Search history

Search 1: ft=vehicle and tilt and steer and brake (Results 65)

Search 2: ft=vehicle and frame and tilt* and steer* and brake (Results 377)

Search 3: ft=vehicle and frame and tilt* and steer* and brake* and suspension (Results 109)

Search 4: ft=vehicle and frame and tilt* and steer* and brake* and suspension and handlebar (Results 18)

Search 5: ft=vehicle and tilt* and handlebar and brake* and suspension (Results 28)

Search 6: ft=vehicle and tilt* and brake* and suspension and two front wheels (Results 16)

Search 7: ft=vehicle and tilt* and two front wheels (Results 188)

Search 8: ft=motorcycle and tilt* and suspension and handlebar and brake* (Results 14)

Search 9: ft=vehicle and lean* and two front wheels (Results 40)

Search 10: ft=vehicle and two front wheel and (damper or suspension) and handlebar and brake* (Results 0)

Search 11: ft=vehicle and two front wheel and (damper or suspension) and brake* (Results 5)

- session log created:11 April 2017 04:20:32
- Update information:

PatBase Coverage at Update 2017 Week 14 (Year 2017 Week 14)

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Major countries

Publishing body	Document type	Bibliographic publication date		Full–Text publication date	
		Earliest	Latest	Earliest	Latest
CN China	Patent Applications	19850910	20170405	19850910	20170405
	Patents	19930106	20170405	19930106	20170405
	Utility Model Applications	19850409	19921230	19850409	19921230
	Utility Models	19930106	20170405	19930106	20170405
	Designs	19850910	20170405	19850910	20150819
DE Germany	Patent Applications	19211221	20170406	19650317	20170406
	Patents	18770101	20170406	19200113	20170406
	Utility Models	19280626	20170406	19610831	20170406
	EP/WO Patents	19871217	20140410		
EP European Patent Office	Patent Applications	19781220	20170405	19781220	20170405
	Patents	19800109	20170405	19800109	20170405
FR France	Patent Applications	19690307	20170407	19810102	20170317
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GB United Kingdom	Unpublished Patent Applications	19830209	20170208		
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JP Japan	Patent Applications	19710116	20170406	19930108	20170330
	Patents	19281026	20170329	19960529	20170329
	Utility Model Applications	19710723	20060209	19990817	20031107
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	Registered Utility Models	19940726	20170323	19940726	20101216
KR Republic of Korea	Patent Applications	19781209	20170407	19940103	20170407
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US United States of America	Patent Applications	20010315	20170406	20010315	20170406
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	Designs	18650912	20170404	19770719	20170404
WO World Intellectual Property Organization (WIPO)	Patent Applications	19781019	20170406	19781019	20170406
	Designs	20151127	20170407	20151127	20170331

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- **search:** SS1 ft=vehicle and tilt and steer and brake (Results 65)
- List: SS1 1–50 (ft=vehicle and tilt and steer and brake) (Results 65)

0) US5375059A – VEHICLE POSITION DETERMINATION SYSTEM AND METHO...

1) Family number: 30537954 (US5375059A) © PatBase

Title: Vehicle position determination system and method

Priority:

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Designated states: AT AU BE BR CA CH DE DK ES FI FR GB IT JP KR LU NL NO RO SE SU US

International class (IPC 8–9): B60K31/00 B60K31/04 B62D1/00 B62D1/28 G01C21/00 G01C21/16 G01C21/20 G01C21/28 G01C21/34 G01C21/36 G01S1/00 G01S13/93 G01S15/93 G01S17/02 G01S17/42 G01S17/93 G01S19/08 G01S19/11 G01S19/23 G01S19/27 G01S19/28 G01S19/41 G01S19/42 G01S19/46 G01S19/47 G01S19/48 G01S19/49 G01S19/52 G01S5/00 G01S5/02 G01S5/14 G01S7/481 G01S7/497 G05D1/00 G05D1/02 G08G1/0968 G08G1/123 G08G1/127 G09B29/10 G11B5/105 G11B5/127 (Advanced/Invention); B60K31/00 B60W30/14 B60W50/00 G01C21/00 G01C21/16 G01C22/00 G01S17/02 G01S17/42 G01S19/11 G01S19/27 G01S19/35 G01S19/52 G01S7/481 G09B29/10 (Advanced/Non–invention); B62D1/00 G01S5/02 G05D1/00 (Core/Invention)

International class (IPC 1–7): B62D1/00 G01C21/00 G01C21/16 G01C21/20 G01C3/06 G01C55/14 G01S17/93 G01S5/02 G01S5/10 G01S5/14 G05D1/00 G05D1/02 G06F15/50 G06F165/00 G06F17/00 G06F19/00 G06G7/70 G06G7/76 G09B29/10

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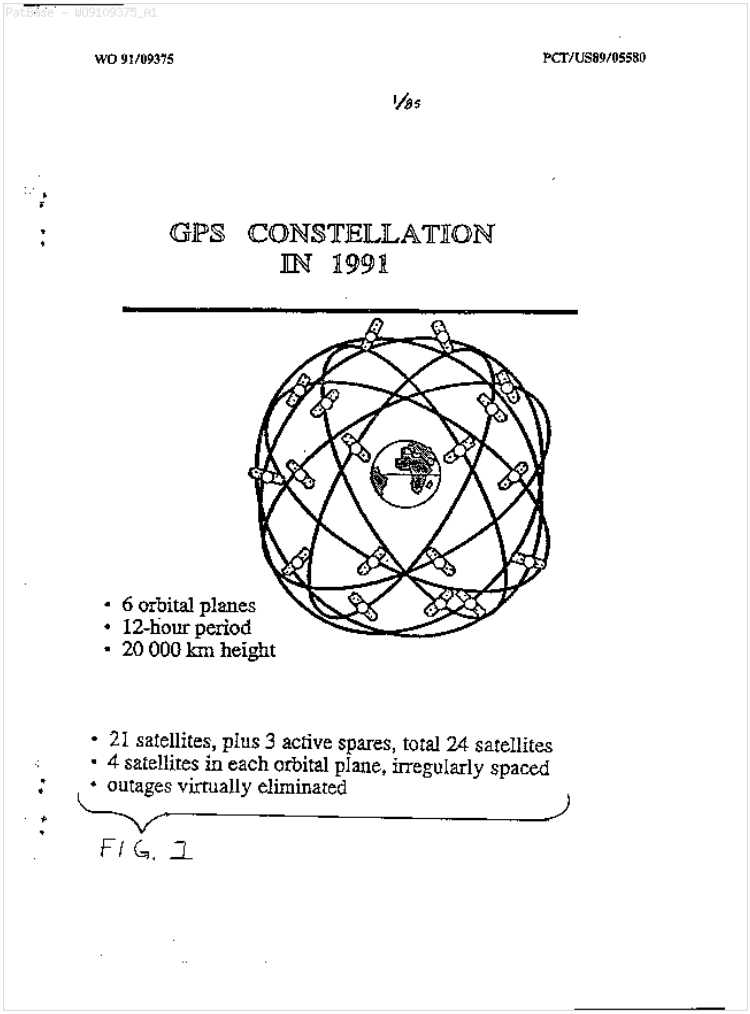
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Abstract:
Source: US5375059A Systems and methods allow for the accurate determination of the terrestrial position of an autonomous vehicle in real time. A first position estimate of the vehicle 102 is derived from satellites of a global positioning system and/or a pseudolite(s). The pseudolite(s) may be used exclusively when the satellites are not in the view of the vehicle. A second position estimate is derived from an inertial reference unit and/or a vehicle odometer. The first and second position estimates are combined and filtered using novel techniques to derive a more accurate third position estimate of the vehicle's position. Accordingly, accurate autonomous navigation of the vehicle can be effectuated using the third position estimate.



0) US2008290618A – VEHICLE

2) Family number: 34395204 (US2008290618A) © PatBase

Title: VEHICLE

Priority: EP20060811325 20061005 JP20050295197 20051007 WO2006JP19998 20061005 WO2006JP319998 20061005

Family:

Publication number	Publication date	Application number	Application date
CN101282871 A	20081008	CN200680037348	20061005
CN101282871 B	20111116	CN200680037348	20061005
DE602006039812 D1	20140213	DE200660039812T	20061005
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EP1944228 B1	20131225	EP20060811325	20061005
JP2007099218 A2	20070419	JP20050295197	20051007
JP4534944 B2	20100901	JP20050295197	20051007
US2008290618 AA	20081127	US20060089476	20061005
US8050820 BB	20111101	US20060089476	20061005
WO07043447 A1	20070419	WO2006JP319998	20061005

Probable Assignee: TOYOTA JIDOSHA KK

Assignee(s):(std)**:** HONNDA YASUKAZU ; MOTOZONO YOSHIKAZU ; TOYOTA MOTOR CO LTD ; YANAKA AKIHIRO ; TOYOTA MOTOR CORP

Assignee(s): TOYOTA JIDOSHA KK ; TOYOTA JIDOSHA TOYOTA SHI KK ; TOYOTA MOTOR CO

Inventor(s):(std)**:** HONNDA YASUKAZU ; MOTOZONO KIICHI ; MOTOZONO YOSHIKAZU ; HONDA TAIICHI ; HONDA YASUKAZU ; YANAKA AKIHIRO ; YANAKA TAKEHIRO ; YOSHIKAZU MOTOZONO ; YASUKAZU HONNDA ; AKIHIRO YANAKA

Inventor(s): YANAKA AKIHIRO TOYOTA SHI ; HONDA YASUKAZU TOYOTA SHI ; MOTOZONO YOSHIKAZU TOYOTA SHI

Agent(s): WINTER BRANDL FUERNISS HUEBNER ROESS KAISER POLTE PARTNERSCHAFT MBB; WINTER BRANDL FUERNISS HUEBNER ROESS KAISER POLTE PARTNERSCHAFT PATENT U RECHTSANWALTSKANZLEI; WINTER BRANDL FUERNISS HUEBNER ROESS KAISER POLTE PARTNERSCHAFT; OBLON SPIVAK MCCLELLAND MAIER AND NEUSTADT PC; OBLON SPIVAK MCCLELLAND MAIER AND NEUSTADT LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HN HR HU ID IE IL IN IS IT KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G17/00 B60G17/01 B60G17/015 B60G17/016 B60G17/0195 B60G3/00 B60G3/01 B60L15/20 B60W10/12 B60W10/18 B60W10/20 B60W10/22 B60W30/02 B60W40/10 B62D37/00 B62D61/08 B62D9/02 B62K17/00 B62K5/02 B62K5/04 (Advanced/Invention); B60W10/12 B60W10/18 B60W10/20 B60W10/22 (Advanced/Non–invention); B60G17/01 (Core/Invention)

CPC: Y02T10/7275 B60W40/114 B60G3/01 B60G17/0161 B60G17/0162 B60G17/0195 B60G21/007 B60G2204/4232 B60G2300/122 B60G2300/45 B60G2400/0521 B60G2400/0522 B60G2400/0523 B60G2400/106 B60G2400/208 B60G2400/252 B60G2400/34 B60G2400/39 B60G2400/40 B60G2400/41 B60G2600/20 B60G2800/91 B60G2800/92 B60G2800/95 B60G2800/96 B60L15/2036 B60W10/04 B60W10/18 B60W10/20 B60W10/22 B60W30/02 B60W40/11 B60W40/112 B60W2300/345 B60W2300/367 B62K5/10 B62K2204/00 Y02T10/645 Y02T10/72

European class: B60G17/016D B60G17/016F B60G17/0195 B60G21/00D B60G3/01 B60L15/20D B60W30/02 B60W40/11 B60W40/112 B60W40/114 B62K5/10 L60G204/4232 L60G300/122 L60G300/45 L60G400/0521 L60G400/0522 L60G400/0523 L60G400/106 L60G400/208 L60G400/252 L60G400/34 L60G400/39 L60G400/40 L60G400/41

L60G600/20 L60G800/910 L60G800/920 L60G800/950 L60G800/960 L60W10/04 L60W10/18 L60W10/20 L60W10/22 L60W300/34A L60W300/36T L62K204/00

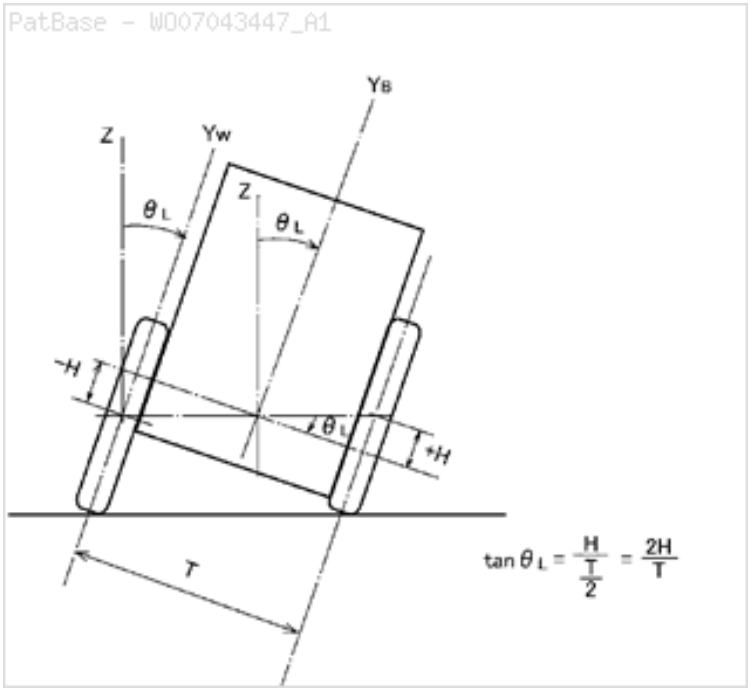
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Forward Citations: WO16092587, WO15038705, WO11107674, US9566200, US9561782, US9428184, US9351889, US9283989, US9248857, US9145168, US9090281, US9061564, US9056629, US9045015, US8798869, US8296015, US8219297, US8214123, US7726446, US2016075404, US2015165855, US2015021865, US2015006031, US2013253769, US2012185136, US2010320023, US2010222956, US2008189021, JP6090125, JP6081271, JP2016516640, JP2015155300, JP2015096376, JP2015047962, JP2014198503, JP2013112238, JP2013112236, JP2013009849, JP2011046294, JP2011011575, JP2010162963, JP2010159038, EP2765024, CN104853941, CN104386065, CN104386065, CN104080671, CN104080671, CN102596674, CN102341282,

Abstract:
Source: US2008290618A When a vehicle turns, a body and a left and a right wheel are inclined inward of a turning circle. Consequently forces are exerted to an operator in an up−down direction, which leads to reducing discomfort felt by the operator. In addition, since a gravity center of the vehicle is moved inward of the turning circle, a turning stability of the vehicle is improved.



0) US2013068550A – TILTING VEHICLE AND A METHOD OF TILTING A VEHIC...

3) Family number: 44603093 (US2013068550A) © PatBase

Title: TILTING VEHICLE AND A METHOD OF TILTING A VEHICLE WITH REAR WHEEL SUPPORTS HAVING HYDRAULIC CYLINDERS COMMUNICATING THROUGH A PUMP

Priority: GB20100000244 20100108 JP20120547548T 20110107 WO2011GB50018 20110107 JP20160000212 20160104

Family:

Publication number	Publication date	Application number	Application date
EP2521659 A2	20121114	EP20110700575	20110107
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GB2476877 B2	20170118	GB20110000226	20110107
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WO11083335 A2	20110714	WO2011GB50018	20110107
WO11083335 A3	20111006	WO2011GB50018	20110107

Probable Assignee: GALE DAVID A

Assignee(s):(std)**:** DAVID ANDREW GALE ; GALE DAVID A ; GALE DAVID ANDREW

Inventor(s):(std)**:** DAVID ANDREW GALE ; GALE DAVID ANDREW

Agent(s): MARKHAM JONATHAN; ASAMURA PATENT OFFICE PC; ASAMURA KIYOSHI; ASAMURA HAJIME; CONLEY ROSE PC

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G17/005 B60G17/015 B60G17/016 B60G21/00 B60G21/073 B60G21/10 B60G3/14 B60G7/00 B60K5/10 B60W30/02 B62D5/12 B62D9/02 B62D9/04 B62J17/00 B62K25/04 B62K25/18 B62K25/20 B62K5/01 B62K5/027 B62K5/04 B62K5/08 B62K5/10 F16F9/22 (Advanced/Invention)

CPC: B60G3/14 B60G17/015 B62D5/12 B62K25/18 B60G21/073 B60G17/005 B62K5/027 B60W30/02 B62D9/04 B60G21/106 B62K5/08 B60G3/145 B60G7/006 B60G7/008 B60G17/0152 B60G17/0162 B60G21/007 B60G2200/132 B60G2200/1324 B60G2200/144 B60G2200/445 B60G2200/46 B60G2200/462 B60G2202/32 B60G2202/322 B60G2202/413 B60G2202/414 B60G2202/416 B60G2204/12 B60G2204/13 B60G2204/14 B60G2204/4605 B60G2204/62 B60G2204/82 B60G2204/8304 B60G2206/10 B60G2300/122 B60G2300/13 B60G2300/37 B60G2300/45 B60G2400/052 B60G2400/10 B60G2400/204 B60G2400/30 B60G2500/02 B60G2500/40 B60G2800/012 B60G2800/24 B62D9/02 B62K5/10 F16F9/22

European class: B60G17/005 B60G17/015B B60G17/016F B60G21/00D B60G21/073 B60G3/14B B60G7/00D B60G7/00W B62D9/02 B62K5/027 B62K5/10 F16F9/22 L60G200/132 L60G200/1324 L60G200/144 L60G200/445 L60G200/460 L60G200/462 L60G202/32 L60G202/322 L60G202/413 L60G202/414 L60G202/416 L60G204/12 L60G204/130 L60G204/14 L60G204/4605 L60G204/62 L60G204/82 L60G204/8304 L60G206/10 L60G300/122 L60G300/13 L60G300/37 L60G300/45 L60G400/052 L60G400/10 L60G400/204 L60G400/30 L60G500/02 L60G500/40 L60G800/012 L60G800/24

US class: 1/1 180/215 180/216 180/432 280/5.5 280/5.509 280/62

Classification Explorer

Cited documents: WO9961302 A1, WO9947372 A1, WO9941096 A1, WO9727071 A1, WO8100088 A1, WO13005007 A1, WO11083335 A2, WO11005945 A1, WO09106978 A1, WO09087595 A1, WO08150173 A2, WO08065436 A1, WO08011917 A1, WO05075278 A1, WO04056645 A1, WO0136253 A1, WO0018597 A1, USRE32736 E, US8613340 BB, US8249775 BB, US6435522 BA, US5927424 A, US4351410 A, US2743941 A, US2184202 A, US2014312580 AA, US2011095494 AA, US2010324808 AA, US2010032915 AA, US2010007109 AA, US2009121448 AA, US2009057048 AA, US2008238005 AA, US2008012262 AA, US2007262549 AA, US2007193803 AA, US2007126199 AA, US2005212247 AA, JP61229608 A2, JP61125973 A2, JP5741278, JP57041278 A2, JP56500769 T2, JP5213253 A2, JP4938318, JP49038318 A2, JP4100724 A2, JP2009544509 T2, JP2008505797 T2, JP11197191 A2, GB2492757 A1, GB2476807 A1, GB2450740 A1, GB2444250 A1, GB2155410 A1, GB1561253 A, FR2654990 A1, FR2646379 A1, EP2000336 A1, EP1561612 A1, EP1437324 A1, DE9414724 U, DE4035128 A1, DE20217112 U1, DE1947232 A1, DE10227417 A1,

DE102009056105 A1

CN201023543 Y, AU1467183 A1,

Forward Citations: WO16001722, WO15193705, WO15123993, WO13186572, WO13005007, WO12104295, USD695644, US9573435, US9381940, US9381785, US9327725, US9283989, US9248857, US9193384, US9186951, US9145168, US9090281, US9045015, US2016082802, US2015165860, US2015091261, US2014358369, US2014312580, US2014252734, US2014252733, JP5952459, GB2533477, GB2528608, GB2528608, GB2492757, GB2492757, DE102014218492, DE102014201670, CN104002902,

Abstract:
Source: US2013068550A There is disclosed herein a vehicle configuration comprising a chassis, at least one front wheel, two rear wheels, and a propulsion unit driving the rear wheels. The rear wheels are connected to the chassis by a wheel support assembly configured for allowing movement of each rear wheel relative to the chassis, a hydraulic cylinder connected to the chassis and the rear wheel supports, and a piston connected the rear wheel supports and the chassis. The piston dividing the hydraulic cylinder into fluidly connected first and second chambers such that movement of hydraulic fluid from the first or second chamber of a hydraulic cylinder to the respective first or second chamber of another hydraulic cylinder displaces the pistons of the hydraulic cylinders in opposing directions relative to the respective housings and causes the chassis to articulate with respect to the surface.

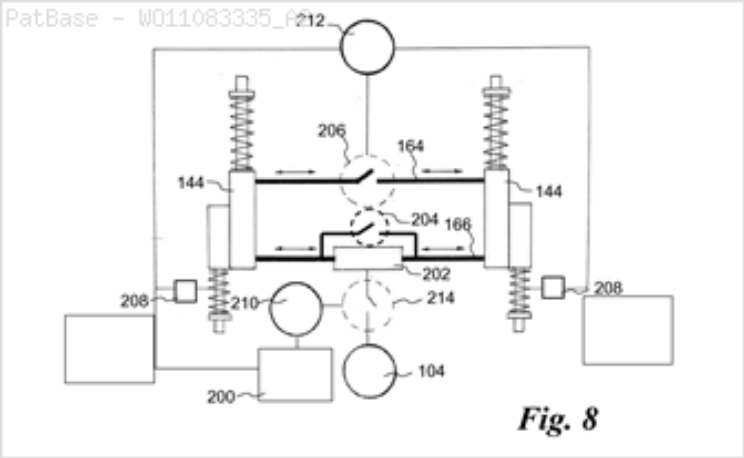


Fig. 8

0) US2014265209A – POLE PROPELLED VELOCIPEDE

4) Family number: 57426799 (US2014265209A) © PatBase

Title: POLE PROPELLED VELOCIPEDE

Priority: US20130792921P 20130315 US20140208552 20140313 WO2014US25957 20140313 US20160074114 20160318 US20160179480 20160610

Family:

Publication number	Publication date	Application number	Application date
CN105209332 A	20151230	CN201480027663	20140313
EP2969728 A2	20160120	EP20140770636	20140313
EP2969728 A4	20161109	EP20140770636	20140313
TW201505900 A	20150216	TW20140109807	20140314
US2014265209 AA	20140918	US20140208552	20140313
US2016200393 AA	20160714	US20160074114	20160318
US2016280319 AA	20160929	US20160179480	20160610
US9321507 BB	20160426	US20140208552	20140313
WO14151541 A2	20140925	WO2014US25957	20140313
WO14151541 A3	20141120	WO2014US25957	20140313

Probable Assignee: DODDS ROBERT B

Assignee(s):(std)**:** DODDS ROBERT B

Inventor(s):(std)**:** DODDS ROBERT B

Agent(s): STEVENS FIONA; JEAN; KYLE JEAN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** A63B69/18 B62J25/00 B62K1/00 B62K17/00 B62K21/02 B62K23/08 B62K3/00 B62K3/10 B62L3/02 B62L3/04 B62M1/14 B62M1/16 B62M29/02 (Advanced/Invention)

CPC: B62M29/02 B62L3/04 B62K17/00 B62M1/14 B62K3/10 B62M1/12 B62K3/005 B62K23/08 B62K1/00 B62K21/02

US class: 1/1 280/219 280/265

Classification Explorer

Cited documents: WO9325288 A1, US7798510 BB, US7537229 BA, US6659488 BA, US6488295 BA, US5979922 A, US5868413 A, US5601299 A, US5568935 A, US5454579 A, US5335927 A, US5160155 A, US5125687 A, US5098087 A, US4863182 A, US4657272 A, US4524987 A, US3389922 A, US3310319 A, US2545543 A, US2216982 A, US2014346752 AA, US2013075996 AA, US2013056949 AA, US2011248467 AA, US2011248466 AA, US2011181014 AA, US2010237582 AA, US2009224524 AA, US2005910 A, US2002047245 AA, US1619668 A, US1425220 A, US1313157 A, US1052722 A, KR200363709 Y1, FR2335393 A1, DE4321558 A1, CN201907606 U, CN102514674 A,

Forward Citations: US2015076797,

Abstract:
Source: US2014265209A A two wheeled tandem vehicle is propelled by hand−grasped poles. A forward wheel on a forward member and a rear wheel on a rearward member align along a longitudinal axis. The forward member rotates about a vertical steering axis. A saddle and footholds support the rider and allow the rider to balance and steer the device. The rider's hands never contact the vehicle but are used to propel the vehicle with the poles.

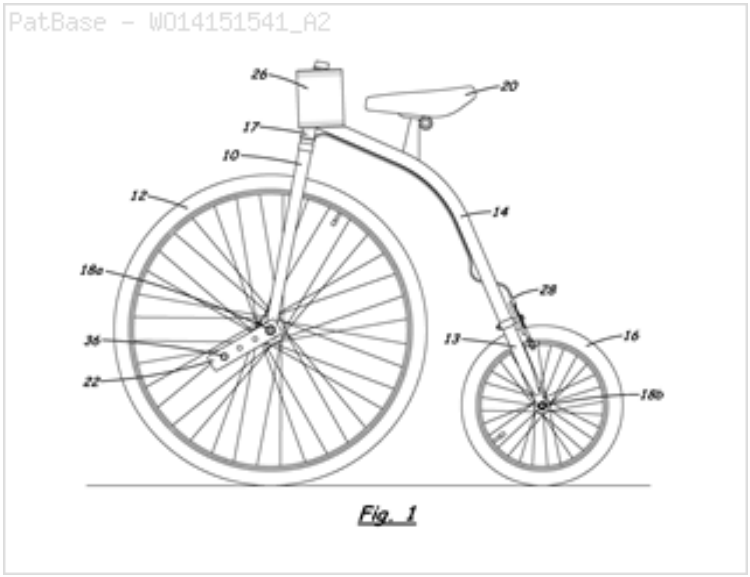


Fig. 1

0) US2016137258A – A VEHICLE DRIVABLE IN USE BY A PERSON WALKING O...

5) Family number: 54727883 (US2016137258A) © PatBase

Title: A VEHICLE DRIVABLE IN USE BY A PERSON WALKING OR RUNNING WHILST SEATED AND THE USE OF SUCH VEHICLE

Priority: GB20130012012 20130704 WO2014GB51658 20140530

Family:

Publication number	Publication date	Application number	Application date
EP3016847 A1	20160511	EP20140729428	20140530
GB201312012 A0	20130821	GB20130012012	20130704
GB2515794 A1	20150107	GB20130012012	20130704
GB2515794 B2	20150610	GB20130012012	20130704
IN201637002510 A	20160408	IN201637002510	20160122
TW201515921 A	20150501	TW20140122830	20140702
US2016137258 AA	20160519	US20140898449	20140530
WO15001297 A1	20150108	WO2014GB51658	20140530

Probable Assignee: VELOFEET LTD

Assignee(s):(std)**:** VELOFEET LTD

Inventor(s):(std)**:** ALVAREZ ICAZA MANUEL ; VARGAS VERNONICA ; VARGAS VERONICA

Inventor(s): VERONICA VARGAS ; MANUEL ALVAREZ ICAZA

Agent(s): MACDONALD KATE

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** A61H3/04 B62J1/00 B62J1/08 B62J1/28 B62K17/00 B62K21/00 B62K3/00 B62M1/00 B62M29/00 (Advanced/Invention)

CPC: B62J1/08 B62K1/00 B62K3/16 B62K2700/56 B62K17/00 B62M1/00 B62K3/00 B62K21/00 B62J1/00 B62M29/00

US class: 280/264 280/267 280/270

Classification Explorer

Cited documents: WO8908043 A1, USD739307 S1, US9188984 BB, US9085334 BB, US9027678 BA, US8800697 BB, US6561294 BA, US5330221 A, US4845805 A, US4657272 A, US4324413 A, US4272095 A, US4239248 A, US4144617 A, US4113393 A, US3860264 A, US3605929 A, US246031 A, US2015251563 AA, US2015175233 AA, US2015174977 AA, US2015129327 AA, US2015129326 AA, US2015123367 AA, US2015028550 AA, US2014353941 AA, US2014353052 AA, US2014353051 AA, US2014297127 AA, US2014251708 AA, US2014067177 AA, US2013304323 AA, US2013304320 AA, US2013304316 AA, US2013304290 AA, US2013299264 AA, US2013299263 AA, US2013299262 AA, US2013299261 AA, US2013299260 AA, US2013133960 AA, US2013056288 AA, US2012179352 AA, US2012175176 AA, US2012175175 AA, US2012173109 AA, US2012173088 AA, US2012173041 AA, US2012168236 AA, US2012166056 AA, US2012158255 AA, US2012032496 AA, US2012018232 AA, US2011304117 AA, US2011238247 AA, US2011166713 AA, US2011067940 AA, US2011006497 AA, US2010181124 AA, US2008217085 AA, US2008143073 AA, US2008054596 AA, US2006279057 AA, US2006131830 AA, US2005028319 AA, US2003042701 AA, US2002047245 AA, JP2001130204 A2, JP2001095865 A2, JP2001085865 A2, EP0945334 A2, DE3620378 A1, DE19547050 A1, CN2466023 Y,

Forward Citations: GB2520588, CN105015671,

Abstract:
Source: US2016137258A The invention provides a vehicle drivable in use by a person walking or running whilst seated comprising: a frame; a large diameter front wheel non−steerable with respect to the frame, a seat for supporting a user's weight whilst walking or running, the frame configured to carry the seat suspended on the front wheel, a small diameter, steerable rear wheel journalled to the frame at a steering pivot axis, the seat being rotatable forwardly with respect to the front wheel and comprising a seat base for supporting a user and further comprising a backrest for engaging the user's back in use. The large front wheel may be of approximate diameter of a user's leg (typically an adult human), thus the large front wheel may be of similar size to a bicycle wheel for the user.

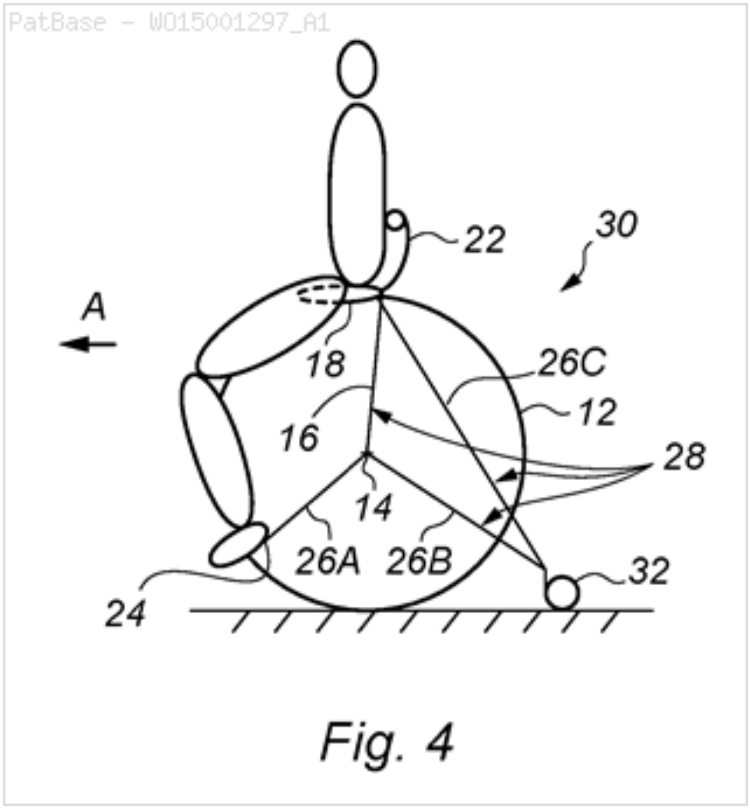


Fig. 4

0) US4076270A – FOLDABLE CAMBERING VEHICLE

6) Family number: 1526864 (US4076270A) © PatBase

Title: FOLDABLE CAMBERING VEHICLE

Priority: CA19760251310 19760428 CA19770272670 19770225 US19750578739 19750519 US19760649967 19760119 CA19790332336 19790723 US19760713411 19760811 US19760714901 19760816

Family:

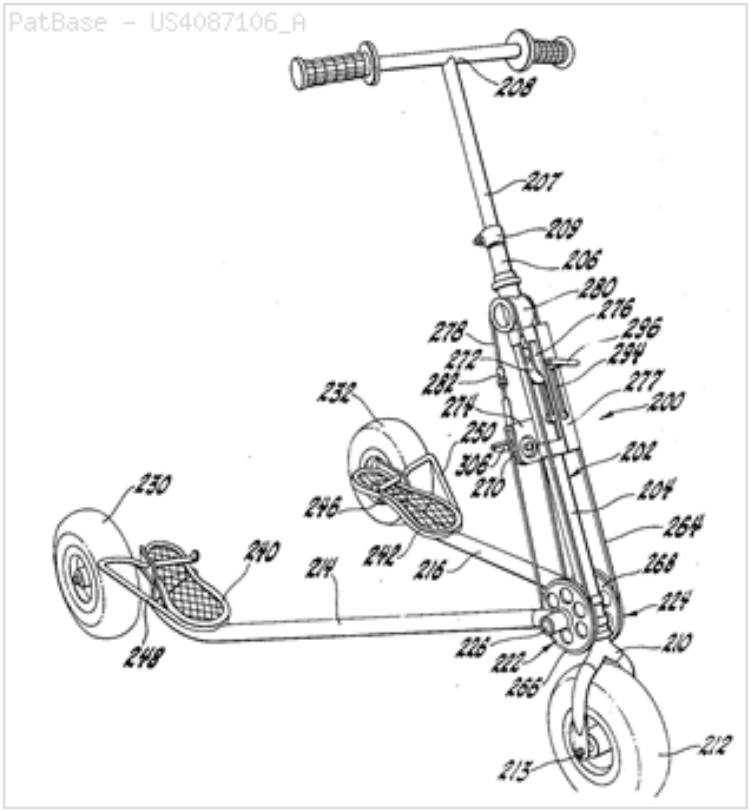
Publication number	Publication date	Application number	Application date
AU197613685 A1	19771110	AU19760013685	19760516
AU197721047 A1	19780713	AU19770021047	19770105
AU512217 B2	19801002	AU19770021047	19770105
BE850536 A1	19770516	BE19770174208	19770119
BE850537 A1	19770516	BE19770174209	19770119
BR7700306 A	19770920	BR19770000306	19770117
BR7700307 A	19770920	BR19770000307	19770117
CA1069558 A1	19800108	CA19770272673	19770225
CA1076159 A1	19800422	CA19790332336	19790723
CA1076159 A2	19800422	CA19790332336	19790723
CA1076622 A1	19800429	CA19770272670	19770225
CA1082752 A1	19800729	CA19760251310	19760428
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FR2311704 A1	19761217	FR19760015050	19760519
FR2311704 B1	19790504	FR19760015050	19760519
FR2338169 A1	19770812	FR19770001450	19770119
FR2338169 B1	19790309	FR19770001450	19770119
FR2338178 A1	19770812	FR19770001452	19770119
FR2338178 B1	19790309	FR19770001452	19770119
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IT1082659 A	19850521	IT19770047669	19770117
JP1094548 C3	19820427	JP19770004082	19770119
JP1120185 C3	19821028	JP19760056760	19760519
JP51145649 A2	19761214	JP19760056760	19760519
JP52116541 A2	19770930	JP19770004081	19770119
JP52123039 A2	19771015	JP19770004082	19770119
JP56032147 B4	19810725	JP19770004082	19770119
JP57008743 B4	19820218	JP19760056760	19760519
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NL7700176 A	19770721	NL19770000176	19770110
SE7700470 A	19770720	SE19770000470	19770118
SE7700471 A	19770720	SE19770000471	19770118
US4076270 A	19780228	US19760713411	19760811
US4087104 A	19780502	US19760714901	19760816
US4087106 A	19780502	US19760649967	19760119

Probable Assignee: GEN MOTORS CORP

Assignee(s):(std)	GEN MOTORS CORP ; GEN MOTORS CORP SOC DELLO STAT
Assignee(s):	GENERAL MOTORS CO ; GENERAL MOTORS CORP ; GENERAL MOTORS CORP SOC DELLO STATO DEL DELAWARE ; GENERAL MOTORS TE DETROIT MICHIGAN VER ST V AM CORP ; GENERAL MOTORS TE DETROIT MICHIGAN VERSTVAM CORP ; WINCHELL FRANK J ; WINKELMANN KLAUS O
Inventor(s):(std)	WINCHELL FRANK J ; WINKELMANN KLAUS OTTO ; WINKELMANN KLAUS O ; WINKELMANN K ; WINCHELL F ; WINKELMANN K O ; WINCHELL FRANK JENNINGS ; WINCHELL F J ; KURAUSU OO UINKERUMAN ; FURANKU JIEE UINCHIERU
Inventor(s):	K O WINKELMANN ; FRANK JENNINGS WINCHELL ; F J WINCHELL ; KLAUS OTTO WINKELMANN ; JENNINGS WINCHELL FRANK
Agent(s):	GOWLING LAFLEUR HENDERSON LLP
International class (IPC 8–9):	B62B13/08 B62B13/12 B62K15/00 B62K17/00 B62K3/00 B62K5/00 B62K5/04 B62K5/06 B62M1/00 B62M1/04 B62M1/12 B62M1/24 B62M27/02 (Advanced/Invention); B62K17/00 B62K5/00 (Advanced/Non–invention); B62B13/00 B62K15/00 B62K3/00 B62K5/00 B62M1/00 (Core/Invention)
International class (IPC 1–7):	B62B11/00 B62B13/08 B62B15/00 B62B19/04 B62B3/02 B62B3/12 B62D11/00 B62D61/06 B62D61/08 B62K15/00 B62K17/00 B62K5/00 B62K5/02 B62K5/04 B62K5/08 B62M1/00 B62M1/04 B62M1/12 B62M1/14 B62M5/00
CPC:	B62B5/003 B62B13/08 B62K15/006 B62K2005/001 B62M1/00 B62M1/24 B62M6/00 B62K5/10 B62B13/12 B62B2205/00 B62K3/002 B62K5/06
European class:	B62B13/08 B62B13/12 B62K15/00F B62K3/00B B62K5/06 B62K5/10 B62M1/00 B62M1/24 B62M6/00 L62B205/00 L62B5/00P1 L62K5/00B
US class:	180/183 180/208 280/12.1 280/14.28 280/16 280/210 280/218 280/220 280/221 280/278 280/8
Classification Explorer	
Cited documents:	US887812 A, US3964563 A, US3799565 A, US3663038 A, US3656775 A, US3645558 A, US3623749 A, US3540750 A, US3354975 A, US3237961 A, US3229782 A, US3123375 A, US3086795 A, US3033585 A, US2771145 A, US2593974 A, US210435 A, US1607972 A, JP51004475 U1, JP51004475 U, JP49042586 U, JP49042586 A2, JP11001619 U1, IT370923 A, FR701216 A, DE456843 A, AT169408 B,
Forward Citations:	WO15166456, WO09070035, WO07147951, WO07063567, WO07063567, WO05005233, WO04087491, WO04087491, WO0236419, USRE32031, USD725712, USD725711, USD716382, USD710950, USD706876, USD658724, USD594792, USD497957, USD495758, USD495374, US9567034, US9545963, US9529365, US9477228, US9459627, US9442492, US9442491, US9442486, US9429955, US9411339, US9411336, US9400502, US9283848, US9268333, US9266582, US9193371, US9188984, US9168966, US9108693, US9073585, US8636288, US8556009, US8505945, US8467941, US8453768, US8387996, US8328209, US8322477, US8170780, US8100216, US7988159, US7967096, US7900725, US7896362, US7808214, US7757794, US7694986, US7690452, US7690447, US7591337, US7571787, US7546889, US7479872, US7438297, US7407175, US7370713, US7275607, US7240908, US7210544, US7192038, US7182166, US7174976, US7157875, US7090040, US7023330, US7004271, US7000933, US6976687, US6969079, US6965206, US6915878, US6908091, US6908090, US6883814, US6880840, US6874591, US6868931, US6866107, US6851694, US6827358, US6827163, US6815919, US6796396, US6789640, US6779621, US6739606, US6651766, US6581714, US6538411, US6499751, US6481729, US6478104, US6467781, US6378879, US6367817, US6302230, US6279929, US6220612, US5762351, US5388659, US5169165, US5168947, US5039121, US5009415, US4998596, US4540192, US4498683, US4332378, US4325565, US4160552, US2016121957, US2016009332, US2015158386, US2015076786, US2014217705, US2014035255, US2012223502, US2012043733, US2011187069, US2011169234, US2010225079, US2010140893, US2010114468, US2010072722, US2010044981, US2009099762, US2008223637, US2008223632, US2008174087, US2008035395, US2007187166, US2007075517, US2007075514, US2006249313, US2006125433, US2006108165, US2006108156, US2006061460, US2006011398, US2005236215, US2005218610, US2005212245, US2005211477, US2005126832, US2004262871, US2004256824, US2004256823, US2004256822, US2004256821, US2004227318, US2004118622, US2004094925, US2004069543, US2004055804, US2004055796, US2004054634, US2004032105, US2004024207, US2004011573, US2004007425, US2004007399, US2004007398, US2003205419, US2003188906, US2003141832, NL2003040, JP2010508188, JP1316536, GB2369331, FR2886914, FR2852914, FR2796358, FR2786958, FR2736876, FR2689082, FR2641469, EP2268530, EP2268530, EP1608546, EP0184076, DE202004014978, DE19652509, DE19652509,

CN104349973, CH705136,

Abstract:
Source: US4076270A A cambering vehicle employing a cambering device which interconnects the trailing arms for controlled pivotal movement and includes means for locking the trailing arms together and for allowing the vehicle to be folded into a compact configuration so as to facilitate stowage thereof.



0) US2004167761A – PORTABLE IN–THE–VEHICLE ROAD SIMULATOR

7) Family number: 29427146 (US2004167761A) © PatBase

Title: PORTABLE IN–THE–VEHICLE ROAD SIMULATOR

Priority: AU20030223488 20030407 AU20100200564 20100215 US20100979280 20101227 US20030742613 20031219 US20020370277P 20020405 AU20120245166 20121107 WO2003US10529 20030407 US20130796510 20130312 US20150846676 20150904

Family:

Publication number	Publication date	Application number	Application date
AU2003223488 AA	20031027	AU20030223488	20030407
AU2010200564 AA	20100311	AU20100200564	20100215
AU2012245166 AA	20121129	AU20120245166	20121107
AU2012245166 BB	20151210	AU20120245166	20121107
EP1495434 A1	20050112	EP20030719618	20030407
EP1495434 A4	20090114	EP20030719618	20030407
US2004167761 AA	20040826	US20030742613	20031219
US2011131026 AA	20110602	US20100979280	20101227
US2014095135 AA	20140403	US20130796510	20130312
US2016189560 AA	20160630	US20150846676	20150904
US8412499 BB	20130402	US20100979280	20101227
WO03088126 A1	20031023	WO2003US10529	20030407

Probable Assignee: SIZOV KONSTANTIN

Assignee(s):(std)**:** SIZOV KONSTANTIN

Assignee(s): KONSTANTIN SIZOV

Inventor(s):(std)**:** SIZOV KONSTANTIN

Inventor(s): KONSTANTIN SIZOV

Agent(s): FISHER ADAMS KELLY; FISHER ADAMS KELLY PTY LTD; FISHER ADAMS KELLY CALLINANS; PATENTBAR INTERNATIONAL P C; PATENTBAR INT PC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): G06F17/50 G06G7/48 G09B5/06 G09B9/04 G09B9/042 G09B9/16 (Advanced/Invention); G09B9/14 (Advanced/Non–invention)

International class (IPC 1–7): G06G7/48

CPC: G09B19/14 G09B19/167 G09B5/065 G09B9/042 G06F17/5095

European class: G09B19/14 G09B19/16D G09B9/042

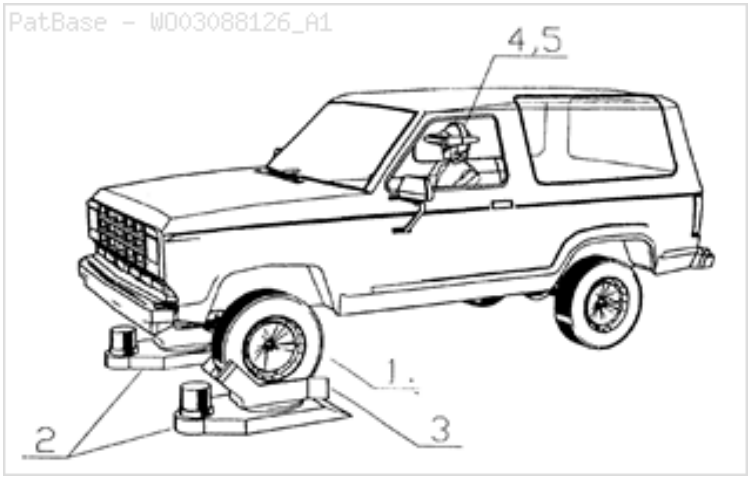
US class: 434/67 703/8 703/8P

Classification Explorer

Cited documents: WO0155690 A1, US8412499 BB, US7424414 BB, US6505503 BA, US6356812 BA, US6354838 BA, US6200139 BA, US6151060 A, US6044696 A, US5921780 A, US5919045 A, US5707237 A, US5621168 A, US5477453 A, US4998594 A, US4912970 A, US4442708 A, US4186593 A, US2002018982 AA, DE20000556 U1, DE19928490 A1, DE10033442 A1,

Forward Citations: WO14144036, WO07109625, WO07109625, US8942878, US8150671, US7979147, US7424414, US7200536, US2014195088, US2014095135, US2013302755, US2010280813, US2009011389, US2005091018, US2002087296, ITMI20082098, EP1997094, CN103854533, CN103479138, CN103413473, CN103413473,

Abstract:



Source: US2004167761A The portable simulation system is a computer−based driving simulator, which uses an actual vehicle as an input device, and a portable display to present a Virtual Driving Environment (VDE) to the driver. Vehicle's steered wheels are placed atop of the turntables permitting free operation of the steering wheel. The vehicle remains immobile while its engine and power steering can be turned off during the simulation. External non−invasive sensors can be placed under the gas and brake pedals, permitting any vehicle to be used in the simulator, including the driver's own vehicle. A digital interface to the vehicle's systems, like OBD II, can be used to increase the fidelity of the simulation. A portable computer used for driving simulation and VDE presentation provides a low cost simulation option. A simple configuration of the portable simulator does not require an external power source and can be set−up and operated at any parking space. Possible applications of the simulation system include driver training and testing.

