

Title (en)  
JOINING DEVICE FOR AN ACTUATING LEVER AND A SUPPORTING ELEMENT OF A VALVE OPERATING MECHANISM OF A COMBUSTION ENGINE

Title (de)  
VERBINDUNGSVORRICHTUNG FÜR EINEN BETÄTIGUNGSEBEL UND EIN ABSTÜTZELEMENT EINER VENTILSTEUERUNG EINER BRENNKRAFTMASCHINE

Title (fr)  
DISPOSITIF DE LIAISON POUR LEVIER DE COMMANDE ET ELEMENT D'APPUI D'UN MECANISME D'ACTIONNEMENT DE SOUPAPE D'UN MOTEUR A COMBUSTION INTERNE

Publication  
**EP 1711691 A1 20061018 (DE)**

Application  
**EP 05714915 A 20050201**

Priority

- DE 2005000153 W 20050201
- DE 102004005831 A 20040206

Abstract (en)  
[origin: WO2005075795A1] The invention relates to a connecting device for the pivotal and loss-prevention joining of an actuating lever (1) and a supporting element (6) of a valve operating mechanism of a combustion engine, said supporting element being assigned to the actuating lever. According to the invention, the actuating lever (1) has, in a supporting section (3), a spherical cap-shaped cavity (5) inside of which the spherical end (7) of the supporting element (6) is placed. A recess (8) is formed underneath the spherical end (7) in the supporting element (6). The actuating lever (1) has, in the supporting section (3), a spherical upper surface (4) above the spherical cap-shaped cavity (5). A securing element (9) joins the actuating lever (1) and the supporting element (6) to one another. This securing element (9) has a U-shaped cross-sectional shape with an upper and a lower limb (10, 11) that are joined to one another via a joining section (12). Geometrically closed openings (13, 14) for accommodating the recess (8) of the supporting element (6) or the spherical upper surface (4) of the supporting section (3) of the actuating lever (1) are made in both limbs (10, 11). The opening (13) in the upper limb (10) is essentially round, and the opening (14), which is located in the lower limb (11) while being assigned to the supporting element (6), is provided, in essence, in the form of a slot.

IPC 8 full level  
**F01L 1/18** (2006.01); **F01L 1/24** (2006.01)

CPC (source: EP US)  
**F01L 1/181** (2013.01 - EP US); **F01L 2001/187** (2013.01 - EP US); **F01L 2301/00** (2020.05 - EP US); **F01L 2303/00** (2020.05 - EP US); **Y10T 74/20402** (2015.01 - EP US); **Y10T 74/2107** (2015.01 - EP US)

Citation (search report)  
See references of WO 2005075795A1

Designated contracting state (EPC)  
IT

DOCDB simple family (publication)  
**WO 2005075795 A1 20050818**; CN 100432377 C 20081112; CN 1930375 A 20070314; DE 102004005831 A1 20050825; DE 112005000102 D2 20060817; EP 1711691 A1 20061018; EP 1711691 B1 20080423; US 2007131052 A1 20070614; US 2011214527 A1 201110908; US 8434441 B2 20130507

DOCDB simple family (application)  
**DE 2005000153 W 20050201**; CN 200580004168 A 20050201; DE 102004005831 A 20040206; DE 112005000102 T 20050201; EP 05714915 A 20050201; US 201113066434 A 20110415; US 58859005 A 20050201