

Title (en)
Adjustable Camshaft

Title (de)
Verstellbare Nockenwelle

Title (fr)
Arbre à came réglable

Publication
EP 2634385 B1 20160525 (DE)

Application
EP 13154654 A 20130208

Priority
DE 102012203145 A 20120229

Abstract (en)
[origin: EP2634385A1] The adjustable cam shaft (1) has an outer shaft (3) that is provided for coaxially surrounding an inner shaft (2). An annular collar (6) of cam portion is axially projected from a cam portion (5) of a cam (4). The annular collar is slidingly arranged with a radial gap (11) on the outer shaft. A retainer (7) is provided for pinning together the cam with the inner shaft by a pin (8). A seal portion is arranged in the region of the annular collar, for sealing the gap of annular collar.

IPC 8 full level
F01L 1/047 (2006.01)

CPC (source: EP US)
F01L 1/047 (2013.01 - EP US); **F01L 1/34413** (2013.01 - US); **F01L 2001/0473** (2013.01 - EP US); **Y10T 74/2102** (2015.01 - EP US)

Citation (opposition)
Opponent : ThyssenKrupp Presta TecCenter AG
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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)
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DE 102012203145 A1 20130829; JP 2013181539 A 20130912; JP 6110160 B2 20170405; US 2013220069 A1 20130829;
US 8851039 B2 20141007

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EP 13154654 A 20130208; CN 201310058641 A 20130225; DE 102012203145 A 20120229; JP 2013037619 A 20130227;
US 201313779245 A 20130227