

Title (en)

Pressure cast light metal piston for internal combustion engines.

Title (de)

Pressgegossener Leichtmetallkolben für Verbrennungskraftmaschinen.

Title (fr)

Piston à métal léger, coulé sur pression, pour un moteur à combustion interne.

Publication

EP 0432810 B1 19940119 (DE)

Application

EP 90202262 A 19900822

Priority

DE 3937616 A 19891111

Abstract (en)

[origin: JPH03194157A] PURPOSE: To improve durability by forming a piston with high-temperature magnesium alloy, by providing its skirt with a chemically applied or electrodeposited metallic sliding layer which has given thickness and hardness, and by coating the inside surface of the piston with a plastic cracker. CONSTITUTION: A piston 1 is formed with pressure-diecast of magnesium alloy belonging to a material group Mg5Nd, a skirt reinforced by 20 vol.% of aluminum oxide fiber is coated with a chemically applied nickel layer (sliding layer) 3 which has a thickness of about 10-30 µm (preferably 16-24 µm) and a hardness of about 740-850 HV0.01 . The inside surface of the piston 1 is coated with a layer 2 formed with a plastic cracker having a thickness of 15 µm. Particles of chromium oxide or similar ceramic oxide material is buried in the sliding layer 3, and the magnesium alloy 2 contains 2-6% of neodymium.

IPC 1-7

F02F 3/10; **F02F 7/00**; **F02B 77/02**

IPC 8 full level

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CPC (source: EP US)

C22C 23/06 (2013.01 - EP US); **C22C 49/04** (2013.01 - EP US); **C23C 30/00** (2013.01 - EP US); **F02F 3/10** (2013.01 - EP US); **F02F 2200/04** (2013.01 - EP US); **F05C 2201/021** (2013.01 - EP US); **F05C 2201/028** (2013.01 - EP US); **F05C 2201/043** (2013.01 - EP US); **F05C 2251/042** (2013.01 - EP US); **F05C 2253/16** (2013.01 - EP US)

Citation (examination)

- DE 2046862 A1 19720330
- JP H06342338 A 19941213 - SONY CORP
- Firmenschrift "75 Jahre Kolbenschmidt", Seiten 43-51
- Firmenschrift "Mahle KG und Elektron-Co. mbH: leichtere Kolbenwerkstoffe", Seiten 1-23

Cited by

CN102581217A; WO9319216A1

Designated contracting state (EPC)

DE

DOCDB simple family (publication)

DE 3937616 A1 19910516; DE 59004332 D1 19940303; EP 0432810 A1 19910619; EP 0432810 B1 19940119; JP H03194157 A 19910823; US 5063894 A 19911112

DOCDB simple family (application)

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