0) US2007093148A – AMPHIBIOUS VEHICLE

8) Family number: 57370442 (US2007093148A) © PatBase

Title: AMPHIBIOUS VEHICLE

Priority: EP20060794866 20061023 US20050256206 20051021 WO2006GB03930 20061023

Family:

Publication number	Publication date	Application number	Application date
CA2625703 AA	20070426	CA20062625703	20061023
CA2625703 C	20151215	CA20062625703	20061023
CN101389498 A	20090318	CN200680039293	20061023
CN101389498 B	20160316	CN200680039293	20061023
DE602006043018 D1	20141016	DE200660043018T	20061023
EP1937497 A2	20080702	EP20060794866	20061023
EP1937497 B1	20140910	EP20060794866	20061023
KR20080063376 A	20080703	KR20087010407	20080429
US2007093148 AA	20070426	US20050256206	20051021
US7207851 BA	20070424	US20050256206	20051021
WO07045909 A2	20070426	WO2006GB03930	20061023
WO07045909 A3	20081030	WO2006GB03930	20061023

Probable Assignee: GIBBS TECHNOLOGIES LTD

Assignee(s):(std)**:** GIBBS ALAN T ; GIBBS ALAN TIMOTHY ; GIBBS TECH LTD ; JENKINS NEIL GRAHAM ; WALL ANDREW P ; JENKINS NEIL G

Assignee(s): GIBBS TECHNOLOGIES LIMITED ; GIBBS TECHNOLOGIES LTD

Inventor(s):(std)**:** GIBBS ALAN T ; GIBBS ALAN TIMOTHY ; GRAHAM JENKINS NEIL ; JENKINS NEIL G ; JENKINS NEIL GRAHAM ; TIMOTHY GIBBS ALAN ; WALL ANDREW P

Inventor(s): JENKINS NEIL ; GIBBS ALAN

Agent(s): SMART AND BIGGAR; PLUCKROSE ANTHONY WILLIAM ET AL; BOULT WADE TENNANT; FULWIDER PATTON LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60F3/00 (Advanced/Invention); B60F3/00 (Advanced/Non–invention); B60F3/00 (Core/Invention)

CPC: B60F3/0007 B60F3/0069 B60F2301/04

European class: B60F3/00B B60F3/00D2 L60F301/04

US class: 440/1 440/12.5 440/84

Classification Explorer

Cited documents: WO06084969 A3, WO06084969 A2, US5562066 A, US4802433 A, US4387661 A, US4358072 A, US3903831 A, US3280785 A, US2003194923 AA, US2003060095 AA, US20030194923, US20030060095, FR2647060 A1, DE3916200, CN1355746,

Forward Citations: WO09027647, USD760623, US9555678, US9415649, US9079466, US8655521, US8221174, US8162704, US8025540, US7934963, US2012310453, US2012143462, US2011196596, US2011189906, US2010173542, US2010144220, US2009061702, US2008108257, RU2555051, JP5331808, JP2010536660, GB2531101, GB2531076, FR3013262, CN105034726, CN103917386,

Abstract:
Source: US2007093148A Amphibious vehicle needs less power on land than on water. A control system is provided to limit power and/or speed on land, using: restriction of flow of fuel, air, or exhaust gases; heated intake air; exhaust gas recirculation; declutching of a supercharger; bypassing of a turbocharger; a variable throttle stop, dual throttles, or a switchable throttle damper; cylinder or intake valve deactivation; a dual length intake manifold; dual mode ignition or engine mapping; dual fuel–gasoline on water, compressed natural gas on road; variable compression ratios or valve timing; a clutch designed to slip; automatic brake application; or aerodynamic brakes. The suspension may tilt the vehicle to increase aerodynamic resistance. The road transmission may be geared to limit maximum speed. High rolling resistance tyres or twin engines may be used. A sensor on retractable suspension may indicate whether the vehicle is on land or on water.

PatBase - WO07045909_A2

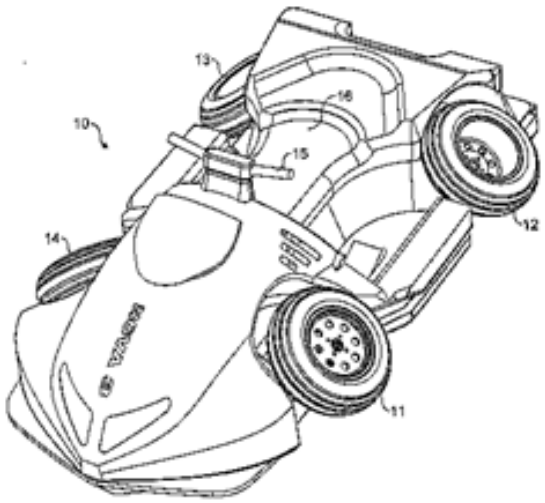


FIG. 1

0) US5291835A – RETRACTABLE INTERMODAL VEHICLE

9) Family number: 19278816 (US5291835A) © PatBase

Title: Retractable intermodal vehicle

Priority: US19930037040 19930325 US19950525713 19950922 WO1994US02212 19940301 US19970889080 19970707

Family:

Publication number	Publication date	Application number	Application date
AU199463957 A1	19941011	AU19940063957	19940301
AU685442 B2	19980122	AU19940063957	19940301
BRPI9406024 A	19951219	BR1994PI06024	19940301
CA2159102 AA	19950925	CA19942159102	19940301
CN1119845 A	19960403	CN19941091590	19940301
DE4491715 T	19960222	DE19944491715T	19940301
DE4491715 T1	19960222	DE19944491715T	19940301
DE69418705 D1	19990701	DE19946018705	19940301
DE69418705 T2	19991223	DE19946018705T	19940301
DE9421442 U1	19960201	DE19940021442U	19940301
EP0688280 A1	19951227	EP19940911436	19940301
EP0688280 B1	19990526	EP19940911436	19940301
GB2291387 A1	19960124	GB19950019542	19940301
GB2291387 B2	19970917	GB19950019542	19940301
GB9519542 A0	19951206	GB19950019542	19940301
PL173941 B1	19980529	PL19940310810	19940301
PL310810 A1	19960108	PL19940310810	19940301
RU2143355 C1	19991227	RU19950118177	19940301
RU95118177 A	19971027	RU19950118177	19951025
US5291835 A	19940308	US19930037040	19930325
US5890433 A	19990406	US19970889080	19970707
WO9421503 A1	19940929	WO1994US02212	19940301

Probable Assignee: WICKS HARRY O

Assignee(s):(std)**:** RAILRUNNER SYSTEMS INC ; REJLRANEH SISTIMZ INK ; RAILRUNNER SYSTEMS ; WICKS HARRY O

Assignee(s): WICKS PLAINTIFF HARRY O SHADOW MOUNTAIN DRIVE APT ; WICKS PLAINTIFF HARRY O ; USB FOCUS FUND XIII LLC ; USB FOCUS FUND XIX LLC C O US BOSTON CAPITAL CORP ; USB FOCUS FUND XXIII LLC ; USB FOCUS FU ; RAIL RUNNER SYSTEMS INC GRIFFIN GA US ; RAILRUNNER SYSTEMS INC GRIFFIN US ; RAILRUNNER SYSTEMS INC GRIFFIN ; BACHRACH JOINT TENANTS HILLEL AND LILIANA ; FLEMING JONATHAN ; FOSKETT CHARLES T ; FOSKETT CHARLES T C O RAILRUNNER NA

Inventor(s):(std)**:** HARRY O WICKS ; VIKS GARRI O ; WICKS HARRY ; WICKS HARRY O

Inventor(s): WICKS HARRY O EL PASO TEX US ; WICKS HARRY O EL PASO TX 79912 US

Agent(s): GRIFFITH HACK; MBM AND CO

Designated states: AT AU BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK ES FI FR GA GB GE GN GR HU IE IT JP KG KP KR KZ LK LU LV MC MD MG ML MN MR MW NE NL NO NZ PL PT RO RU SD SE SI SK SN TD TG TJ UA US UZ VN

International class (IPC 8–9): B60F1/00 B60F1/04 B61D3/10 B61D3/18 B61F3/12 B61F5/00 B61G5/02 (Advanced/Invention); B61F5/00 (Advanced/Non–invention); B61D3/00 B61F3/00 B61F5/00 B61G5/00 (Core/Invention)

International class (IPC 1–7): B60F1/00 B60F1/04 B61D3/10 B61D3/12 B61D3/14 B61D3/18 B61F3/12 B61F5/00 B61F5/50 B61G5/02 B61G5/04

CPC: B61D3/184 B61F3/125 B61D3/18

European class: B61D3/18B2 B61F3/12B

US class: 105/159 105/4.2 105/4.4 213/75R 410/53

Classification Explorer

Cited documents: US5199359 A, US5152228 A, US5107772 A, US5040466 A, US5020445 A, US5009169 A, US4955144 A, US4817536 A, US4753174 A, US4665834 A, US4547107 A, US4202276 A, JP1047672 A2, GB2150900 A1, DE205272 A, DE2051272 A1,

Forward Citations: WO11071887, WO09085632, US8789850, US8677907, US8662535, US8627772, US8567820, US8528929, US8468950, US8438734, US8397925, US8286997, US8215240, US7914042, US7431167, US6089544, US6050197, US5868379, US5601030, US5564341, US5537931, US5431110, US2012325107, US2012017411, US2011226718, US2011176896, US2011175323, US2010242787, US2010199879, US2009283999, US2006102579, ES2565552, EP0856449, EA591, EA024012, EA000591, DE102015108231, CN104203711, CN104203711, CN102712322, CN102588485,

Abstract:
Source: US5291835A A retractable intermodal vehicle for supporting and connecting modified semitrailers end−to−end to form a train of trailers capable of being operated on a railroad track; the semitrailers also able to be operated on a highway as regular semitrailers. The intermodal vehicle is comprised of two lower frames, with a wheel/axle assembly mounted to each, and each pivoted from and supporting a single upper frame assembly; the pivoting of these lower frames providing a limited steering of the rail axles relative to the upper frame. Inflatable air springs are mounted between the lower frames and upper frame assembly to allow the upper frame to be raised and lowered. The upper frame assembly is comprised of two gravity load carrying structures, each for supporting one end of a superimposed trailer; two coupler bodies, each containing a coupler tongue, the tongue being arranged to enter a complimentary coupler tongue receiving socket at either end of the superimposed trailer; and two upwardly movable coupling pins, each pin capable of being raised to enter concentric apertures in a coupler tongue and an a complimentary trailer mounted socket to effect a coupling between these elements; and each pin being capable of being lowered to permit the withdrawal of the coupler tongue from the trailer socket. In an alternative design two separate upper frames are provided.

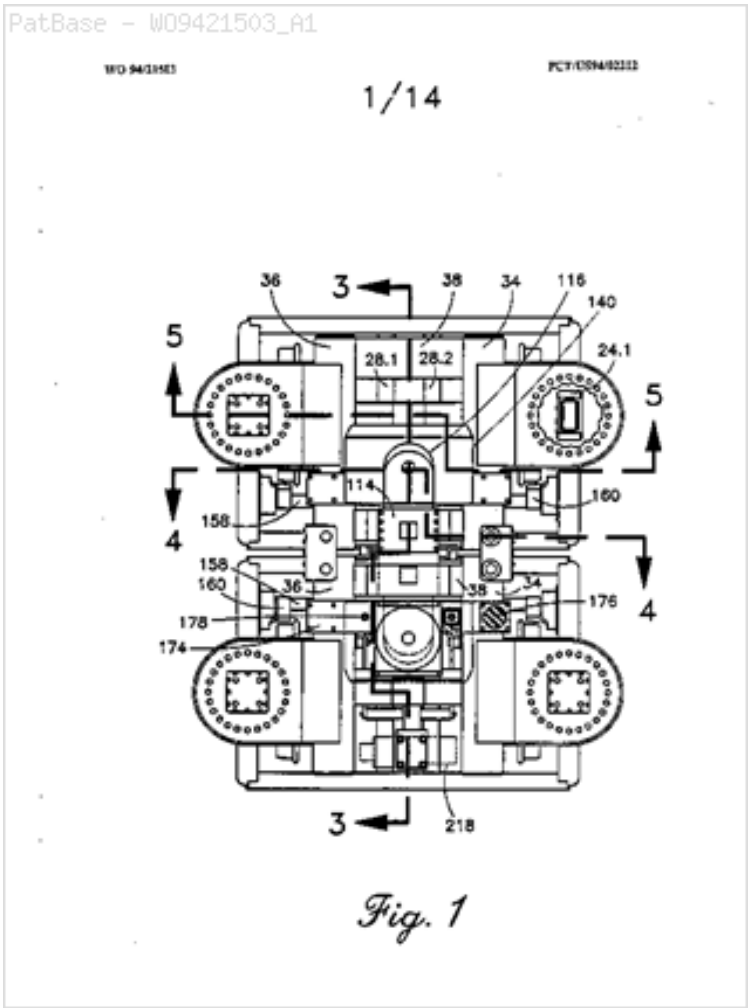


Fig. 1

0) US5709583A – STEERING SYSTEM FOR RADIO–CONTROLLED WHEELED VE...

10) Family number: 9435509 (US5709583A) © PatBase

Title: Steering system for radio–controlled wheeled vehicle toy

Priority: CA19952154616 19950725 JP19940193787 19940727 US19950484867 19950607

Family:

Publication number	Publication date	Application number	Application date
AT174526 E	19990115	AT19950305194T	19950725
CA2154616 AA	19960128	CA19952154616	19950725
CA2154616 C	20030401	CA19952154616	19950725
CN1118708 A	19960320	CN19951001146	19950105
DE69506630 D1	19990128	DE19956006630	19950725
DE69506630 T2	19990617	DE19956006630T	19950725
EP0694323 A1	19960131	EP19950305194	19950725
EP0694323 B1	19981216	EP19950305194	19950725
ES2127995 T3	19990501	ES19950305194T	19950725
HK1012592 A1	20000505	HK19980113842	19981217
JP8038746 A2	19960213	JP19940193787	19940727
KR19960003773 A	19960223	KR19940036666	19941224
US5709583 A	19980120	US19950484867	19950607

Probable Assignee: TYCO IND INC

Assignee(s):(std): MATTEL INC ; TYCO IND INC ; TAIYO KOGYO CO LTD

Assignee(s): TAIYO KOGYO KK ; TYCO IND ; TYCO INDUSTRIES INC ; TYCO INDUSTRIES INC MOUNT LAUREL N J US ; SUTO SHOHEI ; JAFFE JONATHAN ADAM

Inventor(s):(std): JAFFE JOHNATHAN ADAM ; JAFFE JONATHAN ADAM ; SUDO SHOHEI ; SUTO SHOHEI

Inventor(s): SUTO SHOHEI KATSUSHIKA KU TOKYO JP ; JAFFE JONATHAN ADAM VOORHES NEW JERSEY 08043 US ; JOHNATHAN ADAM JAFFE ; SHOHEI SUTO

Agent(s): GOWLING LAFLEUR HENDERSON LLP

Designated states: AT BE CH DE ES FR GB IT LI NL

International class (IPC 8–9): A63H17/26 A63H17/36 A63H17/39 A63H30/04 (Advanced/Invention); A63H29/22 A63H29/24 (Advanced/Non–invention)

International class (IPC 1–7): A63H A63H17/21 A63H17/26 A63H17/36 A63H17/39 A63H30/04

CPC: A63H17/22 A63H17/36

European class: A63H17/22 A63H17/36

US class: 446/440 446/456 446/460

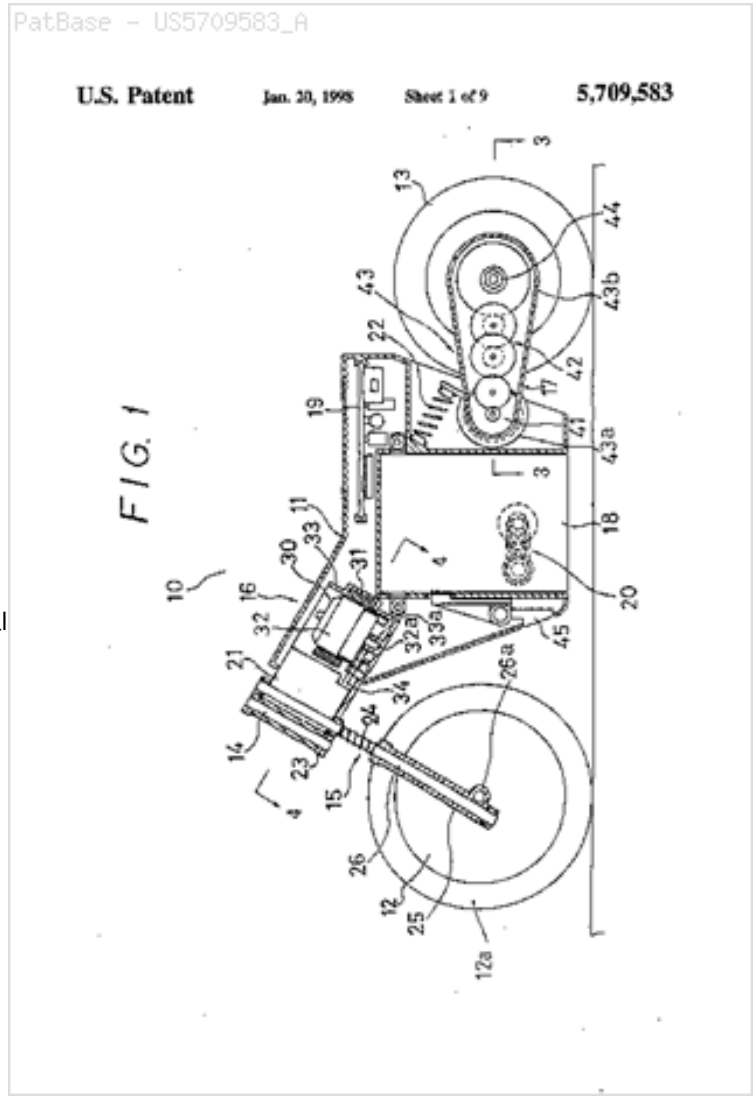
Classification Explorer

Cited documents: USRE30299 E, US5368516 A, US5269718 A, US4966569 A, US4902271 A, US4881917 A, US4764149 A, US4712806 A, US4705487 A, US4601674 A, US4571213 A, US4568306 A, US4526554 A, US4471566 A, US4387532 A, US4383388 A, US4363186 A, US4342175 A, US4309841 A, US4290228 A, US4267663 A, US4201011 A, US4171592 A, US4143307 A, US3886682 A, US3840086 A, US3756338 A, US3650067 A, US3546814 A, US2829467 A, US2814908 A, US2699011 A, US2159974 A, JP62107891 A2, JP56013971 A2, JP2065992 A2, GB747701 A, GB2199257 A1, GB2087739 A1, DE4324774 A1, DE1039898 B,

Forward Citations: WO09157253, WO06047548, WO0029087, US8298039, US8231427, US8162715, US8002606, US7938709, US7896725, US7610131, US7503828, US7291053, US7234990, US7055843, US6796874, US6786796, US6692333, US6682394, US6659837, US6551169, US6482069, US6171172, US6170354, US6095891, US6024627, US5882241, US2011183577, US2010261407, US2010075572,

US2009325460, US2009264046, US2008227365, US2006276101, US2006121824, US2006085111, US2005250414, US2004251657, US2004224602, US2004198157, US2001053653, JP2010005206, GB2367767, GB2367767, GB2321415, GB2321415, FR2863508, EP2168642, EP1997543, EP1706186, EP1421981, EP1208892, EP1208892, DE19983743, CN103706122, CN102824749, AU756648, AU756648,

Abstract:
Source: US5709583A A radio−controlled vehicle toy is disclosed which includes a body, a caster axle mounted on a front end of the body and tilted backward from vertical, a front fork rotatable on the caster axle and rotatably supporting a front vehicle wheel, a rear−wheel drive coupled with a rear vehicle wheel, a radio−control receiver and a power source mounted to the body, and a pair of auxiliary wheels mounted on opposite sides of the vehicle body frame so as to be brought into contact with an underlying surface when the vehicle body frame leans laterally. A steering unit is mounted in a front−end portion of the body and includes a steering mechanism to rotate the front fork based on a control signal issued from the receiver and a resilient coupling which resiliently applies control torque to the front fork. The rear−wheel drive includes a motor which receives an electric current from the power source a speed reduction unit between the motor and the rear wheel, and a switch coupled across the motor, the switch being operable according to a signal initiated by the vehicle receiver to close and short the motor, which exerts a drag to effectively brake the vehicle toy.



0) US2013184936A – VEHICLE ROLLOVER MITIGATION SYSTEM

11) Family number: 53097723 (US2013184936A) © PatBase

Title: VEHICLE ROLLOVER MITIGATION SYSTEM

Priority: US20120350839 20120116

Family:

Publication number	Publication date	Application number	Application date
CN103204158 A	20130717	CN201310014617	20130115
CN103204158 B	20170301	CN201310014617	20130115
DE102013200459 A1	20130718	DE201310200459	20130115
GB201223284 A0	20130206	GB20120023284	20121221
GB2499301 A1	20130814	GB20120023284	20121221
US2013184936 AA	20130718	US20120350839	20120116
US8725353 BB	20140513	US20120350839	20120116

Probable Assignee: FORD GLOBAL TECH LLC

Assignee(s):(std)**:** LU JIANBO ; PILUTTI THOMAS EDWARD ; RHODE DOUGLAS SCOTT ; RUPP JEFFREY DAN ; STEVENS GREG BLAISDELL ; FILEV DIMITAR PETROV ; FORD GLOBAL TECH LLC

Assignee(s): FORD GLOBAL TECHNOLOGIES LLC

Inventor(s):(std)**:** STEVENS GREG BLAISDELL ; RUPP JEFFREY DAN ; RHODE DOUGLAS SCOTT ; PILUTTI THOMAS EDWARD ; PILUTTI THOMAS EDWAR ; LU JIANBO ; FILEV DIMITAR PETROV

Inventor(s): DOUGLAS SCOTT RHODE ; DIMITAR PETROV FILEV ; THOMAS EDWARD PILUTTI ; JIANBO LU ; JEFFREY DAN RUPP ; GREG BLAISDELL STEVENS

Agent(s): JOSEPH E

International class(IPC 8–9)**:** A01B69/00 B60T8/1755 B60W10/04 B60W10/06 B60W10/18 B60W10/20 B60W30/02 B60W30/04 B62D6/00 G06F7/70 (Advanced/Invention)

CPC: B60W10/20 B60W10/16 B60W10/184 B60W2030/043 B60W2520/10 B60W2520/18 B60T2230/03 B60T8/17554 B60T2230/06 B60W30/04 B60W10/06

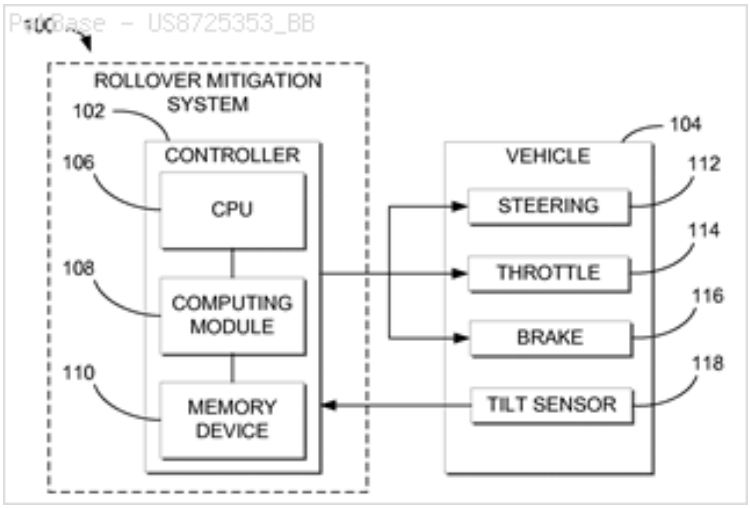
US class: 701/41 701/70

Classification Explorer

Cited documents: US7647148 BB, US5869943 A, US2010017070 AA, US2005177296 AA, US2005131604 AA, CN1671577 A, CN101628582 A,

Forward Citations: WO16180637, US9283825, CN104773175, CN103863308,

Abstract:
Source: US2013184936A The present disclosure provides a system and a method for mitigating vehicle rollovers, the method comprises monitoring a vehicular tilt and sensing a vehicular rollover in a particular direction, through a tilt sensor. Further, the system determines an occurrence of a rollover according to a calculated tilt threshold, through a central processing unit. Steering the vehicle in the sensed direction of the rollover, accelerating the vehicle in the same direction, and braking the vehicle upon sensing a decrease in the rollover, all being controlled through a controller, enables the vehicle to eventually stabilize and return to track.



0) US2015274160A – THREE–WHEELED TILTING VEHICLE

12) Family number: 55718282 (US2015274160A) © PatBase

Title: THREE–WHEELED TILTING VEHICLE

Priority: US20120678043P 20120731 US20150609314 20150129 WO2013US52581 20130729

Family:

Publication number	Publication date	Application number	Application date
US2015274160 AA	20151001	US20150609314	20150129
WO14022315 A2	20140206	WO2013US52581	20130729
WO14022315 A3	20140403	WO2013US52581	20130729

Probable Assignee: GOTECH INT LTD

Assignee(s):(std)**:** GOTECH INT LTD ; HELIX MOTORS INT INC ; HELIX MOTORS INT LTD

Inventor(s):(std)**:** BRUCE IAN ; DUFFY STEPHEN R ; LEE HELEN ; MCLELLAN TIMOTHY F

Agent(s): ALTMAN DANIEL E

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60W10/18 B60W10/20 B60W30/045 B62D61/06 B62D61/08 B62D7/02 B62D9/02 B62K5/027 B62K5/10 (Advanced/Invention)

CPC: B60W30/045 B62D61/08 B60W10/20 B60W10/18 B60W2520/06 B60W2710/18 B60W2720/18 B62D6/002 B62D9/02 B62K5/027 B62K5/10

US class: 180/215 701/41

Classification Explorer

Cited documents: US7967306 BB, US6122577 A, US5927424 A, US2014312580 AA, US2014019006 AA, US2013168934 AA, US2013098703 AA, US2012181765 AA, US2008238005 AA,

Forward Citations: WO17013178, US9440645, US2016059850,

Abstract:
Source: US2015274160A A three–wheeled tilting vehicle is disclosed. The vehicle can include an electronic control system that controls the tilting of the vehicle in higher speed turns for increased stability. The vehicle may also include a traction control system to provide additional stability during higher speed turns.

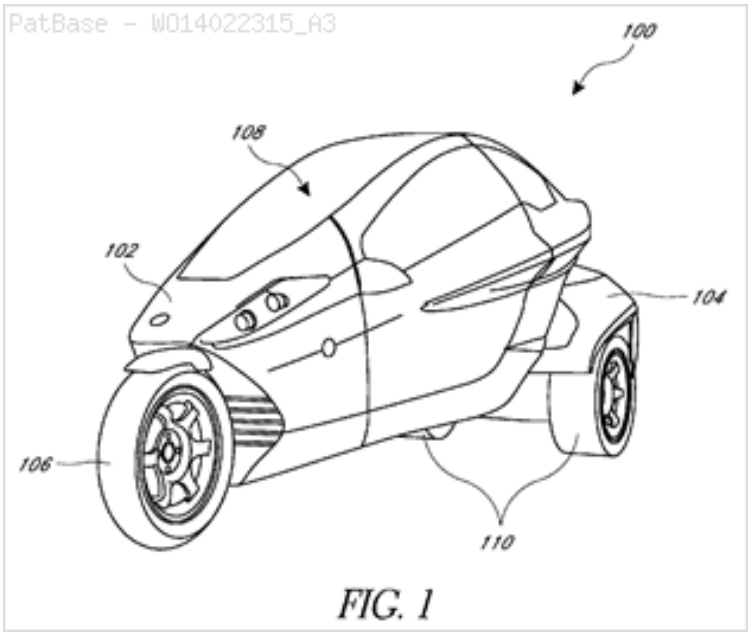


FIG. 1

0) US2014349806A – CONTINUOUSLY VARIABLE TOROIDAL TRANSMISSION

13) Family number: 50796501 (US2014349806A) © PatBase

Title: CONTINUOUSLY VARIABLE TOROIDAL TRANSMISSION

Priority:

EP20140704075	20140110	EP20140710198	20140213	GB20120000357	20120110
GB20130000453	20130110	GB20130002544	20130213	GB20130002702	20130215
WO2013EP50425	20130110	WO2013EP50431	20130110	GB20130004349	20130311
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GB20140014231	20130110	GB20150000434	20130110	WO2014EP52859	20140213
WO2013EP50433	20130110	WO2014EP00051	20140110	WO2014EP00247	20140110
WO2014EP52862	20140213				

Family:

Publication number	Publication date	Application number	Application date
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CN104160175 A	20141119	CN201380013490	20130110
CN104321560 A	20150128	CN201380013432	20130110
CN105121906 A	20151202	CN201480022004	20140213
CN105143720 A	20151209	CN201480011867	20140110
CN105229339 A	20160106	CN201480008740	20140213
EP2802793 A1	20141119	EP20130700991	20130110
EP2802794 A1	20141119	EP20130701926	20130110
EP2943699 A2	20151118	EP20140704075	20140110
EP2956690 A1	20151223	EP20140710198	20140213
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GB201410951 A0	20140806	GB20140010951	20140110
GB201414222 A0	20140924	GB20140014222	20130110
GB201414231 A0	20140924	GB20140014231	20130110
GB201414886 A0	20141008	GB20140014886	20130110
GB201414888 A0	20141008	GB20140014888	20130110
GB201414914 A0	20141008	GB20140014914	20130110
GB201500434 A0	20150225	GB20150000434	20130110
GB201507863 A0	20150617	GB20150007863	20150508
GB201600886 A0	20160302	GB20160000886	20130110
GB2499704 A1	20130828	GB20130000453	20130110
GB2499704 B2	20150311	GB20130000453	20130110
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GB2510749 B2	20150902	GB20140008089	20140213
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GB2511461 B2	20150805	GB20140010951	20140110
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GB2515204 A1	20141217	GB20140014886	20130110
GB2515204 B2	20160120	GB20140014886	20130110

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GB2515206 B2	20160217	GB20140014914	20130110	
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JP2015505020 T2	20150216	JP20140551619T	20130110	
JP2016503144 T2	20160201	JP20150552032T	20140110	
JP2016507030 T2	20160307	JP20150556540T	20140213	
KR20140109497 A	20140915	KR20147022441	20130110	
US2014349806 AA	20141127	US20130371582	20130110	
US2014378272 AA	20141225	US20130371570	20130110	
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WO13104727 A1	20130718	WO2013EP50425	20130110	
WO13104727 A8	20130906	WO2013EP50425	20130110	
WO13104731 A1	20130718	WO2013EP50431	20130110	
WO13104731 A8	20130906	WO2013EP50431	20130110	
WO13104733 A1	20130718	WO2013EP50433	20130110	
WO13104733 A8	20130906	WO2013EP50433	20130110	
WO14108345 A2	20140717	WO2014EP00247	20140110	
WO14108345 A3	20140904	WO2014EP00247	20140110	
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WO14125050 A1	20140821	WO2014EP52862	20140213	

Probable Assignee: TOROTRAK DEV LTD

Assignee(s):(std)**:** TOROTRAK DEV LTD ; TOROTRAK DEVELOPMENT LTD

Assignee(s): TOROTRAK DEVELOPMENT LTD1 ASTON WAYLANCASHIREPR5 3UXLEYLANDGB ; TOROTRAK DEVELOPMENT LIMITED ; DE FREITAS ANDREW ; DUTSON BRIAN

Inventor(s):(std)**:** ANDREW DAMIAN DE FREITAS ; DEFREITAS ANDREW ; DUTSON BRIAN JOSEPH ; FREITAS ANDREW DAMIAN DE ; FREITAS ANDREW DE ; FULLER JOHN WILLIAM EDWARD ; GASKELL CHRISTOPHER ; YATES DAVID ; SHAWE JAMES ; FULLER JOHN ; DUTSON BRIAN ; DE FREITAS ANDREW ; BRIAN DUTSON ; ANDREW DE FREITAS

Inventor(s): JOHN FULLER ; JAMES SHAWE ; JOHN WILLIAM EDWARD FULLER ; DUTSON BRIANGB ; BRIAN JOSEPH DUTSON ; DE FREITAS ANDREWGB

Agent(s): BERESKIN AND PARR LLP SENCRL SRL; GEARY STEPHEN; MORBIDINI MARCO; INO SARI; KURASAWA ICHIRO; MATSUSHITA MITSURU; DESHIMARU TAKESHI; KUMAKURA YOSHIO; ITAYA YASUO

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9):	F02B33/40 F02B39/04 F02B39/12 F02D23/00 F02D41/00 F16H15/08 F16H15/38 F16H15/40 F16H15/52 F16H37/08 F16H61/664 (Advanced/Invention); F16H15/38 (Advanced/Non–invention)
CPC:	F16H2015/383 F16H2200/00 F16H37/086 F16H15/40 F16H15/08 F16H2037/0893 F02D41/1401 F16H61/6648 F16H37/08 F02B39/16 Y02T10/144 F16H61/664 F02B33/34 F16H61/6649 F02D23/005 F02B39/12 F02D41/0007 F02B39/04 F16H15/38
US class:	123/559.1 123/559.3 123/564 476/40 476/50
Classification Explorer	
Cited documents:	WO13123117 A1, WO11113149 A1, WO11064572 A2, WO08120687 A1, WO08102168 A1, WO08002457 A2, US5707313 A, US5334097 A, US3765270 A, US3394617 A, US3267756 A, US2012000446 AA, US2010267510 AA, US2004023753 AA, JP4200728 B2, JP4121567 U, JP2011153638 A2, JP2010144743 A2, JP2009523987 T2, JP2008249117 A2, JP2007502393 T2, DE1217729 B, CN102144113 A, CN101589247 A, CN101160479 A,
Forward Citations:	WO16193710, WO16095030, WO16067058, WO16061500, WO15079070, WO15079069, WO13110670, US9568083, US9512911, US9382988, US9341264, US2013017925, GB2537151,

Abstract:
Source: US2014349806A In a toroidal variator a plurality of rolling elements (20,22) are in driving engagement with an input and output race (10, 14) at respective contact regions. Each rolling element (20, 22) is mounted on a carriage assembly (26) for rotation about a rolling axis, and is being free to pivot about a tilt axis, the tilt axis passing through the rolling element (20, 22) perpendicular to the rolling axis, and intersecting the rolling axis at a roller centre, whereby a change in the tilt axis causes a change in the variator ratio being the ratio of rotational speeds of the races. The tilt axis is arranged at an angle known as castor angle (see Fig. 4) to a plane (P) perpendicular to the variator axis (V). Each carriage assembly (26) can cause a movement of the rolling element (20, 22) with a component of rotation about a pitch axis (A, B). The pitch axis is defined as passing through the roller centre and through the contact regions. Pitching the roller elements (20, 22) causes them to tilt, thereby changing the transmission ratio.

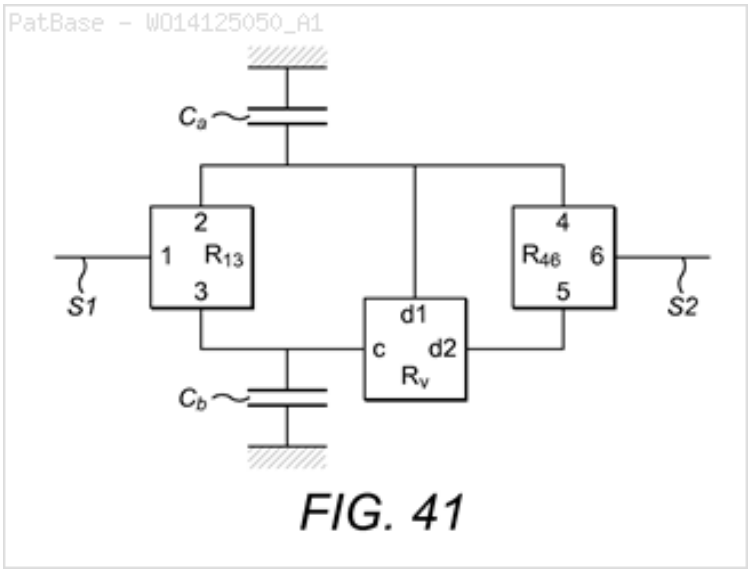


FIG. 41

0) EP1702773A2 – LATERALLY–LEANING VEHICLE SEITENNEIGUNGS–FAHRZ...

14) Family number: 33358507 (EP1702773A2) © PatBase

Title: Laterally–leaning vehicle

Priority: GB20050005527 20050317

Family:

Publication number	Publication date	Application number	Application date
AT413294 E	20081115	AT20060251444T	20060317
DE602006003452 D1	20081218	DE200660003452T	20060317
EP1702773 A2	20060920	EP20060251444	20060317
EP1702773 A3	20060927	EP20060251444	20060317
EP1702773 B1	20081105	EP20060251444	20060317
GB200505527 A0	20050427	GB20050005527	20050317

Probable Assignee: NARROW CAR THE COMPANY LTD

Assignee(s):(std)**:** NARROW CAR CO LTD ; NARROW CAR COMPANY LTD ; NARROW CAR THE COMPANY LTD

Assignee(s): THE NARROW CAR CO LTD ; THE NARROW CAR COMPANY LIMITED ; NARROW CAR THE COMPANY LIMITED

Inventor(s):(std)**:** HARTY DAMIAN ANDREW ; KEMP HUGH

Agent(s): CHETTLE ADRIAN JOHN ET AL

Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

International class(IPC 8–9)**:** B60G21/00 (Advanced/Invention)

CPC: B60G17/0162 B60G2800/019 B60G2800/24 B62D9/02

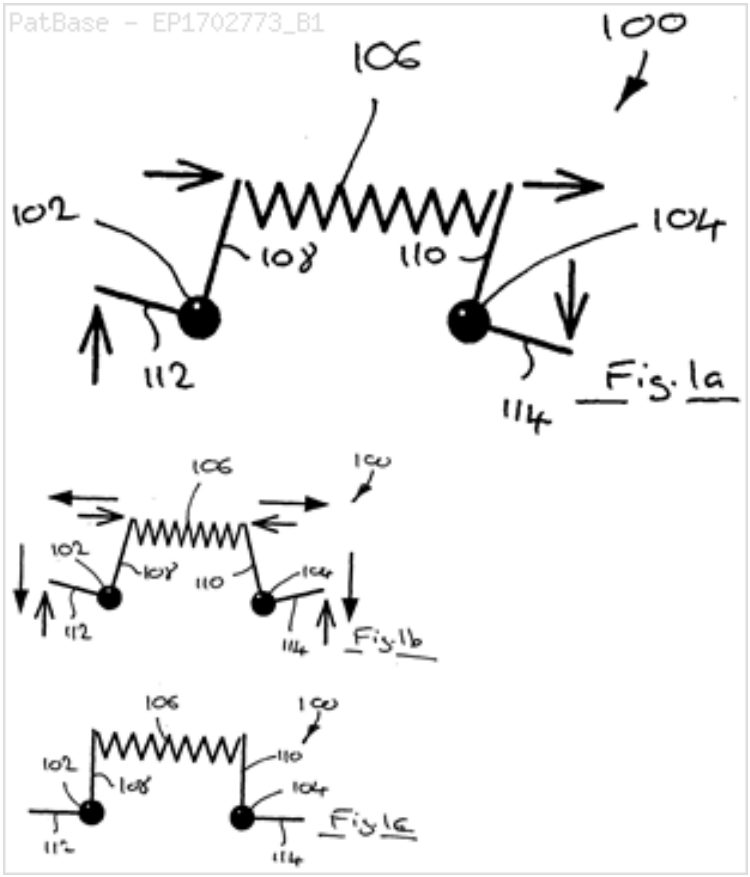
European class: B60G17/016F B62D9/02 L60G800/019 L60G800/24

Classification Explorer

Cited documents: WO9947372 A1, US5662356 A, EP0453771 A2,

Forward Citations: WO13005007, US9327725, US9283989, US9248857, US9145168, US9090281, US9045015, DE202014102328, DE102014209329, DE102014209328,

Abstract:
Source: EP1702773A2 A method of controlling the operation of a free leaning vehicle, the vehicle having a body, a plurality of ground engaging supports of which at least some are movable so as to effect steering of the vehicle, and a roll brake operable to selectively prevent or allow the body and steerable supports to tilt relative to the ground.



0) US3351149A – STEERING DEVICE FOR TRACK–LAYING VEHICLES

15) Family number: 24897898 (US3351149A) © PatBase

Title: Steering device for track–laying vehicles

Priority: FR19650015758 19650504 FR19650023896 19650708 SE19640009281 19640731
SE19640005620 19640506 FR19650029189 19650823 FR19650030295 19650902
SE19640010613 19640904 SE19640010171 19640824

Family:

Publication number	Publication date	Application number	Application date
AT262798 B	19680625	AT19650007846	19650826
AT272857 B	19690725	AT19650003793	19650426
AT277777 B	19700112	AT19650005564	19650621
AT283128 B	19700727	AT19650007634	19650819
BE662945 A	19650817	BE19650662945	19650423
BE666507 A	19651103	BE19650666507	19650707
BE668645 A	19651216	BE19650668645	19650823
BE669159 A	19651231		19650903
CH437006 A	19670531	CH19650010042	19650716
CH442046 A	19670815	CH19650005609	19650422
CH442047 A	19670815	CH19650011026	19650805
CH458948 A	19680630	CH19650011025	19650805
DE1505258 A1	19700226	DE19651505258	19650426
DE1505258 B2	19740509	DE19651505258	19650426
DE1505265 A1	19690619	DE1965A049544	19650622
DE1505272 A1	19690807	DE1965A050060	19650820
DE1505273 A1	19690710	DE1965A050096	19650825
DK112069 A	19690512	DK19650002296	19650506
DK112069 B	19681104	DK19650002296	19650506
DK112839 A	00000000		00000000
DK112839 B	19690120	DK19650003902	19650729
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DK113971 A	19690929	DK19650004320	19650824
DK113971 B	19690512	DK19650004320	19650824
FR1436253 A	19660422	FR19650015758	19650504
FR1440392 A	19660527	FR19650023896	19650708
FR1444643 A	19660701	FR19650029189	19650823
FR1446142 A	19660715	FR19650030295	19650902
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GB1078628 A	19670809	GB19650029685	19650713
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NL6509818 A	19660201	NL19650009818	19650729
NL6510985 A	19660225	NL19650010985	19650823
NL6511401 A	19660307	NL19650011401	19650901
SE332357 B	19710201	SE19640010613	19640904
SE335678 B	19710601	SE19640005620	19640506
SE335827 B	19710607	SE19640009281	19640731
SE335828 B	19710607	SE19640010171	19640824

US3351149 A	19671107	US19650480661	19650818	
US3365013 A	19680123	US19650484248	19650901	
US3369419 A	19680220	US19650452733	19650503	
US3370663 A	19680227	US19650473635	19650721	

Probable Assignee: BOFORS AB

Assignee(s):(std)**:** AB BOFORS ; AB BOFORS AB ; BOFORS AB ; BOFORS AB AB ; BOFROS AB

Assignee(s): AKTIEBOLAGET BOFORS ; AKTIEBOLAGET BOFROS ; AB BOFORS BOFORS SCHWEDEN

Inventor(s):(std)**:** AUGUST HENSTROEM STEN ; AUGUST HENSTROM STEN ; BERGE S ; CLAES RUNE SVANSTROM ; ERIK BERGE SVEN ; GUSTAFSSON P ; GUSTAFSSON PER OLLE LEMART ; GUSTAFSSON PER OLLE LENNART IN ; GUSTAVSSON P ; HENSTROEM S ; JOHANSSON N ; JOHANSSON NILS OLOV ING ; LARS OLOF LUNDIN ; LENNART GUSTAFSSON PER OLLE ; LUNDIN L ; LUNDIN LARS ; LUNDIN LARS OLOF ING ; NILS OLOV JOHANSSON ; O JOHANSSON NILS ; OLAF LUNDIN LARS ; OLLE LENNART GUSTAFSSON PER ; OLOF LUNDIN LARS ; OLOV JOHANSSON NILS ; RUNE SVANSTROEM CLAES ; RUNE SVANSTROM CLAES ; SERGE SVEN ERIK ; STEN AUGUST HENSTROM ; SVANSTROEM C ; SVANSTROEM CLAES RUNE ING ; SVANSTROM CLAES RUNE ; SVEN ERIK BERGE ; LUNDIN LARS OLOF ; JOHANSSON NILS OLOV ; HENSTROM STEN AUGUST ; HENSTROEM STEN AUGUST ; BERGE SVEN ERIK ; JOHANSSON NILS OLOF

Inventor(s): SVEN ERIK BERGE AFDELINGSDIREKTOER ; AFDELINGSDIREKTOER SVEN ERIK BERGE ; STEN AUGUST HENSTROEM ; STEN AUGUST HENSTROEM CIVILINGENIOER ; PER OLLE LENNART GUSTAFSSON ; NILS OLOV JOHANSSON INGENIOER ; LARS OLOF LUNDIN INGENIOER ; HENSTROEM STEN AUGUST BOFORS ; ING CLAES RUNE SVANSTROEM ; ING LARS OLOF LUNDIN ; ING NILS OLOV JOHANSSON ; ING PER OLLE LENNART GUSTAFSSON ; GUSTAFSSON PER OLLE LENNART ; BERGE SVEN ERIK STOCKHOLM ; CLAES RUNE SVANSTROEM

International class (IPC 8–9): B62D11/08 B62D11/14 B62D11/18 B62D55/116 F41H7/02 (Advanced/Invention); B62D11/06 B62D55/104 F41H7/00 (Core/Invention)

International class (IPC 1–7): B62D11/00 B62D11/06 B62D11/08 B62D11/10 B62D11/16 B62D11/18 B62D3/02 B62D55/00 F41H7/02

CPC: B62D11/18 B62D11/183 B62D55/116 F41H7/02 B62D11/08 B62D11/14

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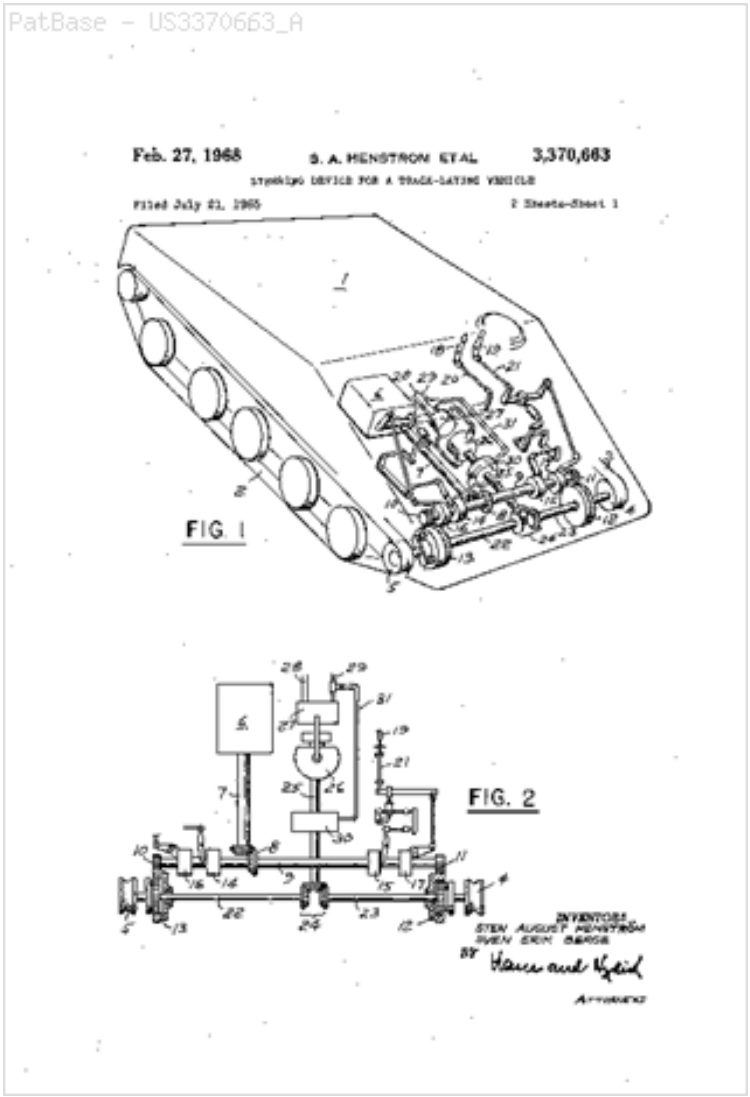
US class: 12/146B 180/6.44 180/6.7 180/644 475/23 475/27 475/28 475/29 74/497 89/40.03

Classification Explorer

Cited documents: US3225618 A, US3056479 A, US2961057 A, US2897787 A, US2874591 A, US2817427 A, US2774434 A, US2745503 A, US2560554 A, US2385881 A, US2336912 A, US2091356 A, US1991094 A, US1984830 A, US1797797 A, IT410525 A, DE714061 A,

Forward Citations: US9302580, US6017289, US5853346, US5704608, US4955442, US4813506, US4738161, US4700794, US4541497, US4520691, US4505168, US4464973, US3714846, US3583508, US3520376, US3461744, US2015057122, US2009010094, FR2450189, FR2351844, DE3202880, DE3135174, DE2537229, DE19834157,

Abstract:
Source: US3351149A ABSTRACT OF THE DISCLOSURE A steering device for a track–laying vehicle, particularly a combat vehicle, the gun of which is traversed by turning the entire vehicle. The steering device permits precision traversing and also sudden and wide changes in the course of the vehicle, for instance, to take evasive action by operating a single control system. The control system includes a member which when moved a predetermined first distance out of a neutral position will effect traversing of the vehicle with a high degree of precision, but when moved beyond such first distance in reference to the neutral position will effect a rapid and wide change in the course of the vehicle.



