

Title (en)
Oil Pan

Title (de)
Ölwanne

Title (fr)
Carter d'huile

Publication
EP 2330276 A1 20110608 (EN)

Application
EP 10166914 A 20100622

Priority
JP 2009275052 A 20091203

Abstract (en)
An oil pan made from a resin material, the oil pan includes: a bottom wall; and side walls; the bottom wall including a plurality of ribs protruding from the outer wall surface, each of the ribs having; a base end portion protruding from the outer wall surface of the bottom wall, and having a tip end surface, and a tip end portion protruding from the tip end surface, the tip end portion being connected with the base end portion at a connection portion, the connection portion at which the base end portion and the tip end portion are connected with each other, which has a width that is equal to or smaller than a width of a portion at a base end position of the base end portion, and equal to or smaller than a width of a portion at a tip end position of the tip end portion.

IPC 8 full level
F01M 11/00 (2006.01)

CPC (source: EP US)
F01M 11/0004 (2013.01 - EP US); **F01M 2011/002** (2013.01 - EP US); **F01M 2011/0087** (2013.01 - EP US); **F01M 2011/0091** (2013.01 - EP US)

Citation (applicant)
JP 2008121643 A 20080529 - MITSUBISHI HEAVY IND LTD

Citation (search report)
• [X] EP 2014882 A2 20090114 - BASF SE [DE]
• [X] WO 0183954 A1 20011108 - BASF AG [DE], et al
• [A] US 4898261 A 19900206 - WINBERG ARVID E [US], et al
• [A] US 3817354 A 19740618 - MEINERS E
• [A] US 1365438 A 19210111 - ADAMSON CECIL F

Cited by
EP2889459A1; CN113446084A; US9951666B2

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 SE SI SK SM TR

Designated extension state (EPC)
BA ME RS

DOCDB simple family (publication)
EP 2330276 A1 20110608; EP 2330276 B1 20121226; JP 2011117352 A 20110616; JP 5502441 B2 20140528; US 2011132913 A1 20110609

DOCDB simple family (application)
EP 10166914 A 20100622; JP 2009275052 A 20091203; US 81969210 A 20100621