

Title (en)  
AN INTERNAL COMBUSTION ENGINE INCLUDING VARIABLE COMPRESSION RATIO

Title (de)  
BRENNKRAFTMASCHINE MIT VARIABLEM VERDICHTUNGSVERHÄLTNIS

Title (fr)  
MOTEUR À COMBUSTION INTERNE À TAUX DE COMPRESSION VARIABLE

Publication  
**EP 4006323 B1 20230607 (EN)**

Application  
**EP 20210071 A 20201126**

Priority  
EP 20210071 A 20201126

Abstract (en)  
[origin: EP4006323A1] An internal combustion engine (1) including variable compression ratio comprises a crankshaft (2) being rotatable about a crankshaft axis (3) and having a crankpin (4), wherein the crankshaft axis (3) and a centreline of the crankpin (4) span a crank plane, a connecting rod (4), a piston (8) being rotatably connected to a distal end portion of the connecting rod (4), and an eccentric member (5) being rotatably mounted on the crankpin (4) and comprising a bearing portion (6) having an outer circumferential wall which bears a proximal end portion of the connecting rod (4) such that the connecting rod (4) is rotatably mounted on the bearing portion (6). The bearing portion (9) is eccentrically disposed with respect to the crankpin (4). The eccentric member (5) is provided with an eccentric member gear (9) which is drivably coupled to a gear train (10) for rotating the eccentric member (5) with respect to the crankpin (4). The gear train (10) comprises a balancing gear (11, 19) which is rotatably mounted to the crankshaft (2) and rotates with respect to the crankshaft (2) about a balancing gear axis at the same speed as the eccentric member gear (9) under operating conditions. The crankshaft axis (3) and the balancing gear axis span a balancing gear plane. The balancing gear (11) has an eccentric centre of gravity (11a) which is located such that under operating conditions it causes a counter torque against a torque that is exerted by the eccentric member gear (9) onto the balancing gear (11, 19) due to an inertial force on the eccentric member (5).

IPC 8 full level  
**F02B 75/04** (2006.01)

CPC (source: EP)  
**F02B 75/048** (2013.01)

Cited by  
EP4183992A1; WO2023094039A1

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

DOCDB simple family (publication)  
**EP 4006323 A1 20220601; EP 4006323 B1 20230607**

DOCDB simple family (application)  
**EP 20210071 A 20201126**