

Title (en)  
ENGINE WITH DOUBLE-ACTING PISTONS AND WITHOUT CONNECTING RODS

Publication  
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Application  
**EP 91830048 A 19910215**

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IT 4520390 A 19900226

Abstract (en)  
[origin: EP0454627A2] An internal combustion engine comprises a crank-case (7), a cylinder (21), a piston (1) reciprocatingly slidable in said cylinder, an output shaft (11) and means for transforming the reciprocating motion of the piston into a rotating motion of the output shaft (11). According to the invention, the reciprocating motion of the piston is transformed into a rotating motion of the shaft by means of a hypocycloid gear transmission (5, 6) comprising a pair of externally toothed gears (5) connected to each other by means of a curved shaft (4) and a pair of internally toothed gears (6) solid to the crank-case (7). During reciprocating motion of the piston in the cylinder, the externally toothed gears roll along the internally toothed gears and transmit their motion to the output shaft by means of a flywheel (10). <IMAGE>

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IPC 8 full level  
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CPC (source: EP)  
**F02B 75/002** (2013.01); **F02B 1/04** (2013.01)

Citation (search report)  
• [Y] WO 8907704 A1 19890824 - MAY CLAUDE HECTOR [GB]  
• [A] US 4864976 A 19890912 - FALERO AVELINO [US]  
• [A] DE 3607421 A1 19870910 - ZOTT KG [DE]  
• [A] EP 0265546 A1 19880504 - BESHORE CRAIG S  
• [Y] PATENT ABSTRACTS OF JAPAN vol. 12, no. 434 (M-764)(3281) 16 November 1988 & JP-A-63 167 031 ( TOSHIAKI TSUJIOKA ) 11 July 1988  
• PATENT ABSTRACTS OF JAPAN vol. 12, no. 434 (M-764)(3281) 16 November 1988 & JP-A-63 167 031 ( TOSHIAKI TSUJIOKA ) 11 July 1988

Cited by  
DE102005024361A1; WO2012148365A1; WO9911948A1

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