0) US2007157385A – HOSPITAL BED

16) Family number: 34706710 (US2007157385A) © PatBase

Title: HOSPITAL BED

Priority:

EP20060845825	20061219	US20040623653P	20041029	US20050751770P	20051219
US20050260452	20051027	US20060557349	20061107	US20050734083P	20051107
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Family:

Publication number	Publication date	Application number	Application date
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Inventor(s): FONG DAVID ; FONG DAVID KS ; WAN FONG DAVID KS

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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): A47B7/02 A47B71/00 A47C21/08 A47C27/08 A61B5/00 A61G7/00 A61G7/005 A61G7/012 A61G7/015 A61G7/018 A61G7/05 A61G7/08 A61G7/10 A61H1/00 B60B33/00 B60T17/22 B60T7/08 G01G19/44 G01G19/52 G01G23/32 G01G23/42 G06F19/00 G06F3/0481 G06F3/0484 G06F3/0488 G08B1/08 (Advanced/Invention); A61B5/103 A61B5/11 A61G7/08 B60T17/22 B60T7/08 G06F19/00 (Advanced/Non–invention); A47B7/00 A47B71/00 A47C21/00 A61G7/00 A61G7/002 A61G7/05 (Core/Invention)

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European class: A61B5/44B10 A61B5/68F4 A61B5/74D6 A61G7/005 A61G7/012 A61G7/015 A61G7/018 A61G7/05 A61G7/05S G06F19/32G G06F19/34A K61B5/103 K61B5/11 K61G203/16 K61G203/20 K61G203/32 K61G210/50 K61G7/05S12 K61G7/05S14 K61G7/05S2A K61G7/05S4A2 K61G7/05W1 K61G7/05Z1 K61G7/08 S06F19/34A

US class: 1/1 108/145 108/147 188/1.12 188/1.120S 340/286.07 340/540 340/573.1 340/686.1 5/280 5/425 5/430 5/430S 5/510 5/510P 5/53.1 5/600 5/600P 5/600S 5/610 5/611 5/611P 5/611S 5/613 5/613P 5/613S 5/616 5/616P 5/617 5/617P 5/618 5/618S 5/620 5/620S 5/630 5/630S 5/86.1 5/905 601/107 601/107S 601/49 601/49P

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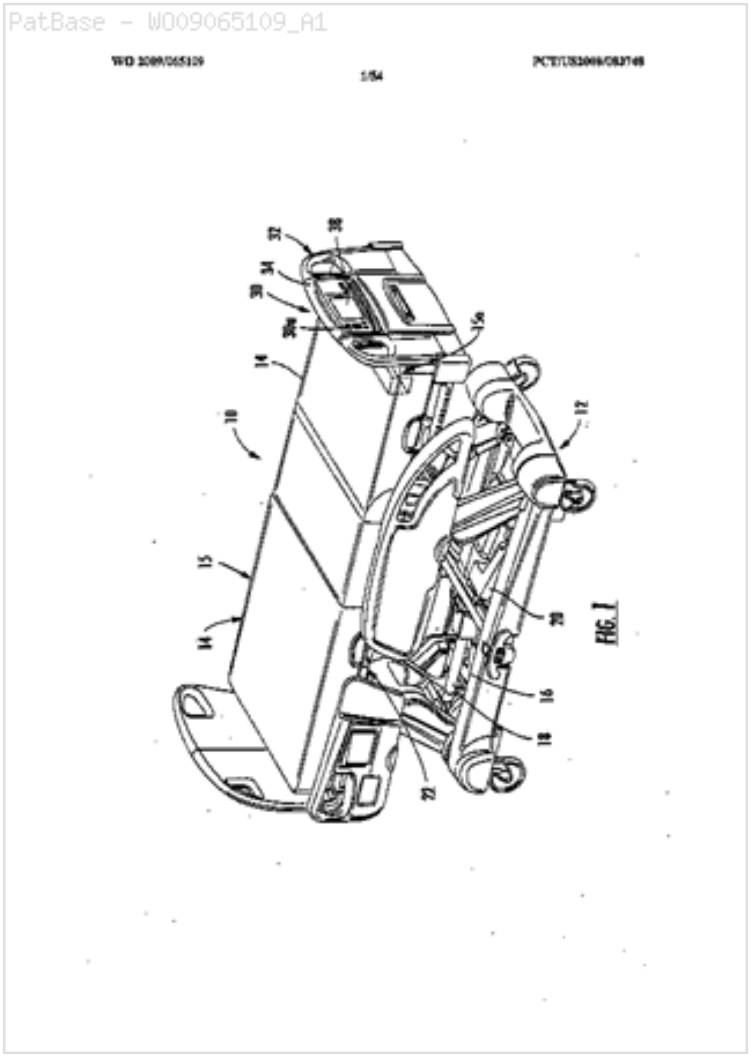
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Forward Citations: WO17015602, WO16172198, WO16160344, WO16060862, WO16027138, WO15195984, WO15071076, WO14151577, WO14144593, WO14090254, WO14052147, WO14032634, WO13177338, WO13177338, WO13170371, WO13152438, WO13131078, WO13126461, WO13120179, WO13086620, WO13071246, WO13053040, WO12171807, WO12153079, WO12065053, WO12065053, WO12061406, WO12061406, WO12056405, WO12056405, WO11066151, WO11030255, WO11005320, WO09065109, WO09064788, WO08113476, USD771259, USD770829, USD770828, USD770827, USD770824, USD770332, USD769042, USD768422, USD751000, USD749014, USD742794, USD738928, USD736023, USD733452, USD729702, USD729132, USD710510, USD710509, USD710507, USD707480, USD706427, USD668087, USD656765, USD656764, USD656762, USD627985, US9610206, US9603764, US9576470, US9575126, US9572735, US9572734, US9569591, US9555778, US9549863, US9539156, US9539155, US9527699, US9526665, US9526346, US9513177, US9510987, US9510982, US9510981, US9510784, US9504622, US9504619, US9498397, US9492341, US9492340, US9489818, US9468576, US9468307, US9465389, US9463124, US9456945, US9456939, US9451833, US9433546, US9398536, US9383250, US9381125, US9375374, US9375142, US9358169, US9358168, US9336677, US9329076, US9320664, US9320662, US9320444, US9314105, US9306322, US9301689, US9295598, US9295390, US9295338, US9271577, US9271567, US9259371, US9259098, US9253259, US9248062, US9241858, US9237814, US9233039, US9233038, US9233033, US9228885, US9226593, US9220651, US9220650, US9213956, US9205010, US9205009, US9182750, US9177465, US9173797, US9173794, US9173793, US9128474, US9126571, US9125783, US9125779, US9107783, US9101517, US9095215, US9075417, US9066602, US9061547, US9052718, US9047750, US9044367, US9044366, US9044365, US9044361, US9038217, US9031673, US9009893, US9005101, US9003581, US9002515, US8984685, US8978181, US8950026, US8926535, US8911387, US8909378, US8909357, US8907287, US8893339, US8887329, US8886383, US8876737, US8869328, US8847756, US8844078, US8801635, US8799011, US8789662, US8774971, US8757308, US8752220, US8745786, US8733719, US8732875, US8717181, US8713727, US8701229, US8700191, US8682457, US8677535, US8650682, US8631524, US8627522, US8621688, US8620625, US8618918, US8596716, US8595871, US8593284, US8572778, US8565934, US8544126, US8537008, US8516637, US8510879, US8495774, US8474794, US8474074, US8474072, US8464380, US8453283, US8439416, US8437876, US8418786, US8418287, US8413273, US8393026, US8375488, US8344860, US8319602, US8314781, US8266742, US8239983, US8205280, US8170766, US8161587, US8155918, US8151387, US8143846, US8117701, US8100061, US8073535, US8069512, US8062198, US8051513, US8016301, US8006332, US7987069, US7986141, US7975335, US7975332, US7962981, US7953537, US7944369, US7926131, US7911348, US7861334, US7805784, US7789187, US7786874, US7779493, US7761310, US7690059, US7472439, US7458121, US7389552, US7386900, US2017049525, US2016242980, US2016148485, US2016089932, US2016052424, US2016038358, US2016019771, US2016000629, US2015283013, US2015282605, US2015250669, US2015238123, US2015182400, US2015164722, US2015164238, US2015135438, US2015096815, US2015067964, US2015048763, US2015028787, US2015000045, US2014331406, US2014323816, US2014310875, US2014265502, US2014265181, US2014259414, US2014259413,

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Abstract:
Source: US2007157385A A patient bed includes a patient support, a base, and an electrical control system. The patient support is mounted relative to said base, which has a plurality of bearing members for moving the base and the patient support across a surface. Each of the bearing members includes a brake operatively associated therewith, with the electrical control system having a user actuatable device and being configured to actuate one or more of the brakes upon actuation of the user actuatable device.



17) Family number: 116717 (US3663038A) © PatBase

Title: VEHICLE WITH COMBINATION STEERING, BRAKING AND PROPULSION MEANS

Priority: US19700025762 19700406

Family:

Publication number	Publication date	Application number	Application date
AU197127280 A1	19721005	AU19710027280	19710402
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CA937258 A1	19731120	CA19710108958	19710329
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NL7104554 A	19711008	NL19710004554	19710405
NO131282 B	19750127	NO19710001271	19710402
NO131282 C	19750507	NO19710001271	19710402
US3663038 A	19720516	US19700025762	19700406

Probable Assignee: KRANSCO

Assignee(s):(std)**:** HENDRICKS W E ; HENDRICKS WILLIAM ; HENDRICKS W ; HENDRICKS WILLIAM E ; HENDRICKS WILLIAM EARL ; SONG J US ; WILLIAM E HENDRICKS

Assignee(s): WILLIAM EARL HENDRICKS ; O'ROURKE JAMES P ; O'ROURKE JAMES P JR ; O ROURKE JAMES P ; KRANSCO MANU CTURING FA ; KRANSCO ; IRVIN LEROY ; KRANSCO MFG ; KRANSCO MFG INC A CORP OF CA ; IRVIN LEROY (1 3 PERCENT) ; IRVIN LEROY 1 3 PERCENT ; O ROURKE JAMES P JR ; HENDRICKS WILLIAM E 614 SOUTH MINNESOTA WICHITA ETAT DU KANSAS E U A ; HENDRICKS C LOUISE SOLE HEIR OF ESTATE OF WILLIAM E HENDRICKS DEC'D ; BLACWELL VIRGINIA L ; BLACWELL VIRGINIA L (1 3 PERCENT) ; BLACWELL VIRGINIA L 1 3 PERCENT ; BRADEN ROBERT ; HENDRICKS C LOUISE SOLE HEIR OF ESTATE OF ; COMMERCE UNION BANK ONE COMMERCE PLACE ; HENDRICKS C LOUISE SOLE HEIR OF ESTATE OF WILLIAM ; COMMERCE UNION BANK ONE COMMERCE PLACE NASHVILLE T ; COMMERCE UNION BANK ; BRADEN ROBERT (1 3 PERCENT) ; BRADEN ROBERT 1 3 PERCENT ; HENDRICKS C LOUISE SOLE HEIR OF ESTATE OF WILLIAM E HENDRICKS DEC D

Inventor(s):(std)**:** HENDRICKS W ; WILLIAM EARL HENDRICKS ; HENDRICKS WILLIAM EARL ; HENDRICKS WILLIAM E

Inventor(s): WILLIAM E HENDRICKS ; EARL HENDRICKS WILLIAM

International class (IPC 8–9)**:** B62B11/00 B62K9/02 (Advanced/Invention); B62B11/00 B62K9/00 (Core/Invention)

International class (IPC 1–7)**:** B62B11/00 B62K17/00 B62K5/00 B62K5/04 B62K9/00 B62K9/02 B62L1/00 B62M B62M1/00 B62M1/14 B62M29/00

CPC: B62B3/12 B62B5/0438 B62B5/049 B62B5/082 B62K9/02

European class: B62B11/00 B62K9/02

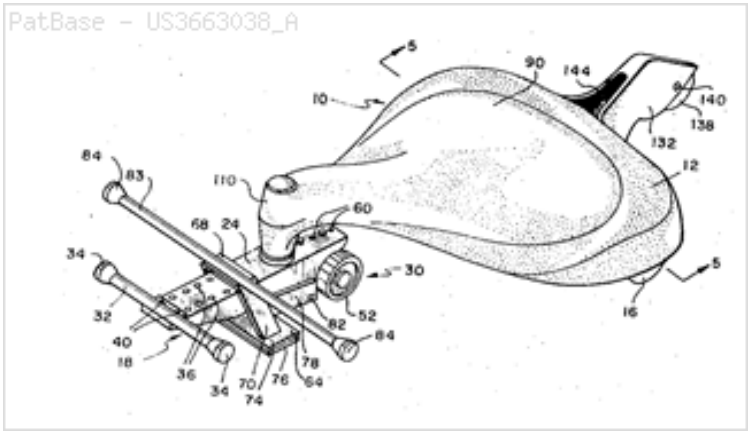
US class: 188/5 280/218 280/87. 280/87.01 280/870

Classification Explorer

Cited documents: US885977 A, US601185 A, US3345080 A, US2879859 A, US210435 A, US205212 A, US1580801 A, US1485834 A, US1247801 A, GB881450 A,

Forward Citations: WO9948750, USD765187, USD725712, USD725711, USD716382, USD710950, USD706876, USD695360, USD582992, US9579558, US9227534, US9211896, US9139248, US9108693, US9033356, US8567803, US7007962, US6722674, US6685201, US6626446, US6561534, US6502843, US5046750, US4930796, US4821676, US4200304, US4087104, US2015175234, US2014367299, US2014339786, US2011266767, US2011140384, US2005236800, US2004145140, GB2183568, CN104071285, CN104071285, CN104029767, CN101973332,

Abstract:



Source: US3663038A A vehicle of a very low profile and very high stability, wherein an integral seat constitutes the vehicle frame. A pair of laterally spaced wheels are mounted on the rear of the seat, and an elongated arm is pivoted intermediate its ends to the front of the seat about a vertical axis, and a dirigible wheel is mounted on the arm rearwardly of the vertical axis. A footrest is secured to the arm forwardly of the vertical axis, whereby a rider can swing the arm to steer the vehicle and also cause propulsion thereof. A brake is pivotally mounted on the arm, with handle actuating means being provided therefor which can be employed to control the brakes and/or swinging movement of the arm. Alternate movement of the arms, legs, and body to the right and left of the desired steering direction coupled with twisting movement of the body results in effecting propulsion of the vehicle in a manner somewhat analogous to the propulsion of a boat by a sculling oar. One version of the vehicle includes a single U–shaped bar to constitute a footrest and handles, and this version includes provision for releasably latching the brake from its breaking condition.

0) US2009124142A – HIGH WATER–SPEED TRACKED AMPHIBIAN

18) Family number: 42998578 (US2009124142A) © PatBase

Title: HIGH WATER–SPEED TRACKED AMPHIBIAN

Priority: US20070967858P 20070907 US20080206320 20080908

Family:

Publication number	Publication date	Application number	Application date
US2009124142 AA	20090514	US20080206320	20080908
US8002596 BB	20110823	US20080206320	20080908
WO09033153 A2	20090312	WO2008US75589	20080908
WO09033153 A3	20090430	WO2008US75589	20080908

Probable Assignee: FAST TRACK AMPHIBIAN LLC

Assignee(s):(std)**:** FAST TRACK AMPHIBIAN LLC ; WERNICKE TIMOTHY K ; WERNICKE KENNETH G ; WENICKE KEITH H ; WERNICKE RODNEY K

Inventor(s):(std)**:** WENICKE KEITH H ; WERNICKE KEITH H ; WERNICKE KENNETH G ; WERNICKE RODNEY K ; WERNICKE TIMOTHY K

Agent(s): BRACEWELL AND GIULIANI LLP; BRADLEY JAMES E

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60F3/00 B62D11/08 B62D55/084 B62D55/10 B63B1/00 B63B35/00 B63H1/00 B63H25/38 F16F9/02 (Advanced/Invention); B60F3/00 B62D11/06 B62D55/08 B63B1/00 B63B35/00 B63H1/00 B63H25/06 F16F9/02 (Core/Invention)

CPC: B60F3/0007 B60F3/0015 B60F3/0038 B60F2301/02 B63H1/34

European class: B60F3/00B B60F3/00B2 B60F3/00C2 B63H1/34 L60F301/02

US class: 114/162 114/162S 114/285 114/285S 180/6.7 180/6.700S 188/266 188/266S 305/120 305/120S 305/155 305/155S 440/12.63 440/12.630P

Classification Explorer

Cited documents: US6981461 BA, US6921304 BB, US6666160 BA, US6554729 BB, US6505694 BB, US6135220 A, US6116972 A, US5765497 A, US5685253 A, US5628272 A, US5579711 A, US5027737 A, US4961395 A, US4671774 A, US4568294 A, US4295834 A, US3976025 A, US3895596 A, US3487802 A, SU1293047 T, JP2001191771 A2,

Forward Citations: WO16205136, WO11113124, US9045177, US8833795, US8721378, US8439152, US8206190, US2014238755, US2014057504, US2013078877, US2011217887, US2011111651, US2011011326, CN103818206, CN103112327, CN102530213,

Abstract:

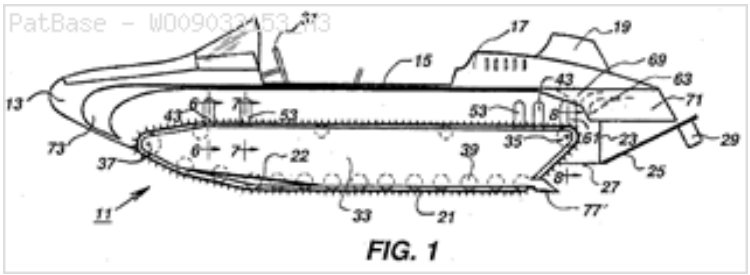


FIG. 1

Source: US2009124142A An amphibious vehicle capable of high speeds on the water has a buoyant hull with driven tracks on each side of the hull. The tracks are movable between an upper position and a lower position relative to the hull. The tracks propel the vehicle both for land travel and water travel. Water diverter vanes at the aft end of each track divert water being carried forward by the tracks. Water diverter vanes at the forward ends direct water carried on the upper runs in a downward and aft direction. A cavitation plate is located behind each of the tracks while waterborne and below the waterline of the hull. A tiltable transom flap is attached to the transom and extends rearward.

0) US2009289437A – VEHICLE WITH THREE WHEELS

19) Family number: 41783937 (US2009289437A) © PatBase

Title: VEHICLE WITH THREE WHEELS

Priority: DE200610052041 20061030 DE200710019026 20070418 WO2007DE01988 20071026 WO2007DE001988 20071029 EP20070817776 20071029

Family:

Publication number	Publication date	Application number	Application date
AU2007315449 AA	20080508	AU20070315449	20071029
CA2667906 AA	20090428	CA20072667906	20071029
CN101557977 A	20091014	CN200780040527	20071029
CN101557977 B	20120104	CN200780040527	20071029
DE102006052041 A1	20080521	DE200610052041	20061030
DE102006052041 B4	20090730	DE200610052041	20061030
DE102007019026 A1	20081023	DE200710019026	20070418
DE112007003233 A5	20091008	DE200711003233T	20071029
DE502007009954 D1	20120726	DE200750009954T	20071029
EP2086824 A1	20090812	EP20070817776	20071029
EP2086824 B1	20120530	EP20070817776	20071029
IN03435DN2009 A	20100416	IN2009DN03435	20090527
JP2010508188 T2	20100318	JP20090533661T	20071029
US2009289437 AA	20091126	US20090431531	20090428
WO08052539 A1	20080508	WO2007DE01988	20071029

Probable Assignee: STEINHILBER HEKTOR

Assignee(s):(std)**:** HEKTOR STEINHILBER ; STEINHILBER HEKTOR ; ZEHENTMEIER PETER

Assignee(s): STEUBHILBER HEKTOR

Inventor(s):(std)**:** HEKTOR STEINHILBER ; STEINHILBER HEKTOR ; ZEHENTMEIER PETER

Inventor(s): STEUBHILBER HEKTOR

Agent(s): GRIFFITH HACK; BERESKIN AND PARR LLP SENCRL SRL; BENNINGER JOHANNES; SIMPSON AND SIMPSON PLLC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K13/00 B62K5/02 B62K5/04 B62K5/06 B62K5/08 B62M29/00 (Advanced/Invention); B62K5/00 B62M29/00 (Core/Invention)

International class (IPC 1–7): B62K5/06

CPC: B62K5/02 B62K5/06 B62K2204/00 B62M1/38 B62K5/10

European class: B62K5/02 B62K5/06 B62K5/10 B62M1/38 L62K204/00

US class: 280/282 280/282P

Classification Explorer

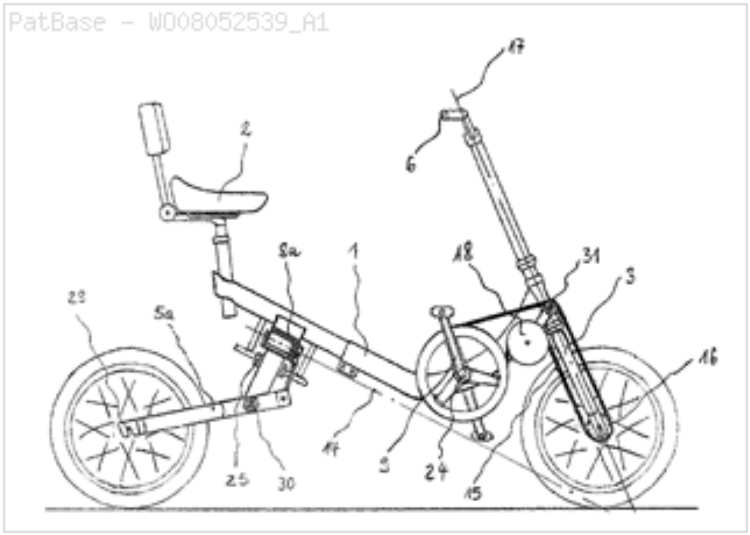
Cited documents: WO9727071 A1, WO8602897 A1, WO06049079 A1, WO06008569 A1, US7722071 BA, US7631721 BB, US7571787 BB, US7543829 BA, US7343997 BA, US6817617 BB, US6402174 BA, US6367824 BA, US6203043 BA, US5788254 A, US5762351 A, US5611555 A, US5544906 A, US5240267 A, US4887829 A, US4375293 A, US4360224 A, US3792748 A, US3645558 A, US3561778 A, US3237961 A, US2008258426 AA, US2007205576 AA, US2007040350 AA, JP51145649 A2, JP50031536 A2, JP2006142863 A2, JP2004122832 A2, JP2002516220 T2, FR2469342 A1, EP0606191

A1, DE69402087 T2, DE4423859 A1, DE20301459 U1,

DE102006052041 A1

Forward Citations: WO14079973, WO13030225, US9283989, US9248857, US9145168, US9090281, US9045015, US7878522, US2016096574, US2013270792, US2008001374, NL1035799, EP2147852, DE102010010455, DE102007019026, CN102092445, CH705136,

Abstract:
Source: US2009289437A The frame of the vehicle, which is capable of inclining in curves and preferably comprises a front wheel and two rear wheels, is rotatably mounted to a steering head beneath the driver's seat. Rigid driving elements are arranged in the area of this steering head, which couple the inclination of the vehicle frame to the opposite movements of the rear wheel swing arms by means of control elements in order to control the vehicle inclination and steer the rear wheels. In order to support the initial horizontal position of the tricycle, return springs are provided at the steering head, which force the rear wheel swing arms into a balanced mid−position. In slow vehicles suitable for rehabilitation purposes, the steering head beneath the driver's seat may be blocked by a brake in the starting phase. In faster vehicles, the movement of the rear wheel swing arms may be assisted by foot levers or manually operated hydraulic cylinders.



0) US3109506A – WALKER–TYPE MOTOR VEHICLE

20) Family number: 30950891 (US3109506A) © PatBase

Title: WALKER–TYPE MOTOR VEHICLE

Priority: DE1960SC28711 19601104

Family:

Publication number	Publication date	Application number	Application date
GB975527 A	19641118	GB19610039494	19611103
US3109506 A	19631105	US19610149676	19611102

Probable Assignee: KURT SCHROETER

Assignee(s):(std)**:** FRANZ GROSSE SCHARMANN ; KURT SCHROETER ; KURT SCHROTER

Inventor(s):(std)**:** KURT SCHROTER ; FRANZ GROSSE SCHARMANN

Inventor(s): SCHROTER KURT ; GROSSE SCHARMANN FRANZ

International class (IPC 8–9)**:** B60K17/10 B62D57/02 (Advanced/Invention); B60K17/10 B62D57/00 (Core/Invention)

International class (IPC 1–7)**:** B60K17/10 B62D57/02

CPC: B60K17/10 B62D57/022

European class: B60K17/10 B62D57/02C

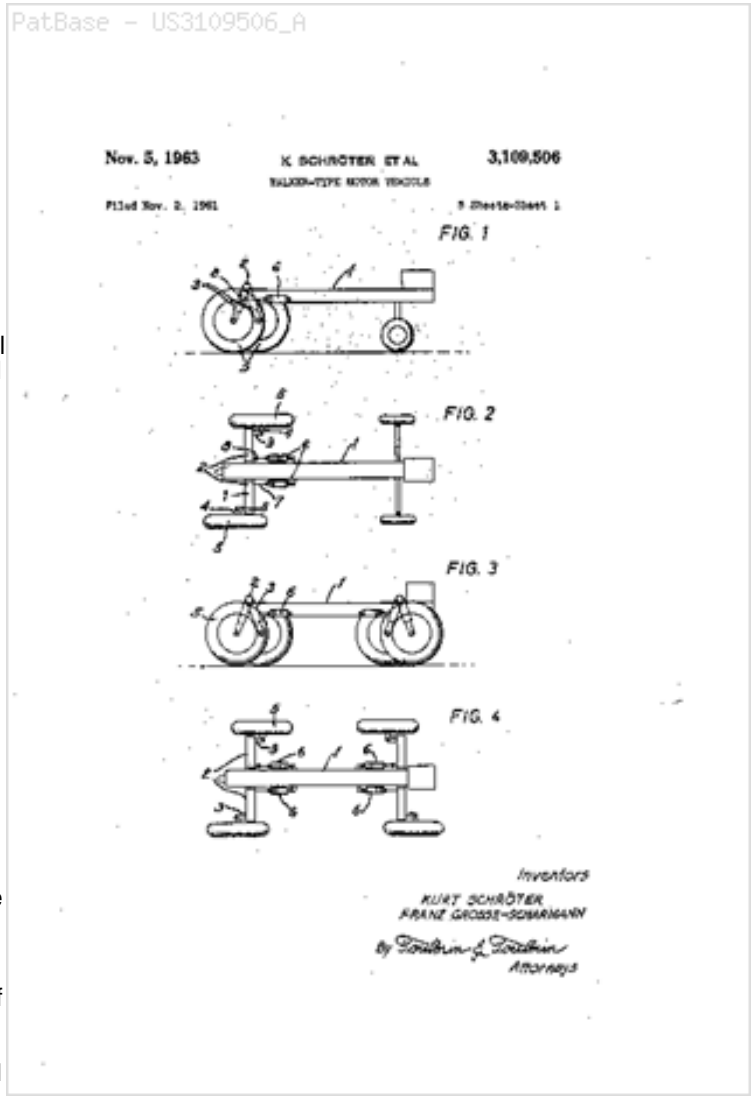
US class: 180/8.1 280/6.15 60/368 60/420

Classification Explorer

Cited documents: US795664 A, US675388 A, US3016966 A, US2419807 A, US2393324 A, US1043574 A,

Forward Citations: US9439820, US8702108, US7900740, US7673710, US7398843, US4462476, US4265326, US3747717, US3378092, US2012313335, US2010107454, US2007137905, US2007114075, FR2418108, CN104323893,

PatBase - US3109506_A



Abstract:
Source: GB975527A 975,527. Propelling by "stepping" action; vehicle suspension. K. SCHROTER, and F. GROSSE–SCHARMANN. Nov. 3, 1961 [Nov. 4, 1960], No. 39494/61. Headings B7D and B7H. A pair of driving wheels on a tractor is mounted so that they may be alternately reciprocatable relatively to the vehicle, the wheel which is being moved rearwardly relative to the direction of the vehicle's travel being provided with means for automatically locking it during this motion. Reference is made to four and six wheel tractors of which all the wheels are driven and are so mounted and provided, their operation being cyclic. In a tractor having two driven wheels 3, mounted for swinging about a horizontal transverse axis as shown in Fig. 1, the wheels are driven by hydraulic motors 21 and 22, Fig. 7, receiving pressure fluid from a pump 12 driven by an internal–combustion engine 10, supply and return lines 20 and 23 being provided, there being connections 24 and 25 to a pair of cylinders having pistons 15 acting upon a swashplate controller 14 of the pump 12, the pistons also being acted upon by springs 16 adjustable by screws 18 so as to give a constant output. The wheel mountings may be reciprocated by hydraulic rams 27 and 29, respectively, supplied with fluid from a pump 13 driven by the engine 10 and having its output similarly controlled through the agency of controller 14–biased off centre by a spring 19, and a pair of pistons 15 and cylinders connected by lines 31 and 32 connected to the fluid pressure lines 26 and 28 connecting the pump 13 and the rams 27 and 29. The tractor is set for forward and reverse travel according to the setting of the swashplate controller 14 of the pump 12 determined by its associated adjustment screws 18. For forward travel, fluid is supplied through the line 20 to the motors 21 and 22 and a supply of pressure fluid from the pump 13 will be provided, say in the line 26 connected to the ram 27. The rams 27 and 29 are connected on the connecting rod side by a conduit 30 and the pressure lines 26 and 28 are connected by lines 33 and 34 to opposite ends of a control valve 35 in the return line 23, whereby, when the line 26 is under pressure, so operating the ram 27 so as to propel the vehicle forwardly by moving its associated wheel mounting backwardly, relatively to the vehicle, the valve 35 is moved downwardly as shown in Fig. 7, whereby the return line from motor 21 is blocked and this motor becomes hydraulically locked, so braking the wheel. The whole output of pump 12 now passes through motor 22 so that its associated wheel moves twice as quickly and travels forwardly relatively to the vehicle, transmitting a force to the vehicle through the ram 29, the piston of which is moved forwardly in the cylinder so generating a pressure in line 28. At the end of the travel of the piston in ram 29, the pressure in line 28 becomes zero, and under the influence of the pressure in line 26, the controller 14 of motor 13 becomes reversed and a similar operation to the opposite hand now takes place. For travel in the reverse direction, the output of motor 12 is set accordingly and the connections between the pumps 12 and 13, valve 35 and rams 27 and 29 are appropriately interchanged. The rams may be single acting with no provision for reverse travel. For operating the vehicle without the stepwise action, the pump 13 is set at zero output and the valve 35 is centred under the action of springs 36 and 37, the position of the suspension units being hydraulically locked by the rams 27 and 29. In a modification, Fig. 12, the wheels are mechanically driven through a differential gear 73 and telescopic cardan shafts 72, the stepwise reciprocation being produced by rams 74 alternately supplied with pressure fluid, and, in this case, the wheel braking effect is produced by the normal wheel brakes, the wheel cylinders of which are acted upon by the difference in the pressure being supplied to and returning from the rams 74, whereby the appropriate braking effect is produced. The forward and rearward movement of the wheel suspensions produces different angles of tilt, and when not used propulsively may be utilized, under the control of a tilt valve, to correct the vehicle inclination, e.g. when travelling on a slope. The suspensions may also be moved simultaneously and locked in position to provide a vehicle of differing wheel base–lengths. The suspension device may comprise a king–pin 54 for a steerable wheel, the steering connection 51 being mounted near the rocking axis 54A so that the steering link 52 generates a conical surface in the wheel movements whereby the steering is unaffected. In an alternative wheel mounting, Fig. 11, the suspension device includes a hydraulic suspension unit 66 and a coil or air spring 67, the wheel being reciprocated by a ram 62, and the suspension and ram being mounted upon a member 63 pivotally mounted at 65 for steering. It is also stated that wheel braking effects may be provided by the

provision of one−way clutches at the wheels.

0) US2005283288A – RE–POSITIONABLE VEHICLE CONTROL–BY–WIRE ASSEMBL...

21) Family number: 32509018 (US2005283288A) © PatBase

Title: RE–POSITIONABLE VEHICLE CONTROL–BY–WIRE ASSEMBLY, METHOD, AND SYSTEM

Priority: US20040869304 20040616

Family:

Publication number	Publication date	Application number	Application date
US2005283288 AA	20051222	US20040869304	20040616
US7363131 BB	20080422	US20040869304	20040616

Probable Assignee: FCA US LLC

Assignee(s):(std)**:** HOWELL GREGORY ; LIM STEPHEN T ; MACEY STUART P ; CHRYSLER LLC

Assignee(s): CITIBANK NA ; DAIMLERCHRYSLER CORP ; CHRYSLER GROUP GLOBAL ELECTRIC MOTORCARS LLC ; CHRYSLER GROUP LLC ; DAIMLERCHRYSTER CO ; NEW CARCO ACQUISITION LLC ; UNITED STATES DEPARTMENT OF TREASURY ; WILMINGTON TRUST CO ; US DEPARTMENT OF TREASURY ; DAIMLERCHRYSTER CO LLC ; JPMORGAN CHASE BANK NA ; FCA US LLC ; FCA US LLC WAS KNOWN AS CHRYSLER GROUP LLC..

Inventor(s):(std)**:** HOWELL GREGORY ; LIM STEPHEN T ; MACEY STUART P

Agent(s): DAIMLERCHRYSLER INTELLECTUAL CAPITAL CIMS 483 02 19 CORP; SMITH RALPH E; RALPH E

International class (IPC 8–9)**:** B60W10/10 B62D1/00 B62D1/18 G06F17/00 (Advanced/Invention); B63H21/22 B63H25/02 G06F17/00 (Advanced/Non–invention); B62D1/18 G06F17/00 (Core/Invention); B63H21/00 B63H25/00 (Core/Non–invention)

International class (IPC 1–7)**:** G06F17/00

CPC: B60K2350/407 B60T2260/02 B60T2270/82 B62D1/18 B63H21/21 B63H21/22 B63H25/02 B63H2025/022

European class: B62D1/18 B63H21/21 L60K350/40M L60T260/02 L60T270/82 L63H21/22 L63H25/02 L63H25/02A

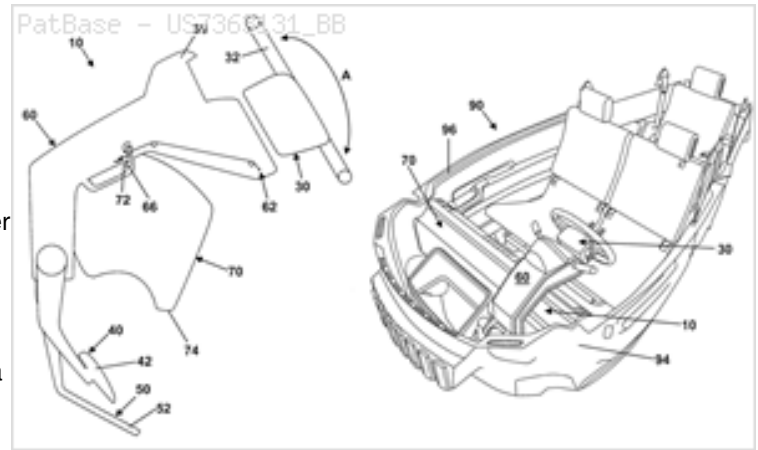
US class: 180/334 280/752 701/1 701/41 701/41P 701/43 701/50

Classification Explorer

Cited documents: US7213673 BB, US7185918 BB, US7137499 BB, US7128342 BB, US6857498 BB, US5617929 A, US3737003 A,

Forward Citations: WO16055817, WO16055816, US8004279, US2010049404, US2009292473, US2004194280, GB2531101, GB2531076, FR2933344,

Abstract:
Source: US2005283288A A vehicle control assembly and a method and system for controlling a vehicle. The assembly includes a controller. A steer–by–wire component, a brake–by–wire component, and an accelerator–by–wire component are each operably attached to the controller. A track is operably attached to the vehicle. The controller is laterally re–positionable with respect to the track. The method includes the steps of providing a controller, and steering, braking, and accelerating the vehicle by–wire with the controller. The method further includes the step of re–positioning the controller between a first vehicle side to a second vehicle side. The system includes controller means, and means for steering, braking, and accelerating the vehicle by–wire with the controller means. The system further includes means for reversibly positioning the controller means from a first vehicle side to a second vehicle side.



0) US5058016A – COMPUTERIZED ELECTRICAL VEHICLE

22) Family number: 4810975 (US5058016A) © PatBase

Title: COMPUTERIZED ELECTRICAL VEHICLE

Priority: IL19870084382 19871105 US19880267021 19881104

Family:

Publication number	Publication date	Application number	Application date
AT109080 E	19940815	AT19880118452T	19881104
DE3850849 D1	19940901	DE19883850849	19881104
DE3850849 T2	19950330	DE19883850849T	19881104
EP0315210 A1	19890510	EP19880118452	19881104
EP0315210 B1	19940727	EP19880118452	19881104
ES2060637 T3	19941201	ES19880118452T	19881104
IL84382 A0	19880429	IL19870084382	19871105
IL84382 A1	19951208	IL19870084382	19871105
JP1243802 A2	19890928	JP19880277576	19881104
US5058016 A	19911015	US19900565891	19900809

Probable Assignee: CARMON COMPUTERIZED VEHICLE LTD

Assignee(s):(std)**:** DAVIDOVITCH J ; IEKESUKERU DABUIDOBUITSUCHI ; CARCOM COMPUTERIZED VEHICLE LT

Assignee(s): CARCOM COMPUTERIZED VEHICLE LTD ; CARMON COMPUTERIZED VEHICLE LTD ; DAVIDOVITCH JECHESKEL ; DAVIDOVITCH JECHESKEL RAMATH GAN IL ; JECHESKEL DAVIDOVITCH

Inventor(s):(std)**:** DAVIDOVITCH JECHESKEL ; IEKESUKERU DABUIDOBUITSUCHI

Inventor(s): DAVIDOVITCH JECHESKEL RAMATH GAN IL

Agent(s): EITAN PEARL LATZER AND COHEN ZEDEK

Designated states: AT BE CH DE ES FR GB GR IT LI LU NL SE

International class (IPC 8–9)**:** B60L11/18 B60L15/00 B62D1/28 B62D9/00 G05D1/00 G05D1/02 H02P5/68 (Advanced/Invention); B60L11/18 B60L15/00 B62D1/00 B62D9/00 G05D1/00 G05D1/02 H02P5/68 (Core/Invention)

International class (IPC 1–7)**:** B60L11/18 B60L15/00 B62D1/28 B62D11/04 G05D1/00 G05D1/02 G06F15/50

CPC: Y02T10/705 B60L11/1824 B60L8/003 B60L11/1877 B60L15/20 B60L2220/44 B62D9/00 H02P5/68 Y02T10/7005 Y02T10/7083 Y02T10/7275 Y02T90/12 Y02T90/14 Y02T90/121 Y02T10/645 Y02T10/7072 Y02T10/72

European class: B60L11/18 B60L11/18L7 B60L11/18M36 B60L15/20 B60L8/00B B62D9/00 H02P5/68 L60L220/44 Y02T10/70B Y02T10/70J2B Y02T10/70J4 Y02T10/72D4 Y02T90/12 Y02T90/14

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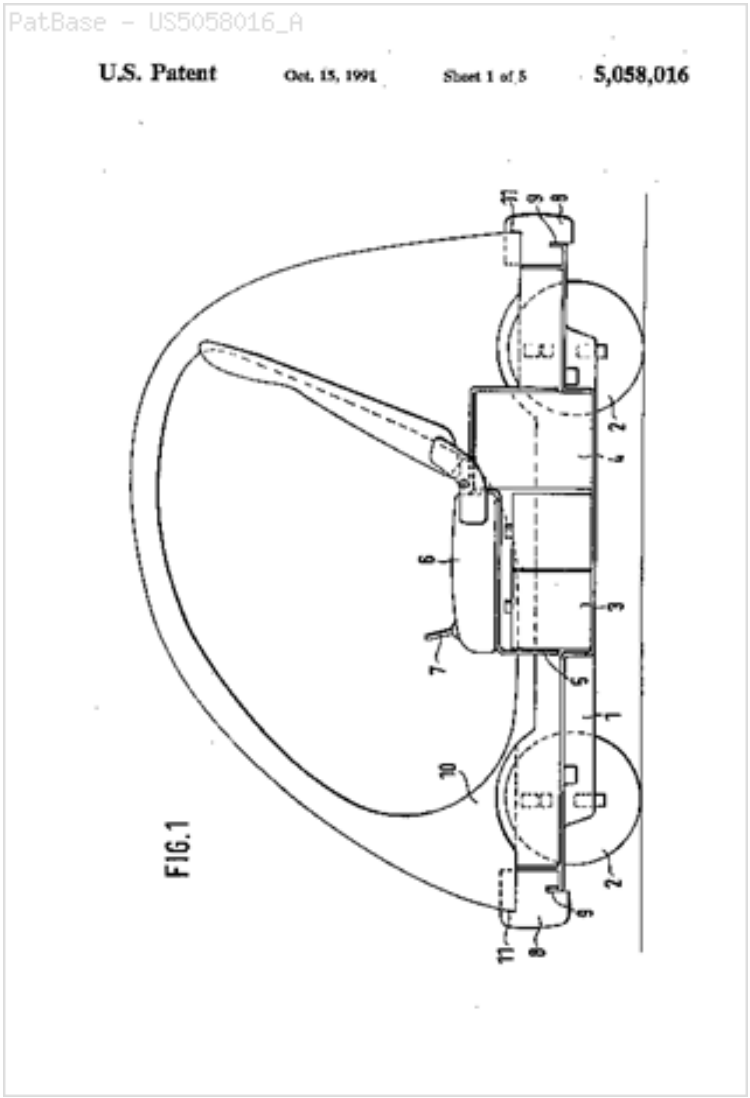
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Forward Citations: WO9420353, WO9420353, WO15002539, WO09125414, WO09125414, USD541701, US9475522, US9085302, US8925659, US8224527, US8219284, US7849945, US7743863, US7597169, US7441615, US7398846, US7373315, US7360816, US7303033, US7292992, US7275609, US7243746, US7140672, US7096986, US7083016, US7028791, US7000318, US6986401, US6976307, US6971471, US6968918, US6959475, US6948226, US6938712, US6935658, US6923282, US6905138, US6899194, US6890039, US6889785, US6880856, US6857889, US6851496, US6845839, US6843336, US6836943, US6830117, US6766873,

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Abstract:
Source: US5058016A An electrical vehicle for road or internal transportation, in which all driving performances are carried out merely by controlling the relative rotation speeds and tilt−angle of each driving wheel, through a programmable control system, thus eliminating any mechanical means regularly utilized for this purpose, and enabling this vehicle to be driven by a person, or automatically along guiding elements, or by remote control, or to be programmed for travelling along a predetermined course without any external guiding measures.



