

Title (en)  
ENGINE AND VEHICLE

Title (de)  
MOTOR UND FAHRZEUG

Title (fr)  
MOTEUR ET VÉHICULE

Publication  
**EP 2949889 B1 20170315 (EN)**

Application  
**EP 15163610 A 20150415**

Priority  
JP 2014108987 A 20140527

Abstract (en)  
[origin: EP2949889A2] A straight line that passes through the center of rotation of a cam shaft and the center of rotation of a weight is assumed to be a vertical axis as seen from the axial direction of the cam shaft. A straight line that is orthogonal to the vertical axis and that passes through the center of rotation of the cam shaft is assumed to be a horizontal axis. A direction from the center of rotation of the cam shaft toward the center of rotation of the weight among directions parallel to the vertical axis is assumed to be a first vertical direction. One direction among the directions parallel to the horizontal axis is assumed to be a first horizontal direction. The center of gravity of the weight is disposed in a first region as seen from the axial direction of the cam shaft. The first region is located in the first vertical direction from the horizontal axis and in the first horizontal direction from the vertical axis. The weight includes a first portion that is disposed in the first region as seen from the axial direction of the cam shaft. In a closed state, the first portion includes a first protruding portion that protrudes to the outside of an external peripheral surface of the bearing as seen from the axial direction of the cam shaft.

IPC 8 full level  
**F01L 13/08** (2006.01)

CPC (source: EP)  
**F01L 13/08** (2013.01)

Cited by  
US2020173415A1; DE102016119105A1

Designated contracting state (EPC)  
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DOCDB simple family (publication)  
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**EP 15163610 A 20150415**; CN 201510276254 A 20150526; JP 2014108987 A 20140527; TW 104116116 A 20150520