

Title (en)
INTERNAL COMBUSTION ENGINE

Title (de)
VERBRENNUNGSMOTOR

Title (fr)
MOTEUR À COMBUSTION INTERNE

Publication
EP 2175116 A1 20100414 (EN)

Application
EP 08827087 A 20080808

Priority
• JP 2008064304 W 20080808
• JP 2007208037 A 20070809

Abstract (en)
A heat-insulating thin layer formed on a wall surface, which faces the interior of a combustion chamber of the internal combustion engine, of a base material constituting the combustion chamber comprises a first heat-insulating material and a second heat-insulating material. The second heat-insulating material has a thermal conductivity not higher than that of the base material, and the first heat-insulating material has a thermal conductivity and a heat capacity per unit volume lower than those of the base material and also has a thermal conductivity and a heat capacity per unit volume lower than those of the second heat-insulating material. The first heat-insulating material having a low thermal conductivity and a low heat capacity per unit volume is mixed into the second heat-insulating material having high heat resistance and high strength. Thus, the first heat-insulating material can be protected against a high-temperature, high-pressure gas present in the combustion chamber.

IPC 8 full level
F02B 23/00 (2006.01); **F02F 1/00** (2006.01); **F02F 1/24** (2006.01); **F02F 3/12** (2006.01); **F02F 3/14** (2006.01)

CPC (source: EP)
F02B 77/02 (2013.01); **F02F 1/00** (2013.01); **F02F 1/18** (2013.01); **F02F 3/12** (2013.01); **F02F 3/14** (2013.01); **F02B 23/0672** (2013.01); **F02B 2023/0612** (2013.01); **F05C 2251/04** (2013.01); **F05C 2251/048** (2013.01)

Cited by
CN103080386A; DE102018124938B4; DE102012009029A1; DE102016100860B4; CN107269412A; EP2818677A4; DE102014224830A1; US2015300289A1; CN105017957A; US9617949B2; EP2436898A1; CN102444497A; DE102017221733A1; US8893693B2; US11300046B2; US9051876B2; US10393059B2; US10941299B2; US8813734B2; DE102014018694A1; US2018106212A1; US10539093B2; WO2012073101A3; WO2022042937A1; US10718291B2; US9683480B2; DE102014224830B4

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

Designated extension state (EPC)
AL BA MK RS

DOCDB simple family (publication)
EP 2175116 A1 20100414; **EP 2175116 A4 20120208**; **EP 2175116 B1 20190327**; JP 5629463 B2 20141119; JP WO2009020206 A1 20101104; WO 2009020206 A1 20090212

DOCDB simple family (application)
EP 08827087 A 20080808; JP 2008064304 W 20080808; JP 2009526502 A 20080808