23) Family number: 30545299 (US2005120715A) © PatBase

Title: HEAT ENERGY RECAPTURE AND RECYCLE AND ITS NEW APPLICATIONS

Priority:

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WO2005US26793	20050727	US19970999729	19971223	US19980137499	19980820

Family:

Publication number	Publication date	Application number	Application date
AP200704109 A0	20070831	AP20070004109	20050727
AU2005325208 AA	20060727	AU20050325208	20050727
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CA2404410 AA	20040320	CA20022404410	20020920
CA2599414 AA	20070823	CA20052599414	20050727
CN101146981 A	20080319	CN200580049207	20050727
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Probable Assignee: CHRISTIAN SCHOOL OF TECHNOLOGY CHARITABLE FOUNDATION TRUST

Assignee(s):(std)**:** CHRISTIAN SCHOOL OF TECHNOLOGY CHARITABLE FOUNDATION TRUST ; CHRISTION SCHOOL OF TECHNOLOGY ; LABRADOR GAUDENCIO A ; LABRADOR GAUDENCIO AQUINO ; GAUDENCIO LABRADOR ; LABRADOR GAUDENCIO ; CHRISTIAN SCHOOL OF TECHNOLOGY

Assignee(s): CHRISTIAN SCHOOL OF TECHNOLOGY CHARITABLE FOUNDATI ; CHRISTION SCHOOL OF TECHNOLOGY CHARITABLE FOUNDATI ; CHRISTION SCHOOL OF TECHNOLOGY CHARITABLE FOUNDATION TRUST

Inventor(s):(std)**:** CHRISTIAN SCHOOL OF TECHNOLOGY ; LABRADOR GAUDENCIO A ; LABRADOR GAUDENCIO AQUINO

Inventor(s): CHRISTIAN SCHOOL OF TECHNOLOGY CHARITABLE ; GAUDENCIO AQUINO LABRADOR ; LABRADOR GAUDENCIO

Agent(s):

ROGER SYN AND CO PATENT AND TRADE MARK ATTORNEYS; FURMAN AND KALLIO; OYEN WIGGS GREEN AND MUTALA LLP; GAUDENCIO AQUINO LABRADOR

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

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International class (IPC 1–7): B01D61/10 B63B17/00 B63B35/00 B63B7/00 F01K23/10 F03D5/02 F03D5/04 F03G7/00 F04B35/00 F24F6/14 F28D5/00

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US class: 114/102 114/267 114/382 114/39.1 114/39.2 114/39.26 114/39.29 114/39.31 210/136 210/170 210/259 210/321.87 244/153.00R 244/153R 244/24 405/76 415/5 416/8 417/330 417/332 60/39.01 60/506 60/618 60/618P 60/676 60/698 60/698P 60/772 62/304 62/310 62/314 623/40

Classification Explorer

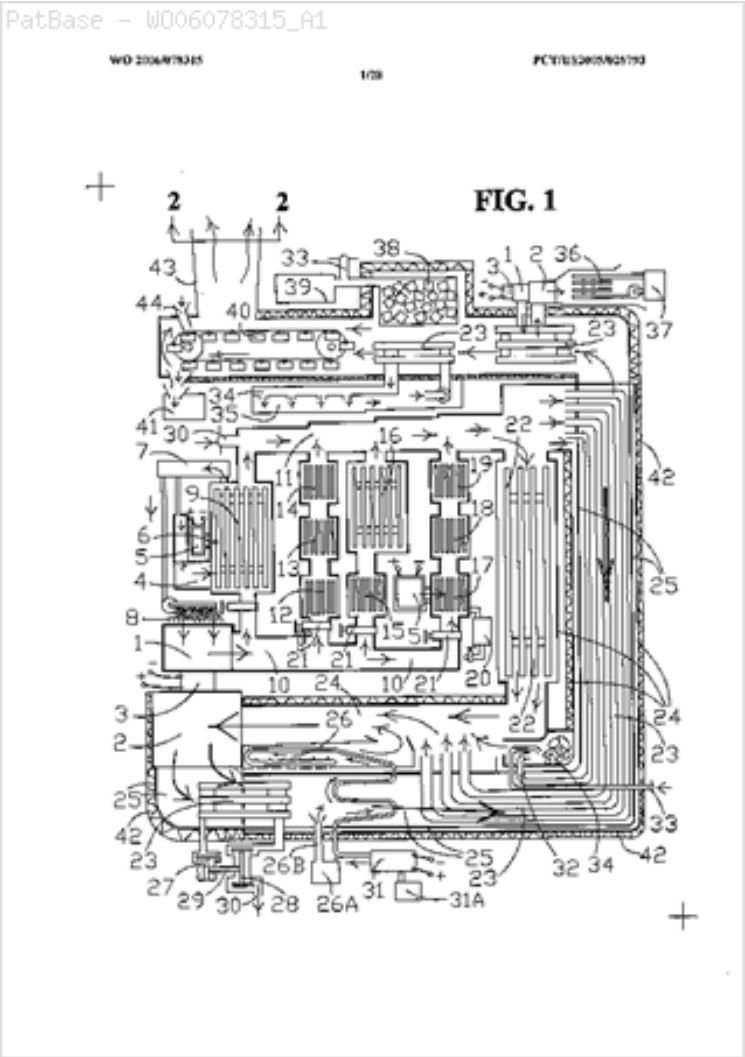
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Forward Citations: WO9604479, WO9510706, WO9421913, WO16176184, WO16154757, WO16130438, WO15083154, WO15049551, WO13150320, WO13150320, WO13063606, WO13052752, WO13052752, WO11121557, WO11024084, WO11024084, WO10151237, WO10096656, WO10096656, WO10043987, WO10043987, WO10000100, WO09118427, WO09059111, WO09058637, WO09052202, WO09052202, WO09003362, WO08124037, WO08072269, WO08054131, WO08031904, WO08006413, WO07065717, WO07027544, WO07000788, WO06117593, WO06113988, WO06078315, WO06028454, WO05064155, WO03092847, WO03092847, WO02072479, WO02063165, WO02056989, WO02056989, WO0141897, USD749231, USD747450, USD746966, USD746425, USD729925, USD729376, USD729375, USD729374, USD729373, USD729372, USD728770, USD728769, USD728092, USD718208, USD581438, US9611829, US9599995, US9599368, US9599356, US9598826, US9587630, US9581255, US9581140, US9581135, US9568021, US9568006, US9546099, US9534581, US9513028, US9511859,

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Abstract:
Source: US2005120715A What has been created is a plurality and a variety of processes and a variety of devices correspondingly supportive to each process, wherein, a new partnership between; (1) a heat absorbing radiator compressed air pipes/tubes and (2) a gas turbine engine or a reciprocating piston engine,–is used to recapture and reconvert the, otherwise wasted, heat energies expelled by engines, by factories, by smelting plants, by distillation plants, by chillers/coolers/freezers, by cooking ovens, by lamps/stoves, by trash burners, and the heat energies created by the solar heat on the desert/ocean water,–into electric power and finally into hydrogen–deuterium fuel,–by having the engine's tailpipes submerged in cold compressed air inside the heat absorbing radiator pipes in reverse air flow, to further drive and re–drive the same engine; wherein, in order to capture fusion heat energy the hydrogen bomb is detonated in the deep ocean to catch the flames by the water and the hot water is used to energize the compressed air inside the heat absorbing radiator pipes; wherein, in order to produce fusion energy, an abundant electric arc is passed across liquid deuterium or across gaseous deuterium by the electro–plasma torch and sparkplug in the internal combustion engine, and by detonating a dynamite inside a liquid deuterium; wherein diamond is produced by placing carbon inside the hydrogen bomb; and wherein, deuterium fusion flame is used first in smelting glass to large sizes before running an engine.



0) US6158757A – MOTION CONVERSION ASSEMBLY AND VEHICLE

24) Family number: 14929687 (US6158757A) © PatBase

Title: MOTION CONVERSION ASSEMBLY AND VEHICLE

Priority: US19970053676P 19970724 US19980122302 19980724 US19980122543 19980724

Family:

Publication number	Publication date	Application number	Application date
US6158757 A	20001212	US19980122543	19980724
US6224078 BA	20010501	US19980122302	19980724

Probable Assignee: TIDCOMB STEVEN

Assignee(s):(std)**:** TIDCOMB STEVEN

Inventor(s):(std)**:** TIDCOMB STEVEN

International class (IPC 8–9)**:** A61G5/02 B62K21/00 B62M1/12 B62M1/24 (Advanced/Invention); A61G5/00 B62K21/00 (Core/Invention)

International class (IPC 1–7)**:** B62M1/14 B62M1/16 F16D1/00

CPC: B62M1/12 B62M1/28 Y10T403/599 A61G5/023 A61G5/025 A61G5/1051 B62K21/00

European class: A61G5/02A4 A61G5/02B2 B62K21/00 B62M1/12 B62M1/28 K61G5/10G

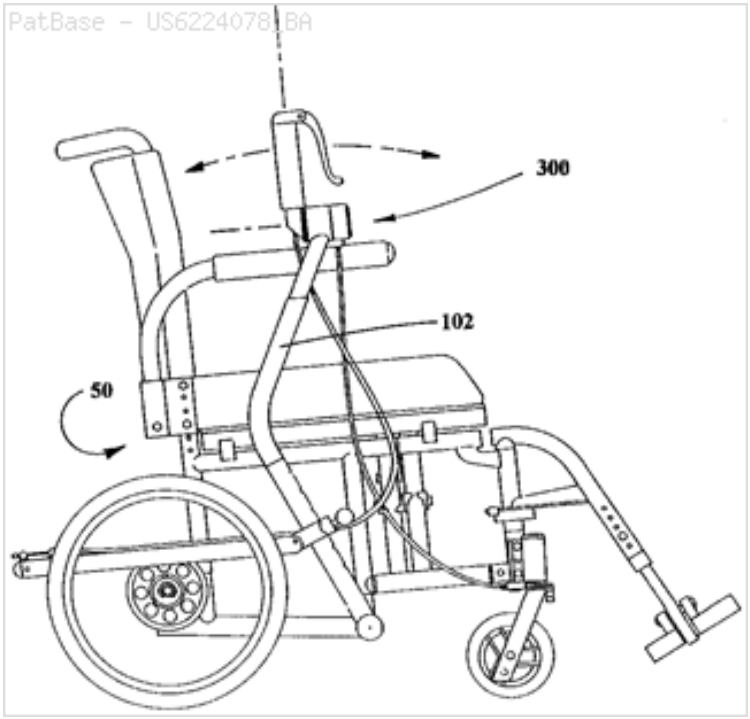
US class: 280/240 280/244 280/250.1 403/325

Classification Explorer

Cited documents: US6007082 A, US5941547 A, US5775708 A, US5590893 A, US5555775 A, US5429379 A, US5280936 A, US5242179 A, US5184837 A, US5020815 A, US5007655 A, US4865344 A, US4840076 A, US4811964 A, US4762332 A, US4705284 A, US4560181 A, US4518002 A, US4453729 A, US4449420 A, US4437677 A, US4417742 A, US4379566 A, US4305600 A, US4113221 A, US3994509 A, US3986725 A, US3760905 A, US3666292 A, FR527214 A, AU115951 A1,

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Abstract:
Source: US6158757A An occupant–propelled vehicle comprising a vehicle body and a first vehicle propulsion system that comprises a first drive wheel, a drum rotatably coupled to the vehicle frame and drivingly engaged with the drive wheel, a movable force receiver, an elongated and flexible motion conversion member drivably coupled with the force receiver with a first reference point spaced a given effective–travel distance from a second reference point and a body portion overlying the drum, and an actuator mechanism for actuating the motion conversion member between a slackened, disengaged state and a tensioned state wherein there is frictional engagement between the drum and the motion conversion member. The actuator mechanism may be automatic or manual.



0) US3368292A – VEHICLE FOR CONDITIONING SNOW SLOPES, AND FOR T...

25) Family number: 28930681 (US3368292A) © PatBase

Title: VEHICLE FOR CONDITIONING SNOW SLOPES, AND FOR TRANSPORTATION THEREON

Priority: FR19650021463 19650618 IT19640013430 19640619 IT19650011370 19650524

Family:

Publication number	Publication date	Application number	Application date
AT262794 B	19680625	AT19650005498	19650618
AT274035 B	19690910	AT19670003775	19650618
CH460545 A	19680731	CH19650008525	19650618
DE1455735 A1	19690529	DE19651455735	19650615
DE1455735 C3	19730301	DE1965P037055	19650615
DE1658409 B1	19700716	DE19651658409	19650619
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DE1780647 B2	19740228	DE19651780647	19650615
DE1780647 C3	19740926	DE19651780647	19650615
FR1461421 A	19660225	FR19650021463	19650618
GB1107052 A	19680320	GB19650024116	19650608
GB1107053 A	19680320	GB19660024141	19650608
SE328488 B	19700914	SE19650008070	19650618
US3368292 A	19680213	US19650464496	19650616

Probable Assignee: PRINOTH ERNESTO ST ULRICH ITALIEN

Assignee(s):(std)**:** ERNESTO PRINOTH ; PRINOTH E ; PRINOTH ERNESTO ; PRINOTH ERNESTO ST ULRICH ITALIEN

Assignee(s): PRINOTH ERNESTO ST ULRICH BOZEN ITALIEN

Inventor(s):(std)**:** PRINOTH ERNESTO ; PRINOTH ERNESTO ST ULRICH ; PRINOTH E ; ERNESTO PRINOTH

Inventor(s): PRINOTH ERNESTO ST ULRICH BOZEN ITALIEN

International class (IPC 8–9)**:** B60P3/00 B62D11/00 B62D11/20 B62D49/06 B62D55/06 B62D55/065 B62D55/07 B62D55/10 B62D55/116 B62M27/02 E01H4/02 E01H5/06 (Advanced/Invention); B60P3/00 B62D11/00 B62D49/00 B62D55/00 B62D55/08 B62D55/104 B62M27/00 E01H4/00 E01H5/04 (Core/Invention); B62D E01C (Subclass/Invention)

International class (IPC 1–7)**:** B62D11/20 B62D55/00 B62D55/06 B62D55/18 B62D55/20 E01C E01H4/00 E01H5/06

CPC: B62M2027/027 Y10S280/09 B62D49/0642 B60P3/00 B62D11/00 B62D11/20 B62D55/062 B62D55/0655 B62D55/07 B62D55/10 B62D55/116 B62M27/02 E01H4/02 E01H5/06

European class: B60P3/00 B62D11/00 B62D11/20 B62D49/06D4 B62D55/065B B62D55/06C B62D55/07 B62D55/10 B62D55/116 B62M27/02 E01H4/02 E01H5/06 L62M27/02G

US class: 180/14.1 180/420 180/9.1 180/9.4 180/9.42 280/400 280/468 280/DIG.9 305/181 37/10 37/100 37/219

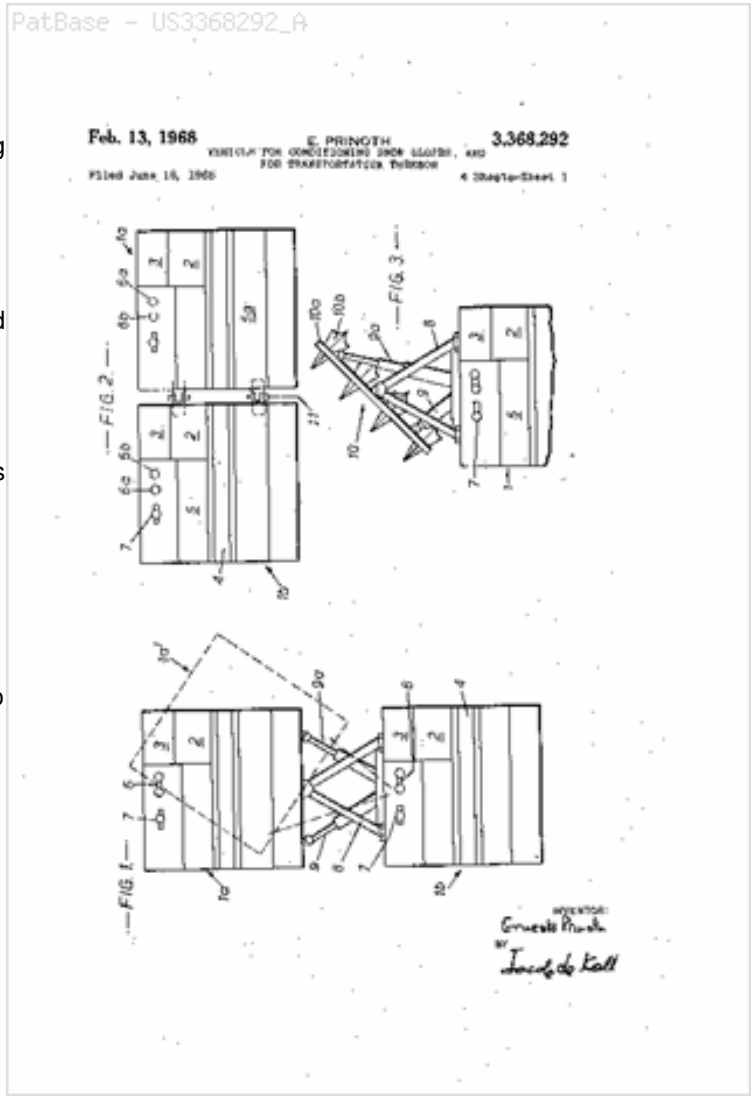
Classification Explorer

Cited documents: US655686 A, US3157239 A, US3011576 A, US2933143 A, US2925873 A, US2749189 A, US2436681 A, US2367751 A, US2272619 A, US2112559 A, US2051864 A, US1310604 A, FR1110037 A, CA620491 A,

Forward Citations: WO8702635, US9482681, US5113958, US4860465, US4819738, US4544304, US4453614, US4133552, US4090627, US4019268, US3966345, US3692119, US3650343, US3637267, US2006237239, JP51158906, EP2352981, EP2352981, AT411570,

Abstract:
Source: GB1107052A 1,107,052. Endless tracks; tracked vehicles. E. PRINOTH. 8 June, 1965 [19 June, 1964], No. 24116/65. Heading B7H. An endless track vehicle comprises a continuously flexible endless track 23a passing over wheel pairs 14, 14, 15, 15 and further endless tracks 23b, 23b, 23c, 23c disposed laterally of the track 23a and connected thereto by transversely disposed metal bars 24a, 24b, of triangular cross–section. The vehicle has a quadrangular chassis 12 in which are mounted an engine 2, change speed gear 3 and seats 5 and 5a, and flexible shafts 17a, 17b and 18, the shaft 17a being driven from the change speed gear 8 by a chain–and–sprocket drive 20, 21 and 22. The wheels 14 and 15 have pneumatic tyres with moulded teeth corresponding metal projections on the belt 23a. The wheels 14 are mounted on balance beams 13 carried by a shaft 18 resiliently mounted at 18a in the frame. A pair of vehicles may be connected in side by side relationship with a hinge in between, steering being effected by selective actuation of the vehicle engines, or in tandem by a triangular coupling 8 hinged at its base to one vehicle and having a ball joint connection at its apex to the other, steering being effected by actuation of a pair of rams 9. For steering an individual vehicle a bar 10a carrying ploughshare devices 106 is mounted on the triangular frame 8, the bar being angled for steering by the rams 9 and 9a. The ploughshare devices cut the ground and tend to follow the direction they are pointing, whereby the vehicle is steered.

PatBase - US3368292_A



0) US2008083851A – SYSTEM AND METHOD FOR TRANSFERRING AIRPLANES

26) Family number: 41672205 (US2008083851A) © PatBase

Title: SYSTEM AND METHOD FOR TRANSFERRING AIRPLANES

Priority:

CA20082687433 20080402 CA20152687433 20150420 CN200880024713 20080402
IL20090197748 20090323 IL20090202072 20091112 EP20070827146 20070924
HK20090107477 20090814 EP20100177889 20070924 EP20100177831 20070924
US20090619130 20091116 US20090619123 20091116 IL20090202081 20091112
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US20130010415 20130826

Family:

Publication number	Publication date	Application number	Application date
BRPI0715266 A2	20130723	BR2007PI15266	20070924
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WO08038270 A3	20080626	WO2007IL01172	20070924	
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WO08139440 A2	20081120	WO2008IL00459	20080402	
WO08139440 A3	20100114	WO2008IL00459	20080402	
WO13042114 A1	20130328	WO2012IL50357	20120910	

Probable Assignee: ISRAEL AEROSPACE IND LTD

Assignee(s):(std)**:** BRAIER RAN ; ISRAEL AEROSPACE IND LTD ; ISRAEL AEROSPACE IND LTD IAI ; ISRAEL AIRCRAFT IND LTD ; PERRY ARIE

Assignee(s): ISRAEL AIRCRAFT INDUSTRIES LTD ; ISRAEL AEROSPACE INDUSTRIES LTD IAI ; ISRAEL AIRCRAFT IND ; ISRAEL AEROSPACE INDUSTRIES LTD IL ; ISRAEL AEROSPACE INDUSTRIES LTD ; ISRAEL AEROSPACE IND

Inventor(s):(std)**:** ARIE PERRY ; BRAIER RAN ; PERRY ARIE ; RAN BRAIER

Inventor(s): PERRY ARIE 45257 ; BRAIER RAN 73142

Agent(s): OGILVY RENAULT LLP SENCRL SRL; NORTON ROSE FULBRIGHT CANADA LLP SENCRL SRL; BECKER KURIG STRAUS; Becker Kurig Straus; GRUENECKER KINKELDEY STOCKMAIR AND SCHWANHAEUSSER ANWALTSSOZIETAET; CARPINTERO MARIO; RIZZO SERGIO; REINHOLD COHN AND PARTNERS; MIYOSHI HIDEKAZU; MARKS AND CLERK SINGAPORE LLP; GARY M NATH NATH LAW GROUP; NATH AND ASSOCIATES PLLC SIXTH FLOOR; OLIFF AND BERRIDGE PLC; JIAXIAO; NATH LAW GROUP; WILLIAM L; SUSANNE M; DORSEY AND WHITNEY LLP; OLIFF PLC

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60D1/24 B60P3/11 B62D61/10 B64C13/20 B64C25/02 B64C25/50 B64C39/00 B64F B64F1/10 B64F1/22 G05D1/00 G05D1/02 G08G5/06 (Advanced/Invention); B60P3/06 B62D61/00 B64C13/00 B64C25/00 B64C39/00 B64F1/00 G05D1/00 G08G5/00 (Core/Invention); B64F1/22 G05D1/00 (Core/Non–invention); B64F G08G (Subclass/Invention)

International class (IPC 1–7): B64C25/02

CPC: B64F1/10 B64C2201/187 B64C39/024 B64C2201/021 B64C2201/086 B64F1/00 Y02T50/82 B64C25/50 B64F1/22 B64F1/227 B64F1/228 Y02T50/826

European class: B64C25/50 B64C39/02C B64F1/00 B64F1/22 B64F1/22E2 B64F1/22E4 L64C201/02A L64C201/08C Y02T50/82 Y02T50/82D

US class: 1/1 180/167 180/6.2 244/175 244/175S 244/189 244/189P 244/50 244/50P 244/70 244/70P

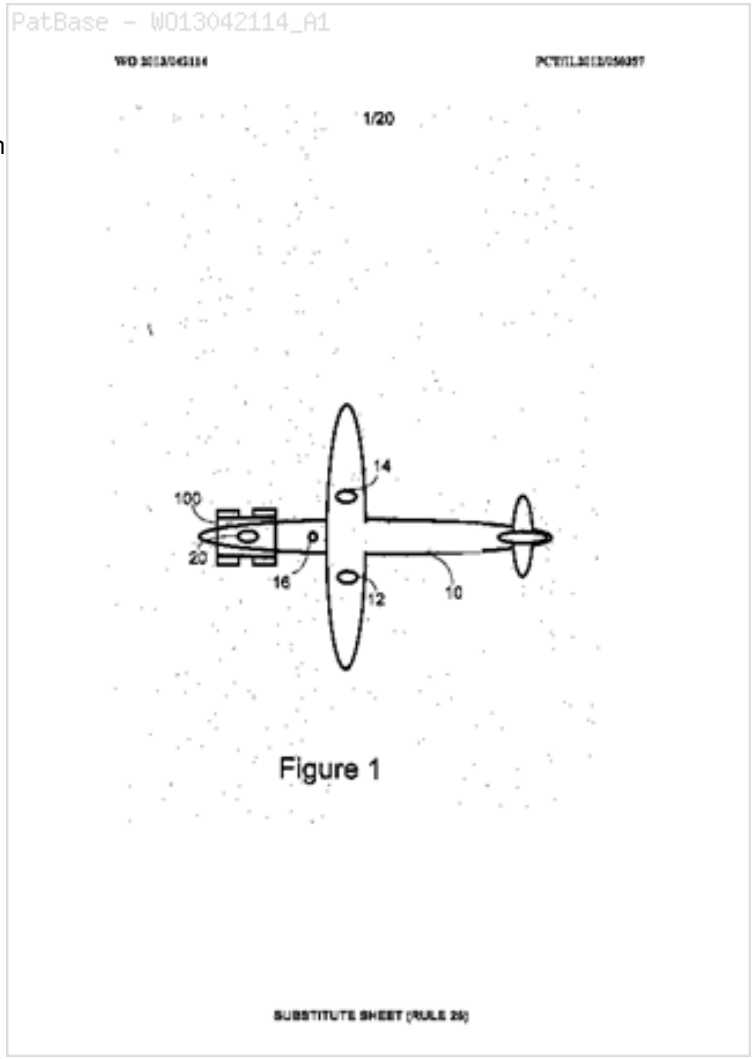
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US3064746 A, US3004773 A, US2966222 A, US2957650 A, US2877911 A, US2751990 A, US2539010 A, US2014124621 AA, US2012119018 AA, US2012061521 AA, US2011224845 AA, US2011127366 AA, US2009183499 AA, US2008278756 AA, US2008083851 AA, US2006278756 AA, US2006056949 AA, US2005196256 AA, US2003095854 AA, US2003047362 AA, US2002173904 AA, RU2302980 C2, RU2301980 C2, RU2271316 C2, KR20070028486 A, JPS562237, JP70741, JP70741, JP62237, JP62037000 U1, JP57070741 A2, JP56002237 A2, JP505512, JP4306173 A2, JP4138997 A2, JP3500520 T2, JP3107310 A2, JP279497, JP2279497 A2, JP2004501829 T2, JP2003189412, JP2001525759 T2, JP2001505512 T2, JP2001505512, JP189412, JP138997, JP138997, JP1164659 A2, JP10250694 A2, GBI249465, GB1249465 A, FR2911658 A1, FR2675919 A1, FR2581965 A1, EP1634808 A1, EP1623924 A1, EP1574430, EP1190947 A1, EP0649787 A1, EP0235845 A1, DE4446048 A1, DE4446047 A1, DE4340919 A1, DE4324211 A1, DE4131649 A1, DE4102861 A1, DE4009419 A1, DE4007610 A1, DE3928854 A1, DE3844744 C2, DE3534045 A1, DE3521429 A1, DE3327629 A1, DE3327628 A1, DE19734238 A1, CN2458238 Y, CN1511759 A,

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Abstract:
Source: US2008083851A A method for transferring airplanes and an unmanned airplane transfer system. The airplane transferring system includes: receiving a transfer signal responsive of a movement of an airplane control component; and transferring an airplane, by an unmanned airplane transfer system, in response to the transfer signal.



0) US2004040756A – GYROSCOPICALLY STABILIZED VEHICLE

27) Family number: 30348106 (US2004040756A) © PatBase

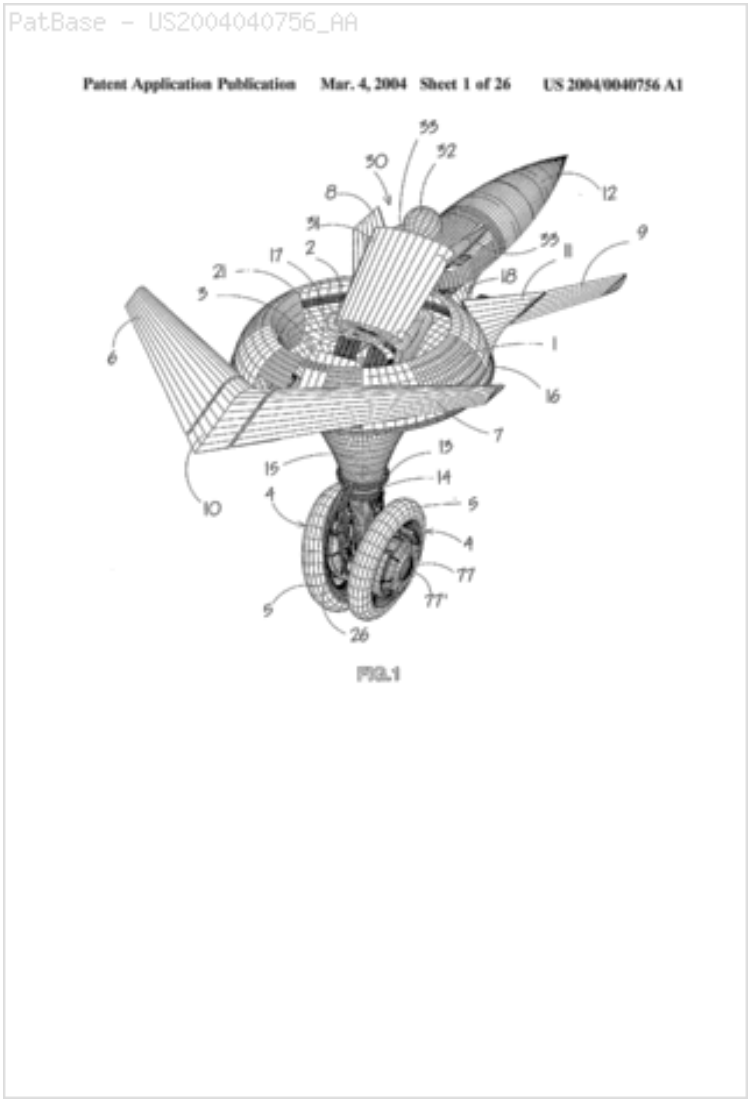
Title:	GYROSCOPICALLY STABILIZED VEHICLE
Priority:	US20020232515 20020903

Family:

Publication number	Publication date	Application number	Application date
US2004040756 AA	20040304	US20020232515	20020903

Probable Assignee:	NMNGANI ABDULAREEF
Assignee(s):(std)**:**	NMNGANI ABDULAREEF
Inventor(s):(std)**:**	NMNGANI ABDULAREEF
International class (IPC 8–9)**:**	B62D37/06 B62D61/00 (Advanced/Invention); B62D37/00 B62D61/00 (Core/Invention)
International class (IPC 1–7)**:**	B62D11/02 B62D6/00
CPC:	B62D37/06 B62D61/00
European class:	B62D37/06 B62D61/00
US class:	180/6.2 180/62
Classification Explorer	
Cited documents:	US6458008 BA, US6360838 BA, US5823845 A, US5314034 A, US2003116363 AA, US2003010554 AA,
Forward Citations:	WO11115699, US8918239, US8706390, US8615356, US8532915, US8376273, US7470217, US7237748, US7226018, US2012253554, US2012072099, US2011231085, US2011231060, US2011231041, US2009120698, US2006063647, US2006038068, US2005224642, TWI537169,

Abstract:
Source: US2004040756A A gyroscopically stabilized vehicle includes a funnel−shaped member rotatable in a frame having a neck that supports two closely spaced generally parallel wheels and a relatively wide upper portion within or on which are located a motor for causing the stabilizer to rotate and for propelling the wheels, a support for a rider, and subsystems for controlling the rate of rotation of the stabilizer, steering the vehicle, braking the vehicle, and providing auxiliary stabilization when the rate of rotation of the stabilizer is decreased to permit rapid acceleration and high speed maneuverability. Power from the motor is transmitted directly to the funnel−shaped stabilizer member and to the wheels via a differential that distributes power between the stabilizer member and the wheels so that at low speeds, the stabilizer member is driven at a relatively high speed for maximum stability, and during acceleration, the rotation speed of the stabilizer is decreased in order to transmit maximum power to the wheels, with front−to−back stability being maintained during acceleration by independently controlled forward and rear auxiliary spoilers or stabilizers. Steering is facilitated by selective braking of the two wheels and, during high speed maneuvering, by selective braking of the stabilizer member and independent control of the auxiliary stabilizers and the position of the wheels relative to the frame.



0) US2009205883A – PAYLOAD–CARRYING MOTOR VEHICLE WITH TAG AXLE HA...

28) Family number: 43633319 (US2009205883A) © PatBase

Title: PAYLOAD–CARRYING MOTOR VEHICLE WITH TAG AXLE HAVING DISABLEABLE BRAKES

Priority: US20080070040 20080215

Family:

Publication number	Publication date	Application number	Application date
US2009205883 AA	20090820	US20080070040	20080215
US7775533 BB	20100817	US20080070040	20080215

Probable Assignee: STRONG BROOKS

Assignee(s):(std)**:** STRONG BROOKS

Inventor(s):(std)**:** STRONG BROOKS

Agent(s): RONALD L PHILLIPS; RONALD L

International class (IPC 8–9): B62D61/10 (Advanced/Invention); B62D61/00 (Core/Invention)

CPC: B60T13/683 B62D61/12

European class: B60T13/68B B62D61/12

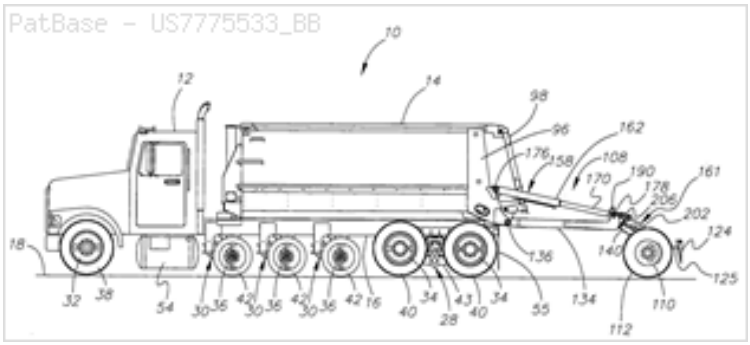
US class: 180/24.02 280/86.5

Classification Explorer

Cited documents: US6808035 BA, US6371227 BB, US6247712 BA, US6189901 BA, US6116698 A, US5823629 A, US4684142 A, US4063779 A,

Forward Citations: US8770601, US8573611, US8523203, US8523202, US8485538, US8459625, US7731208, US2012187645, US2009206570,

Abstract:
Source: US2009205883A A payload–carrying motor vehicle comprises a steer axle, at least one drive axle and a tag axle. All of the axles have wheels with tires and air brakes and a tag axle suspension system is adapted to suspend the tag axle in an active condition wherein the tag axle is pivotal about a first axis parallel to the other axles and also about a second axis located equidistant from the tag axle wheels and laying in a plane at right angles to the first axis and wherein the tag axle is forced to urge the tag axle tires against a road surface to aid in supporting the vehicle.
An air brake system is adapted to operate the air brakes of all the wheels and a tag axle operating system is adapted to establish the tag axle in the active condition while enabling operation of the air brakes of the tag axle wheels and to disable operation of the air brakes of the tag axle wheels when the tag axle pivots about the second axis and reaches a predetermined tilt angle in maintaining contact of the tag axle tires with a road surface.



29) Family number: 47678752 (US2010296632A) © PatBase

Title: SYSTEM AND METHOD TO AUTOMATICALLY ASSIST MOBILE IMAGE ACQUISITION

Priority: FR20090053407 20090522 US20090638201 20091215 US20100766591 20100423 US20120443719 20120410 WO2010US55603 20101105 US20090641780 20091218

Family:

Publication number	Publication date	Application number	Application date
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CN102119862 B	20141203	CN201010604230	20101215
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WO11075232 A1	20110623	WO2010US55603	20101105

Probable Assignee: GEN ELECTRIC

Assignee(s):(std)**:** BOUVIER BERNARD ; GEN ELECTRIC ; GENERAL ELECTRIC CO

Assignee(s): GENERAL ELECTRIC COMPANY

Inventor(s):(std)**:** BERNARD BOUVIER ; BOUVIER BERNARD

Agent(s): BEDFORD GRANT RICHARD; CABINET SCHMIT CHRETIEN; CABINET HIRSCH ET ASSOCIES; GE HEALTHCARE IP DEPARTMENT; FLETCHER YODER PC; THOMAS JONATHAN E ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): A61B19/00 A61B6/00 A61B6/04 A61B6/10 B60T1/00 G01C22/00 G03B42/02 G05D1/00 G06F17/00 G06F19/00 G21K1/02 H05G1/02 (Advanced/Invention)

CPC: A61B6/105 A61B6/107 A61B6/4441 A61B6/0457 A61G2203/22 A61B6/547 A61B6/4405 A61B6/548

European class: A61B6/04C A61B6/10B2 A61B6/44B A61B6/44J2B A61B6/54H K61B6/10D K61G203/22

US class: 1/1 188/5 378/193 378/198 378/198P 701/23 701/25 701/25P 701/26 701/26P 701/37 701/41

Classification Explorer

Cited documents: WO9316633 A1, WO06126108 A1, US8177430 BB, US7696499 BB, US7695192 BB, US7450682 BB, US7173265 BB, US6834220 BA, US6814490 BA, US6702306 BA, US63820109, US6374937 BA, US6131690 A, US6040637 A, US5572569 A, US5490297 A, US5013018 A, US4935949 A, US4894855 A, US4589126 A, US4484666 A, US4411100 A, US4336858 A, US4280412 A, US2010329426 AA, US2010299015 AA, US2010296632 AA, US2010172468 AA, US2009082661 AA, US2009070936 AA, US2008194942 AA, US2008119714 AA, US2008118036 AA, US2008071420 AA, US2008042076 AA, US2007299571 AA, US2007192910 AA, US2007179460 AA, US2007003021 AA, US2006120512 AA, US2006114104 AA, US2006002511 AA, US2005173549 AA, US2005103545 AA, US2005065675 AA, US2005065675, US2005020906 AA, US20050065675, US2003085368 AA, US2001044577 AA, US0065675, JP63186403 U1, JP63186403 U, JP63186403 U, JP6181104 A2, JP6181104, JP61081104 A2, JP60252004 A2, JP60252004, JP5361891, JP53061891 A2, JP53061891, JP2011229900 A2, JP2011229900, JP2008246109 A2, JP2008246109, JP2007289408 A2, JP2007289408, JP2006141669 A2, JP2006141669, JP200552308, JP2005331021 A2, JP2005331021, JP2005052308 A2, JP2005052308, JP2003169794 A2, JP2003169794, JP200236055, JP2002036055 A2, JP2002036055, JP11292278 A2, JP1129227 A2, DE4224614 A1,

DE102005052784 B3

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DE04224614, CN2880613 Y, CN2655869 Y, CA2229347 AA,

Forward Citations: WO16128525, WO15051468, WO15033445, WO14192960, WO14027312, WO13090481, WO13071045, USD725272, US9610049, US9517044, US9474496, US9374537, US9326747, US9279679, US9259203, US9101318, US9089309, US8992083, US8979365, US8788154, US8666585, US8636410, US8459868, US2015085992, US2015023475, US2014331406, US2014329464, US2014233698, US2014210470, US2014093040, US2014074361, US2013243160, US2013172907, US2012328077, US2011096910, US2010299015, US2010299014, JP6078058, JP6049657, JP5918093, JP5711761, JP2015033445, JP2014516759, JP2014217765, JP2014062797, JP2013514138, JP2013017818, FR2998468, FR2983056, EP2944261, EP2545855, EP2502564, EP2502563, EP2502562, EP2454994, DE102014219077, DE102013208610, DE102012215169, DE102012215169, DE102012213202, DE102011078682, DE102011078682, DE102011006529, CN104138274, CN103533895, CN102688050, CN102688049, CN102551770,

Abstract:
Source: US2010296632A A system and method to perform image acquisition of a subject is provided. The system includes a mobile device to move an imaging system across a floor, and a brake system that restrains movement of the mobile device. A controller includes a memory having program instructions to instruct a processor to perform the steps of: instructing movement of the mobile device in support of the imaging system to a first position for image acquisition of the subject; receiving feedback that the mobile device is located at the first position; and applying a brake force to restrain movement of the mobile device. The step of applying the brake force includes generating a vacuum in restraint of movement of the mobile device with respect to the floor.

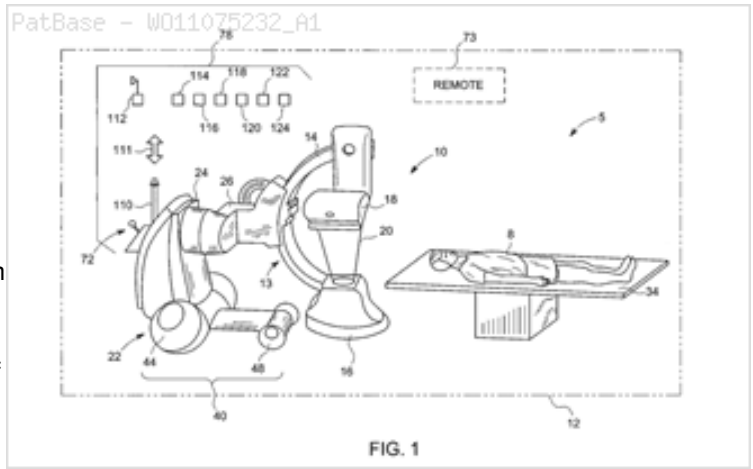


FIG. 1

0) US2006181042A – ANIMAL–POWERED VEHICLE

30) Family number: 33212065 (US2006181042A) © PatBase

Title:	ANIMAL–POWERED VEHICLE
Priority:	US20050056359 20050214

Family:

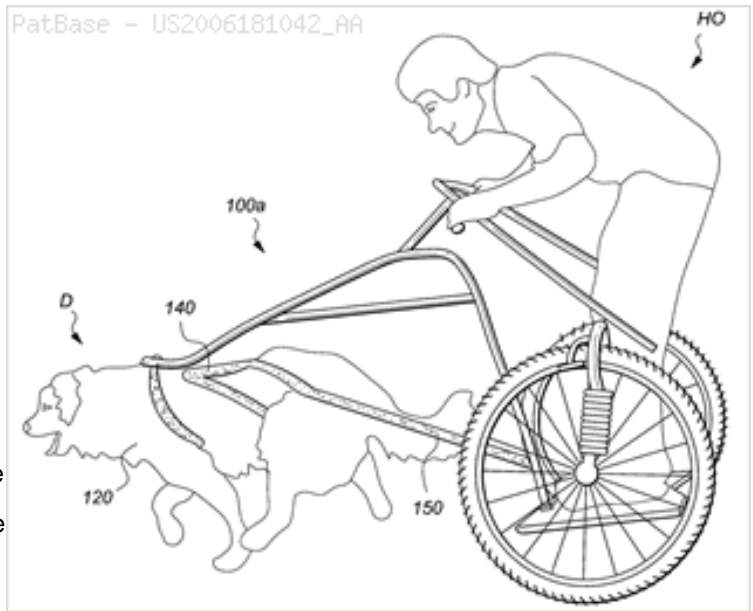
Publication number	Publication date	Application number	Application date
US2006181042 AA	20060817	US20050056359	20050214

Probable Assignee:	SAWYER VERNON L III
Assignee(s):(std)**:**	SAWYER VERNON L III
Inventor(s):(std)**:**	SAWYER VERNON L III
Inventor(s):	SAWYER VERNON LIII ; SAWYER VERNON ; SAWYER VERNON L
Agent(s):	WOOD NGO AND EISENBERG PLLC
International class (IPC 8–9):	B62C1/02 (Advanced/Invention)
CPC:	A01K27/00 A01K27/002 A01K27/003 B62C1/02 B62C1/08
European class:	A01K27/00 A01K27/00B A01K27/00C B62C1/02 B62C1/08
US class:	280/63 280/63P

Classification Explorer

Cited documents:	US6135059, US5937794, US5433458, US5344171, US5205570, US5174594, US4861052, US292896, US2475870, US2004075226, US187693,
Forward Citations:	USD633825, US9089109, US2014251235,

Abstract:
Source: US2006181042A The present invention is directed to an animal–powered vehicle. In one embodiment the vehicle includes a handle bar, first and second substantially vertically aligned wheel holders, first and second wheels, first and second elongated, platform support pillars, a platform, a substantially rigid, elongated steering stem, and a brake system. The vehicle also includes a means for supporting the platform, and an optional means for load–balance steering. The wheel holders are respectively attached proximate to the ends of the handle bar. The top ends of the platform support pillars are respectively attached proximate to the ends of the handle bar such that the platform support pillars respectively extend downward proximate to and inside the wheel holders. The steering stem extends forward with respect to the middle portion of the handle bar. The brake system is optionally configured to provide skid–steer steering capability.



