

Title (en)

Article protected against high temperature corrosion and reciprocating piston internal combustion engine or turbine or combustion unit containing the article

Title (de)

Werkstück mit einem Schutz gegen Hochtemperaturkorrosion, sowie Hubkolbenbrennkraftmaschine, Turbine oder Verbrennungsanlage mit einem solchen Werkstück

Title (fr)

Pièce protégée contre la corrosion à haute température et moteur

Publication

EP 1752561 A1 20070214 (DE)

Application

EP 06405297 A 20060711

Priority

- EP 06405297 A 20060711
- EP 05405469 A 20050810

Abstract (en)

Workpiece protected against high temperature corrosion by the presence of a low melting vanadium phase with a surface edge layer including one of: Ca, Mg, Ta, Y, Na, Zn, Pb, Si, Ni and Co, so that in use because of chemical reaction between one of these elements and the vanadium and/or vanadium compounds and/or a low melting vanadium phase a high melting vanadium phase is formed and formation of a low melting vanadium phase is prevented. An independent claim is included for an internal combustion engine, especially a large two-stroke diesel engine (sic), turbine or refuse incineration unit (sic) involving the above workpiece.

IPC 8 full level

C23C 30/00 (2006.01); **C23C 4/06** (2016.01); **F01N 13/16** (2010.01); **F02B 77/02** (2006.01); **F02B 77/04** (2006.01)

CPC (source: EP)

C23C 4/04 (2013.01); **C23C 4/08** (2013.01); **C23C 26/02** (2013.01); **C23C 30/00** (2013.01); **F01D 5/286** (2013.01); **F01D 5/288** (2013.01); **F02B 77/02** (2013.01); **F02B 77/04** (2013.01); **F23G 5/48** (2013.01); **F23M 5/00** (2013.01); **F23R 3/002** (2013.01); **F05D 2220/40** (2013.01); **F05D 2230/90** (2013.01); **F23M 2900/05004** (2013.01)

Citation (search report)

- [X] GB 2197344 A 19880518 - ELF FRANCE
- [X] WO 9743457 A1 19971120 - MAN B & W DIESEL GMBH [DK], et al
- [X] DE 10204812 A1 20030814 - MAN B & W DIESEL AS KOPENHAGEN [DK]
- [X] DE 3444456 C1 19851219 - MAN B & W DIESEL GMBH
- [X] US 4175163 A 19791120 - AZAMI TADAO [JP], et al
- [X] SCHLAGER, D. ET AL: "Protection against high temperature corrosion with laser welded claddings - applied and tested on exhaust valve discs of large diesel engines burning heavy fuel oil", MATERIALS AND CORROSION , 53(2), 103-110 CODEN: MTCREQ; ISSN: 0947-5117, 2002, XP002361318
- [X] GITANJALY ET AL: "Effects of MgO and CaO on hot corrosion of Fe base superalloy superfer 800H in Na2SO4-60% V2O5 environment", BR CORROS J; BRITISH CORROSION JOURNAL MARCH 2002, vol. 37, no. 1, March 2002 (2002-03-01), pages 56 - 62, XP002361436
- [X] WARNES B M ET AL: "Hot-corrosion resistance of Ni-Cr-Al-Y and Ni-18% Si alloys in sulfate eutectic and sulfate plus vanadate melts at 973 K", OXID MET; OXIDATION OF METALS DECEMBER 2002, vol. 58, no. 5-6, December 2002 (2002-12-01), pages 487 - 498, XP002361437
- [X] DIETZEL F: "The use of heavy fuel oil as a gas-turbine fuel", ENERGIE WEST GERMANY, vol. 28, no. 1, January 1976 (1976-01-01), pages 22 - 25, XP009059491, ISSN: 0013-7359
- [X] ELIAZ, N. ET AL: "Hot corrosion in gas turbine components", ENGINEERING FAILURE ANALYSIS , 9(1), 31-43 CODEN: EFANEM; ISSN: 1350-6307, 2002, XP002361438
- [X] SEIERSTEN M ET AL: "Sodium vanadate-induced corrosion of nickel and MCrAlY coatings on Inconel 600", MATERIALS SCIENCE AND TECHNOLOGY UK, vol. 3, no. 7, July 1987 (1987-07-01), pages 576 - 583, XP009059495, ISSN: 0267-0836

Cited by

EP2434216A1; EP2039412A3; EP2039412A2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA HR MK YU

DOCDB simple family (publication)

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