

Title (en)

Engine braking process for a four stroke internal combustion engine

Title (de)

Verfahren zur Motorbremsung mit einem 4-Takt-Verbrennungsmotor

Title (fr)

Procédé de freinage moteur pour moteur à combustion interne à quatre temps

Publication

EP 0736672 A3 19970319 (DE)

Application

EP 96102964 A 19960228

Priority

AT 59795 A 19950404

Abstract (en)

[origin: EP0736672A2] The IC engine has a braking control operated by a throttle valve in the exhaust duct. The exhaust valve (1) of each cylinder is partially opened during engine braking to increase the cylinder pressure during the compression stroke and thereby enhance the engine braking effect. A hydraulic servo system operates on the valve gear to open the valve. The hydraulic servo comprises a hydraulic cylinder incorporated into the rocker mechanism of the valve gear, or interposed between the valve and the cam drive. The system can be incorporated into existing engine designs.

IPC 1-7

F01L 13/02

IPC 8 full level

F01L 1/18 (2006.01); **F01L 1/24** (2006.01); **F01L 13/06** (2006.01); **F02D 9/06** (2006.01); **F02D 13/04** (2006.01); **F02B 75/02** (2006.01)

CPC (source: EP KR US)

F01L 1/181 (2013.01 - EP US); **F01L 13/06** (2013.01 - EP KR US); **F02D 13/04** (2013.01 - KR); **F02B 2075/027** (2013.01 - EP US)

Citation (search report)

- [A] US 5215054 A 19930601 - MENEELY VINCENT A [CA]
- [A] DE 3923371 C1 19900613
- [A] EP 0320536 A1 19890621 - DOORNES BEDRIJFSWAGEN FAB [NL]
- [A] US 4624224 A 19861125 - KODAMA HISASHI [JP], et al
- [A] US 1798938 A 19310331 - HALLET GEORGE E A
- [A] KORNER W -D ET AL: "DIE MOTORBREMSE VON NUTZFAHRZEUGEN - GRENZEN UND MOGLICHKEITEN ZUR WEITERENTWICKLUNG", ATZ AUTOMOBILTECHNISCHE ZEITSCHRIFT, vol. 90, no. 12, 1 December 1988 (1988-12-01), pages 671 - 675, XP000082904

Cited by

DE112005002543B4; EP2143894A1; EP2143895A1; DE102008032774A1; EP2305967A1; EP3187703A1; CN104813006A; EP2305968A1; CN108049929A; EP1526257A3; AT500958B1; AT510237A1; AT510237B1; AT510236A1; AT510236B1; EP3184760A1; EP1801392A3; DE19858213A1; DE19758372C2; AT502997B1; US10167751B2; EP1258603A1; US9976509B2; WO2017008857A1; WO2017173471A1; US8161936B2; US7556004B2; US8240288B2; EP2143896A1; DE102008061412A1; DE102008032775A1; EP2412955A1; US8931456B2; EP2412954A1; US8831861B2; EP1526257A2; EP2246545A1; DE102009019437A1; EP2679787A1; DE102012012875A1; US10669899B2

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