 1/04** (2023.01); **C22C 1/05** (2023.01); **C22C 1/10** (2023.01); **C22C 32/00** (2006.01); **C22C 33/02** (2006.01)

CPC (source: EP)

B22F 1/05 (2022.01); **B22F 3/105** (2013.01); **B22F 7/06** (2013.01); **B22F 7/08** (2013.01); **B22F 9/04** (2013.01); **B22F 9/082** (2013.01);
C22C 1/0416 (2013.01); **C22C 1/0433** (2013.01); **C22C 1/0458** (2013.01); **C22C 1/05** (2013.01); **C22C 1/10** (2013.01); **C22C 32/0026** (2013.01);
C22C 32/0031 (2013.01); **C22C 32/0036** (2013.01); **C22C 32/0052** (2013.01); **C22C 32/0057** (2013.01); **C22C 32/0063** (2013.01);
C22C 32/0068 (2013.01); **C22C 32/0073** (2013.01); **C22C 33/0285** (2013.01); **C22C 33/0292** (2013.01); **B22F 2003/1051** (2013.01);
B22F 2003/242 (2013.01); **B22F 2003/248** (2013.01); **B22F 2999/00** (2013.01)

C-Set (source: EP)

B22F 2999/00 + B22F 7/08 + B22F 2003/242 + B22F 2003/1051

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

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

WO 2022208032 A1 20221006; EP 4313446 A1 20240207; FR 3121374 A1 20221007

DOCDB simple family (application)

FR 2022050614 W 20220331; EP 22718747 A 20220331; FR 2103304 A 20210331