



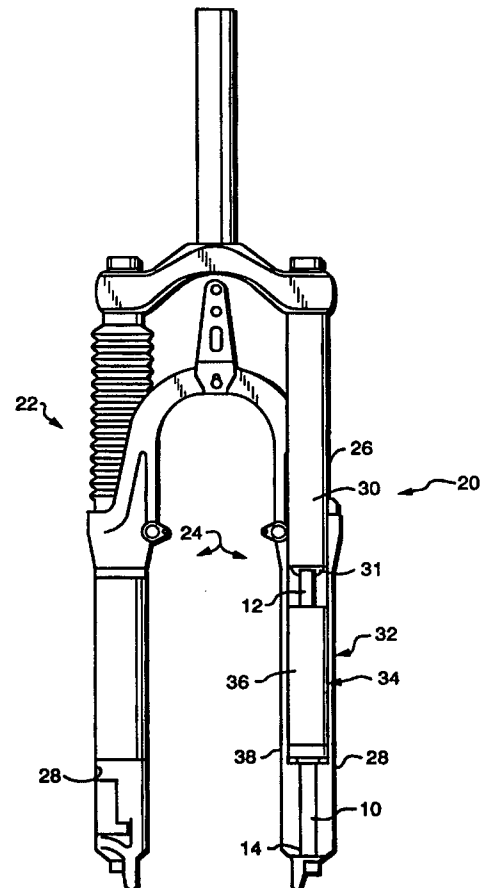
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| <p>(51) International Patent Classification<sup>6</sup> :<br/><b>D06F 37/22, F16F 7/08</b></p>   | <p><b>A3</b></p>   | <p>(11) International Publication Number: <b>WO 99/01677</b><br/>(43) International Publication Date: 14 January 1999 (14.01.99)</p> |
| <p>(21) International Application Number: PCT/US98/13196<br/>(22) International Filing Date: 25 June 1998 (25.06.98)<br/>(30) Priority Data:<br/>60/051,636 3 July 1997 (03.07.97) US<br/>09/028,780 24 February 1998 (24.02.98) US<br/>(71) Applicant: ROCKSHOX, INC. [US/US]; 401 Charcot Avenue, San Jose, CA 95131 (US).<br/>(72) Inventor: BALDOMERO, Ricardo, R.; 10715 Vera Avenue, Felton, CA 95018 (US).<br/>(74) Agents: HANSEN, David, W. et al.; Skadden, Arps, Slate, Meagher &amp; Flom LLP, 919 Third Avenue, New York, NY 10022-3897 (US).</p> | <p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b><br/><i>With international search report.</i></p> <p>(88) Date of publication of the international search report: 17 June 1999 (17.06.99)</p> |  |

(54) Title: PISTON ROD AND PISTON ASSEMBLY

(57) Abstract

A lightweight low cost damping assembly having a piston rod (10) on which a piston (40) is formed such that fastener elements are not needed to secure the piston onto the piston rod. Preferably, the piston rod is formed by chrome plating the exterior of a tubular steel rod except at a piston attachment portion. The piston attachment portion is specially shaped such that the piston may be formed thereon and coupled thereto by the inter-engaging of the piston with the shape of the piston attachment portion. Most preferably, the piston attachment portion is in the form of shallow grooves, knurls (44) or dimples in the exterior of the piston rod and the piston is injection molded thereon. The material of the piston molds itself into the shape of the piston attachment portion, thereby resulting in a secure coupling between the piston and the piston rod.



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INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/13196

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :D06F 37/22; F16F 7/08  
US CL :188/129;276/202,203

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 188/129,322,15  
267/202,203,206,207

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| Y         | US 5,549,182 A (EHRNSBERGER et al.) 27 August 1996 (27.08.96) , see Fig. 3.        | 1-21                  |
| Y         | US 5,456,480 A (TURNER et al.) 10 October 1995 (10.10.95), see Fig. 3.             | 1-21                  |
| A         | US 4,099,602 A (KOURBETSOS) 11 July 1978 (11.07.78).                               |                       |
| A         | US 4,877,114 A (TAYLOR) 31 October 1989 (31.10.89).                                |                       |
| A         | US 5,275,264 A (ISELLA) 04 January 1994 (04.01.94).                                |                       |

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Date of the actual completion of the international search

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