

Title (en)

LUBRICATION SYSTEM WITH JET COOLING OF THE PISTONS OF AN INTERNAL-COMBUSTION ENGINE

Publication

EP 0347580 A3 19900314 (DE)

Application

EP 89108801 A 19890517

Priority

DE 3821302 A 19880624

Abstract (en)

[origin: EP0347580A2] The invention relates to a lubrication system with spray cooling of the pistons of an internal-combustion engine by means of spray nozzles whose cooling jets are directed onto the inner surfaces of the pistons of the internal-combustion engine. In order to ensure that the lubricant pressure builds up quickly after an internal-combustion engine is started, the lubricant supply to the spray nozzles is interrupted in this operating phase. Since the lubricating oil supply to the camshafts can be considerably reduced in the starting phase, without damaging the bearings, or can even be completely turned off, a common lubricating oil supply is provided for the spray nozzles and camshafts, which lubricating oil supply can be regulated centrally by means of control valves. It is advantageous that already existing lubricant channels can be used and the spray nozzles can be designed in a simple manner, without integrated control valves. It is furthermore advantageous that the spray nozzles no longer have to be arranged on the central main duct above the crankshaft, which is unfavourable for accessibility and spatial characteristics, but in the region of the camshafts, which can be arranged in a suitable lateral crankshaft region in the case of a V-engine.

IPC 1-7

F01M 1/16; **F01M 1/08**; **F01P 3/08**

IPC 8 full level

F01M 1/08 (2006.01); **F01M 1/16** (2006.01); **F01M 9/10** (2006.01); **F01P 3/08** (2006.01); **F01M 11/02** (2006.01)

CPC (source: EP US)

F01M 1/16 (2013.01 - EP US); **F01M 9/10** (2013.01 - EP US); **F01P 3/08** (2013.01 - EP US); **F01M 9/102** (2013.01 - EP US); **F01M 11/02** (2013.01 - EP US); **F02B 2275/34** (2013.01 - EP US)

Citation (search report)

- [A] US 2991770 A 19610711 - RAUSCH JOHN T
- [A] DE 1216014 B 19660505 - INT HARVESTER CO
- [A] US 2678702 A 19540518 - O'HARROW CHARLES T
- [AD] DE 2720034 A1 19771215 - CATERPILLAR TRACTOR CO

Cited by

EP0659989A1; US5503116A

Designated contracting state (EPC)

CH DE ES FR GB IT LI NL

DOCDB simple family (publication)

DE 3821302 C1 19890601; DE 58901738 D1 19920730; EP 0347580 A2 19891227; EP 0347580 A3 19900314; EP 0347580 B1 19920624; ES 2033047 T3 19930301; US 4936417 A 19900626

DOCDB simple family (application)

DE 3821302 A 19880624; DE 58901738 T 19890517; EP 89108801 A 19890517; ES 89108801 T 19890517; US 36879889 A 19890620