0) GB1026415A – IMPROVEMENTS IN OR RELATING TO TRANSPORTATION S...

31) Family number: 20498608 (GB1026415A) © PatBase

Title: Improvements in or relating to transportation systems

Priority: US19620216451 19620813 FR19630944510 19630812

Family:

Publication number	Publication date	Application number	Application date
DE1430953 A1	19681205	DE19631430953	19630813
FR1372065 A	19640911	FR19630944510	19630812
GB1026415 A	19660420	GB19630031593	19630809

Probable Assignee: ALDEN SELF TRANSIT SYST

Assignee(s):(std)**:** ALDEN SELF TRANSIT SYST

Assignee(s): ALDEN SELF TRANSIT SYSTEMS CORP

Inventor(s):(std)**:** G BRUSH STEPHEN ; L ALDEN WILLIAM

International class (IPC 8–9)**:** B61B5/02 B62D1/26 (Advanced/Invention); B61B5/00 B62D1/00 (Core/Invention)

International class (IPC 1–7)**:** B60Q9/00 B61B13/00 B62D31/00

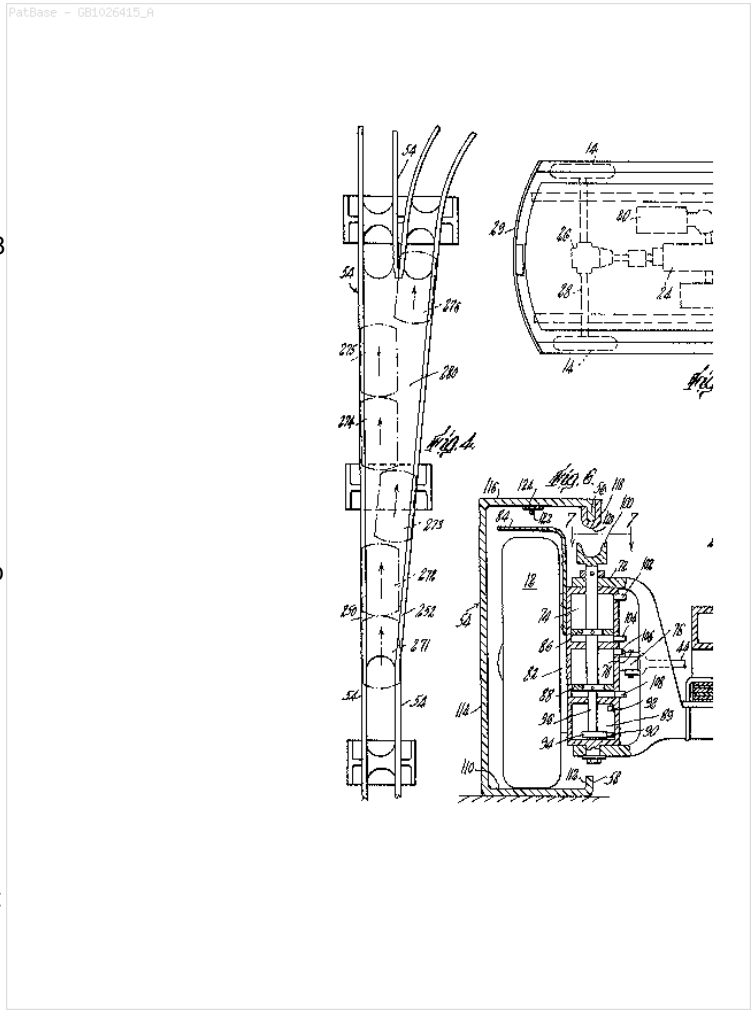
CPC: B61B5/02 B62D1/265

European class: B61B5/02 B62D1/26B

Classification Explorer

Forward Citations: WO9426573, DE2622778,

Abstract:
Source: GB1026415A 1,026,415. Guiding vehicles; vehicle magnetic couplings. ALDEN SELF−TRANSIT SYSTEMS CORPORATION. Aug. 9, 1963 [Aug. 13, 1962], No. 31593/63. Headings B7B, B7H, B7L and B7T. A transportation system has two guide tracks 54, Fig. 6, in which runs the wheels 12 of a vehicle; each front wheel brake drum 82 carries a cylinder in which slides pistons 86, 88 carrying a guide 100 and a switch element 94 cooperating with contacts 90, 92 to indicate the position of guide 100. Fluid is admitted to below both pistons through ports 104, 108 to raise guide 100 against guide element 120 on track 54, the normal steering being disconnected by a clutch. Whilst travelling along the track the vehicle is propelled by an electric motor controlled from a conductor 122 on track 54 which is engaged by a slider attached to the rear mudguard, Fig. 8, not shown, or to guide 100, Fig. 9, not shown. The vehicle is normally driven by an I.C. engine. To accommodate the top flanges 116 of tracks 54 the vehicle is formed with channels 50, Fig. 3. A train of vehicles connected together by magnets in their bumpers have their left−hand guides 100 engaging track 54, Fig. 4; should any vehicle, e.g. 276, 273, wish to leave the track then a block signal at the track side passes a signal to the appropriate vehicle to lower the left guide 100 and raise the right guide 100 to follow the other track 54, the magnetic couplers being actuated to repel the vehicle immediately in front and behind the vehicle leaving the train. The cars may be kept spaced apart in the train by sensing devices. In Fig. 11, the guides 150, 152 are carried on shaft 154 which is rotated through a rack and pinion mechanism 156, 158 to engage one of the guides with one of the guide elements 118. In Figs. 12, 13 sets of rollers 172−174 and 166−168 constitute the guides and are carried on links 176, 170 respectively. The rollers are mounted for vertical movement into and out of engagement with guide elements 190, 192 on a parallelogram linkage 177, 178, 180, 181 tiltable about shaft 183 and supported by flanges 184; the guiding rollers are connected to the normal steering linkage 162 by bar 163 and link 164. The guide 100 may be mounted to be moved downwardly to engage a channel guide rail which carries the electric conductor, Fig. 15, not shown; whilst each guide in Fig. 16 comprises two parts 230, 232 on arms 234, 236 which are pivoted by cylinder 240 to engage the parts 230, 232 with guide rail 246. Fig. 17, not shown, gives a track lay−out with entrance and exit spurs. A control circuit controls each vehicle from signals over the conductors 122, Fig. 18, not shown.



0) US2478389A – KERF–CUTTING MACHINE

32) Family number: 22324817 (US2478389A) © PatBase

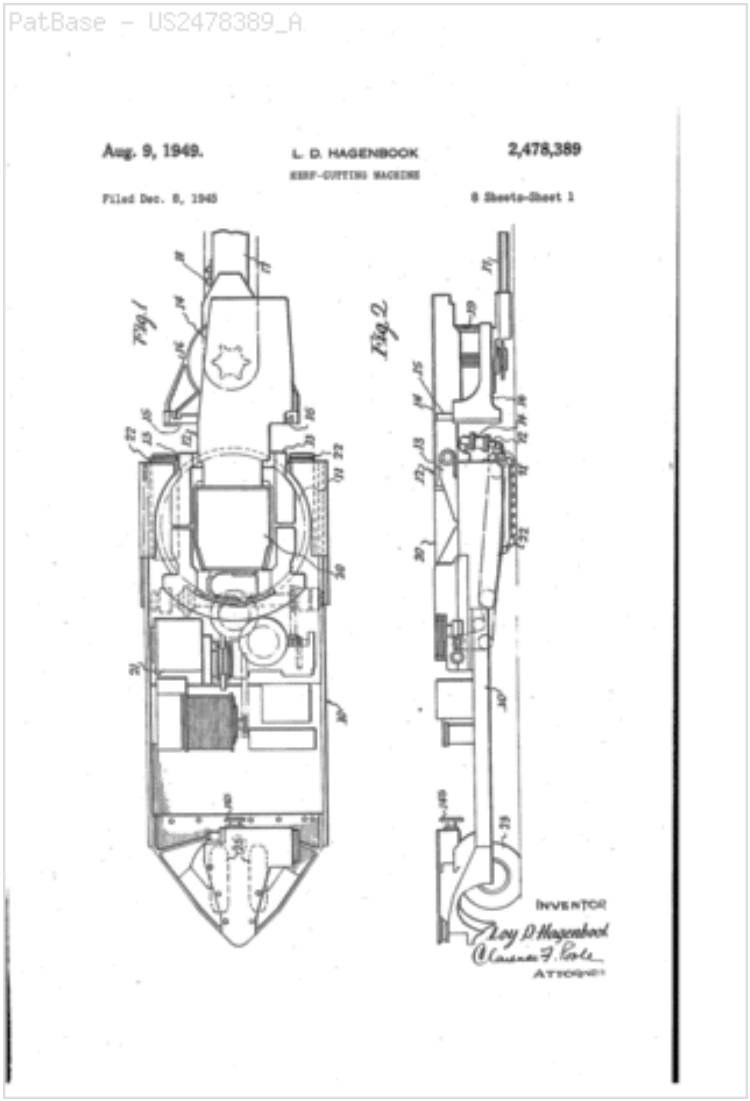
Title:	KERF–CUTTING MACHINE
Priority:	US19450633580 19451208

Family:

Publication number	Publication date	Application number	Application date
US2478389 A	19490809	US19450633580	19451208

Probable Assignee:	GOODMAN MFG CO
Assignee(s):(std):	GOODMAN MFG CO
Assignee(s):	GOODMAN MANUFACTURING COMPANY
Inventor(s):(std):	HAGENBOOK LOY D
International class (IPC 8–9):	E21C29/22 (Advanced/Invention); E21C29/00 (Core/Invention)
International class (IPC 1–7):	E21C29/24
CPC:	E21C29/22 Y10S71/03
European class:	E21C29/22
US class:	180/317 180/431 180/6.3 180/6.7 180/9.38 280/43.23 299/75 305/9 71/DIG.3
Classification Explorer	
Cited documents:	US2357724 A, US2332546 A, US2307966 A, US2282749 A, US1682557 A,
Forward Citations:	US2694581, US2663266,

PatBase - US2478389_A



Abstract:
Source: US2478389A I claim as my invention: 1. In a kerf–cutting machine, a main frame, a cutter chain carrying cutter bar pivotally mounted at the front of said main frame for movement about a. vertical– axis and projecting forwardly beyond said main frame to cut a kerf across the front of and to each side thereof, and means for supporting said main frame for movement about the ground and for feeding said cutter bar longitudinally into and withdrawing it from a. coal face and forming a stable support means for said cutter bar when disposed to either side of said main frame and during cutting across the forward end of said main frame, including two relatively short laterally spaced continuous tread devices at the forward end of said main frame at opposite sides thereof, steering wheel means supporting the rear end of said main frame, said steering wheel means being spaced a. substantial distance from said tread devices, and said tread devices being so located with respect to the center of gravity of the machine that the major portion of the load during cutting and transportation of the machine will be taken on said continuous tread devices and the load on said steering wheel means will only be sufficient to give said steering wheel means traction to assist said tread devices in steering the machine. 2. In a kerf–eutting machine, a. main frame, a cutter chain carrying cutter bar pivotally mounted at the front of said main frame for movement about a, vertical axis and projecting forwardly beyond said main frame to cut a kerf across the front of and to each side thereof, and means for supporting said main frame for movement about the ground and for feeding said cutter bar longitudinally into and withdrawing it from a coal face and forming a stable support means for said cutter bar when disposed to either side of said main frame and during cutting across the forward end of said main frame, including two relatively short laterally spaced continuous tread devices at the foxward end of said main frame at opposite sides thereof, steering wheel means supporting the rear end of said main frame, said steering wheel means being spaced a substantial distance from said tread devices, and the center of gravity of the machine being within the limits of said tread devices to distribute the weight between said steering wheel means and said tread devices so that a major portion of the load during cutting and transportation will be taken on said tread de~ vices, and the load on said steering wheel means will only be suiicient to give said steering wheel means traction to assist said tread devices in steering the machine. 3. In a kerf–cutting machine, a main frame, a. turntable at the front of said main frame, a. cutffing element mounted on said turntable and proJecting beyond the forward end thereof and including a. cutter chain carrying cutter bar supported in front of said main frame to cut a kerf across the front of and to either side of said main frame, adjacent the mine bottom, and means for supporting said main frame for movement about the ground and for feeding said cutter bar longitudinally into and withdrawing it from a coal face and forming a stable support means for said eutter bar when disposed to either side of said main frame and during cutting across the forward end of said main frame, including two laterally spaced continuous tread devices at the forward end of said main frame at opposite sides thereof, steering wheel means supporting the rear end of said main frame, a separate transverse pivotal mounting for each of said tread devices on said main frame disposed intermediate the ends of said tread devices, the distance from the pivotal axes of said transverse pivotal mouutings to the forward ends of said tread devices being less than the distance from the center of gravity of the sz,4'rs,sao machine to the rear end of said overhanging cutter chain by a distance sumcient to place a. greater part of the weight of the machine on said tread devices and place only enough weight on said steering wheel means to assist said tread devices in steering. 4. In a keri–cutting machine, a. main frame, 9, cutting element mounted on said mein frame and including a projecting cutter chain carrying cutter bar, means for propelling said main Imme about the mine Door and for feeding said cutter bar longitudinally into and withdrawing 115 f1‘0m a coa.1`1’ace including two laterally spaced continuous tread devices and ground engaging support and steering means spaced rearwardly of said tread devices for supporting and steering the rear end of said main frame, and independent supporting connections between said tread devices and said main frame including a. separate supporting arm for each tread device, transverse pivotal connections between said arms and said main frame, a. transverse pivotal supporting connection between each arm and an associated tread clevlce, and means connected between said main frame and said arms for holding said arms from pivotal movement with respect to

said main frame or for independently or simultaneously pivoting said arms about their axes of pivotal connection to said main frame, to tilt said cutter bar about transverse or longitudinal axes. 5. In a keri'–cutting machine, a. main frame, 8, cutting element mounted on said main frame and including za, projecting cutter chain carrying cutter bar, means for propelling said main frame about the mine iioor and for feeding said cutter bar longitudinally into and withdravrlng it from a coal face including two laterally spaced continuous tread devices and ground engaging support and steering means spaced rearwardly of said tread devices for supporting and steering the rear end of said main frame, and independent supporting connections between said tread devices and seid main frame including a separate supporting arm extending along each tread device. a. transverse pivotal connection between une end' of each of said arms and said main frame, a transverse pivotal connection between each arm and an associated tread device, and extensible means connected between the free ends of said arms and said main frame for holding said arms stationary with respect to said main frame or for independently or simultaneously pivoting said arms about their axes ox" pivotal connection to said main frame, to tilt said cutter bar about transverse or longitudinal axes. 6. In a kerf–cutting machine, a raain frame, a cutting element mounted on said main frame and having a. projecting cutter chain carrying cutter bar, means for propelling said machine about the mine Hoor and for feeding said cutter bar longltudinally into and withdrawing it from 2. coal face including two laterally spaced continuous tread devices and ground engaging support and steering means spaced rearwardly of said tread devices for supporting and steering the rear endss of said main frame, and a supporting connection lzetweeu said tread devices and said main frame including a separate pivoted arm extending along the inside of each tread device, transverse pivotal connections between the rear ends of said arms and said main frame, transverse pivotal connections between said arms and said tread devices, and extensible means connected between said mainframe and said anus for holding said arms from pivotal movement with respect to said main so so we T0 frame, or for pivoting said arms about their axes of pivotal connection to said main frame, to tilt said cutter bar about transverse or longitudinal axes. ~ 'L In a. ker!–cutting machine, a main frame, a cutting element mounted on said main frame and having a projecting cutter chain carrying cutter bar, means for Propelling said machine about the mine Hoor and for feeding said cutter ber 1ong1. tudinally into and withdrawing it from a coal face including two laterally spaced continuous tread devices and ground engaging support and steering means spaced rearwardly of said tread devices for supporting and steering the rear end ot said main frame, and B. supporting connection between said tread devices and said main frame including a separate plvoted arm extending along the inside of each tread device, transverse pivotal connections between the rear ends of said arms and said main frame, transverse pivotal connections between sald arms and said tread devices intermediate the ends of said arms, and extensible means connecting thelorward ends of said arms with said main frame, for holding said arms from pivotal movement with respect to said main frame or for pivoting said arms about their axes of pivotal connection to said main frame, to tilt said main frame and cutter bar about transverse or longitudinal axes. 8. In a keri'–cutting machine, a main frame, nf. cutting element mounted on said main frame and having a projecting cutter chain carrying cutter bar, means for propelling said machine about the mine floor and for feeding said cutter 'bar longltudlnally into and withdrawing it from a coal face including two lsdzerally spaced continuous tread devices and ground engaging support and steepins means spaced rearwardly of said tread devices for supporting and steering the rear end of said main frame, and sa supporting connection between seld tread devices and said main frame including a separate plvoted arm extending along each tread device, transverse pivotal connections between the rear ends of said arms and said main frame, transverse pivotal connections between said arms and said tread devices Intermediate the ends of said arms, means for limiting pivotal movement uf said tread devices with respect to said arms, and extensible devices connecting the forward ends of said arms with said main frame for holding said arms from pivotal movement with respect to said main frame or for pivoting said arms about their axes of pivotal connection to said main frame, said %enslble means being independently operable to tilt said cutter bar about transverse or longitudinal axes. , 9. In 9. lcerf–cutting machine, a mam frame, a cutting element mountedon said main frame and having a projecting cutter chain carrying cutter bar, means for propelling said machine about the mine floor and for feeding said cutter bar longitudinally into and withdrawing it from a coal face including two laterally spaced continuous tread devices and ground engaging support and steering means spaced rearwardly of said tread devices for supporting and steering the rear end of said mein frame, and a supporting connection between said tread devices and said main frame including a, separate plvoted ann extending along each tread device, transverse pivotal connections between said arms and said .main frame, transverse pivotal connections between said arms and said tread devices intermediate the ends of said arms, means for limiting pivotal movement o! _ _ 9,478,389 ' l9 said tread devices with respect to said arms, and extensible devices connecting said arms with said main frame, for holding said arms from pivotal movement with respect to said main frame or for pivoting said arms about their axes of pivotal connection to said main frame, said extensible devices each including a iluid pressure cylinder having a piston rod extensible therefrom, and valve means for controlling the admission and release of Huid under pressure to and from said cylinders, independently of each other, to tilt said cutter bar about transverse or longitudinal axes and to hold said cutter bar in lixed relation with respect to said arms. 10. In a kerf–cutting machine, a main frame, a turntable on said main frame, a cutting element mounted on said turntable and including a projecting cutter chain carrying cutter bar, said turntable being adapted to feed said cutter bar across a coal face to cut a kerf therein, and means for supporting and propelling said machine about the mine iioor and for feeding said cutter bar longitudinally into and withdrawing it from a coal face including centrally disposed rubbertired steering wheel means at the rear end of said main frame and forming a support for the rear end thereof, and two independently mounted laterally spaced continuous tread devices at opposite sides of the forward end of said main frame forming a supporting and propelling means therefor, said tread devices extending from the forward end of said turntable rearwardly beyond the pivotal axis thereof to form a stable support for said main frame and to support said cutter bar in the same cutting plane, when said turntable is turned to position said cutter bar to either side of said main frame, a separate arm for each tread device pivotally connected to said main frame, for supporting said tread devices to follow an uneven mine bottom, and independently operable extensible means connected With said arms for holding said arms stationary or for pivoting one or both of said arms with respect to said main frame. for tilting said main frame and cutter bar with respect to the ground. _lt; 11. In a kerf–cutting machine, a main

frame, a turntable on said main frame, a cutting element mounted on said turntable and including a projecting cutter chain carrying cutter bar, said turntable being adapted to feed said cutter bar across a coal face to cut a kerf therein, and means for supporting and propelling said machine about the mine iioor and for feeding said cutter bar longitudinally into and withdrawing it from a coal face including a rubber–tired steering wheel forming a support for the rear end of said main frame and two laterally spaced continuous tread devices at opposite sides of the forward end of said main frame forming a supporting and propelling means therefor, said tread devices extend~ ing from the forward end of said turntable rearwardly heyond the pivotal axis thereof to form a stable support for said main frame and to support said ,cutter bar in the same cutting plane, when said cutting element is positioned to either side thereof, and an adjustable supporting connection between sald tread devices and said main frame including 2, separate pivoted arm for each tread device transversely pivoted to said truck adjacent its rear end and having a treaddevice plvoted thereto intermediate its ends, and separate independently operable extensible means pivotally connected between said main frame and the forward ends of said arms for holding said arms from pivotal movement with respect to said iw _W .io »ll5 nn G5 main frame, or for tilting said main frame about transverse or longitudinal axes, to change the angle of said cutter bar with respect to the ground. 12. In a kerf~cutting machine, a main frame, a cutter chain carrying cutter bar projecting from said main frame, and means for supporting said main frame for movement about the ground and for feeding said cutter bar longitudinally into and withdrawing it from a coal face including two laterally spaced continuous tread devices forming a support for the forward end of said main frame, a motor on said main frame, a drive connection from said motor to said tread devices, a centrally disposed rear rubber tired steering wheel forming a support for the rear end of said main frame, means for turning said wheel for steering the machine. individual braking means for each of said tread devices, and connections between said steering means and said braking means, for applying an increasing pressure to either one of said braking means upon turning movement of said steering wheel, to retard travel of and to brake the tread device on the side of said main frame towards which it turns, said connections being arranged to increase the braking pressure of said braking means a predetermined amount as the degree of turning of said steering wheel away from the longitudinal axis oi the machine increases and including a variable pressure fluid valve operatively connected with said steering wheel to supply fluid under pressure to said braking means upon turning movement of said steering wheel. 13. In a kerf–cutting machine, a main frame, a cutter chain carrying cutter bar projecting from said main frame, and means for supporting said main frame for movement about the ground and for feeding said cutter bar longitudinally into and withdrawing it from a coal face including two continuous tread devices spaced at opposite sides of said main frame adjacent the forward end thereof, and two closely spaced centrally disposed rear steering wheels forming a support for the rear end of said main frame, means for turning said wheels together for steering the vehicle including an upright shaft and a steering member connected with said shaft for turning said shaft, a motor on said main frame, a drive connection from said motor to said tread devices, including a differential having driving connection with said tread devices, individual braking means for each of said tread devices, and a plurality of variable pressure fluid valves operatively connected with said steering member for applying said braking means to the tread device about which said main frame is turning, with a pressure which increases as the angle of said steering wheels with respect to the longitudinal axis of the machine increases. 14. In a kerf~cutting machine, a main frame, a cutter chain carrying cutter bar projecting from said main frame, and means for supporting said main frame for movement about the ground and for feeding said cutter bar longitudinally into and withdrawing it from a coal face including two continuous tread devices spaced at opposite sides of said main frame, adjacent the forward end thereof, individual iluid operated braking means for each of said tread devices for braking said tread devices independently or simultaneously of each other, means for driving said tread devices so arranged as to permit either of said tread devices to be stopped while the other continues to travel, upon application of one of said braking means, two closely spaced centrally disposed rear A _ |,4n,sso 21 l steering wheels forming a support for the rear end of said main frame, a steering member for turning said wheels for steering. and means operatively connected with said steering member for applying said braking means to the tread device about which said main frame is turning, with a pressure which increases as the angle of said steering wheels with respect to the longitudinal axis of the machine increases, including two variable pressure Huld valves, fluid connections from said valves to said braking means, for applying said braking means, and an operative connection from said steering member for operating either ot said valves depending upon the direction of turning movement of said steering member. 15. In a kerf–cutting machine, a main frame, a cutter chain carrying cutter bar projecting from said main frame, and means for supporting said main frame for movement about the ground and for feeding said cutter bar longitudinally into and withdrawing it from a coal face including two continuous tread devices spaced at opposite sides of said main frame, adjacent the forward end thereof, individual Huld operated braking means for each of said tread devices for braking said tread devices independently or simultaneously of each other, means for driving said tread devices. said driving means being sn arranged as to permit said braking means to be applied independently of each other, two closely spacedicentrally disposed rear steering wheels forming a support for the rear end of said main frame, a steering member for turning said wheels for steering, two variable pressure Huid valves, each of said valves being adapted to have connection with one of said braking means for operating said braking means, a separate operating lever for each oi' said valves, and an engaging member on said steering member, adapted to have engagement with either one or the other of said operating levers, depending upon the direction of tuming movement of said steering wheels, for operating said respective valve to supply `11uid to its respective braking means at gradually Increasing pressures as said wheels turn away from the longitudinal center line of the machine. 16. In a kerf–cutting machine, a main frame. a cutter chain carrying cutter har projecting from said main frame, and means for supporting said main frame tor movement about the ground and for feeding said cutter bar longitudinally into and withdrawing it from a coal face including two continuous tread devices spaced at opposite sides of said main frame, adjacent the forward end thereof, individual iiuid operated braking means for each ‘of said tread devices for braking said tread devices independently or simultaneously of each other, means for driving said tread devices, said driving means being so arranged as to per~ mit said braking means to be applied Independently of each other, two closely spaced centrally disposed rear steering wheels forming a support for the rear end of said main frame, a steering member for turning said wheels for steering. two variable pressure iluid valves, each of said valves being adapted to have

connection with one of said braking means, for operating said braking means, a separate operating lever for each of said valves, a common support for each of said levers, an engaging member on said steering member, adapted to have engagement with either one or the other of said operating levers depending upon the direction od' turning movement of said steering wheels, a reaction member adapted to limit movement of said operating levers towards each other, and means for rectilinearly moving said support for operating said valves and applying said brakes together. 17. In a ker!–cutting machine, a main frame, a cutter chain carrying cutter bar projecting from said main frame, and means for supporting said main frame for movement about the ground and for feeding said cutter bar longitudinallfinto and withdrawing it from a coal face including two continuous tread devices spaced at opposite sides of said main frame, adjacent the forward end thereof, individual lluid operated braking means for each of said tread devices for braking said tread devices independently or simultaneously of each other. means for driving said tread devices, said driving means being so arranged as to permit said braking means to be applied independently of each other, two closely spaced centrally disposed rear steering wheels forming s. support for the rear end of said main frame, a steering member for turning said wheels for steering, two variable pressure fluid valves for controlling operation of said braking means, each of said valves having a. depresslble plunger arranged so the pressure passing through its respective valve will increase as said plunger is depressed, a separate operating lever having engagement with each of said plungers, for depressing said plungers, a common support for each of said operating levers, an engaging member on said steering member adapted to have engagement with either one or the other of said operating levers to depress either one or the other of said plungers and apply either one or the other of said braking means with an increasing pressure as said steering wheels turn away from the longitudinal center line of the machine, a. reaction member adapted to limit movement of said operating levers towards each other, and means for rectilinearly moving said pivotal support for said operating levers, for causing said operating levers to depress said plungers together to apply both of said brakes, each of said plungers having a greater travel than that necessary to cause the maximum amount ol' pressure to pass through its respective valve, to permit the application of the two brakes, when said steering wheels are turned in one extreme position or another. 18. In a kerf–cutting ma/chine, a main frame, a cutter chain carrying cutter bar projecting from said main frame, and means for supporting said main frame tor movement about the ground and for feeding said cutter bar longitudinally into and withdrawing it from _a coal face including two continuous tread devices spaced at opposite sides of said main frame. adjacent the forward end thereof, two closely spaced steering wheels forming a support for the rear end of said main frame, a steering member for turning said wheels for sbeerlng, individual fluid operated braking means for each of said tread devices for braking said tread devices independently or simultaneously of each other, means for driving said tread devices, said driving means being so arranged as to permit either of said tread devices to be stopped upon application of one of said braking means while the other tread device continues to be driven, two variable pressure iluld valves. each of said valves being adapted to have connection with one of said braking means, for operating said braking means, a separate plvoted operating lever for each of said valves, and an engaging member on said steering member, adapted to have engagement with either one or the other of said operating levers, depending upon the direction of turning movement of said steering wheels, for operating said respective valve to supply iiuid to its respective braking means at gradually increasing pressures as said wheels turn away from the longitudinal center line of the machine, said engaging member being adapted to be positioned at various locations on said steering member, for varying the point at which pressure is initially applied to said braking means andfor varying the point at which maximum pressure is applied to said braking means. 19. In combination with a self–propelled vehicle having continuous tread traction devices at opposite sides thereof, individual fluid operated braking means for each of said tread devices, for braking said tread devices independently or simultaneously of each other, power means for driving said tread devices, said driving means being so arranged as to permit the application of one braking means while driving the other tread device for steering the vehicle, two variable pressure iiuid valves for operating said braking means, a separate operating lever for each of said valves, a member movable rectilinearly of said valves and having said levers pivotally mounted thereon, a pivotally movable steering member, means on said steering member engageable with either of said operating levers, for operating either of said valves, depending upon the direction of pivotal movement of said steering member, means for limiting pivotal movement of said opcratingievers in one direction, and means for moving said support member for said operating levers with respect to said means for limiting pivotal movement of said operating levers, for simultaneously operating each of said valves and applying said' brakes together, said means being operable to open one of said valves to apply one of said brakes when the other of said valves has been opened and its respective brake has been applied by the turning oi' said steering member. 20. In combination ,with a self–propelled vehicle having continuous\tread traction devices at opposite sides thereof. individual Hurd operated braking means for each of said treadilevices, for braking said tread devices independently or simultaneously of each other, power means for driving said tread devices, said d.riving means being so arranged as to permit the application of one braking means while driving the other tread device for steering the vehicle, two piston type variable pressure Huid valves for controlling operation of said braking means, each of said valves including a' valve block and a plunger depressible therein for moving said valve to a position to permit iiuid under pressure to pass therethrough at pressures which increase as said plunger is depressed within the block of said valve, a separate pivoted operating lever having engagement with each of said plungers for depressing said plungers, a member mounted for slidable movement with respect to said valve blocks and having said operating levers pivotally mounted thereon, a plvoted steering member, an engaging member on said steering member adapted to have engagement with either of said operating levers, for operating either of said valves and their respective brakes upon movement of said steering member in one direction or another, means for limiting movement of said operating levers in one direction, and means for moving said support member for said operating levers in a direction parallel to the axes of said plungers, to cause said operating levers to simultaneously depress said plungers to apply said brakes together, said plungers having a travel greater than is necessary to open their respective valves for the passage of fluid under pressure therethrough, so said support member may apply one of said brakes, by opening its respective valve when the plunger of said other valve is depressed to permit maximum pressure to pass through its respective valve. 21. In combination with a self–propelled vehicle having continuous tread traction devices at opposite sides thereof,

individual nuid operated braking means for each of said tread devices, for braking said tread devices independently or simultaneously of each other, power means for driving said tread devices, said driving means being so arranged as to permit the application of one braking means while driving the other tread device, for steering the vehicle, two piston type variable pressure fluid valves for controlling operation of said braking means, each of said valves including a valve block and a plunger depressihle therein for moving its valve to a position to permit Iiuid under pressure to pass therethrough at pressures which increase as said plunger is depressed within the block of said valve, a separate pivoted operating lever having engagement with each of said plungers, for depressing said plungers. a support member for said levers mounted between said valve blocks for slidable movement with respect thereto and having said operating levers pivotally mounted thereon, a steering member, an engaging member on said steering member adapted to have engagement with either one of said operating levers, for operating either of said valves and its respective brake upon movement of said steering member in one direction or another, means for limiting pivotal movement of said operating levers in a direction opposite to their direction of movement when depressing their respective plunger, and means for rectilinearly moving said support member between said valves, to move said operating levers towards said valve blocks for causing said operating levers to apply said brakes together. 22. In combination with a self–propelled vehicle having cont–inuous tread traction devices at opposite sides thereof, individual fluid operated braking means for each of said tread devices, for braking said tread devices independently or simultaneously of each other, power means for driving said tread devices, said driving means being so arranged as to permit the application of one braking means while driving the other tread device for steering the vehicle, two piston type variable pressure iiuid valves for controlling operation of said braking means, each of said valves including a valve block and a plunger depressible therein for moving its valve to a position to permit Huid under pressure to pass therethrough at pressures which increase as said plunger is depressed within the block of said valve, a separate pivoted operating lever having engagement with each of said _plungers for depressing said plungers, a support member for said plungers mounted between said valve blocks for slidable movement with respect thereto and having said operating levers pivotally mounted thereon, a steering member, an engaging member on said steering member adapted to have engagement with either one of said operating levers, for operating either of said valves and its respective brake upon movement of said steering member in one direction or another, means for limiting pivotal movement of said operating levers in a direction opposite to their direction of movement when depressing their respective plunger, and means for rectillnearly moving said support member between said valves to move said operating levers towards said valve blocks and cause said operating levers to appLv said brakes together. and said plungers having a travel which is greater than the travel necessary to fully open their respective valves for the passage of iluid under pressure therethrough, to permit one brake to be applied by the move~ ment of said support member and operating levers towards said valve blocks when the other brake has already been applied by said steering member. 23. In a self–propelled vehicle, a. pair of steering wheels, means for turning said wheels for steering the vehicle including a threaded shaft, means for turning said shaftvabout its longitudinal axis, a nut on said shaft, an operative connection between sald nut and said wheels for turning said. wheels including a booster cylinder, and means for supplying Buld under pressure to opposite ends of said booster cylinder to cause said booster cylinder to reduce the effort required for steering including a iluid valve connected with opposite ends of said booster cylinder, and a connection between the end of said threaded shaft and said valve for operating said valve due to end thrust on said threaded shaft, caused by the reaction of said nut against said shaft. 24. In a self–propelled vehicle, a pair oi' steering Wheels, :means for turning said wheels for steering the vehicle including a threaded shaft, a. hand wheel for turning said shaft about its longitudinal axis, a nut on said shaft, held from turning movement with respect thereto, and adapted to be :moved along said shaft on rotatable movement thereof, an operative connection between said nut and said wheels, for turning said wheels including a plvoted member and a booster cylinder connected between said nut and said pivoted member, and means operative upon turning of said hand wheel for supplying fluid under pressure to opposite ends of said booster cylinder to reduce the eifort required for steering including a fluid valve having a plunger for operating said valve, fluid pressure connections from said valve to opposite ends of said booster cylinder. and an engaging connection between said threaded shaft and the end of said plunger, for operating said valve by endwise movement of said shaft caused by the reaction of said nut against said shaft during steering. 25. In a self–propelled vehicle, a pail' of steering Wheels, means for turning said Wheels for steering the vehicle including a threaded shaft, a hand wheel for turning said shaft about its longitudinal axis, s. nut on said shaft, held from turning movement with respect thereto, and adapted to be moved along said shaft on rotatable movement thereof, an operative connection between said nut and said wheels, for turning said wheels including a pivoted member and a booster cylinder' connected between said nut and said pivoted member, and means operative upon turning of said hand wheel for supplying Huid under pressure to opposite ends of said booster cylinder to reduce the edort required for steering including a fluid valve having a plunger and having e. spring for urging said plunger in one direction; and an engaging connection between the end of said threaded shaft and the end of said plunger, for moving said plunger into a position to open said valve to the passage of fluid to one end of said cylinder by end thrust on said shaft in one direction and to permit said spring to open said valve to the passage of fluid to the opposite end of said cylinder upon movement of said shaft in an opposite direction effected by end thrust thereon. ' 26. In a sell–propelled vehicle. a pair of steering wheels, means for turning said wheels for steering the vehicle including a threaded shaft, a. hand wheel for turning said shaft about its longitudinal axis, a nut on said shaft, held from turning movement with respect thereto, and adapted to be moved along said shaft on rotatable movement thereof, an operative connection between said nut and said wheels, for turning said wheels including a gear sector, a rectilinearly movable booster cylinder having a rack thereon meshing with the teeth of said gear section, and connected with said nut for rectilinear movement therewith, and means operative upon turning of said hand wheel, for supplying iluid under pressure to one end or the other of said booster cylinder, to urge said cylinder in one direction or another and reduce the eifort required for steering including a. iluid valve, a plunger extending from said valve for operating said valve, Enid connections from said valve to opposite ends of said booster cylinder and a connection between said threaded shaft and the end of said plunger for operating said valve by endwise movement of said shaft caused by the reaction of said nut against said shaft when turning said hand wheel. 27. In a self–propelled vehicle, a pair of laterally spaced

continuous tread devices for supporting one end of said vehicle, a pair of rubber–tired steering wheels for supporting the opposite end of said vehicle, means for turning said wheels for steering the vehicle including a hand wheel, an angularly movable steering member and an operative connection between said hand Wheel and said steering member for angularly moving said steering member upon turning movement of said hand wheel, individual fluid operated braking means for each of said tread devices for braking said tread devices independently or simultaneously of each other, two variable pressure nuld valves for operating said braking means, and an operative connection between said steering member and said valves for operating either of said valves, to cause its associated braking means to be applied with gradually increasing pressures as the angle of said steering wheels with respect to the center line of the machine increases. 28. In a self–propelled vehicle, laterally spaced continuous tread traction devices for supporting the forward end of said vehicle, rubber tired steering wheels for supporting the rear end of said vehicle, means for turning said wheels for steering the vehicle including a threaded shaft, a hand wheel for turning said shaft about its longitudinal axis, a nut on said shaft rectilinearly moved by said shaft upon turning movement thereof, an angularly movable steering member connected with said wheels, and angularly moved by said nut, upon rectilinear movement thereof, to turn said wheels, individual iluid operated braking means for each oi' said tread devices for braking said tread devices independently or simultaneously of each other, two variable pressure fluid valves for operating said braking means, a separate operating lever for each of said valves, and an engaging member on said steering member adapted to have engagement with either one or the other of said operating levers, depending upon the direction of turning movement of said steering wheels, for operating its respective valve to supply fluid to its respective braking means at gradually increasing pressures as the angle of said steering wheels with respect to the longitudinal center line of the machine increases, so said trac– tion devices may aid said steering wheels In steer–
'UNITED STATES PATENTS ing the vehicle.

0) US4456277A – TRICYCLE

33) Family number: 2049471 (US4456277A) © PatBase

Title: TRICYCLE

Priority: US19820397024 19820712 WO1983US01068 19830711

Family:

Publication number	Publication date	Application number	Application date
AU198318271 A1	19840208	AU19830018271	19830711
EP0113772 A1	19840725	EP19830902554	19830711
EP0113772 A4	19851211	EP19830902554	19830711
JP59501502 T2	19840823	JP19830502575T	19830711
OA7697 A	19850830	OA19840058251	19840309
US4456277 A	19840626	US19820397024	19820712
WO8400338 A1	19840202	WO1983US01068	19830711

Probable Assignee: COLORADO CYCLODYNAMICS

Assignee(s):(std)**:** COLORADO CYCLODYNAMICS ; CYCLODINE SALES INT ; CYCLODINE SALES INTERNATIONAL ; CYCLODYNAMICS OF COLORADO INC

Assignee(s): CYCLODYNAMICS OF COLORADO INC A CORP OF ; CARPENTER ALAN EDWARD

Inventor(s):(std)**:** CARPENTER ALAN E ; CARPENTER ALAN EDWARD ; EDWARD CARPENTER ALAN ; EDWARD CARPENTIER ALAN

Inventor(s): CARPENTIER ALAN EDWARD

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD

Designated states: AT AU BE CF CG CH CM DE DK FR GA GB JP KP LI LU MR NL SE SN TD TG

International class (IPC 8–9): B62K21/00 B62K3/00 B62K5/00 B62K5/04 B62M6/20 B62M6/85 (Advanced/Invention); B62K5/00 (Advanced/Non–invention); B62K21/00 B62K3/00 B62K5/00 B62M6/00 (Core/Invention)

International class (IPC 1–7): B62K21/00 B62K23/06 B62K5/04 B62K9/02 B62M1/06

CPC: Y10S482/901 B62K5/05 B62K3/005 B62K5/06 B62K21/00

European class: B62K21/00 B62K3/00C B62K5/05 B62K5/06

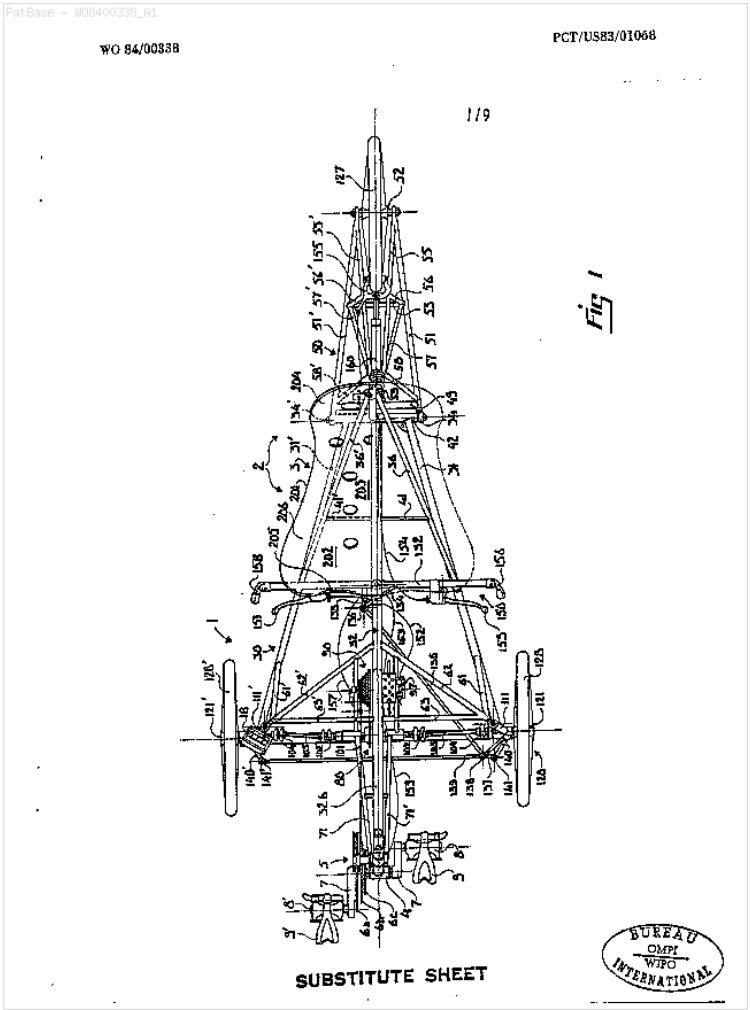
US class: 180/205 180/205.4 180/207.2 180/215 272/73 280/202 280/269 280/282 280/283 280/289A 280/289S 482/57 482/901

Classification Explorer

Cited documents: US4360224 A, US4333664 A, US4325448 A, US4303256 A, US4198072 A, US4061460 A, US3940166 A, US3913929 A, US3910126 A, US3843145 A, US3827519 A,

Forward Citations: WO9414643, WO13093876, WO13093876, WO02092419, WO02092419, USD588650, USD493391, US9359034, US9278723, US9193415, US9174693, US9114851, US8911332, US8905420, US8645024, US8535206, US8210555, US8157280, US8033560, US7967096, US7946373, US7926828, US7753386, US7748728, US7661501, US7559403, US7429055, US7416203, US7357209, US7017685, US7005757, US6983948, US6588785, US6572129, US6402174, US6206394, US6203043, US6105984, US5901973, US5876052, US5681234, US5599244, US5544906, US5501478, US5397145, US5343973, US5263732, US5211254, US5098114, US5069469, US5036937, US4944360, US4919225, US4674762, US4659098, US4634137, US2014346752, US2013313802, US2013263696, US2011109260, US2010314179, US2010298037, US2010289244, US2010264621, US2010237582, US2010230924, US2010072726, US2010072722, US2009218786, US2009184488, US2009166996, US2009108559, US2008191447, US2007246905, US2007040350, US2006226630, US2006163838, US2006151224, US2005140113, US2004160059, US2004154854, US2003217874, KR100892571, JP6144336, JP2014097757, GB2429684, FR2651742, FR2645106, FR2559103, ES2153266, EP2147852, EP1813520, EP0765799, DE4343778, DE19511629, DE19511629,

Abstract:
Source: US4456277A Human−powered, front−wheel drive tricycle of a 2DS−1IS (2 driven, steerable−1 independent suspension) format having two steerable front wheels in a fully engineered front end, a multi−triangulated space frame and a single trailing rear wheel mounted in an independent swing−arm type suspension. A chain drive system (21+speeds) includes a crank assembly mounted on a prow ahead of the front wheels driving a transfer gear and differential to the split front axle. A transfer gear caliper/disc braking system ahead of the differential provides braking force equally distributed to both front wheels regardless of road conditions, resulting in anti−skid properties. Track/wheelbase ratios above 0.45 provide stability and excellent handling; FWD provides excellent traction. Preferably, all wheels are of the same 20" diameter. Rider is in a semi−recumbent, supine position with handlebars, having shift and braking controls, mounted beneath a rigid seat. Shoulder harness and seat belt system are provided. Faired, semi−faired and unfaired models disclosed, with full fairing including an open−top cockpit, NACA inlets and safety lighting system, capable of speeds in the 40−60 mile−per−hour range. Crank motor assist, rear wheel motor drive, and PTO for Third World usage shown.



