

Title (en)

A hydro-pneumatic spring suspension strut for motor vehicles.

Title (de)

Hydropneumatisches Federbein für Fahrzeuge.

Title (fr)

Jambe de suspension hydropneumatique pour véhicule.

Publication

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Application

EP 78300106 A 19780629

Priority

HU AU000377 A 19770630

Abstract (en)

A hydro-pneumatic spring suspension strut for vehicles provides damping limited proportionally to the load, and comprises an hydraulic telescopic oneway shock absorber (3) and a load bearing pneumatic spring (2). The gas space of the pneumatic spring (2) is bounded by a rolling membrane (6) and rigid walls (4, 7) fixable to the vehicle body and wheels. The shock absorber cylinder (22) is connected to an auxiliary membrane (15) open to the pressure prevailing inside the pneumatic spring (2) to urge the cylinder (22) in the direction of extension of the strut (1, 35, 41) and to bear against a piston column (5) in the strut (1, 35, 41) the oscillation of which is to be damped. The auxiliary membrane (15) enables the cylinder (22) to move relative to the piston column (5) when its biasing force is balanced by the damping force of the shock absorber (3).

IPC 1-7

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IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

- DE 1003608 B 19570228 - METALLGUMMI GMBH
- US 3140098 A 19640707 - BROADWELL ROBERT J
- FR 2064601 A6 19710723 - ALLINQUANT FERNAND, et al
- US 3178167 A 19650413 - OF MENAR ALEXANDER V LOEWIS
- FR 2097305 A5 19720303 - ALLINQUANT FERNAND, et al
- [A] DE 1087466 B 19600818 - BETEILIGUNGS & PATENTVERW GMBH
- [A] DE 1480170 A1 19700611 - SCHOPF WALTER
- [A] CH 359984 A 19620131 - SCHWEIZ WAGONS AUFZUEGEFAB [CH]
- [A] FR 2038840 A5 19710108 - ALLINQUANT FERNAND MICHE, et al

Cited by

EP0466628A1; DE102017221447A1; CN111120565A; EP0413420A1; EP0193035A1; US4690430A; GB2186509A; GB2186509B; FR2540048A1; DE102019209899A1; DE102006032208B3; DE19503454A1; DE19503454C2; FR2574717A1; DE102013212978A1; US7325794B2; US9630469B2; US9296272B2; US7404547B2; WO2012054531A1; WO2013052930A3; WO2012054524A1; WO2012054537A1; WO9113776A1; WO2012054520A1; US9290073B2; US9809075B2; US6286820B1; DE102019209899B4

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