

Title (en)  
VALVE, COMBUSTION-CHAMBER STRUCTURE, ENGINE AND VEHICLE

Title (de)  
VENTIL, MOTOR MIT BRENNKAMMERSTRUKTUR UND FAHRZEUG

Title (fr)  
SOUPAPE, MOTEUR DE STRUCTURE DE CHAMBRE DE COMBUSTION ET VÉHICULE

Publication  
**EP 3889401 A1 20211006 (EN)**

Application  
**EP 21160102 A 20210302**

Priority  
JP 2020065718 A 20200401

Abstract (en)  
A combustion chamber is partitioned by a cylinder block, a cylinder head, a piston, an intake valve, and an exhaust valve. The intake valve (exhaust valve) comprises an intake valve body including an umbrella part having a valve head and a valve face, a heat-insulation layer provided at the valve head and having smaller heat conductivity than the valve body, a heat-barrier layer provided to cover the valve head with the heat-insulation layer and having smaller heat conductivity than the valve body and the heat-insulation layer, and a heat-diffusion layer provided between the heat-insulation layer and the heat-barrier layer and having larger heat conductivity than the heat-insulation layer and the heat-barrier layer. The heat-diffusion layer comprises a contact portion which contacts with the cylinder head when the intake valve is closed.

IPC 8 full level  
**B21K 1/22** (2006.01); **F01L 3/04** (2006.01); **F01L 3/12** (2006.01); **F01L 3/20** (2006.01)

CPC (source: EP US)  
**F01L 3/02** (2013.01 - US); **F01L 3/04** (2013.01 - EP); **F01L 3/12** (2013.01 - EP); **F01L 3/18** (2013.01 - US); **F01L 3/20** (2013.01 - EP); **F01P 3/14** (2013.01 - US); **F01L 2303/00** (2020.05 - EP); **F01P 2003/006** (2013.01 - US)

Citation (applicant)  
JP 2018172997 A 20181108 - MAZDA MOTOR

Citation (search report)  
• [A] WO 2019167260 A1 20190906 - NITTAN VALVA [JP]  
• [A] DE 3125560 A1 19820527 - DANA CORP [US]  
• [A] US 2015040879 A1 20150212 - TOMITA TAKAHIRO [JP], et al  
• [A] JP S6196115 A 19860514 - MAZDA MOTOR

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)  
**EP 3889401 A1 20211006**; JP 2021161978 A 20211011; US 2021310401 A1 20211007

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**EP 21160102 A 20210302**; JP 2020065718 A 20200401; US 202017138513 A 20201230