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 <i>F02M 61/16</i> (2006.01) <i>F02M 51/06</i> (2006.01)</p> <p>(21) International Application Number:
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 27 October 2010 (27.10.2010)</p> <p>(25) Filing Language: English</p> <p>(26) Publication Language: English</p> <p>(30) Priority Data:</p> <table border="0"> <tr> <td>12/653,085</td> <td>7 December 2009 (07.12.2009)</td> <td>US</td> </tr> <tr> <td>61/304,403</td> <td>13 February 2010 (13.02.2010)</td> <td>US</td> </tr> <tr> <td>61/312,100</td> <td>9 March 2010 (09.03.2010)</td> <td>US</td> </tr> <tr> <td>12/841,135</td> <td>21 July 2010 (21.07.2010)</td> <td>US</td> </tr> <tr> <td>12/804,509</td> <td>21 July 2010 (21.07.2010)</td> <td>US</td> </tr> <tr> <td>12/804,508</td> <td>21 July 2010 (21.07.2010)</td> <td>US</td> </tr> <tr> <td>12/841,149</td> <td>21 July 2010 (21.07.2010)</td> <td>US</td> </tr> <tr> <td>12/841,170</td> <td>21 July 2010 (21.07.2010)</td> <td>US</td> </tr> <tr> <td>12/841,146</td> <td>21 July 2010 (21.07.2010)</td> <td>US</td> </tr> <tr> <td>12/804,510</td> <td>21 July 2010 (21.07.2010)</td> <td>US</td> </tr> </table> <p>(72) Inventor; and</p> <p>(71) Applicant : MCALISTER, Roy, E. [US/US]; 2350 W Shangri La, Phoenix, AZ 85029 (US).</p> | 12/653,085 | 7 December 2009 (07.12.2009) | US | 61/304,403 | 13 February 2010 (13.02.2010) | US | 61/312,100 | 9 March 2010 (09.03.2010) | US | 12/841,135 | 21 July 2010 (21.07.2010) | US | 12/804,509 | 21 July 2010 (21.07.2010) | US | 12/804,508 | 21 July 2010 (21.07.2010) | US | 12/841,149 | 21 July 2010 (21.07.2010) | US | 12/841,170 | 21 July 2010 (21.07.2010) | US | 12/841,146 | 21 July 2010 (21.07.2010) | US | 12/804,510 | 21 July 2010 (21.07.2010) | US | <p>(74) Agents: PILLING, Cameron, B. et al.; Perkins Coie LLP, P.O.Box 1247, Seattle, WA 98111-1247 (US).</p> <p>(81) Designated States (<i>unless otherwise indicated, for every kind of national protection available</i>): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.</p> <p>(84) Designated States (<i>unless otherwise indicated, for every kind of regional protection available</i>): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published:
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(54) Title: INTEGRATED FUEL INJECTOR IGNITERS SUITABLE FOR LARGE ENGINE APPLICATIONS AND ASSOCIATED METHODS OF USE AND MANUFACTURE

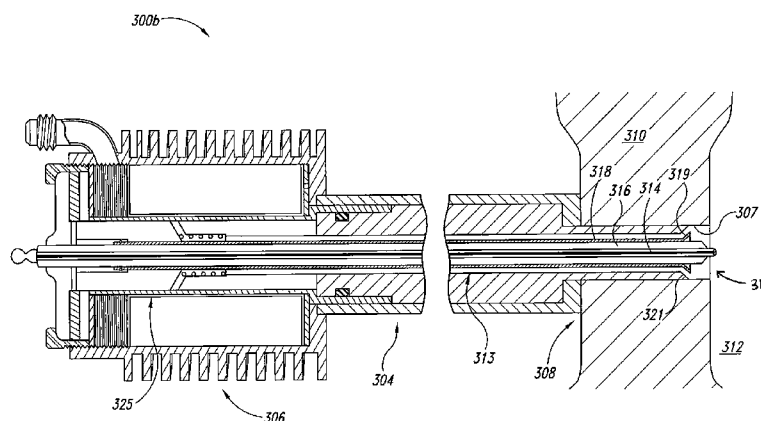


Fig. 3B

(57) Abstract: Embodiments of injectors suitable for injection ports having relatively small diameters are disclosed herein. An injector according to one embodiment includes a body having a first end portion opposite a second end portion. The second end portion is configured to be positioned adjacent to a combustion chamber and the first end portion is configured to be spaced apart from the combustion chamber. The injector also includes an ignition conductor extending through the body from the first end portion to the second end portion, and an insulator extending longitudinally along the ignition conductor and surrounding at least a portion of the ignition conductor. The injector further includes a valve extending longitudinally along the insulator from the first end portion to the second end portion. The valve includes a sealing end portion, and the valve is movable along the insulator between an open position and a closed position. The injector also includes a valve seat at or proximate to the second end portion of the body. When the valve is in the open position the sealing end portion is spaced apart from the valve seat, and when the valve is in the closed position the sealing end portion contacts at least a portion of the valve seat.