0) US5069469A – RECUMBENT CYCLE

34) Family number: 4860701 (US5069469A) © PatBase

Title: Recumbent cycle

Priority: US19870056259 19870610

Family:

Publication number	Publication date	Application number	Application date
US5069469 A	19911203	US19870056259	19870610

Probable Assignee: H P E CORP

Assignee(s):(std)**:** H P E CORP

Assignee(s): HPE A CORP OF WASHINGTON CORP ; HPE CORP

Inventor(s):(std)**:** MACCABEE MALCOLM M ; POSS GLEN T ; ROSENGRANT BRENT L

International class (IPC 8–9)**:** B62K13/08 B62K5/04 B62K5/05 B62K5/08 B62M1/36 (Advanced/Invention)

International class (IPC 1–7)**:** B62K19/06 B62L3/02 B62M1/02 B62M9/16

CPC: B62K3/005 B62K5/05 B62K5/08 B62K13/08 B62M1/36

European class: B62K13/08 B62K3/00C B62K5/05 B62K5/08 B62M1/36

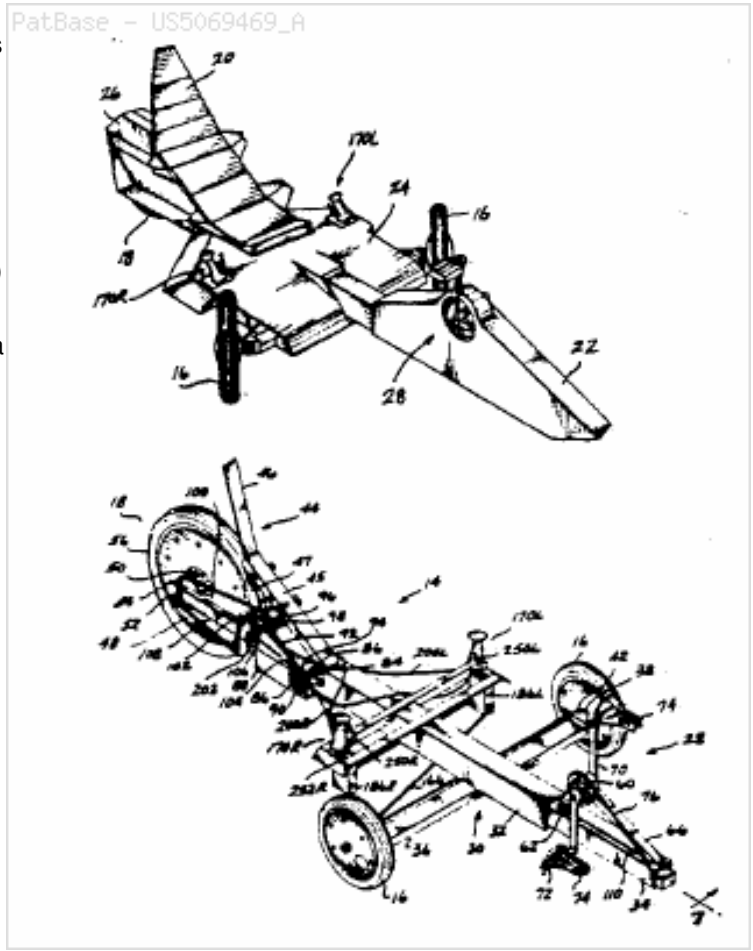
US class: 280/259 280/261 280/282 280/288.1 280/288.2

Classification Explorer

Cited documents: US690733 A, US4705284 A, US4659098 A, US4634137 A, US4592563 A, US4580802 A, US4548421 A, US4502705 A, US4497502 A, US4469343 A, US4456277 A, US4451064 A, US4432561 A, US4351406 A, US4335899 A, US4333664 A, US4283070 A, US4272095 A, US4198072 A, US4168846 A, US4108460 A, US3960392 A, US3921467 A, US3913929 A, US3753577 A, US3722612 A, US3666035 A, US3580349 A, US3466059 A, US3429584 A, US332263 A, US306498 A, US2986406 A, US298217 A, US2481683 A, US2182345 A, GB2117719 A1,

Forward Citations: WO14094899, WO14094888, WO11130134, WO03004346, USD774602, USD764601, US9463837, US9371107, US9359034, US9067632, US8720927, US8342555, US8328218, US8226103, US8210555, US8157280, US7976046, US7753386, US7588110, US7401799, US7354055, US7114737, US7066480, US6206394, US6086078, US5979922, US5901973, US5876052, US5383675, US2014224556, US2010300789, US2010264621, US2010237582, US2009224524, US2007246905, US2007045020, US2006284395, US2004173989, FR2826924, FR2795702,

Abstract:
Source: US5069469A Recumbent cycle (12) is supported by a pair of forward steerable wheels (16) and a single rear drivewheel (18) mounted on rear end portion of a frame structure (14) by a hub assembly (50) having an integral transmission and brake. A pair of side−mounted gimbal assemblies (170L, 170R) may be conveniently tilted laterally to steer wheels (16) in the same corresponding direction. The gimbal assemblies (170L, 170R) may be individually or in unison tilted in the forward direction to actuate the brake of hub assembly (50). Frame structure (14) includes a forward beam (34) telescopically engaged within a main beam (32) to vary the distance between a crank assembly (28) and a seat (20) to accommodate riders of different sizes.



0) EP0968905A1 – TRAIN OF TRANSPORT VEHICLES, OF THE KIND OF TUN...

35) Family number: 13111544 (EP0968905A1) © PatBase

Title: Train of transport vehicles, of the kind of tunnelling machine train follower

Priority: CA19992276849 19990628 FR19980008361 19980629

Family:

Publication number	Publication date	Application number	Application date
CA2276849 AA	19991229	CA19992276849	19990628
EP0968905 A1	20000105	EP19990440164	19990624
FR2780377 A1	19991231	FR19980008361	19980629
FR2780377 B1	20000811	FR19980008361	19980629

Probable Assignee: GAUSSIN SA

Assignee(s):(std)**:** GAUSSIN SA

Assignee(s): GUYOT MARTIAL

Inventor(s):(std)**:** GUYOT MARTIAL

Inventor(s): MARTIAL GUYOT

Agent(s): MARKS AND CLERK; CABINET BLEGER RHEIN

Designated states: CH DE DK FI FR LI NL

International class (IPC 8–9): B60B35/10 B61C13/00 B61C15/00 B61C17/12 B61L3/12 B62D1/28 B62D53/00 (Advanced/Invention); B62D1/00 B62D53/00 (Core/Invention)

International class (IPC 1–7): B60B35/10 B61C13/00 B61C15/00 B61C17/12 B61L3/12 B62D1/24 B62D1/28 B62D53/00 B62D7/04 E21D9/12

CPC: B60G3/26 B60G7/003 B60G7/02 B60G2200/144 B60G2200/44 B60G2200/46 B60G2204/13 B60G2204/4232 B60G2204/62 B62D1/28 B62D53/005

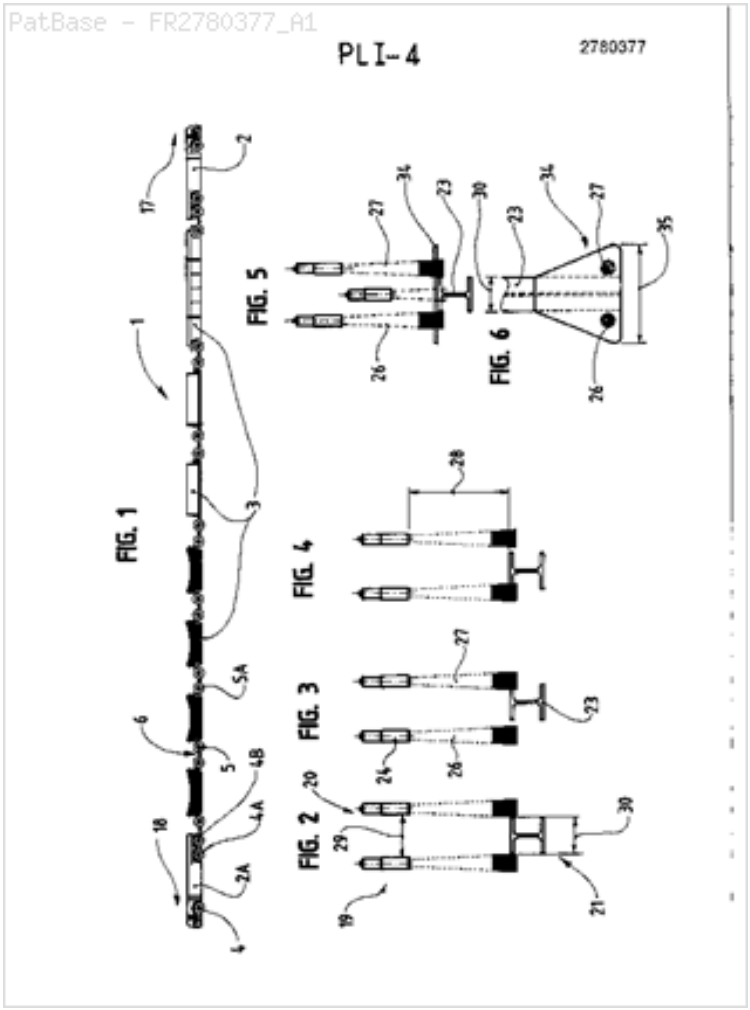
European class: B60G3/26 B60G7/00A1 B60G7/02 B62D1/28 B62D53/00B L60G200/144 L60G200/440 L60G200/460 L60G204/130 L60G204/4232 L60G204/62

Classification Explorer

Cited documents: US3246714 A, FR2751603 A1, FR2643599 A1,

Forward Citations: WO14202693, WO12066219, WO10034767, US7040428, FR3007328, FR3003229, FR2971761, FR2936213, FR2936212, EP2492170,

Abstract:
The transport train has vehicles (2,2A,3) that are mounted on drive axles (4,4A,4B,5,5A) and are connected to each other by linkages (6) which steer the drive axles so that the train is directed as a single line. The two vehicles (2,2A) arranged at the ends of the transport train operate as driving units with a reversible function. They are controlled so as to either drive the transport train or brake its motion or slow it down and maintain the tension within the train during descent.



0) FR2136972A –

36) Family number: 2875430 (FR2136972A) © PatBase

Priority: FR19710016868 19710510

Family:

Publication number	Publication date	Application number	Application date
FR2136972 A1	19721229	FR19710016868	19710510
FR2136972 B1	19730511	FR19710016868	19710510

Probable Assignee: DENIER HOWARD

Assignee(s):(std)**:** DENIER HOWARD

International class (IPC 8–9): B66F11/04 (Advanced/Invention); B66F11/04 (Core/Invention)

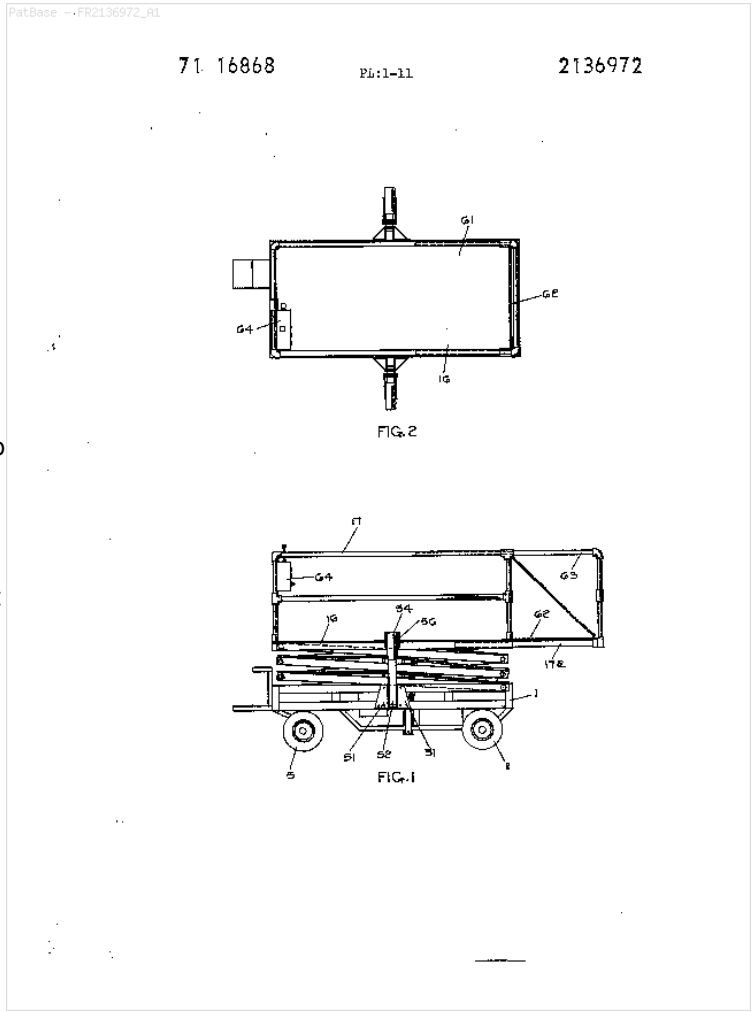
International class (IPC 1–7): B60P1/28 B60P3/00 B66F11/00

CPC: B66F11/042

European class: B66F11/04A

Classification Explorer

Abstract:
Source: FR2136972A (Claim 1) CLAIMS 1. Forklift vehicle, characterized in that it comprises a base resting on the ground and move horizontally along the latter, a mobile platform vertically relative to the base and disposed above it, a lever system comprises a connecting the base and the platform and forming a pantograph can be folded or develops so as to raise or lower the platform vertically relative to the base until a selected level, the pantograph with multiple pivot arms articulate each other in their central part and the ends are hinged together, the pantograph arm with a lower primary whose end is hinged to the base and which is associated with a lower arm side, the lower end CONNECTED TO the base can move longitudinally relative to the latter in the development or the folding of the pantograph, the pantograph with an upper arm articulates the primary platform and associated with an upper arm secondary whose top end is connected to the platform so that it can move longitudinally with respect to it during development or folding of the pantograph, the first lifting elements of a game, facing up and hinged to the base, each with a piston rod whose upper end is engaged in a housing fixed to a concave part of the secondary arm of the pantograph corresponding lower when it is folded, and can exert a direct push–up to begin the development of a pantograph from its initial folded position to a position partially developed, the first organ being articulated by lifting their lower ends on a horizontal shaft arranged transversely in the base and several pairs of second members being disposeagnormalement lifting a sharp angle relative to the base of a way to lift the side arms of the pantograph from a partially developed position of the latter, a pair of second members being hinged lifting of the arms of the pantograph lower primary hinged to the base, and including a piston rod articulated to a portion of the secondary arm interdiaire inferior combines the pantograph, the pair of second pivot the lifting i from the initial tilt angle up to a raised position to develop the pantograph B way up high after the first predetermined lifting bodies have previously



partially developed the pantograph, so as to raise the platform jusqu'8 a selected level.

0) GB787462A – IMPROVEMENTS IN MOTOR VEHICLES

37) Family number: 19470669 (GB787462A) © PatBase

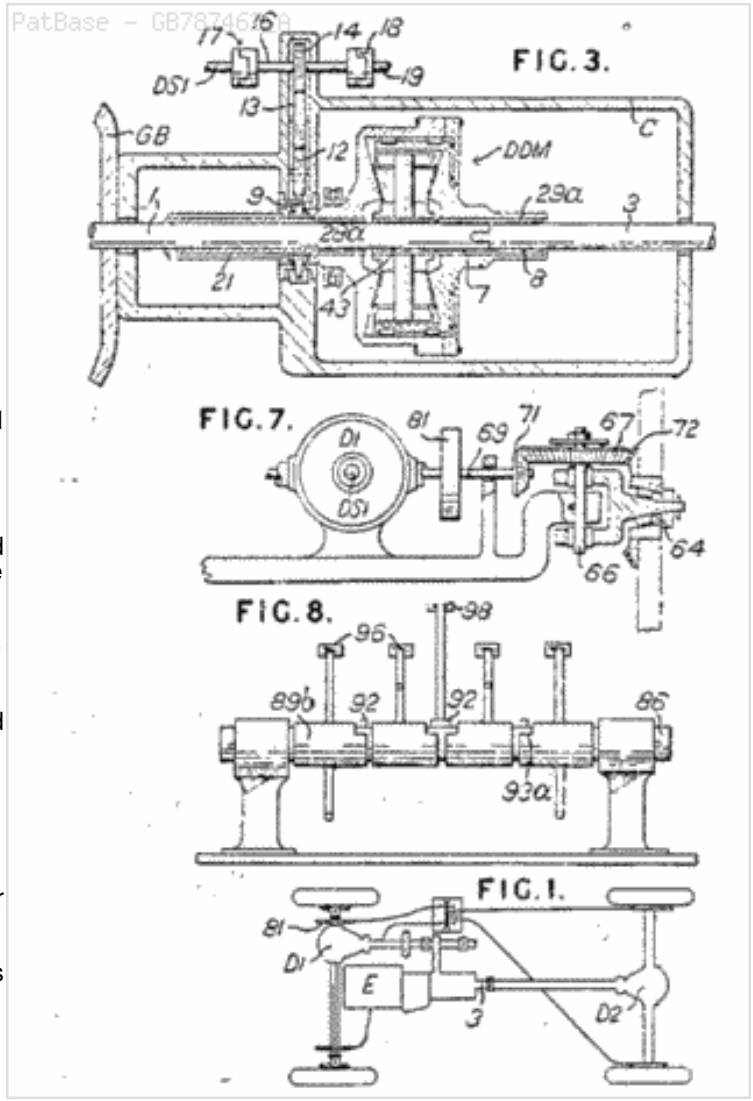
Title:	Improvements in motor vehicles
Priority:	GB19540013831 19540512

Family:

Publication number	Publication date	Application number	Application date
GB787462 A	19571211	GB19540013831	19540512

Probable Assignee:	RONALD LESLIE BATEY
Assignee(s):(std)**:**	RONALD LESLIE BATEY
International class (IPC 8–9)**:**	B60K17/34 (Advanced/Invention); B60K17/34 (Core/Invention)
International class (IPC 1–7)**:**	B60K17/34
CPC:	B60K17/34
European class:	B60K17/34
Classification Explorer	
Forward Citations:	US4706517, US4631978, US2987134,

Abstract:
Source: GB787462A 787,462. Motor vehicle driving gear. BATEY, R. L. July 20, 1955 [May 12, 1954]. No. 13831/54. Classes 79(2) and 79(5) [Also in Group XXIV] In a motor vehicle having driven front and rear wheels a differential gear DDM is slidably mounted on aligned shafts 1, 3 connected to the engine E and one pair of the wheels, respectively, whereby either the aligned shafts can be connected for drive of only one pair of wheels or all the wheels can be driven with the differential gear interposed between the front and rear wheels. As shown the output shaft 1 of a change speed gear GB has a spigotted non–driving connection with the shaft 3 in a casing C, the shaft 3 being drivingly connected to a differential gear D2 for the rear wheels of the vehicle. The sliding movement on the shafts 1, 3 of the gear DM is under the control of a manual lever (not shown) and the gear DDM comprises output members 28a, 29a and an input member 43. With the gear DDM in the position shown in Fig. 3 the shafts 1, 3 are rigidly interconnected by splines on the member 29a whereby only the rear wheels are driven. Movement of the gear DDM to the right in Fig. 3 causes the member 43 to be clutched to a splined portion 7 of the shaft 1, the splined member 29a to be connected only to a splined portion 8 of the shaft 3 and a splined portion 21 of the output member 28a to be connected to a gear 9 connected by gearing 12, 13 to a gear 14 on the shaft 16. The shaft 16 can be connected by dog clutches 17, 18 to a shaft DS1 drivingly connected to the differential gear D1 of the steerable front wheels of the vehicle and to a power take–off shaft 19. Further movement of the gear DDM to the right causes the gear 9 to be positively connected to the splined portion 7 of the shaft 1 by the member 28a and no drive to be transmitted to the vehicle rear wheels. The front wheels of the vehicle are each rotatably mounted on a stub axle 64 steeringly deflectable about the axis of a pin 66, the pin carrying a gear wheel 67 meshing with a gear 71 of the associated output shaft 69 of the gear D1 and with a gear 72 united with the wheel whereby the drive to the wheel is transmitted. Associated with each wheel is a brake 81 operated from pedals 96, 98. The pedals 96 are individual to the brakes and the pedal 98 permits simultaneous operation of all the brakes 81. The pedals 96 are carried by sleeves 89b rotatably mounted on a shaft 86 carrying the pedal 98 and projections 92 adapted to engage shoulders 93a on the sleeves.



0) GB1431186A – CONTROL SYSTEM

38) Family number: 3985561 (GB1431186A) © PatBase

Title: CONTROL SYSTEM

Priority: GB19730014256 19730323

Family:

Publication number	Publication date	Application number	Application date
GB1431186 A	19760407	GB19730014256	19730323

Probable Assignee: DELECTRONIQUE ET DAUTOMATIQUE

Assignee(s):(std): DELECTRONIQUE ET DAUTOMATIQUE

Assignee(s): LABORATOIRE DELECTRONIQUE ET DAUTOMATIQUE DAUPHINOIS ; MAYER F

International class (IPC 8–9): A61B5/16 A61B5/18 G05B15/02 G05D3/14 (Advanced/Invention); A61B5/16 G05B15/02 G05D3/14 (Core/Invention)

International class (IPC 1–7): B60K28/00 G05B15/00

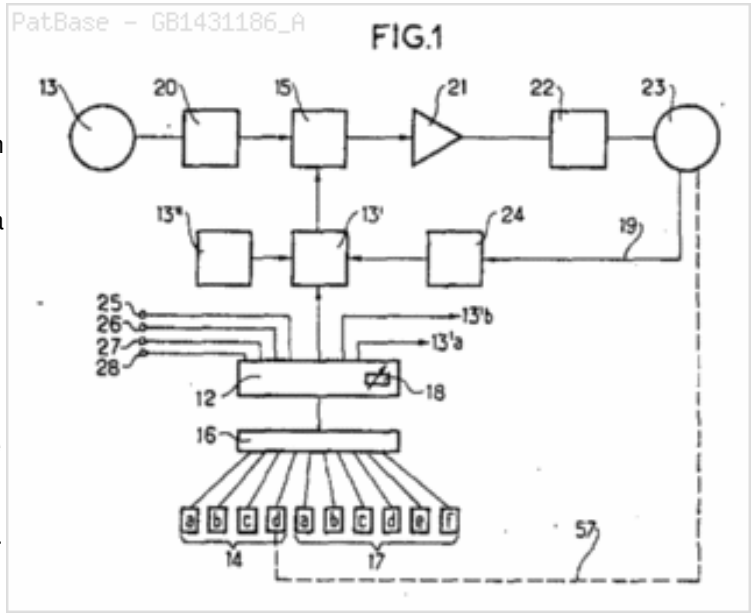
CPC: A61B5/7239 A61B5/18 A61B5/162 B60W2540/12 G05B15/02 G05D3/14

European class: A61B5/16D A61B5/18 G05B15/02 G05D3/14 L60W540/12

Classification Explorer

Forward Citations: WO9424464, WO9424464, US6306063, US5748472, GB2321721, FR2789884, EP0713675, EP0713675, EP0238489,

Abstract:
Source: GB1431186A 1431186 Controlling motor vehicles LABOBATOIRE D'ELECTRONIQUE ET D'AUTOMATIQUE DAUPHINOIS and F MAYER 23 March 1973 14256/73 Heading B7H [Also in Division G3] In a device, e.g. a motor vehicle, having one or more feedback loops by which functions are controlled in response to manual commands, a computer in the or each loop modifies the feedback signal according to the reaction of the human operator, as determined in an unspecified way from sensors influenced by the human reactions. As shown, a signal from a vehicle driver 13 actuated control member 20 is compared at 15 with a feedback signal from a transducer 24 coupled to a controlled element 23, modified at 13^{1} which is said to be an "electronic image" of the driver formed by computer 12 in response to sensors 14 of the driver's reactions and/or parameters, and sensors 17 of parameters of the vehicle and/or external parameters. 16 is a store for the parameters; 13^{11}_{11} is a fixed store of the driver's image and if 13^{11} and 13^{1} do not agree the system assumes it has the wrong driver and stops the vehicle. The effect of the modification of the feedback signal is to limit the response of the controlled member to a value which is "safe" for the vehicle and its driver. The operation may be modified by a manual adjuster 18, e.g. to give a "sporty" or "family driver" characteristic. 25... 28 are indicator outputs. Lists of the sensed factors are given; examples in group 14 are frequency and strength of control operations (driver reaction), pulse beat and encephalogram (driver parameters), and in group 17 state of the brakes and quality of the roads. None of the sensors or their signals are described. In Fig. 2 (not shown), operation of clutch, brake, acceleration and steering are monitored by transducers whose signals are proportional to the rate of change of the operation and are differentiated and filtered by a lowpass filter and combined by addition or multiplication by a device (44) whose output represents "driver's inadequacy" and is displayed on an indicator and provides the control. The rate of change of this signal (i.e. improving or "getting worse") is also displayed. In Fig. 3 (not shown), the output of this device is modified by a vehicle speed or engine power signal and divided by a signal derived from the steering movements. If the result is below a threshold value the fuel supply is cut off and warning lights operated.



0) US2012026467A – CAMERA CRANE MOBILE BASE

39) Family number: 50539415 (US2012026467A) © PatBase

Title: CAMERA CRANE MOBILE BASE

Priority: US20100846711 20100729 US20110308880 20111201 US20120402070 20120222 WO2011US45250 20110725 US20120693975 20121204

Family:

Publication number	Publication date	Application number	Application date
CA2805788 AA	20130116	CA20112805788	20110725
CA2805788 C	20160816	CA20112805788	20110725
EP2598944 A1	20130605	EP20110813022	20110725
EP2598944 A4	20160706	EP20110813022	20110725
US2012026467 AA	20120202	US20100846711	20100729
US2012120371 AA	20120517	US20110308880	20111201
US2012152630 AA	20120621	US20120402070	20120222
US2013094000 AA	20130418	US20120693975	20121204
US8322858 BB	20121204	US20110308880	20111201
US8550632 BB	20131008	US20100846711	20100729
US8684530 BB	20140401	US20120693975	20121204
US8733478 BB	20140527	US20120402070	20120222
WO12015763 A1	20120202	WO2011US45250	20110725

Probable Assignee: CHAPMAN LEONARD STUDIO EQUIP

Assignee(s):(std)**:** CHAPMAN LEONARD STUDIO EQUIP ; CHAPMAN LEONARD STUDIO EQUIPMENT INC ; CHAPMAN LEONARD T

Assignee(s): CHAPMAN LEONARD STUDIO EQUIPMENT

Inventor(s):(std)**:** CHAPMAN LEONARD T

Agent(s): SMART AND BIGGAR; VIERING JENTSCHURA AND PARTNER; PERKINS COIE LLP; KENNETH H; OHRINER KENNETH H

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G11/08 B60G3/10 B60K1/02 B60K7/00 B62D21/00 B62D61/10 B62D7/06 B66F11/00 F16M11/24 G03B17/00 G03B17/56 (Advanced/Invention); H04N5/232 (Advanced/Non–invention)

CPC: B66F11/048 F16M11/2021 F16M11/2028 G03B17/561 B60K7/0007 B60Y2200/40 F16M11/18 F16M11/2057 F16M11/28 F16M11/42

European class: F16M11/18 F16M11/20A3B F16M11/28 F16M11/42 G03B17/56B L60K7/00E L60Y200/40

US class: 180/24.07 180/24.070P 180/24.08 180/246 180/6.48 180/60 180/60S 180/65.51 280/124.171 348/373 352/243 352/243P 396/428

Classification Explorer

Cited documents: WO9610511 A1, WO8703104 A1, USD379017 S1, USD378156 S1, US8333520 BA, US8322858 BB, US8142083 BB, US8057112 BB, US8033742 BA, US7926833 BB, US7854555 BB, US7588104 BB, US7464775 BB, US7311452 BB, US7303033 BB, US7134517 BA, US7111574 BB, US7101045 BB, US6776488 BB, US6719307 BA, US6626117 BA, US6056450 A, US5762466 A, US5704623 A, US5671932 A, US5620192 A, US5490684 A, US5312121 A, US4952953 A, US4943019 A, US4907768 A, US4849778 A, US4747424 A, US4702843 A, US3426862 A, US2501796 A, US2010116572 AA, US2007080001 AA, US2006278459 AA, US2006046826 AA, US2006012144 AA, US2003076480 AA, US1794145 A, US1576920 A, FR1586700 A,

Forward Citations:

US9079482, US8936130, US8733478, US8684530, US2014345958, US2014014422, US2012217080, EP2856255, CN104494417, CN104354786, CN104354786, CN103786807, CN102806955,

Abstract:
Source: US2012026467A A camera crane mobile base has a drive motor assembly at each corner of a chassis. The drive motor assemblies may have an electric motor linked to an axle via gearing, and one or more wheels attached to the axle. The electric motors may be separately controlled to propel and steer the mobile base. A column is pivotally attached to the chassis and pivotal in lateral and longitudinal directions via actuators. The drive motor assemblies may be removed from the chassis for storage or transport. With the drive motor assemblies installed, the mobile base is highly stable and maneuverable. With the drive motor assemblies removed, the chassis is narrow enough to fit through a typical doorway. Steering systems may be linked to the drive motor assemblies at the front and/or rear of the chassis, to allow steering control of the mobile base in corrective, crab and/or round steering modes. The chassis may optionally have an upward curvature from either end towards the center location.

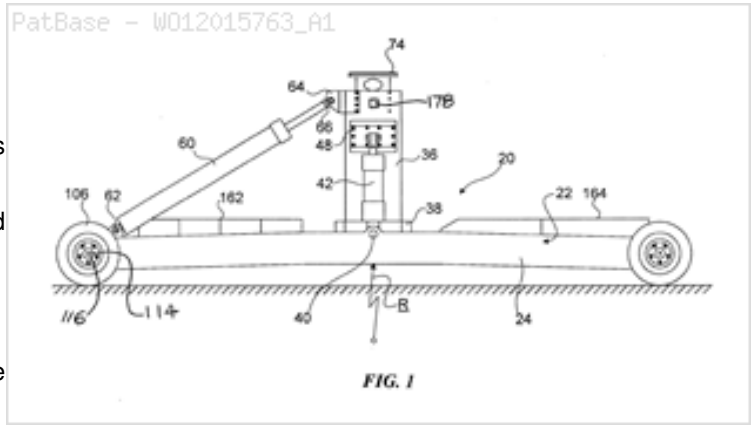


FIG. 1

0) DE2101312A1 –

40) Family number: 529070 (DE2101312A1)

© PatBase

Priority: DE19712101312 19710113

Family:

Publication number	Publication date	Application number	Application date
DE2101312 A1	19720504	DE19712101312	19710113

International class (IPC 8–9): B60T11/21 B62D11/08 (Advanced/Invention); B60T11/16 B62D11/06 (Core/Invention)

International class (IPC 1–7): B60T11/20

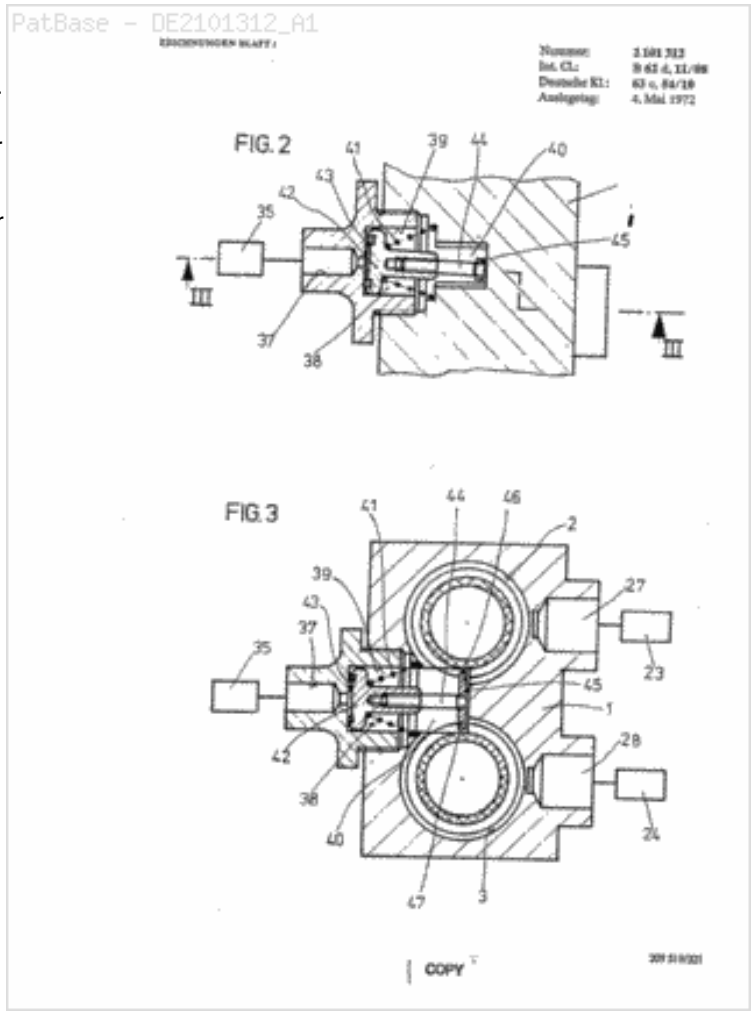
CPC: B60T11/21 B62D11/08

European class: B60T11/21 B62D11/08

Classification Explorer

Forward Citations: EP0049969,

Abstract:
Source: DE2101312A1 (Claim 1) 1. Lenkbremseinrichtung fuer hydraulisch bremsbare Kraftfahrzeuge, insbesondere fuer Schlepper, mit zwei einerseits mit einem Ausgleichsbehaelter, andererseits mit je einer rechten bzw. linken Radbremse oder Radbremsgruppe verbindbaren Hauptzylindern, deren Bremskolben entweder einzeln zwecks Lenkung des Fahrzeuges oder gemeinsam zwecks Bremsung des Fahrzeuges vorzugsweise durch Pedale betaetigbar sind, dadurch gekennzeichnet, dass die Druckraeume der beiden Hauptzylinder (2 und 3) miteinander verbunden sind, dass fuer beide Hauptzylinder (2 und 3) ein gemeinsames Verbindungsventil (Kippventil 38) vorgesehen ist, welches die Verbindung zwischen den beiden Hauptzylindern (2 und 3) einerseits und dem Ausgleichsbehaelter (35) andererseits steuert, und dass ferner jeder der beiden Bremskolben (4 bzw. 5) sowohl mit dem Verbindungsventil (Kippventil 38) als auch mit je einem Sperrventil (19 bzw. 20) zum Sperren der Verbindung zwischen dem zugehoerigen Hauptzylinder und der ihm zugeordneten Radbremse oder Radbremsgruppe (23 bzw. 24) in Wirkverbindung stehen, derart, dass das Verbindungsventil (Kippventil 38) bei unbetaetigten Bremskolben (4 und 5) geoeffnet ist und bei einzelner oder gemeinsamer Betaetigung der Bremskolben (4 und 5) schliessbar ist, waehrend die Sperrventile (19 und 20) bei unbetaetigten Bremskolben (4 und 5) geschlossen sind und bei Betaetigung des zugehoerigen Bremskolbens (4 bzw. 5) in oeffnungsstellung schaltbar sind.



Machine translation: (Claim 1) 1 Steering braking device for hydraulically braked vehicles, especially for tractors, with two one hand with a Ausgleichsbehaelter, on the other hand, each with a right or left wheel brake or Radbremsgruppe connectable main cylinders whose pistons either individually preferably for the purpose steering of the vehicle or common purpose of braking of the vehicle are actuated by pedals, characterized in that the Druckraeume the two master cylinders (2 and 3) are connected, that for both master cylinders (2 and 3) a common connector valve (tilting valve 38) is provided which the connection between the two main cylinders (2 and 3) one hand and the Ausgleichsbehaelter (35) on the other hand, controls, and further that each of the two

brake piston (4 or 5) with both the connecting valve (tilting valve 38) and each with a check valve (19 or 20) to lock the connection between the associated master cylinder and its associated wheel brake or Radbremsgruppe (23 and 24) are operatively connected such that the connecting valve (tilting valve 38) for the non−actuated brake piston (4 and 5) is open and in single or joint operation of the brake piston (4 and 5) closable, is during the check valves (19 and 20) in the non−actuated brake piston (4 and 5) are closed and when operating the associated brake piston (4 and 5) are switchable in opening position.

0) US6942234B – HAND–POWERED VEHICLE

41) Family number: 32224669 (US6942234B) © PatBase

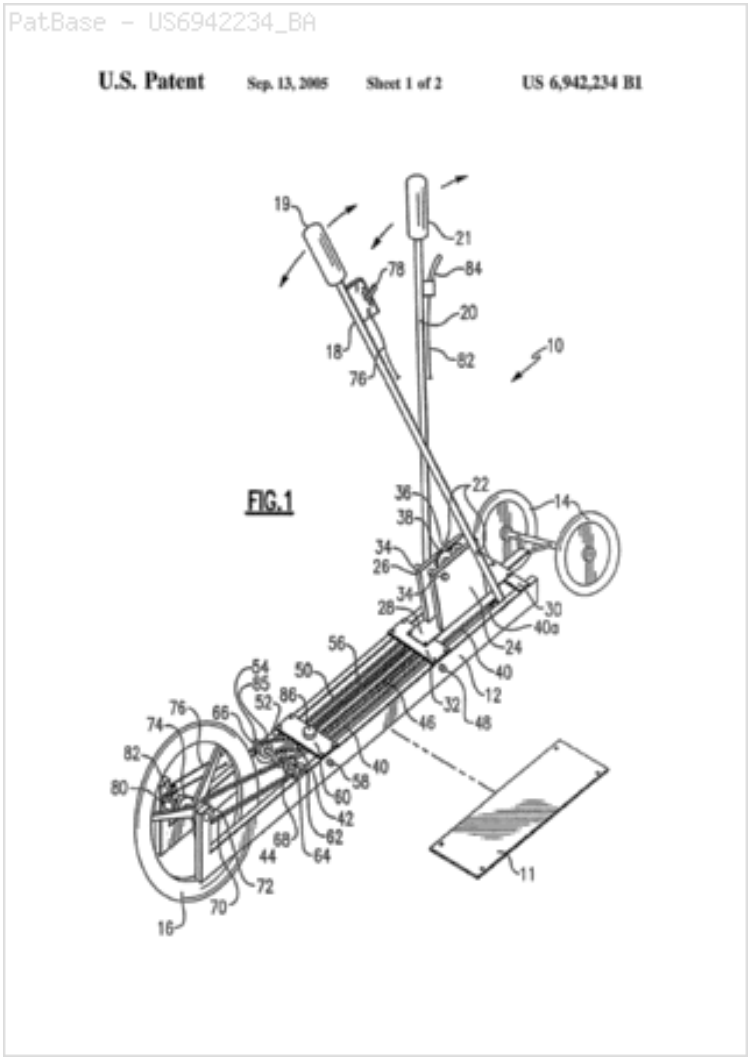
Title:	HAND–POWERED VEHICLE
Priority:	US20040769113 20040130

Family:

Publication number	Publication date	Application number	Application date
US6942234 BA	20050913	US20040769113	20040130

Probable Assignee:	CHAIT PAUL NICHOLAS
Assignee(s):	CHAIT PAUL NICHOLAS
Inventor(s):(std)	CHAIT PAUL NICHOLAS
Agent(s):	RINNE JR RISTO A; RISTO A
International class (IPC 8–9)**:**	B62M1/16 (Advanced/Invention)
International class (IPC 1–7)**:**	B62M1/16
CPC:	B62M1/16
European class:	B62M1/16
US class:	280/244
Classification Explorer	
Cited documents:	US6708997 BB, US5829772 A, US5690346 A, US5272928 A, US4453729 A, US4124222 A, US3175844 A, US2002153691 AA,
Forward Citations:	WO14145945, WO13062429, WO11157910, US9428244, US8172243, US7850191, US7360780, US7328906, US7303202, US2016229484, US2016144927, US2015069738, US2010327551, US2007290477, US2007219067, US2007175685, US2007126195, FR2961475, FR2961474, DE102009003896, DE102008057400, CN103301627, CN103301627, CN102616331, CN102556232, CN101792000,

Abstract:
Source: US6942234B A wheeled apparatus is provided that converts alternate back and forth longitudinal motion supplied by the arms of a user to a pair of members into rotary motion that is used to drive the apparatus forward. The members move in opposite direction pulling and releasing a pair of chain segments that each a freewheel. Each freewheel drives an axle when rotated in one direction and coasts in the opposite direction. A drive gear is attached to the axle and supplies power to a driven gear attached to a multi−speed internal gear hub. A brake is also attached to the hub. An optional supplemental source of motive power such as an electric motor or gasoline engine can also be included.



0) US2015054252A – VEHICLE HAVING POSITIONAL CONTROL FUNCTION

42) Family number: 55048528 (US2015054252A) © PatBase

Title: VEHICLE HAVING POSITIONAL CONTROL FUNCTION

Priority: WO2012KR03106 20120423

Family:

Publication number	Publication date	Application number	Application date
CN104271434 A	20150107	CN201280071240	20120423
US2015054252 AA	20150226	US20120394102	20120423
US9527546 BB	20161227	US20120394102	20120423
WO13162082 A1	20131031	WO2012KR03106	20120423

Probable Assignee: LEE KOOK HWAN

Assignee(s):(std)**:** GREENTRACK CO LTD ; LEE KOOK HWAN

Assignee(s): GREENTRACK CO

Inventor(s):(std)**:** LEE KOOK HWAN

Agent(s): REVOLUTION IP PLLC; KIM SOON WOONG

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K21/06 B62K21/08 B62K25/04 B62K5/025 B62K5/027 B62K5/04 B62K5/10 F16F1/14 (Advanced/Invention)

CPC: B62K21/06 B62K21/08 B62K5/025 B62K5/10

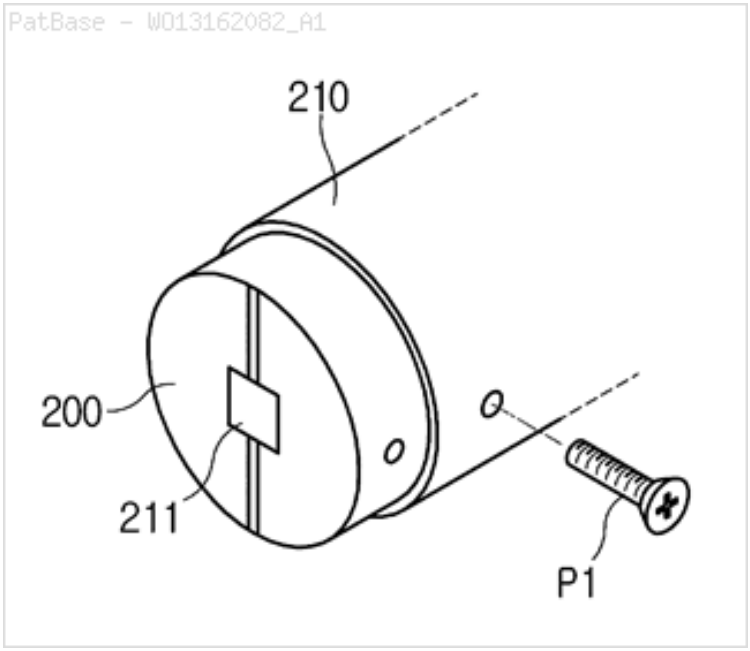
US class: 280/276

Classification Explorer

Cited documents: US7597333 BB, US7287928 BB, US7121566 BB, US6830255 BB, US4132435 A, US3742770 A, US2011049833 AA, US2009134591 AA, US2004135334 AA, US2003221888 AA, US2003168273 AA, US2002121756 AA, KR20070001352 U, KR20070001352 U, KR20060107443 A, KR20060085090 A, KR200438635 Y1, JP2004114808 A2, FR2653047 A1, CN2853119 Y, CN2438642 Y, CN200977975 Y, CN1597431 A,

Forward Citations: USD782942, US9365254, US2016221628, CN105015683,

Abstract:
Source: US2015054252A Disclosed is a vehicle having a structure in which a handle connecting frame is attached to an upper end of a front fork section in a state in which the front fork section is connected thereto, and a front wheel rotatably supported by the front fork section is able to be steered, characterized in that a main rotary shaft of the front wheel functions as a main body and a support member and is fixed at two places to simultaneously tilt two handles leftward or rightward, the main rotary shaft of the front wheel is mounted on a footrest section, and a high elasticity compound recovery member is connected between the footrest section and a rear wheel rotary shaft in a longitudinal direction to be turned leftward or rightward to correspond to a centrifugal force about the rear wheel rotary shaft when tilting occurs during running



0) US2010132602A – PERSONAL WATERCRAFT WITH REACTIVE SUSPENSION AN...

