

Title (en)

MULTI-CYLINDER INTERNAL COMBUSTION ENGINE

Publication

EP 0232467 A3 19880622 (DE)

Application

EP 86114449 A 19861018

Priority

DE 3603674 A 19860206

Abstract (en)

[origin: US4759317A] A multi-cylinder internal combustion engine with liquid cooling comprises a cylinder head and a cylinder crankcase connected with the cylinder head; the crankcase includes cylinder liners circumcirculated by the cooling medium. For reducing the weight of the internal combustion engine, the cooling medium quantity is reduced and the cylinder head and the cylinder liners are acted upon with cooling medium by a cross-flow cooling system. Additionally, an internal combustion engine unit of relatively short construction and relatively light weight is created by the particular construction of the cylinder liners.

IPC 1-7

F02F 1/16; **F01P 3/02**; **F02F 1/14**

IPC 8 full level

F01P 3/02 (2006.01); **F02F 1/10** (2006.01); **F02F 1/14** (2006.01); **F02F 1/16** (2006.01)

CPC (source: EP US)

F01P 3/02 (2013.01 - EP US); **F02F 1/108** (2013.01 - EP US); **F02F 1/16** (2013.01 - EP US)

Citation (search report)

- [Y] DE 1476443 A1 19700205 - WHITE MOTOR CORP
- [Y] US 2078499 A 19370427 - FREDRIK LJUNGSTROM
- [A] EP 0110406 A2 19840613 - NISSAN MOTOR [JP]
- [A] GB 2010394 A 19790627 - DAIMLER BENZ AG

Cited by

CN111502855A; EP0356227A3; US5086733A; DE19838746A1; DE19838746C2; US11149679B2; US6167848B1; EP3865687A1

Designated contracting state (EPC)

DE ES FR GB IT NL SE

DOCDB simple family (publication)

EP 0232467 A2 19870819; **EP 0232467 A3 19880622**; **EP 0232467 B1 19900718**; DE 3603674 A1 19870813; DE 3603674 C2 19880225; DE 3672812 D1 19900823; ES 2017616 B3 19910301; JP S62186041 A 19870814; US 4759317 A 19880726

DOCDB simple family (application)

EP 86114449 A 19861018; DE 3603674 A 19860206; DE 3672812 T 19861018; ES 86114449 T 19861018; JP 30018686 A 19861218; US 1170087 A 19870206