A torsion suspension system (20) of the present disclosure includes a vehicle frame (12) and a bar group (32) rotatably coupled to the vehicle frame (12). In an embodiment, the bar group (32) includes a bolster tube (40). The bolster tube (40) has an opening (42) through an elongated side of the bolster tube (40). A torsion bar (58) is positioned through the opening (42) and has opposite ends extending outward of the opening (42). A plurality of elastomeric cords (60) are positioned adjacent the torsion bar (58) in the opening (42). The cords are sized to resist and dampen relative rotation between the opening (42) and the torsion bar (58). The opposite ends of the torsion bar (58) couple with the vehicle frame (12).
INTERNATIONAL SEARCH REPORT

International application No. PCT/US2012/054048

A. CLASSIFICATION OF SUBJECT MATTER

E02F 9/08(2006.01)i, B62D 21/15(2006.01)i

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)
E02F 9/08; B60G 11/99; B60D 7/00; B60G 9/00; B62D 55/12; E02F 3/76; B60G 11/18

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS (KIPO internal) & keywords: torsion suspension system, vehicle frame, bar group, bolster tube, torsion bar and elastomeric cords

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tr>
<td>Y</td>
<td>US 3881563 A (HAMMERSMITH, ALBERT A.) 6 May 1975 See column 3, lines 1 - 64 and figure 1</td>
<td>1-13</td>
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<tr>
<td>A</td>
<td>US 4364438 A (PYLE, DONALD L.) 21 December 1982 See column 5, lines 35 - 57 and figures 1, 8.</td>
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<td>A</td>
<td>US 6045146 A (SCHOEN et al.) 4 April 2000 See column 3, line 19 - column 4, line 34 and figures 2 - 5.</td>
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<td>US 4243247 A (KARAOKA, SHUNFEI) 6 January 1981 See column 2, line 34 - column 5, line 24 and figures 3, 6 - 8.</td>
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See patent family annex.

Date of the actual completion of the international search
19 FEBRUARY 2013 (19.02.2013)

Date of mailing of the international search report
21 FEBRUARY 2013 (21.02.2013)

Name and mailing address of the ISA/KR

Authorized officer

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Telephone No. 82-42-481-8525

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