

(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织
国际局

(43) 国际公布日
2020 年 9 月 3 日 (03.09.2020)



(10) 国际公布号
WO 2020/173436 A1

- (51) 国际专利分类号:
B61G 7/14 (2006.01) *B61G 11/16* (2006.01)
- (21) 国际申请号: PCT/CN2020/076621
- (22) 国际申请日: 2020 年 2 月 25 日 (25.02.2020)
- (25) 申请语言: 中文
- (26) 公布语言: 中文
- (30) 优先权:
201910141398.3 2019年2月26日 (26.02.2019) CN
201920244002.3 2019年2月26日 (26.02.2019) CN
- (71) 申请人: 中车长春轨道客车股份有限公司 (CRRC CHANGCHUN RAILWAY VEHICLES CO., LTD.) [CN/CN]; 中国吉林省长春市长客路2001, Jilin 130000 (CN)。
- (72) 发明人: 姜士鸿 (JIANG, Shihong); 中国吉林省长春市长客路2001, Jilin 130000 (CN)。 闵韩琴 (MIN, Hanqin); 中国吉林省长春市长客路2001, Jilin 130000 (CN)。 丛立新 (CONG, Lixin); 中国吉林省长春市长客路2001, Jilin 130000 (CN)。 张强 (ZHANG, Qiang); 中国吉林省长春市长客路2001, Jilin 130000 (CN)。 孙文跃 (SUN, Wenyue); 中国吉林省长春市长客路2001, Jilin 130000 (CN)。
- (74) 代理人: 北京集佳知识产权代理有限公司 (UNITALEN ATTORNEYS AT LAW); 中国北京市朝阳区建国门外大街22号赛特广场7层, Beijing 100004 (CN)。
- (81) 指定国 (除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB,

(54) Title: VEHICLE AND VEHICLE BODY COLLISION ENERGY ABSORPTION DEVICE THEREOF

(54) 发明名称: 车辆及其车体碰撞吸能装置

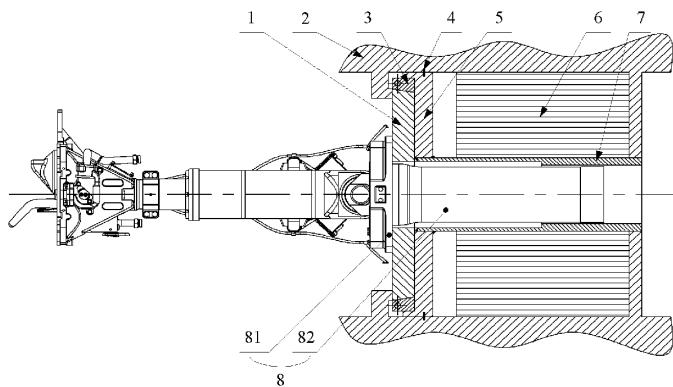


图 1

(57) Abstract: A vehicle and a vehicle body collision energy absorption device thereof. A car coupler (8) of the vehicle body collision energy absorption device comprises a car coupler body (81) and an expansion pipe (82) capable of absorbing energy and stretching relative to the car coupler body (81), and the car coupler body (81) is arranged on a car coupler mounting plate (1); a vehicle body structure (2) is provided with an energy absorption cavity, and the car coupler mounting plate (1) and the expansion pipe (82) are located in the energy absorption cavity. The device also comprises a compression energy absorption unit (6) arranged in the energy absorption cavity, a locking device (3) used for locking the car coupler mounting plate (1) relative to the energy absorption cavity, a retreating support (5) arranged between the car coupler mounting plate (1) and the compression energy absorption unit (6), and a shear pin (4)

[见续页]



WO 2020/173436 A1

GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW。

- (84) 指定国(除另有指明, 要求每一种可提供的地区保护): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), 欧亚 (AM, AZ, BY, KG, KZ, RU, TJ, TM), 欧洲 (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, KM, ML, MR, NE, SN, TD, TG)。

本国际公布:

- 包括国际检索报告(条约第21条(3))。

connected between the vehicle body structure (2) and the retreating support (5). One end of the compression energy absorption unit (6) abuts against a rear plate of the energy absorption cavity. The retreating support (5) is arranged in the energy absorption cavity in a sliding mode and provided with a locking component and a linkage structure, the locking component unlocks the locking device (3) after getting away from the car coupler mounting plate (1), and the linkage structure is provided with a positioning structure which is positioned axial to the expansion pipe (82). The present vehicle body collision energy absorption device improves the energy absorption effect and guarantees safety and security for the life and property of passengers.

(57) 摘要: 一种车辆及其车体碰撞吸能装置, 车体碰撞吸能装置的车钩(8)包括车钩主体(81)及相对于车钩主体(81)吸能伸缩的胀管(82), 车钩主体(81)设置于车钩安装板(1)上; 车体结构(2)上具有吸能腔体, 车钩安装板(1)及胀管(82)位于吸能腔体内; 还包括设置于吸能腔体内的压缩吸能单元(6)、相对于吸能腔体锁止车钩安装板(1)的锁止装置(3)、设置于车钩安装板(1)与压缩吸能单元(6)之间的后退支座(5)及连接车体结构(2)与后退支座(5)之间的剪切销(4); 压缩吸能单元(6)的一端与吸能腔体的后板相抵; 后退支座(5)可滑动地设置于吸能腔体内, 后退支座(5)具有锁止部件及联动结构, 锁止部件在远离车钩安装板(1)后解锁锁止装置(3), 联动结构具有与胀管(82)轴向定位的定位结构。该车体碰撞吸能装置, 提高了吸能效果, 保证了乘客的生命财产安全。