43) Family number: 45101931 (US2010132602A) © PatBase

Title: PERSONAL WATERCRAFT WITH REACTIVE SUSPENSION AND AN INTEGRATED BRAKING AND STEERING SYSTEM

Priority: US20080200682P 20081203 US20090592885 20091203 US20090592905 20091203 US20090592904 20091203 US20110247806 20110928 US20140211224 20140314

Family:

Publication number	Publication date	Application number	Application date
US2010132602 AA	20100603	US20090592905	20091203
US2010132603 AA	20100603	US20090592885	20091203
US2010138084 AA	20100603	US20090592904	20091203
US2012017820 AA	20120126	US20110247806	20110928
US2014235120 AA	20140821	US20140211224	20140314
US8132524 BB	20120313	US20090592905	20091203
US8347802 BB	20130108	US20090592885	20091203
US8676412 BB	20140318	US20090592904	20091203
US8718842 BB	20140506	US20110247806	20110928
US9302757 BB	20160405	US20140211224	20140314

Probable Assignee: PEREIRA FRED

Assignee(s):(std)**:** PEREIRA FRED

Inventor(s):(std)**:** PEREIRA FRED

Agent(s): MARK S HUBERT PC; MARK S

International class (IPC 8–9)**:** B60L15/00 B60L3/00 B63B1/00 B63B1/18 B63B1/20 B63B1/22 B63B17/00 B63B29/02 B63B3/00 B63B35/73 B63B39/00 B63B39/06 B63H11/00 B63H20/02 B63H23/00 B63H25/44 G05D1/00 G05D3/00 G06F17/00 G06F7/00 (Advanced/Invention); B63B1/00 B63B17/00 B63B3/00 B63B35/73 G05D1/00 (Core/Invention)

CPC: B63B35/731 B63H25/50 B63B1/20 B63H23/00 B63B17/0081 B63B29/02 B63B39/005 B63B39/061 B63H20/02 B63H25/44

European class: B63B29/02 B63B35/73B B63B39/00V B63B39/06B B63H25/44 B63H25/50 Y02T70/56

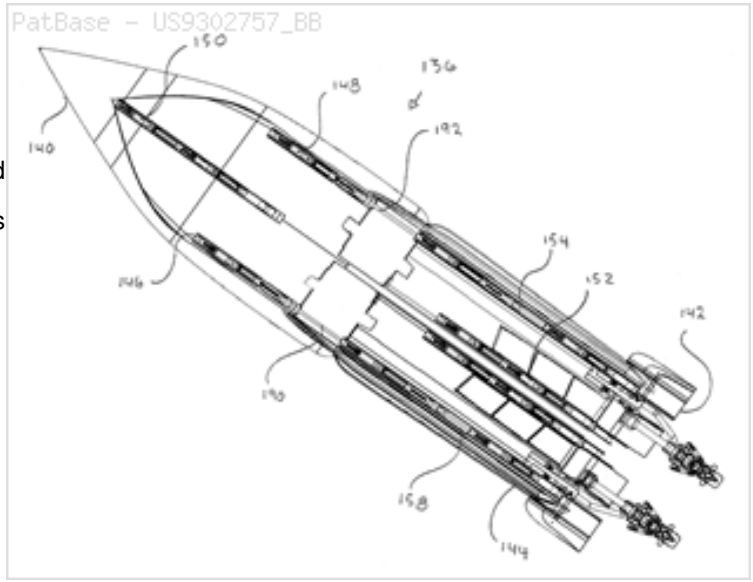
US class: 1/1 114/271 114/279 114/284 114/284S 114/285 114/55.5 114/55.500P 114/55.54 114/55.540P 114/61.15 440/40 701/21 701/36 701/37

Classification Explorer

Cited documents: WO06038808 A1, WO06035229 A2, US7946237 BB, US7913636 BB, US7874882 BB, US6892666 BA, US6763774 BA, US6620003 BB, US5697317 A, US5603281 A, US5520133 A, US5277142 A, US4649851 A, US4351262 A, US4014283 A, US3948206 A, US3922994 A, US3517632 A, US3483844 A, US3280786 A, US3257982 A, US3158129 A, US2010138084 AA, US2010132603 AA, US2008216728 AA, US2007261625 AA, US2007139216 AA,

Forward Citations: WO11143692, USD726632, US9150282, US9016220, US8555801, US8132524, US2014080367, US2011275255, US2010132602,

Abstract:
Source: US2010132602A A watercraft with several stability and handling design improvements. It has an enhanced reactive suspension system positioned in the vessel between a set of separating hull and body components. The watercraft also has improved braking, steering and stabilizing systems designed around multiple pivoting mechanisms on the vessel hull that work individually or in unison to achieve the desired braking or steering effect. The stabilizing system is operated by a computerized, gyroscopic hydraulic control to maintain stability and comfort of ride, minimizing the roll, pitch and yaw commonly experienced in the passenger compartment.



0) US2011061559A – AUTOMATED TRANSPORT SYSTEM

44) Family number: 48464045 (US2011061559A) © PatBase

Title: AUTOMATED TRANSPORT SYSTEM

Priority: US20090205777P 20090204 US20090276370P 20090911 US20100658023 20100201

Family:

Publication number	Publication date	Application number	Application date
US2011061559 AA	20110317	US20100658023	20100201
US8272331 BB	20120925	US20100658023	20100201

Probable Assignee: AUTRAN CORP

Assignee(s):(std)**:** AUTRAN CORP ; LUND VAN METRE

Inventor(s):(std)**:** LUND VAN METRE

International class (IPC 8–9)**:** B60L11/00 B60L13/00 B60L9/00 B60P3/07 B60P3/073 B60P3/077 B61B13/04 B61J3/00 E01B25/10 E01B25/12 F16H57/10 G06F19/00 (Advanced/Invention)

CPC: B60L2200/26 B60L5/36 B60L7/12 B60L9/08 B60L9/28 B60L11/1803 B60L11/1805 B60L15/38 B60L2200/44 B60L2220/12 B60L2260/32 B60M1/32 B61B13/00 E01B25/10 Y02T10/7005 Y02T30/30

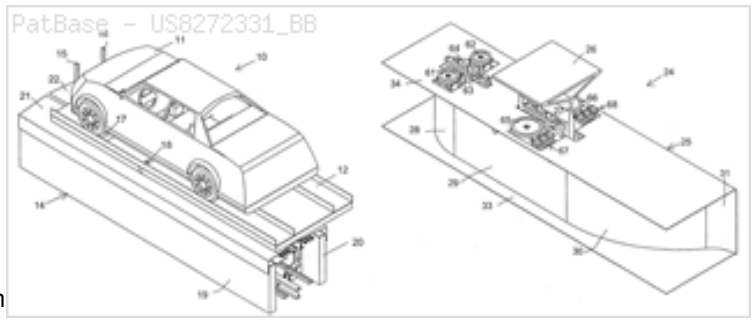
European class: B60L11/18C B60L11/18E B60L15/38 B60L5/36 B60L7/12 B60L9/08 B60L9/28 B60M1/32 B61B13/00 E01B25/10 L60L200/26 L60L200/44 L60L220/12 L60L260/32 Y02T10/70B Y02T30/30

US class: 104/119 104/288 104/288S 104/88.01 191/29.00RS 191/29R 410/7 410/7S 701/36 701/36S

Classification Explorer

Cited documents: US6886651 BA, US5706735 A, US5381737 A, US5359941 A, US5222439 A, US5069141 A, US4996928 A, US4990117 A, US4304187 A, US3690393 A, US2838009 A, US2694164 A, US2645185 A,

Forward Citations: WO13070799, US8826825, US8776970, US8776969, US8763774, US8763773, US8448579, US8079270, US2013213755, US2013025990, US2013020165, US2013020164, US2013020163, US2012312188, US2007044567,



Abstract:
Source: US2011061559A A single main steel wheel rides on a single main steel rail of a guideway to support and drive a carrier and to facilitate steering and provide a simplified, more compact and less costly construction. The carrier can support a car through a platform having elements and chocks for locking contact with a front bumper and front wheels of the car Auxiliary wheels and rails cooperate to cause nearly all weight to be carried through the single main wheel. Traction is increased when necessary through application of increased upward forces to undersides of auxiliary rails and/or through developing magnetic forces between the steel wheel and steel rail. An AC induction motor is a main source of drive power. Acceleration and braking are assisted through epicyclic gearing, braking means and a DC motor/generator that is connected to a battery and that drives the carrier if supply of AC fails.

0) US2002023579A – HIGH SPEED ELECTRIC WATERCRAFT

45) Family number: 32438426 (US2002023579A) © PatBase

Title: High speed electric watercraft

Priority:
CA20002298957 20000215 US19980076002P 19980226 US20000254786P 20001213
US19990252038 19990218 US20000561972 20000501 US20010296754P 20010611
US20010349375P 20011222 US20010877196 20010611 US20010927640 20010813
US20020164566 20020610 US20010302647P 20010705 US20020187830 20020703
US20020164567 20020610 US20010323723P 20010921 US20050287381 20051128
US20040754608 20040112 US20030724240 20031201 US20030474957P 20030603
US20020349375P 20020122 US20030620618 20030717 US20020396084P 20020717
US20030445249P 20030206 US20020433591P 20021216 US20020431200P 20021206

Family:

Publication number	Publication date	Application number	Application date
AU200017596 A5	20000824	AU20000017596	20000218
CA2298957 AA	20000818	CA20002298957	20000215
DE10007497 A1	20001123	DE20001007497	20000218
DE10132093 A1	20020620	DE20011032093	20010502
GB200003489 A0	20000405	GB20000003489	20000216
GB2346841 A1	20000823	GB20000003489	20000216
GB2346841 B2	20030326	GB20000003489	20000216
JP2001354186 A2	20011225	JP20000105636	20000218
US2002023579 AA	20020228	US20010877196	20010611
US2002088387 AA	20020711	US20010927640	20010813
US2002185046 AA	20021212	US20020164567	20020610
US2003060094 AA	20030327	US20020164566	20020610
US2004090195 AA	20040513	US20030620618	20030717
US6073569 A	20000613	US19990252038	19990218
US6273015 BA	20010814	US20000561972	20000501
US6532884 BB	20030318	US20010877196	20010611
US6571722 BB	20030603	US20010927640	20010813
US6659815 BB	20031209	US20020164566	20020610
US6676460 BA	20040113	US20020187830	20020703
US6882289 BB	20050419	US20020164567	20020610
US6969287 BA	20051129	US20040754608	20040112
US7335071 BA	20080226	US20050287381	20051128

Probable Assignee: MARUTA ELECTRIC BOATWORKS LLC

Assignee(s):(std): MARUTA ELECTRIC BOATWORKS ; MARUTA ELECTRIC BOATWORKS L L ; MARUTA ELECTRIC BOATWORKS LLC ; PEEK JOSEPH TIMOTHY ; MOTSENBOCKER KAYO ; MOTSENBOCKER MARVIN ANDREW ; HINKELMANN KLAUS ; MOTSENBOCKER MARVIN ; MARUYAMA KAYO ; MOTSENBOCKER MARVIN A ; PROFITT JAMES ARTHUR

Assignee(s): MARVIN MOTSENBOCKER ; MOTSENBOCKER MARVIN MOTSENBOCKER KAYO ; KAYO MOTSENBOCKER ; MURATA ELECTRIC BOATWORKS LLC ; MARUTA ELECTRIC BOATWORKS L L C

Inventor(s):(std): MOTSENBOCKER KAYO ; MOTSENBOCKER MARVIN ; MOTSENBOCKER MARVIN A ; PROFITT JAMES ARTHUR ; PEEK JOSEPH TIMOTHY ; MOTSENBOCKER MARVIN ANDREW

Inventor(s): KAYO MOTSENBOCKER ; MARVIN ANDREW MOTSENBOCKER ; MARVIN MOTSENBOCKER

Agent(s): PAT DONOGHUE

International class (IPC 8–9): B63B1/10 B63B1/12 B63B1/14 B63B43/04 B63B43/18 B63H1/18 B63H1/28 B63H20/36 B63H21/17 B63H21/22 B63H5/16 G01S15/04 G01S15/87 G01S15/88 G01S7/521

H03K17/945 (Advanced/Invention);
B63B1/10 B63B39/00 B63H23/24 (Advanced/Non–invention);
B63B43/00 B63H1/00 B63H20/00 B63H21/00 B63H5/00 G01S15/00 G01S7/521
H03K17/94 (Core/Invention);
B63H23/00 (Core/Non–invention)

International class (IPC 1–7): B60L11/02 B63B1/00 B63B1/10 B63B1/12 B63B35/73 B63B43/04 B63H21/17 B63H21/22 G08B23/00 H02P5/46

CPC: B63B1/107 B63B1/12 B63B43/04 B63H21/17 Y02T70/5209 Y02T90/46 B63B1/125 B63H1/18 B63H1/28 B63B1/14 B63B39/005 B63H5/165 B63H21/22 B63H23/30 H03K17/945 B63H23/32 B63B43/18 B63H20/36 B63H23/24 G01S7/521 G01S15/04 G01S15/87 G01S15/88

European class: B63B1/10C B63B1/12 B63B1/12M B63B1/14 B63B43/04 B63B43/18 B63H1/18 B63H1/28 B63H20/36 B63H21/17 B63H21/22 B63H23/30 B63H23/32 B63H5/16G G01S15/04 G01S15/87 G01S15/88 G01S7/521 H03K17/945 L63B1/10C L63B39/00V L63H23/24 Y02T70/52B Y02T90/46

US class: 114/121 114/283 114/61.1 114/61.100P 114/61.12 114/61.120P 114/61.13 114/61.14 318/109 318/109P 340/979 340/984 340/995.27 440/1 440/2 440/49 440/6 440/63 440/6P 440/6S 440/71 440/76

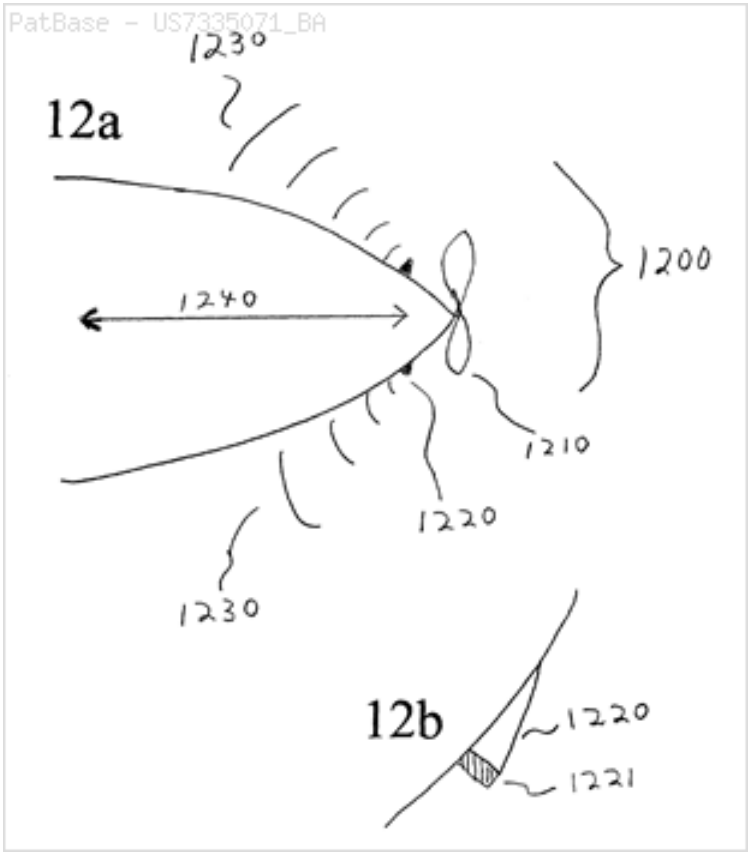
Classification Explorer

Cited documents: USRE36459 E, US6747457 BB, US6678589 BB, US6676460 BA, US6549830 BB, US6466024 BA, US6377515 BA, US6354892 BA, US6348751 BA, US6331762 BA, US6313608 BA, US6276974 BA, US6227918 BA, US6216501 BA, US6215261 BA, US6184656 BA, US6182598 BA, US6182596 BA, US6182590 BA, US6176190 BA, US6167829 BA, US6152062 A, US6137203 A, US6094023 A, US6084325 A, US6081098 A, US6078156 A, US6051952 A, US6037749 A, US6005317 A, US5961558 A, US5941189 A, US5941188 A, US5936321 A, US5931110 A, US5928040 A, US5915328 A, US5880548 A, US5863228 A, US5847533 A, US5839800 A, US5837948 A, US5834874 A, US5833501 A, US5832440 A, US5825099 A, US5814958 A, US5807151 A, US5800224 A, US5790355 A, US5759075 A, US5711742 A, US5703448 A, US5694878 A, US5694653 A, US5694553 A, US5691742 A, US5659231 A, US5656919 A, US5646467 A, US5637987 A, US5613887 A, US5598087 A, US5588886 A, US5575730 A, US5575703 A, US5544607 A, US5540169 A, US5522333 A, US5511504 A, US5467257 A, US5465679 A, US5456200 A, US5453672 A, US5438252 A, US5418445 A, US5418359 A, US5405276 A, US5386368 A, US5369269 A, US5329870 A, US5315287 A, US5313556 A, US5296797 A, US5238432 A, US5227703 A, US5209642 A, US5209237 A, US5190487 A, US5178085 A, US5174233 A, US5168473 A, US5168471 A, US5146208 A, US5083950 A, US5039924 A, US5030149 A, US5019822 A, US5009620 A, US4988885 A, US4986204 A, US4957459 A, US4944238 A, US4938721 A, US4933609 A, US4915047 A, US4890265 A, US4826461 A, US4819730 A, US4811682 A, US4780085 A, US4763596 A, US4754181 A, US4734817 A, US4730571 A, US4678998 A, US4630205 A, US4616509 A, US4597377 A, US4596238 A, US4565533 A, US4557211 A, US4510923 A, US4426606 A, US4411631 A, US4405891 A, US4355274 A, US4349897 A, US4345533 A, US4334177 A, US4319844 A, US4313080 A, US4304558 A, US4293280 A, US4277707 A, US4261277 A, US4243926 A, US4188906 A, US4174671 A, US4115040 A, US4106425 A, US4093050 A, US4078516 A, US3902444 A, US3897744 A, US3889624 A, US3848976 A, US3842772 A, US3830178 A, US3805723 A, US3794898 A, US3653349 A, US3628112 A, US3548276 A, US3517632 A, US3438328 A, US3329929 A, US3310693 A, US2888149 A, US2769420 A, US2737145 A, US2436939 A, US2004040817 AA, US2003137275 AA, US2003038637 AA, US2003030414 AA, US2003025481 AA, US2002153864 AA, US2002073818 AA, US1759644 A, US1448225 A, JP6190258 A2, GB2297728 A1, GB1232688 A, CH637684, CH637584,

Forward Citations: WO17050708, WO15123530, WO13127928, WO13113681, WO11069623, WO11069623, WO11045487, WO11038869, WO11038869, WO09124841, WO09021522, WO08155448, WO07089850, WO07089693, WO06119057, WO02068896, WO02068896, USRE44161, USD594491, US9605872, US9577567, US9568527, US9559688, US9558667, US9548733, US9545987, US9531379, US9531184, US9520875, US9475548, US9469066, US9450530, US9447613, US9426739, US9415836, US9376196, US9337832, US9311204, US9287864, US9269268, US9230442, US9219472, US9209724, US9197206, US9188691, US9184745, US9165469, US9143126, US9136840, US9115435, US9104650, US9044759, US9037299, US9018892, US9008874, US9000903, US8989939, US8983739, US8983283, US8976034, US8965640, US8963379, US8930050, US8928266, US8870106, US8858281, US8851946, US8845490, US8836257, US8803711, US8783592, US8758069, US8757526, US8739717, US8723468, US8708260, US8690621, US8678305, US8676482, US8672247, US8636552, US8550387, US8511593, US8500049, US8497770, US8480443, US8476853, US8464767, US8454402, US8442699, US8430347, US8425662, US8424787, US8406944, US8403124, US8387589,

US8382019, US8356207, US8347859, US8337266, US8315750, US8265809, US8262424, US8205815, US8201766, US8201761, US8198853, US8190316, US8182396, US8162244, US8152577, US8149557, US8146845, US8113451, US8106529, US8091809, US8087599, US8074911, US8044933, US8028947, US8020796, US8018099, US8008812, US7974090, US7969705, US7963468, US7954737, US7946515, US7946514, US7887381, US7882394, US7865311, US7840318, US7812495, US7802741, US7789723, US7785162, US7753745, US7712689, US7661614, US7637723, US7635102, US7631824, US7631823, US7631822, US7624938, US7606011, US7559815, US7547199, US7511276, US7505836, US7483784, US7482767, US7481688, US7476862, US7445531, US7416458, US7353095, US7344096, US7311276, US7306496, US7267593, US7263945, US7247063, US7197390, US7165746, US7143363, US7121219, US7105800, US7078877, US7047902, US7040244, US7031807, US6986688, US6969287, US6912965, US6890224, US6888537, US6855020, US6854406, US6837758, US6709240, US6405653, US6141037, US2016264109, US2016096610, US2016039529, US2015276883, US2015100185, US2014263802, US2014176061, US2014032027, US2013328616, US2013218604, US2013199812, US2013197728, US2013193040, US2013180979, US2013127626, US2013010571, US2012238160, US2012164895, US2012089255, US2012025967, US2011294375, US2011246011, US2011208377, US2011203507, US2011196552, US2011195816, US2011186663, US2011173496, US2011143612, US2011143610, US2011143609, US2011111650, US2011104963, US2011064520, US2011056715, US2010320299, US2010320297, US2010288861, US2010282879, US2010280685, US2010280684, US2010275879, US2010270404, US2010252664, US2010243774, US2010235024, US2010185348, US2010170969, US2010125383, US2010102153, US2010092275, US2010090637, US2010084496, US2010076633, US2010014691, US2010008036, US2009284093, US2009276080, US2009127035, US2009090797, US2009042460, US2009032629, US2008299842, US2008290011, US2008281505, US2008254689, US2008236471, US2008174455, US2008173818, US2008142537, US2008105772, US2008053994, US2007249241, US2007246585, US2007246582, US2007246581, US2007205731, US2007175883, US2007152626, US2007150118, US2007067678, US2007051292, US2007049137, US2007049136, US2007046630, US2007028824, US2007023210, US2007017284, US2006254486, US2006232240, US2006225973, US2006219827, US2006197502, US2006191463, US2006175996, US2006057911, US2006054725, US2006054724, US2006052014, US2006009092, US2005267654, US2005263058, US2005231860, US2005139759, US2005115484, US2005040789, US2005037780, US2004242088, US2004238688, US2004192124, US2004181323, US2004100225, US2004063363, US2004015277, US2003151589, US2003137219, US2003060952, US2003053892, US2003003822, KR20140107664, KR101643833, KR101056999, JP5379747, JP2011246064, FR2904963, EP2634084, EP2601095, EP2548796, EP1806282, EP1806281, DE20212117, DE102011086291, DE102010005050, CN104093628, CN103552650, CN103112570, CN102729745, CN102729745, CN102639396, AU2013214319,

Abstract:
Source: US2002023579A High speed electric watercraft of various configurations are provided that utilize at least one submerged enclosed hull containing an electric motor and at least one other parallel float positioned higher that the enclosed hull to provide buoyancy for a platform that can carry one or more individuals above a water surface. The watercraft optionally include features of (1) a rounded front end on the platform, (2) a platform length that is shorter than the float for stability against tipping, (3) entryways that do not require stepping over a vessel hull, (4) dimensions fore and aft that minimize spray onto the rear of the platform, (5) shock absorbers to provide a smoother ride, and (6) adjustable struts that connect floats with the platform to allow control of the platform height above the water surface. These and other features are made possible by a fast electric design that avoids certain problems of vessel type watercraft.



0) GB2008045A – STEERING VEHICLES

46) Family number: 1676546 (GB2008045A) © PatBase

Title: Steering vehicles

Priority: GB19770046857 19771110 GB19780043543 19781107

Family:

Publication number	Publication date	Application number	Application date
DE2848905 A1	19790517	DE19782848905	19781110
GB2008045 A1	19790531	GB19780043543	19781107
GB2008045 B2	19820609	GB19780043543	19781107

Probable Assignee: SHENDALE LTD

Assignee(s):(std)**:** SHENDALE LTD

Inventor(s):(std)**:** JACKMAN THOMAS RICHARD ; STONEBANKS TREVOR JAMES

Inventor(s): JAMES STONEBANKS TREVOR ; RICHARD JACKMAN THOMAS

International class (IPC 8–9)**:** B62D1/12 (Advanced/Invention); B62D1/02 (Core/Invention)

International class (IPC 1–7)**:** B62B3/00 B62D9/00

CPC: B62K5/02 B62B3/001 B62B2301/04 B62B2301/10

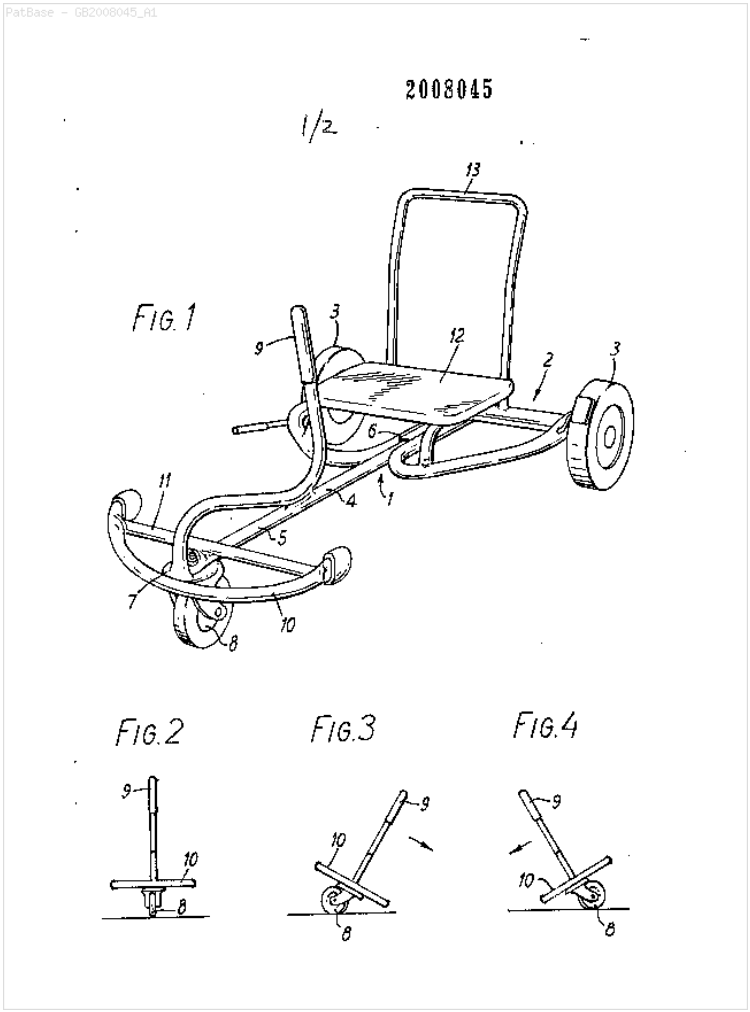
European class: B62B3/00A B62D1/12 B62K5/02 L62B301/04 L62B301/10

Classification Explorer

Cited documents: US3504934 A, US3252713 A, US1056357 A, SE182554 C1, GB1147005 A, FR500633 A, DE2322964 A1,

Forward Citations: WO05085054, USD528946, US7249778, US2015130160, JP2007526174, GB2361221,

Abstract:
Source: GB2008045A A vehicle comprises at least two wheels or runners (3, 8) one of which (8) is mounted in castor fashion to turn about a steering axis, steering of the vehicle being affected by tilting the steering axis from side to side, e.g. by handle 9. The vehicle may be of various kinds such as a child's 'go–cart' as shown or a shopping or luggage trolley.



0) AU2002302091A – SCAVENGER ENERGY CONVERTER SYSTEM ITS NEW APPLI...

47) Family number: 31799603 (AU2002302091A) © PatBase

Title: Scavenger energy converter system its new applications and its control systems

Priority: AU20020302091 20021122

Family:

Publication number	Publication date	Application number	Application date
AU2002302091 AA	20040610	AU20020302091	20021122

Probable Assignee: GAUDENCIO LABRADOR

Assignee(s):(std)**:** GAUDENCIO LABRADOR

Assignee(s): LABRADOR GAUDENCIO A

Inventor(s):(std)**:** LABRADOR GAUDENCIO A

Inventor(s): GAUDENCIO A LABRADOR

Agent(s): CHRYSILIOU IP

International class (IPC 8–9): F03D9/00 F03G6/00 (Advanced/Invention); F03D9/00 F03G6/00 (Core/Invention)

International class (IPC 1–7): F03D9/00 F03G6/00

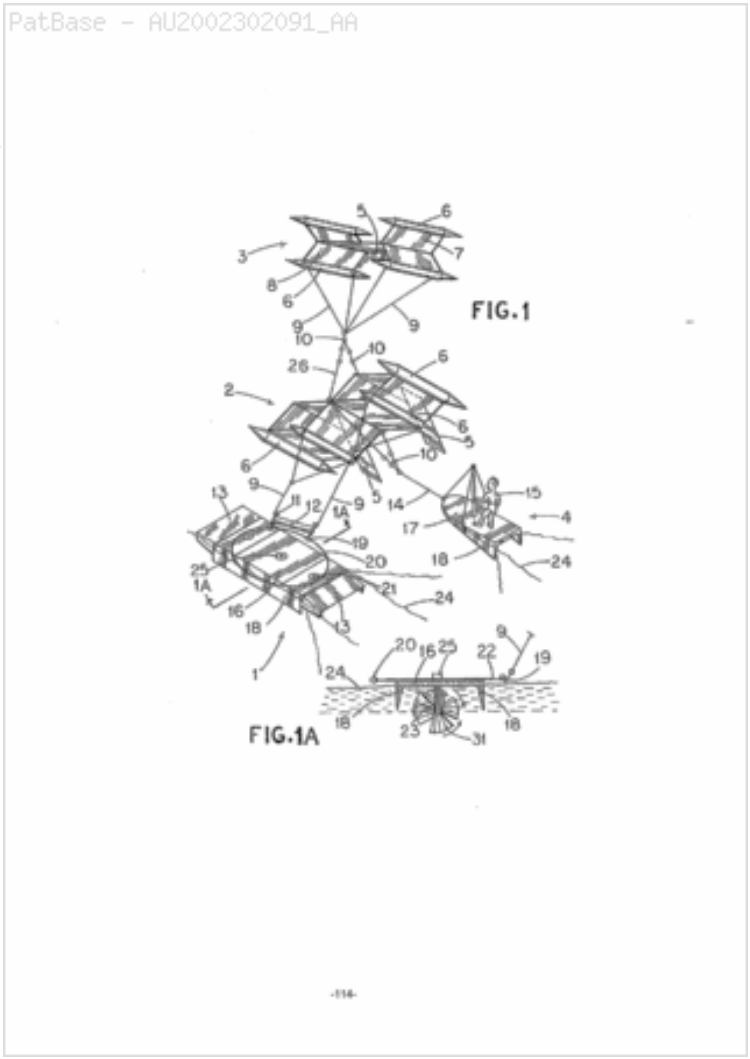
CPC: Y02B10/22 Y02B10/30 Y02B10/70 Y02E10/46 Y02E10/725

European class: Y02B10/22 Y02B10/30 Y02B10/70 Y02E10/46 Y02E10/72H

Classification Explorer

Forward Citations: WO14020367, US9287753, US8928160, US8164204, CN104813022,

Abstract:
Source: AU2002302091A What has been invented is a series of scientific applications of the wideface energy converter device, be it in the form of a wideface solar heat receiver or a wideface fluid impeder device. The wider is the solar heat receiver, the more solar power is available for conversion. The wider is the sail of the boat, the more wind is available to push the boat. Wherefore, the wideface solar trap made up of multi–layer transparent roofs covering a heat insulated box is used to heat up a radiator tubings that contain water. The multilayer transparent roof, having spaces in between sheets, prevents solar heat from backing out hence the trap becomes hotter and hotter because the inner sheet is not in contact with the cold wind. This solar trap is now used to heat up radiator pipes of compressed air coming from a gas turbine engine and then returned back to the exhaust turbine of same engine. Applying the principle of the wind sail, the turbine blades of the compressor and the turbine blades of the exhaust turbine are made wideface as much as possible to produce maximum impedance against the expanding exhaust hot air and to produce maximum push upon the fresh air being compressed. This wideface fluid impeder is now expanded into an underwater platform from One Acre or much more and attached to floating hotels, large/small boats, and floating sea walls, to prevent oscillation by the surfs. 36 9 Fig.1 104 Fig.I



48) Family number: 8990034 (US5214363A) © PatBase

Title: REMOTE ELECTRICAL STEERING SYSTEM WITH FAULT PROTECTION

Priority: US19900602430 19901022 US19930065125 19930520 WO1991US07846 19911017

Family:

Publication number	Publication date	Application number	Application date
CA2092531 AA	19930325	CA19912092531	19911017
CA2092531 C	20010313	CA19912092531	19911017
DE69116165 D1	19960215	DE19916016165	19911017
DE69116165 T2	19961010	DE19916016165T	19911017
EP0554387 A1	19930811	EP19910920656	19911017
EP0554387 A4	19930614	EP19910920656	19911017
EP0554387 B1	19960103	EP19910920656	19911017
JP6506887 T2	19940804	JP19910518613T	19911017
US5214363 A	19930525	US19900602430	19901022
US5361024 A	19941101	US19930065125	19930520
WO9206891 A1	19920430	WO1991US07846	19911017

Probable Assignee: SYNCRO CORP

Assignee(s):(std)**:** SYNCRO CORP ; BABCOCK IND INC ; BABCOCK IND INC WHOLLY OWNED S ; SYNCRO CORP AND BABCOCK IND INC

Assignee(s): SYNCRO CORP ARAB ALA US ; WISNER GARY EUGENE ; BABCOCK IND INC WHOLLY OWNED SUBSIDIARY ACC ; BABCOCK IND INC WHOLLY OWNED SUBSIDIARY ACCO CONTROLS GROUP INDUSTRIAL CONTROLS ; SYNCRO AND BABCOCK IND INC CORP ; BABCOCK IND INC WHOLLY OWNED SUBSIDIARY ACCO CONTROLS GROUP INDUSTRIAL CONTROLS MILAN TENN US ; HARRINGTON CHARLES WILLETT ; FKI IND INC ; MCCLELLAN JAMES WENDELL ; BABCOCK IND INC WHOLLY OWNED SUBSIDIARY ACCO CONTROLS GROUP INDUSTRIAL CONTROLS MILAN TENN

Inventor(s):(std)**:** HARRINGTON CHARLES ; HARRINGTON CHARLES W ; HARRINGTON CHARLES WILLETT ; MCCLELLAN JAMES W ; MCCLELLAN JAMES WENDELL ; MCCLELLAN WENDELL ; MCCLELLAN WENDELL JAMES ; WISNER GARY ; WISNER GARY E ; WISNER GARY EUGENE

Inventor(s): WISNER GARY EUGENE BOAZ AL 35957 US ; MCCLELLAN WENDELL JAMES JACKSON TN 38305 US ; HARRINGTON CHARLES WILLETT JACKSON TN 38305 US

Agent(s): MACRAE AND CO

Designated states: AT BE CA CH DE DK ES FR GB GR IT JP LU NL SE

International class (IPC 8–9): B63H25/02 B63H25/04 B63H25/24 B63H25/42 G05D1/02 (Advanced/Invention); F02B61/04 (Advanced/Non–invention); B63H25/00 B63H25/06 G05D1/02 (Core/Invention); F02B61/00 (Core/Non–invention)

International class (IPC 1–7): B63H25/02 B63H25/04 B63H25/24 B63H25/42 G05D1/00

CPC: B63H20/12 B63H25/02 B63H2025/022 B63H25/24 B63H21/265 F02B61/045

European class: B63H21/26B B63H25/24 R02B61/04B

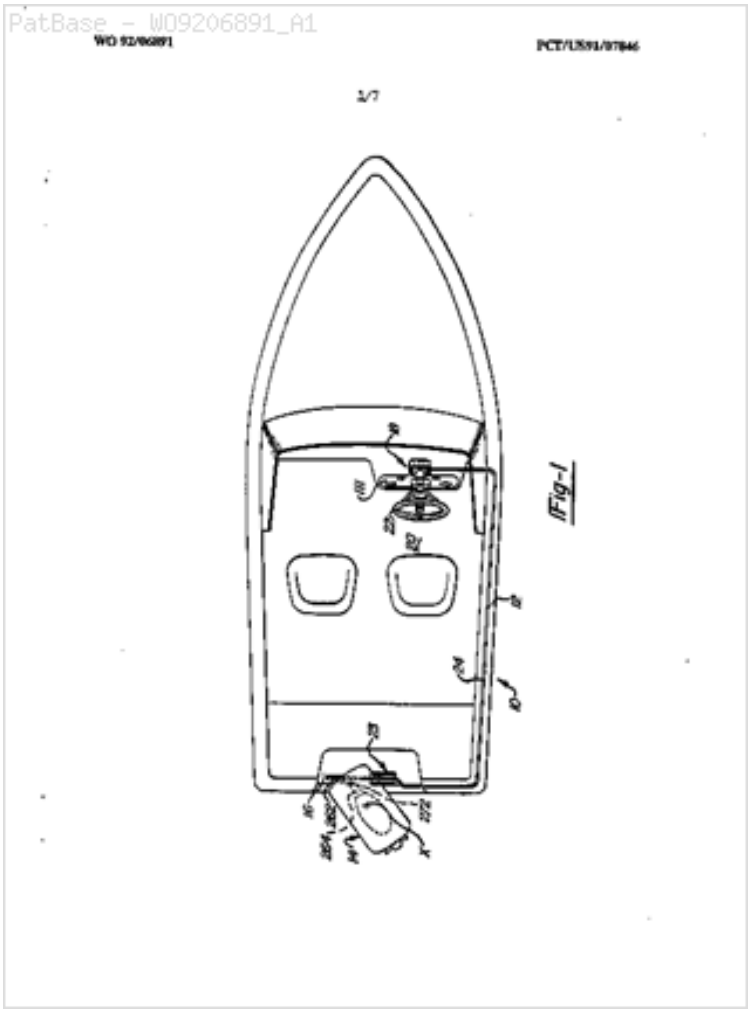
US class: 318/588 361/23

Classification Explorer

Cited documents: US5214363 A, US4824408 A, US4739236 A, US4636701 A, US4626757 A, US4595867 A, US4419084 A, US4413215 A, US4114074 A, US3995205 A, US3865063 A, US3798525 A, US3739738 A, US3695205 A, US3662243 A, US3571684 A, US3390614 A, US2958024 A, US2860297 A, US2505555 A, US2498223 A, US1965378 A, US1694237 A, GB2080751 A1,

Forward Citations: WO07035119, WO05115834, WO05102835, WO0015495, US9360846, US8408953, US8162706, US8145370, US8133084, US8046121, US7930986, US7872739, US7677937, US7666039, US7527537, US7497746, US7494390, US7465200, US7455557, US7452250, US7422496, US7367854, US7320629, US7303167, US7270068, US7267587, US7267069, US7224137, US7220157, US7137595, US6957990, US6734649, US6688927, US6597141, US6549831, US6446520, US6431928, US6230844, US6201483, US5864187, US5399949, US5361024, US2014312824, US2009241823, US2008278714, US2008125925, US2008119094, US2008115711, US2008113571, US2008085640, US2007224893, US2007105463, US2007093147, US2007089661, US2007066156, US2007066154, US2007049139, US2007046242, US2007046241, US2006217012, US2006180070, US2006138281, US2006019558, US2005282447, US2005215131, US2005184692, US2005064768, US2004056153, US2003089826, JP2006306176, JP2006306174, EP1937550, EP1937550, AU755331,

Abstract:
Source: US5214363A A remote, electrical steering system for marine vehicles including an electrical motor operable by a control and power circuit to rotate a drive screw having a screw connection to a nut in a drive tube for moving the drive tube in translation to cause steering movement of a motor/rudder with the control circuit sensing various fault conditions for placing the electrical motor in a brake condition to inhibit inadvertent steering and with the screw and nut connection resisting backlash from the motor/rudder to inhibit inadvertent steering and isolate the electrical motor and associated gearing from backlash loads.



0) US2015183319A – ELECTROMOTIVE FOUR–WHEEL MOTORCYCLE

49) Family number: 49459153 (US2015183319A) © PatBase

Title: ELECTROMOTIVE FOUR–WHEEL MOTORCYCLE

Priority: KR20100132413 20101222 KR20110000759 20110105 WO2011KR06263 20110825

Family:

Publication number	Publication date	Application number	Application date
CN103282269 A	20130904	CN201180064132	20110825
IN02451KN2013 A	20131206	IN2013KN02451	20130805
KR101034814 B1	20110516	KR20110000759	20110105
US2015183319 AA	20150702	US20110978460	20110825
WO12093763 A1	20120712	WO2011KR06263	20110825

Probable Assignee: OH BONGSEOK

Assignee(s):(std)**:** OH BONG SEOK ; OH BONGSEOK

Inventor(s):(std)**:** OH BONG SEOK ; OH BONGSEOK

Agent(s): HONG BYUNG EUI

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60K17/34 B62K11/10 B62K5/01 B62K5/08 B62L3/00 B62M7/12 G05D1/08 (Advanced/Invention) ; B62K11/10 B62L3/00 B62M7/12 G05D1/08 (Advanced/Non–invention)

CPC: B62L3/00 B62M7/12 B62K5/01 B60K17/34 B62K5/08 B62D11/04 B62K2204/00

European class: B62K11/10 B62K5/01 B62M7/12

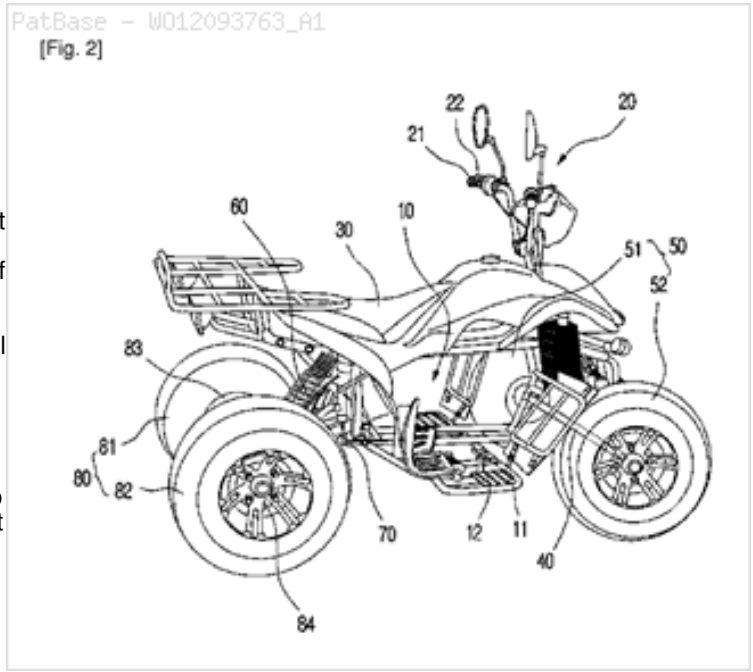
US class: 180/242

Classification Explorer

Cited documents: WO08106830 A1, US7866428 BA, US7757794 BB, US7565937 BB, US6202773 BA, US5294191 A, US2013015005 AA, US2011127093 AA, US2010059979 AA, US2007278023 AA, US2007144796 AA, US2006175098 AA, KR20090062321 A, KR200371695 Y1, JP6219168 A2, JP2004148936 A2, CN101559727 A, CN101531144 A,

Abstract:

Source: US2015183319A The present invention relates to a four−wheel all−terrain motorcycle. The four−wheel motorcycle includes: a body coupled to a frame; an operating part disposed on a front side portion of the body, the operating part including handles on both sides thereof to steer wheels and control transmission of power; a sheet part coupled to a side of an upper portion of the body; a front wheel shaft disposed on a front of the body; front wheels including first and second wheels respectively coupled to both ends of the front wheel shaft; a first rear−wheel connecting body coupled to one side of the rear of the body; a second rear−wheel connecting body coupled to the other side of the rear of the body; rear wheels including a third wheel coupled to the first rear−wheel connecting body and a fourth wheel coupled to the second rear−wheel connecting body; a first motor coupled to a side of the third wheel to provide torqueto the third wheel; a second motor coupled to a side of the fourth wheel to provide torqueto the fourth wheel; and a controller electrically connected to the first and second motors to simultaneously or individually control the rotation speed of the first and second motors. According to the present invention, the controller may simultaneously or individually control the rotation speed of the first and second motors to allow stable driving on roads having rough road surfaces. Also, a curved path driving detection unit detects a rotation direction and angle, and the controller individually controls the rotation speed of the first and second motors according to the detected values so that an inner wheel has a rotation speed less than that of an outer wheel. Thus, when a vehicle is driven along a curved path, stability may be improved. Also, when an emergency stop is required, it may be easily executed by a user who is accustomed to driving an automobile because it is performed by applying a foot brake system generally found in automobiles. In addition, a foot brake and a hand brake may be operated at the same time to improve braking power.



0) GB9823827A – HUMAN PROPELLED RECREATIONAL CART

50) Family number: 14505270 (GB9823827A)

© PatBase

Title: Human propelled recreational cart

Priority: CA19992287827 19991101 GB19980023827 19981102

Family:

Publication number	Publication date	Application number	Application date
CA2287827 AA	20000502	CA19992287827	19991101
GB9823827 A0	19981223	GB19980023827	19981102

Probable Assignee: JOBIDON RICHARD

Assignee(s):(std)**:** JOBIDON RICHARD

Inventor(s):(std)**:** JOBIDON RICHARD

Agent(s): FINCHAM ERIC

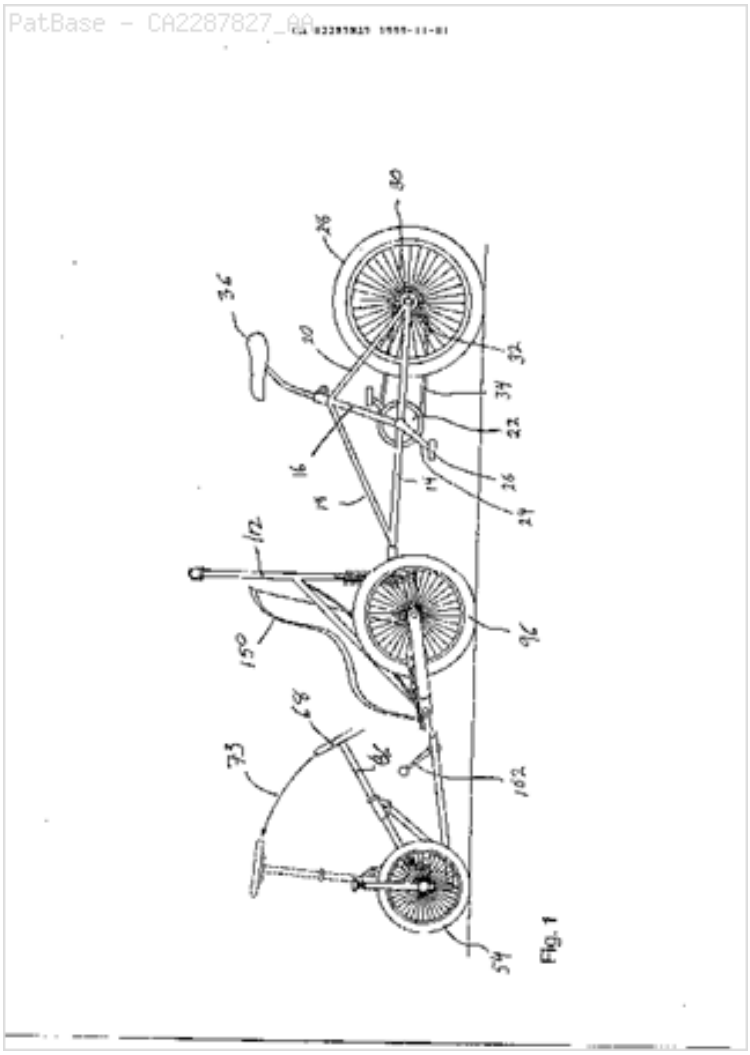
International class (IPC 8–9)**:** B62B13/00 B62K17/00 B62K5/00 B62K5/003 (Advanced/Invention); B62B13/00 B62K17/00 B62K5/00 (Core/Invention)

International class (IPC 1–7)**:** B62B13/00 B62K17/00 B62K5/00

Classification Explorer

Forward Citations: US7011320,

Abstract:
Source: CA2287827A There is provided a human propelled vehicle having a front cart portion and a rear cycle portion, the rear cycle portion comprising a frame having a single wheel mounted thereon, and a seat, pedals being operatively connected to drive the wheel in a conventional bicycle arrangement, the front cart portion having a plurality of ground contact members such as wheels, a seat or the like for a passenger, a steering assembly to steer the ground contact members and connecting means connecting the rear cycle portion and front cart portion which permit the rotational movement the rear cycle portion and the front cart portion and also a tilting motion for the rear cycle portion.



