Title (en)

Sintered materials for valve guides and production methods therefor

Title (de)

Gesinterte Materialien für Ventilführungen und Herstellungsverfahren dafür

Title (fr)

Matériaux frittés pour guides de soupape et procédés de production associés

Publication

**EP 2436463 A3 20120711 (EN)**

Application

**EP 11007891 A 20110928**

Priority

JP 2010222975 A 20100930

Abstract (en)

[origin: EP2436463A2] A sintered material for valve guides consists of, by mass %, 1.3 to 3 % of C, 1 to 4 % of Cu, and the balance of Fe and inevitable impurities. The sintered material exhibits a metallic structure made of pores and a matrix, the matrix is a mixed structure of a pearlite phase, a ferrite phase, an iron carbide phase, and a copper phase, and a part of the pores includes graphite that is dispersed therein. The iron carbide phase is dispersed at 3 to 25 % by area ratio and the copper phase is dispersed at 0.5 to 3.5 % by area ratio with respect to a cross section of the metallic structure, respectively.

IPC 8 full level

**B22F 3/10** (2006.01); **B22F 3/11** (2006.01); **B22F 5/00** (2006.01); **C22C 33/02** (2006.01); **C22C 38/00** (2006.01); **F01L 3/02** (2006.01)

CPC (source: EP KR)

**B22F 3/1028** (2013.01 - EP KR); **B22F 3/11** (2013.01 - EP KR); **B22F 5/008** (2013.01 - EP KR); **C22C 9/00** (2013.01 - EP KR); **C22C 9/02** (2013.01 - EP KR); **C22C 13/00** (2013.01 - EP KR); **C22C 33/0264** (2013.01 - EP KR); **C22C 38/008** (2013.01 - EP KR); **C22C 38/16** (2013.01 - EP KR); **F01L 3/02** (2013.01 - EP KR)

Citation (search report)

- [A] US 6012703 A 20000111 - HAYASHI KOICHIRO [JP], et al
- [A] US 2002023518 A1 20020228 - CHIKAHATA KATSUNAO [JP], et al
- [AD] US 2005063856 A1 20050324 - MIYASAKA MOTOHIRO [JP]
- [A] EP 0481763 A1 19920422 - HITACHI POWDERED METALS [JP]

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 2436463 A2 20120404**; **EP 2436463 A3 20120711**; **EP 2436463 B1 20130710**; CN 102443739 A 20120509; CN 102443739 B 20140507; JP 2012092441 A 20120517; JP 5783457 B2 20150924; KR 101365816 B1 20140220; KR 20120034052 A 20120409

DOCDB simple family (application)

**EP 11007891 A 20110928**; CN 201110315889 A 20110930; JP 2011211843 A 20110928; KR 20110099927 A 20110930