

Title (en)

Electromagnetic actuating device for operating a gas exchange valve with stacking springs

Title (de)

Elektromagnetisch betätigbare Stellvorrichtung zur Betätigung eines Gaswechselventils mit Federschachtelung

Title (fr)

Dispositif électromagnétique pour actionner une soupape de gaz avec des ressorts concentriquement emboîtés

Publication

**EP 1069285 A3 20010502 (DE)**

Application

**EP 00123025 A 19951215**

Priority

- DE 9420463 U 19941221
- EP 95942673 A 19951215

Abstract (en)

[origin: US5813653A] PCT No. PCT/EP95/04970 Sec. 371 Date Nov. 4, 1996 Sec. 102(e) Date Nov. 4, 1996 PCT Filed Dec. 15, 1995 PCT Pub. No. WO96/19643 PCT Pub. Date Jun. 27, 1996An electromagnetic actuator operating a cylinder valve of an internal-combustion engine includes first and second spaced electromagnets having pole faces oriented toward one another; an armature arranged for reciprocating motion between the pole faces; and a connecting rod having a first rod part being in an abutting contact with a first side of the armature and being a component separate therefrom. The abutting contact is such as to prevent a torque transmission between the first rod part and the armature. The connecting rod has a second rod part which is rigidly affixed to a second side of the armature and extending towards the cylinder valve. There are further provided a first spring situated adjacent the first electromagnet externally thereof and arranged for urging the first rod part into the abutting contact with the armature for urging the armature away from the first pole face towards the second pole face; and a second spring situated adjacent the second electromagnet externally thereof and arranged for urging the armature away from the second pole face towards the first pole face. The first and second springs act oppositely such that in a de-energized state of the first and second electromagnets the armature is held by the first and second springs in an intermediate position between the pole faces of the first and second electromagnets.

IPC 1-7

**F01L 9/04**

IPC 8 full level

**F01L 9/20** (2021.01)

CPC (source: EP US)

**F01L 9/20** (2021.01 - EP US)

Citation (search report)

- [A] DE 2630512 A1 19780112 - DAIMLER BENZ AG
- [A] US 4831973 A 19890523 - RICHESON JR WILLIAM E [US]

Designated contracting state (EPC)

DE FR IT

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**US 5813653 A 19980929**; DE 19581518 D2 19970227; DE 59510173 D1 20020523; DE 59510563 D1 20030327; DE 9420463 U1 19960425; EP 0748416 A1 19961218; EP 0748416 B1 20020417; EP 1069285 A2 20010117; EP 1069285 A3 20010502; EP 1069285 B1 20030219; WO 9619643 A1 19960627

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