

Title (en)
INTERNAL COMBUSTION ENGINE AND TRANSPORT EQUIPMENT

Title (de)
VERBRENNUNGSMOTOR UND TRANSPORTVORRICHTUNG

Title (fr)
MOTEUR À COMBUSTION INTERNE ET ÉQUIPEMENT DE TRANSPORT

Publication
EP 4224004 A4 20231122 (EN)

Application
EP 21957735 A 20211214

Priority
JP 2021045974 W 20211214

Abstract (en)
[origin: EP4224004A1] An internal combustion engine (100) includes a piston (40) formed of an aluminum alloy, the piston including a piston head (43) and a piston skirt (44) extending from an outer circumferential portion of the piston head; and a cylinder block (10) including a cylinder wall (12) including a sliding surface (12a), along which the piston is slidable. The cylinder block is formed of an aluminum alloy containing silicon, and includes a plurality of primary-crystal silicon grains (2) at the sliding surface. The piston skirt includes a resin layer (rl) formed on at least a part of an outer circumferential surface thereof.

IPC 8 full level
F02F 1/00 (2006.01)

CPC (source: EP)
F02F 3/105 (2013.01)

Citation (search report)

- [XY] JP H01253553 A 19891009 - HONDA MOTOR CO LTD
- [XY] JP 2004347053 A 20041209 - NISSAN MOTOR
- [Y] JP 2003013163 A 20030115 - TOYOTA MOTOR CORP
- [Y] JP H10331970 A 19981215 - NISSAN MOTOR
- [Y] JP H0788711 A 19950404 - TOSHIBA TUNGALOY CO LTD, et al
- See references of WO 2023112123A1

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)
EP 4224004 A1 20230809; EP 4224004 A4 20231122; WO 2023112123 A1 20230622

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