

Title (en)

INTERNAL COMBUSTION ENGINE HAVING A LINEAR GENERATOR AND A ROTARY GENERATOR

Title (de)

VERBRENNUNGSKRAFTMASCHINE MIT LINEARGENERATOR UND ROTATORISCHEM GENERATOR

Title (fr)

MOTEUR À COMBUSTION INTERNE POURVU D'UN GÉNÉRATEUR LINÉAIRE ET D'UN GÉNÉRATEUR ROTATIF

Publication

EP 2964919 A1 20160113 (DE)

Application

EP 13709369 A 20130305

Priority

EP 2013054398 W 20130305

Abstract (en)

[origin: WO2014135198A1] The invention relates to an internal combustion engine having a piston (2) oscillating in a cylinder (1) linearly between a top dead centre (OT) and a bottom dead centre (UT). A crankshaft (5) is driven by the piston (2) by means of a connecting rod (6). The crankshaft (5) is connected to the rotor (7) of a first electrical machine (8). The rotor (7) of the first electrical machine (8) co-operates electromagnetically with a stator (10) of the first electrical machine (8). The stator (10) of the first electrical machine (8) is connected to a first current converter unit (11) for bidirectional transmission of electrical energy. The rotor (13) of a second electrical machine (14) is disposed on the piston (2). The stator (17) of the second electrical machine (14) is disposed on the piston (1). The rotor (13) of the second electrical machine (14) co-operates electromagnetically with the stator (17) of the second electrical machine (14). The stator (17) of the second electrical machine (14) is connected to a second current converter unit (18) for unidirectional or bidirectional transmission of electrical energy. The current converter units (11, 18) are controlled by a control device (19) common to the current converter units (11, 18).

IPC 8 full level

F02B 63/04 (2006.01); **F02B 75/28** (2006.01); **H02K 7/18** (2006.01)

CPC (source: EP US)

F02B 63/041 (2013.01 - EP US); **F02B 63/042** (2013.01 - EP US); **F02B 75/02** (2013.01 - US); **F02B 75/282** (2013.01 - EP US); **H02K 7/1815** (2013.01 - EP US); **H02K 7/1876** (2013.01 - EP US)

Citation (search report)

See references of WO 2014135198A1

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

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2014135198 A1 20140912; BR 112015021360 A2 20170718; CA 2903899 A1 20140912; CN 105189971 A 20151223; EP 2964919 A1 20160113; US 2016010544 A1 20160114; US 9885280 B2 20180206

DOCDB simple family (application)

EP 2013054398 W 20130305; BR 112015021360 A 20130305; CA 2903899 A 20130305; CN 201380076336 A 20130305; EP 13709369 A 20130305; US 201314772917 A 20130305