0) US4994973A – CONTROL SYSTEM FOR INDUSTRIAL USE VEHICLES

51) Family number: 2885941 (US4994973A) © PatBase

Title: Control system for industrial use vehicles

Priority: JP19880331098 19881228 JP19880331099 19881228

Family:

Publication number	Publication date	Application number	Application date
DE68923946 D1	19950928	DE19896023946	19891222
DE68923946 T2	19960111	DE19896023946T	19891222
EP0376206 A2	19900704	EP19890123807	19891222
EP0376206 A3	19911016	EP19890123807	19891222
EP0376206 B1	19950823	EP19890123807	19891222
JP2179202 A2	19900712	JP19880331098	19881228
JP2179203 A2	19900712	JP19880331099	19881228
JP2764594 B2	19980611	JP19880331099	19881228
KR940009269 B1	19941006	KR19890019407	19891223
US4994973 A	19910219	US19890454975	19891222

Probable Assignee: NIPPON YUSOKI CO LTD

Assignee(s):(std)**:** NIPPON YUSOKI CO LTD

Assignee(s): NIPPON YUSOKI CO LTD NAGAOKAKYO KYOTO JP ; NIPPON YUSOKI KK

Inventor(s):(std)**:** MAKINO NORIAKI ; MAKINO KENSHO ; KIKUCHI SANPEI ; KIKUCHI SAMPEI

Inventor(s): MAKINO NORIAKI OOTSU SHI SHIGA JP ; KIKUCHI SAMPEI FUSHIMAI KU KYOTO SHI KYOTO JP

Designated states: DE FR GB

International class (IPC 8–9)**:** B60L15/28 B66F9/24 G07C5/08 (Advanced/Invention); B60L15/20 B66F9/24 G07C5/00 (Core/Invention)

International class (IPC 1–7)**:** B60L15/28 B60R16/02 B66F9/06 B66F9/24 G06F15/20 G07C5/08

CPC: Y02T10/7258 B66F9/24 G07C5/0816

European class: B66F9/24 G07C5/08P Y02T10/72D

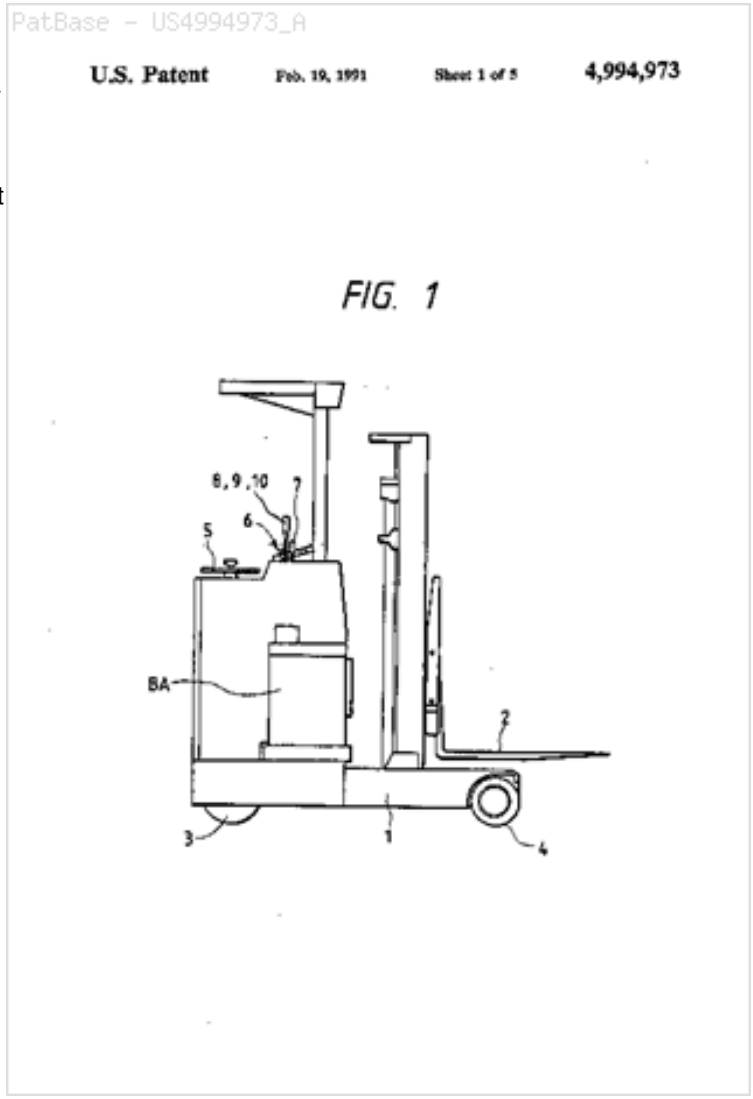
US class: 414/273 701/50

Classification Explorer

Cited documents: US4742468 A, US4547844 A, US4520419 A, US4376298 A, US4354568 A, JP62262602 A2, JP62115783 U1, JP62115783 U, JP62012306 A2, JP52149716 A2, GB2099184 A1, DE3306463 A1,

Forward Citations: WO9921065, WO9729474, WO9204693, WO15168336, WO15099268, WO07126310, WO0170619, US9533864, US8246008, US8240230, US7606648, US7235948, US6755267, US6052633, US6003455, US5906648, US5880710, US5687081, US5638387, US5552988, US5489828, US2006192519, US2006169097, US2006169093, US2005256607, NL1031744, GB2451986, GB2451986, GB2360500, GB2360500, EP0664273, EP0468805, DE10056552,

Abstract:
Source: US4994973A A control system for industrial use vehicles such as battery powered fork lifts in which regenerative energy is saved when the direction of travel is reversed. The control system functions to moderate the current drain on the battery. The control system comprising: a travel signal input means for generating an output signal from a travel accelerator, a cargo−handling signal input means for generating a cargo−handling signal, a monitor voltage input means for detecting a voltage at each of a plurality of monitor points and for outputting a detected signal, a sensor input means for generating an output signal from each sensor, monitor input means for generating an output signal from each monitor, and a microprocessor controller for receiving the output signals of the respective means and for outputting predetermined control signals.



0) WO11113091A1 – A COMBINED CLUTCH AND BRAKE ACTUATOR FOR A MOTO...

52) Family number: 49605749 (WO11113091A1) © PatBase

Title: A COMBINED CLUTCH AND BRAKE ACTUATOR FOR A MOTORIZED VEHICLE WHICH MAY BE OPERATED BY EITHER A HANDLE BAR OPERATED LEVER OR A SEPARATE PEDAL. THE COMBINED ACTUATOR LINKING IN TO A 'FLY BY WIRE' TYPE ELECTRONIC CONTROL SYSTEM WITH AT LEAST ONE DYNAMIC

Priority: AU20100901066 20100315

Family:

Publication number	Publication date	Application number	Application date
WO11113091 A1	20110922	WO2011AU00286	20110314

Probable Assignee: INNOVATIVE MOTORCYCLE TECHNOLOGY PTY LTD

Assignee(s):(std)**:** HUTCHINSON OWEN ; INNOVATIVE MOTORCYCLE TECHNOLOGY PTY LTD

Inventor(s):(std)**:** HUTCHINSON OWEN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** B60K17/00 B60K20/00 B60K23/00 B60T1/06 B60T7/12 B60T7/22 B60W10/02 B60W10/184 B60W30/18 B62D1/00 B62D6/00 (Advanced/Invention)

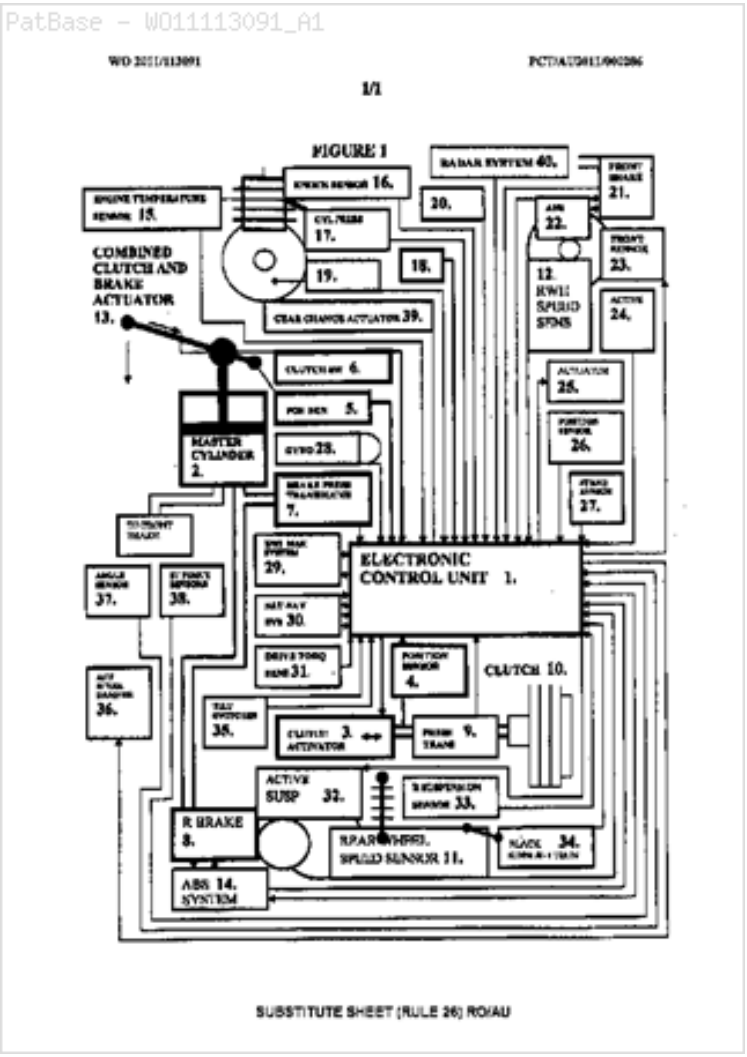
CPC: B60W30/18181 B60K23/02 B60T7/22 B60T8/1706 B60T8/1755 B60T2210/36 B60T2230/03 B60T2260/04 B60W10/02 B60W10/184 B60W30/18136

European class: B60T7/22 B60T8/1755 B60T8/17P7 B60W10/02 B60W10/184 B60W30/18R9F B60W30/18W L60K23/02 L60T210/36 L60T230/03 L60T260/04

Classification Explorer

Cited documents: US6253140, US5058014, US2005258011, CN2815853,

Abstract:
A means by which the control of both the clutch and brake functions may be achieved by the actuation of a single lever or pedal.



0) WO9846474A2 – PORTABLE SCOOTER TROTTINETTE PORTABLE

53) Family number: 15103134 (WO9846474A2) © PatBase

Title: PORTABLE SCOOTER

Priority: US19970843423 19970415 US19980013322 19980126 WO1998US07360 19980414

Family:

Publication number	Publication date	Application number	Application date
AU199868989 A1	19981111	AU19980068989	19980414
EP0973674 A2	20000126	EP19980914691	19980414
TW391938 B	20000601	TW19980105698	19980415
WO9846474 A2	19981022	WO1998US07360	19980414
WO9846474 A3	19981217	WO1998US07360	19980414

Probable Assignee: EMPOWER CORP

Assignee(s):(std)**:** EMPOWER CORP ; LANG JEFFREY H ; NIELSEN PETER ; SCHOONMAKER JAMES ; STAELIN DAVID ; ULRICH NATHAN ; WALLACE DAVID ; STAELIN PAUL H

Inventor(s):(std)**:** DAVID STAELIN ; DAVID WALLACE ; JAMES SCHOONMAKER ; JEFFREY H LANG ; LANG JEFFREY H ; MARKER JAMES SCHOON ; MARKER JAMES SCHOON AND ; NATHAN ULRICH ; NIELSEN PETER ; NIELSON PETER ; PAUL H STAELIN ; PETER NIELSEN ; SCHOONMAKER JAMES ; STAELIN DAVID ; STAELIN PAUL H ; ULRICH NATHAN ; WALLACE DAVID

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HU ID IE IL IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZW

International class (IPC 8–9): B62K15/00 B62K3/00 (Advanced/Invention); B62K15/00 B62K3/00 (Core/Invention)

International class (IPC 1–7): B62K15/00

CPC: B62K3/002 B62K15/006

European class: B62K15/00F B62K3/00B

Classification Explorer

Cited documents: US5388659 A, US5265695 A, US5097922 A, US5039121 A, US4570739 A, US4087108 A, US1951277 A,

Forward Citations: WO15086274, WO13122461, WO12163789, WO08090309, WO04093595, WO04045943, WO0236419, WO0230730, WO0115967, US9545963, US9529365, US9477228, US9459627, US9442492, US9442491, US9442486, US9429955, US9411339, US9411336, US9400502, US9268333, US9205890, US9188984, US9168966, US8740230, US8662508, US8636293, US8562005, US8467941, US8453768, US8322477, US8170780, US7979179, US7962256, US7900725, US7857088, US7757794, US7740099, US7712937, US7690452, US7690447, US7546889, US7407175, US7275607, US7210544, US7182166, US7174976, US7090040, US7023330, US7004271, US7000933, US6969079, US6915878, US6874591, US6868931, US6866107, US6827163, US6815919, US6779621, US6609584, US6538411, US6431302, US6347681, NL2008301, GB2453796, GB2453796, ES2257894, EP2762395, EP2223847, EP2025587, EP1736400, EP1565371, EP1401543, EP1096980, EP1004505, EP1004505, CN104379437, CN104024098, AT411747,

Abstract:
A portable, personal scooter is disclosed which is small, lightweight, and foldable for enhanced portability. A motorized version is controlled by a controller sensitive to platform load, among other things. Brake and suspension systems are shown, as are skids ahead of the rear wheels for navigating road hazards. Advantageous combinations of pivotable bearings and joints enable the scooter to be tilt−steered and easily folded for portage and storage. The arrangement of bearings and pivots provides for several folded configurations. The "half−folded" configuration is partially collapsed and permits the user either to carry it or to tow it on its rear wheels, much like wheeled airport luggage. The "fully−folded" configuration can be the size of a briefcase and easily carried, stored, or shipped. A collapsible brace provides rigidity for the steering shaft while allowing it to be turned for steering and to be tilted laterally. A special wheel suspension mechanism helps the front road wheel pass over an obstacle such as a curb. Wheel braking and suspension systems are also disclosed. Methods of collapsing and transporting the scooter are also disclosed.

PatBase - WO9846474_A2

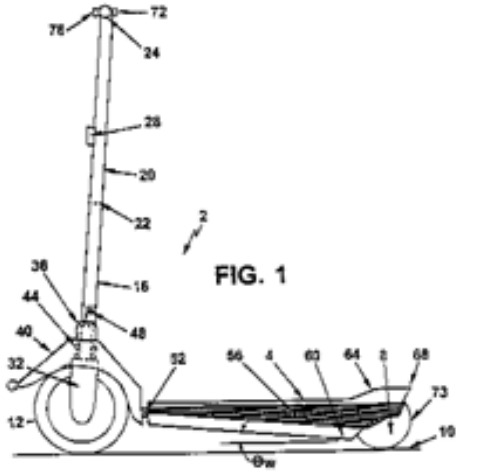


FIG. 1

FIG. 2

0) GB1165904A – IMPROVEMENTS IN OR RELATING TO AIR TRANSPORTABL...

54) Family number: 66289 (GB1165904A) © PatBase

Title: Improvements in or relating to Air Transportable Vehicles

Priority: GB19660030506 19660707

Family:

Publication number	Publication date	Application number	Application date
AU2410767 A1	19690109	AU19670024107	19670705
BE701054 A	19680108		19670707
GB1165904 A	19691001	GB19660030506	19660707

Probable Assignee: MATBRO LTD

Assignee(s):(std)**:** MATBRO LTD

Assignee(s): MATHEO LTD ; MATBRO LIMITED

Inventor(s):(std)**:** MATHEW LEONARD STANLEY

Inventor(s): LEONARD STANLEY MATHEW

International class (IPC 8–9)**:** B60K17/34 B60K5/00 B62D13/00 B62D21/18 B62D5/10 B62D51/00 B66F9/06 B66F9/08 (Advanced/Invention)

International class (IPC 1–7)**:** B60K17/34 B60K5/00 B62D49/00 B62D51/00 B66F9/06

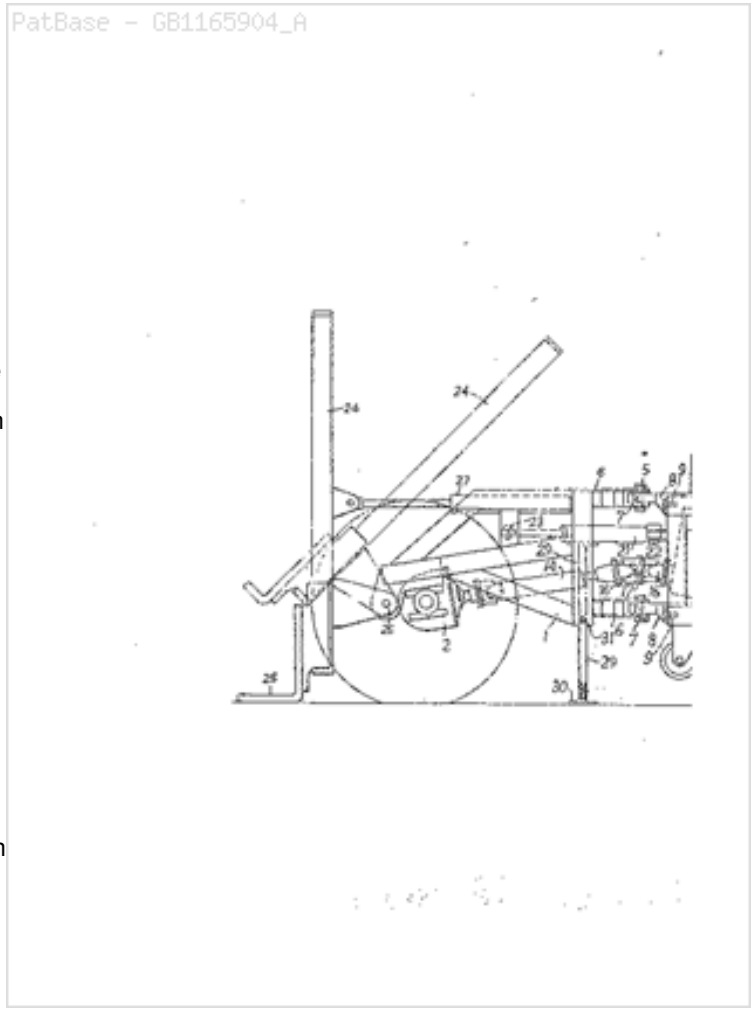
CPC: B60K5/00 B62D51/00

European class: 63C19 B60K5/00 B62D51/00

Classification Explorer

Forward Citations: WO07018471, US7861819, AU2006277084,

Abstract:
Source: GB1165904A 1,165,904. Articulated vehicles. MATBRO Ltd. 29 June, 1967 [7 July, 1966], No. 30506/66. Heading B7H. In an articulated fork lift truck divisible into separate units for transport by air, front and rear frame sections 1, 3 are separably connected about a vertical steering axis and are supported by respective axles 2, 4, an hydraulic steering ram 21 is connected between the sections 1, 3, an engine 10 on the rear section 3 drives the wheels on both axles 2, 4 through transmission means arranged such that the drive to the front axle 2 can be disconnected without disconnecting the drive to the rear axle 4, an auxiliary wheel 40 supports the rear section 3 when detached from the front section 1 and means are provided for steering the detached rear section 3 and for supporting the detached front section 1 in a horizontal position. A folding frame 41, 43 carries the auxiliary wheel 40, and a safety wheel 45 engages the ground should the rear section 3 tilt forwardly. The rear section 3 is steered by differentially braking the wheels on the rear axle 4, or by means of a tiller which steers the auxiliary wheel 40. A transfer gearbox 12 coupled to the engine 10 through a shaft 11 drives the rear axle 4 through a shaft 15 and the front axle 2 through a shaft 14 and coupling members 16 connected by bolts 17. Brackets 8 detachably secured to the rear section 3 by bolts 9 include tongues 7 connected by vertical pivot–pins 5 to forks 6 on the front section 1. A mast 24 mounted on the front section 1 so as to be tiltable by an hydraulic ram 27 carries a lifting frame 25 which is lowered to support the front section 1 in conjunction with a support leg 29. The mast 24 may also be tiltable about a longitudinal axis and displaceable laterally of the front section 1.



0) DE2914973A1 – STRASSENGAENGIGES FAHRZEUG, INSBESONDERE FUER D...

55) Family number: 1787475 (DE2914973A1) © PatBase

Title: STRASSENGAENGIGES FAHRZEUG, INSBESONDERE FUER DEN OEFFENTLICHEN PERSONENNAHVERKEHR SUSPENSION SYSTEM FOR BUS AXLE – HAS LIMITED STEERING MOVEMENT FOR AUTOMATIC GUIDANCE

Priority: DE19792914973 19790412

Family:

Publication number	Publication date	Application number	Application date
DE2914973 A1	19801016	DE19792914973	19790412

Probable Assignee: DAIMLER BENZ AG

Assignee(s):(std)**:** DAIMLER BENZ AG

Inventor(s):(std)**:** BINDER HELLMUTH DIPL ING

International class (IPC 8–9)**:** B62D1/26 (Advanced/Invention); B62D1/00 (Core/Invention)

International class (IPC 1–7)**:** B62D1/26

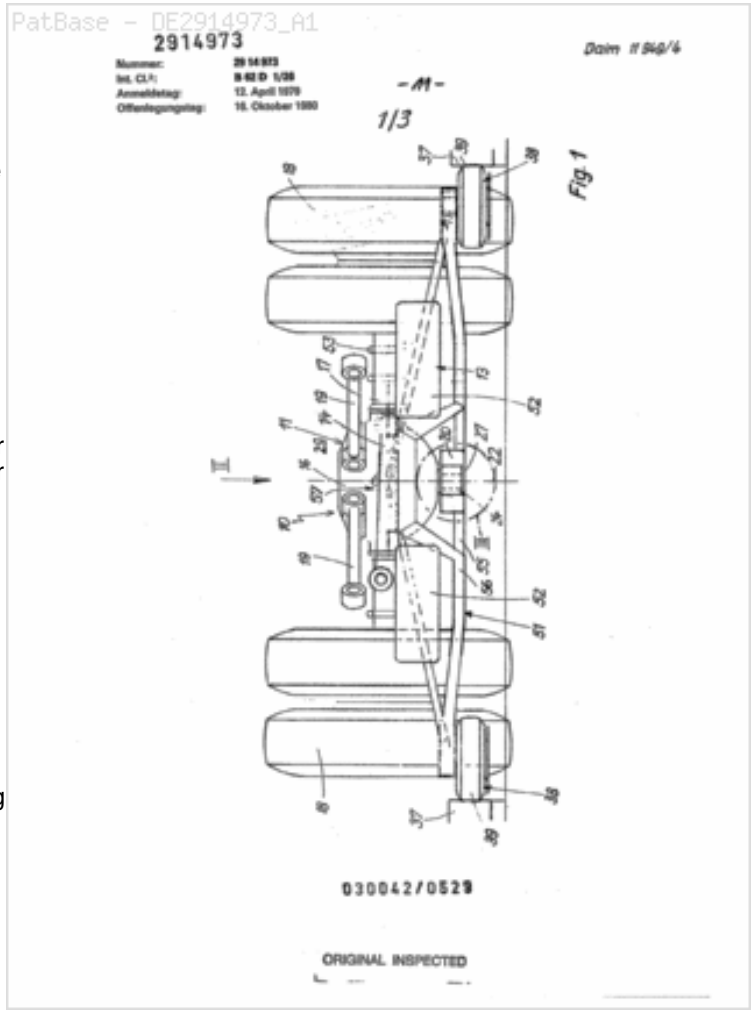
CPC: B62D1/265

European class: B62D1/26B

Classification Explorer

Forward Citations: DE4407999,

Abstract:
Source: DE2914973A1 Ansprueche tS Strassengaengiges Fahrzeug, insbesondere fuer den oef fentlichen Personennahverkehr, mit einer in sich unlenkbaren, aber um eine vertikale Achse relativ zum Fahrzeugaufbau schwenkbaren Fahrzeugachse Schwenkachse –,ferner mit richtungsgebenden Ein richtungen fuer die Schwenkachse, insbesondere mit am Fahrzeug beidseitig angeordneten, zusammen mit fahrbahnseitigen, spurbestimmenden, vertikalen Querfuehrungsstegen unmittelbar auf die Schwenklage der Schwenkachse einwirkenden Querfuehrungsrollen mit vertikaler Abrollflaeche, ferner mit einem Paar von dreieckfoermig etwa in einer Horizontalebene angeordneten Lenkerstangen, die mittig am Achskoer per der Schwenkachse, vorzugsweise an dessen Ober seite, sowie am Fahrzeugaufbau beweglich angreifen und mit dem Schnittpunkt ihrer Laengsachsen etwa die Grundrisslage des Schwenkmittelpunktes bestim men, und mit einem im Grundriss etwa lagegleich dazu an der gegenueberliegenden Umfangsseite des Achskoerpers angeordneten Schwenkzapfen, an dem gelenkig ueber eine den Schwenkzapfen uebergreifen de Lagerbuechse, Anlenkauge od. An axle support for a bus with automatic steering control has the centre of the axle pivoted in a support housing (24) by two concentric bearing pins (26). A steering control for the axle has the axle pivoted about a central bolt (25) on which the axle is suspended in the bearing. The bearing is simple and robust. It allows the axle to tilt and to steer, with the steering action controlled by lateral guide wheels in contact with the track edges and with the steering brake released.



0) GB444095A – GYROPLANE APPARATUS ADAPTED FOR ROAD TRAVEL

56) Family number: 18932848 (GB444095A) © PatBase

Title: Gyroplane apparatus adapted for road travel

Family:

Publication number	Publication date	Application number	Application date
GB444095 A	19360313	GB19350018156	19350625

Probable Assignee: ANDRE THAON

Assignee(s):(std)**:** ANDRE THAON

International class (IPC 8–9)**:** B64C37/00 (Advanced/Invention); B64C37/00 (Core/Invention)

International class (IPC 1–7)**:** B64C27/04

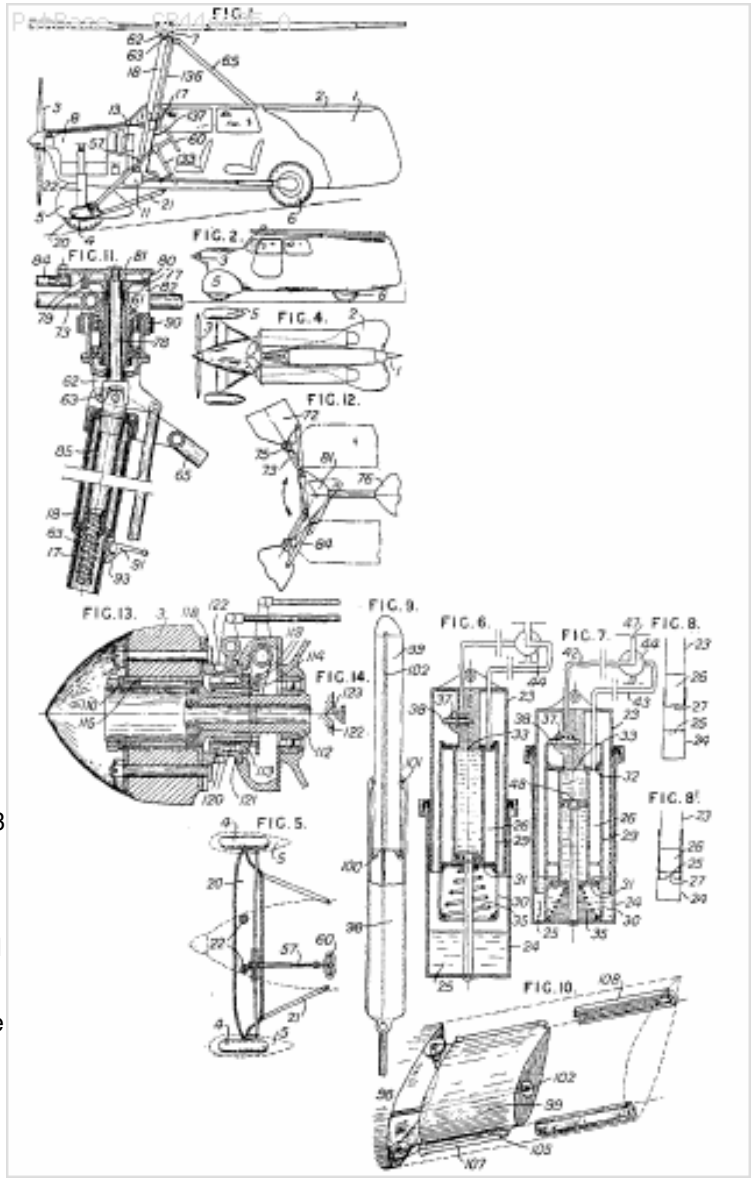
CPC: B64C37/00

European class: B64C37/00

Classification Explorer

Forward Citations: US3050274, GB2409672, GB2409672,

Abstract:



Source: GB444095A [Class 4] [See also Group XXXII] A gyroplane modified to permit of selfpropulsion on roads comprises at least one driving wheel, one or a pair of steering−wheels and means for reducing the over−all size of the craft to a size approximating that of an ordinary road vehicle. The machine shown is of the type known under the Registered Trade Mark " Autogiro." It comprises a main body, Figs. 1 and 4, terminating at the rear in a fin 1 and a fixed tail plane 2, and having an airscrew 3 arranged at the nose. Suspension means comprise a front axle with steering wheel 4 having streamline fairings 5, and a rear driving wheel 6. A rotor 7 is supported above the body by a collapsable pyramid. A motor 8 may be coupled to airscrew 2 and by means of bevel gear transmission 13 and a gear box 11 either to rotor 7 or to rear wheel 6. Gear box 11 provides for two forward speeds and reverse drive. When the apparatus is desired to operate as a road vehicle, the rotor blades are folded and reduced in span, the rotor support is collapsed to permit of the blades being nested in the position shown in Fig. 2, the length of the front axle supporting struts is reduced to level the body, and the airscrew is uncoupled from the engine and hold in an athwartships position. Rotor Assembly.−The rotor comprises a hub 61, Fig. 11, mounted in ball bearings on a support 62 pivoted on pin 63 carried by a triangular pyramid comprising pivoted stays 65, Fig. 1, and telescopic tubular member 17, 18 which is pivotally mounted on gear box 11. Three rotor blades are provided, of which two blades 72, Fig. 12, are connected by vertical hinge pins 75 to links 73 in turn pivoted about horizontal axes to hub 61 whilst the third 76 is connected to the hub without the intermediary of a hinge pin. Hinge pins 75 permit of blades 72 being folded rearwardly to the position shown in Fig. 4. Means for securing and folding blades 72 comprise links 84 connected by ball−and−socket joints to the blades and to a plate 81 mounted on shaft 78 and adapted to be rotated when required for spreading the blades by means of a disc 77 having studs 79 co−operating with studs 80 on plate 81. Disc 77 is driven directly or through a planetary gear by shaft 78 which is connected by a universal joint with a tube 85 journalled in telescopic support 18. At the lower end of tube 85 is fixed a nut through which screws a threaded shaft 83. When it is desired to raise the rotor from the position of Fig. 2 to that of Fig. 1, shaft 83 is driven through gearbox 11 by engine 8 thereby screwing the nut of tube 85 together with the rotor assembly upward until a stop−member 84 at the end of the threaded shaft 83 comes into contact with the nut. Further rotation of shaft 83 now rotates tube 85, shaft 78, and disc 77 which last acts through the stops 79, 80 to spread blades 72 into the flying position in which the stops 79 also engages abutments 82 formed on hub 61 and thus provide a rotor driving connection. The various parts are so designed that the torque required to turn the rotor is greater than that required to spread blades 72 which is in turn greater than that required to raise the rotor to flying position. In order to fold the blades and lower the rotor, hub 61 is first stopped by a brake 90 in the position in which blade 76 extends rearwardly, the rotor is next tilted back whereupon blades 72 swing rearwardly under the action of gravity, and finally the rotor is allowed to fall under its own weight, the rate of descent being controlled by a hand brake 91. Brake 91 embodies a catch element 93 which automatically falls into a notch in tube 17 at the completion of the upward movement of tube 18. The rotor blades, Figs. 9 and 10, each consist of an inner element 98 and an outer element 99 slidable therein. The outer end of element 99 is connected by an elastic cord or like device 102 to the inner end of element 98. The blade is thus contracted automatically when the rotor stops and is extended automatically upon rotation by the action of centrifugal force. Elements 99 are guided on the inner elements 98 by rollers 100, 101 and by the co−operation of tongues 107 with correspondingly grooved member 108 secured on the inner sides of the leading and trailing edges of element 98. Positive stops are formed by male wedge surfaces 105, on tongues 107 which engage corresponding female surfaces on members 108. Undercarriage stern and driving gear.−The landing gear comprises a streamlined axle 20, Fig. 5, secured to the body by radius rods 21 and by vertical shock absorbing struts 22 rigidly secured to the axle so as to absorb braking torque. Each strut 22 has two operating positions, one for flight, and one for road use as shown diagrammatically in Figs. 8 and 8 <1> . In each position the strut is arranged to provide the requisite

suspension characteristics. In both cases the resilient support is provided by piston 23 movable in a cylinder 24 containing compressed air. A certain quantity of liquid 25 is placed in cylinder 24 and piston 23 is formed with a chamber 26 having a valve 27 which remains closed in the extended position of the strut, Fig. 8, and is opened to effect the shortening of the strut for road use. In the former case shock−absorbing is ensured by the presence of air compressed between the liquid 25 and the bottom of piston 23, in the second case by the air compressed between liquid 23 and the upper closure of chamber 26. In a constructional form, Figs. 6 and 7, a certain quantity of oil 25 is placed at the bottom of cylinder 24. The chamber 26 of piston 23 is constituted by a tube 29 which surrounds, and is adapted for sliding movement relative to, a hollow stem 33 centrally secured to piston 23. The annular chamber 26 between tube 29 and stem 33 is sealed in the position shown in Fig. 7 by washers 31, 32 and a spring 35 serves to prevent entry of air via slits 30 into the chamber. Chamber 26 is, however, in communication via pipe 43 and four−way control valve 44 with a compressed air tank 47. Thus, whilst air from cylinder 24 cannot enter tube 26, air from tank 43 may pass leathers 31, 32 to compensate for leakage. The two other leads from valve 44 respectively communicate with the atmosphere and with the interior of piston 23 by way of pipe 42 and automatic valve 37. The hollow stem 33 is filled with oil and in combination with a piston 48 serves as a dashpot. In order to reduce the length of the strut for road use, valve 44 is turned to shut off the air supply to pipe 43 and to place pipe 42 in communication with the atmosphere. The pressure in piston 23 opens valve 37 and the piston sinks downwardly under its own weight beyond the position shown in Fig. 7. Chamber 26 now communicates with the cylinder 24 through slits 30. In this position valve 37 is held upon by engagement of its head 38 with the wall of tube 29. To bring the strut into the operating position of Fig. 8, valve 44 is turned to the position shown admitting compressed air into the leg from tank 47 thereby raising piston 23 until valve 37 shuts by reason of its head 38 clearing the tube 29. Steering and controlling.Wheels 4, Fig. 5, which together with their casings are adapted to steer the machine on the ground to act as rudders in flight are turned by a hand wheel 60 carried by a control column 133, Fig. 1, by means of rack−and−pinion gear. Steering wheel column 57 is of telescopic construction and is universally jointed to permit of movements of axle 20 relative to the body and of fore−and−aft movement of the wheel to tilt the rotor for control in flight. The rotor tilting control includes members 136, 137, Fig. 1, which are locked in flight but which slide one over the other when the rotor is allowed to fall to the nested position. Means are provided for holding control column 133 stationary when the machine is on the road. Airscrew drive.−Airscrew 3, Fig. 13, is driven from the engine through a coupling providing means for obtaining positive drive, drive through a clutch, braking of the airscrew. and locking of the airscrew in a transversal position. Airscrew hub 115 is rotatably mounted on a bearing sleeve 110 keyed to crank−shaft 112. Slidable on sleeve 110 under control of a fork 114 is a coupling member 113 formed with dog clutch teeth 120 and a coned surface 119 which are respectively engageable with corresponding teeth 120 and coned surface 119 formed on driving plate 118 secured to the airscrew hub. Plate 118 is formed with a continuous shoulder 121 and a shoulder 122 which is interrupted by two notches 123. A pivotally mounted member 124 is adapted to be engaged with the face of shoulder 121 in order to brake the airscrew and to stop the airscrew in a given position when oppositely moved to engage in notch 123.

57) Family number: 1716227 (DE1605875A1)

© PatBase

Title:	RODELSCHI DOWNHILL SKIING (Machine translation)
Priority:	DE1968R047704 19680102

Family:

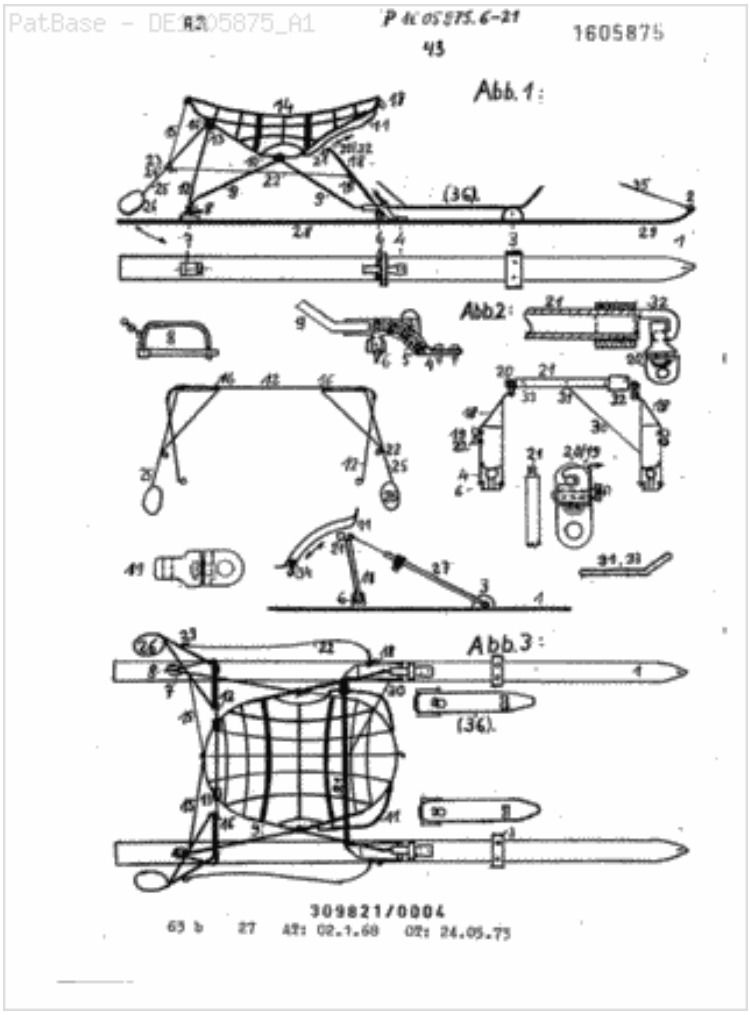
Publication number	Publication date	Application number	Application date
DE1605875 A1	19730524	DE19681605875	19680102

Probable Assignee:	RIEMER OSKAR
Assignee(s):(std):	RIEMER OSKAR
Inventor(s):(std):	RIEMER OSKAR
International class (IPC 8–9):	B62B13/08 (Advanced/Invention); B62B13/00 (Core/Invention)
International class (IPC 1–7):	B62B13/08 B62B13/12
CPC:	B62B13/08
European class:	B62B13/08

Classification Explorer

Abstract:
Source: DE1605875A1 (Claim 1)
Hauptanspruch bezueglich cles–Rodelschis. 1, Der Rodelschi (abgekuerzt;. RS) ist dadurch gekennzeichnet, dass er ein wirksam verkantbares, lenkbares und bremeb–aresq mit einer Notbremsautomatik ausgestattetes Fahrzeug ist, das durch einen sDeziellen Sitz in der Lage ist, Berghaenge auch schraeg abwaerts EMI0033.

Machine translation: (Claim 1) main claim in respect td –cles toboggan ski. 1, the ski sled (abbreviated,. RS) is characterized in that it effectively one verkantbares, steerable and bremeb–aresq emergency braking system is equipped with a vehicle that is a sDeziellen seat in a position to even mountain–slopes obliquely downwards EMI0033.



0) DE3726433A1 – HINGE FITTING FOR SEATS, IN PARTICULAR MOTOR–VE...

58) Family number: 6049024 (DE3726433A1) © PatBase

Title: Hinge fitting for seats, in particular motor–vehicle seats with an adjustable backrest

Priority: DE19873726433 19870808

Family:

Publication number	Publication date	Application number	Application date
DE3726433 A1	19890216	DE19873726433	19870808
FR2619061 A1	19890210	FR19880009210	19880707
FR2619061 B1	19930730	FR19880009210	19880707

Probable Assignee: KEIPER RECARO GMBH CO

Assignee(s):(std): KEIPER RECARO GMBH CO

Assignee(s): KEIPER RECARO GMBH AND CO

Inventor(s):(std): BERGHOF HANS JOACHIM ; BERGHOFF HANS JOACHIM

Inventor(s): HANS JOACHIM BERGHOFF

International class (IPC 8–9): B60N2/22 (Advanced/Invention); B60N2/22 (Core/Invention)

International class (IPC 1–7): B60N1/06

CPC: B60N2/2227

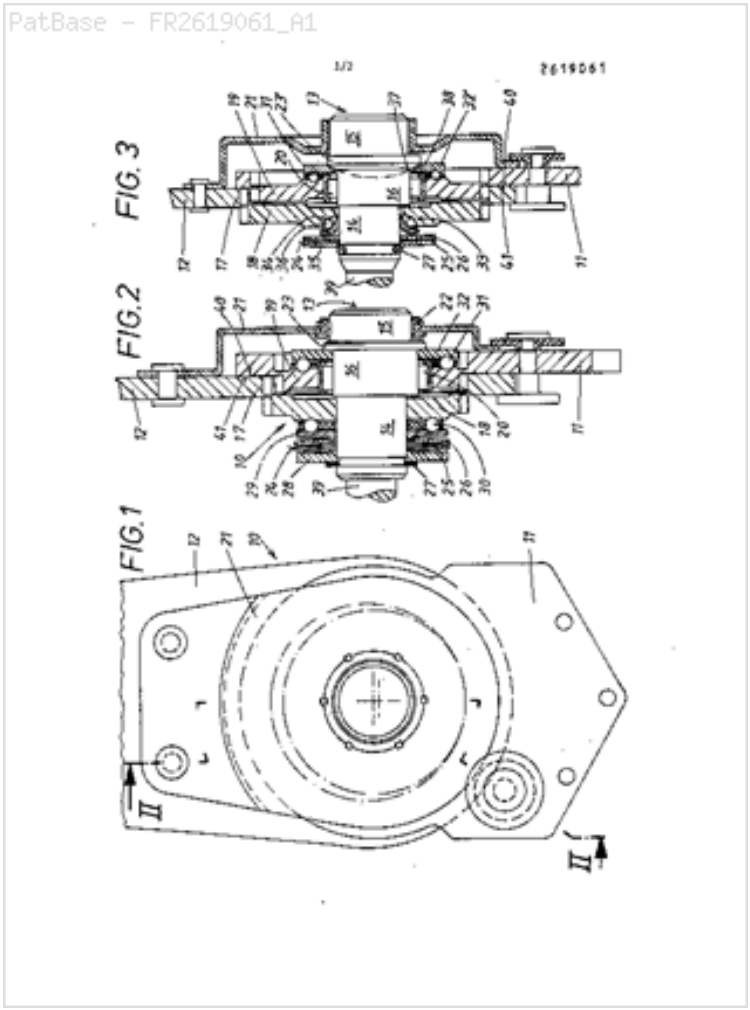
European class: B60N2/225 B60N2/22K

Classification Explorer

Cited documents: DE2907134, DE2724047,

Forward Citations: US5542772, DE19533453, DE19533453,

Abstract:
Source: DE3726433A1 The hinge parts, movable relative to one another, of a hinge fitting are connected via a spindle, there being provided an adjustment and fixing device which determines the position of the hinge parts relative to one another and is designed as a gear mechanism, the spindle having a motive element which can be moved by a driving element. A frictional braking device fixes the hinge parts in their adjusted position. A braking device of this kind can be realised, for example, by a brake spring coupling connected between a hinge part and the spindle. Apart from the overall width of the hinge fitting needing to be large for this, high demands are placed on the accuracy of manufacture since alignment errors in the bearings and tolerances in the toothings can lead to constraining forces which increase the adjusting torque. The mentioned disadvantages can be avoided by the spindle having a support ring, which fits over areas on the outside of one hinge part, whilst on the spindle portion which projects away from the other hinge part there is held a spring arrangement which compresses the hinge parts in the axial direction. This spring arrangement on the one hand causes the hinge parts to be compressed to produce a braking torque and, on the other hand, shows the tendency of the spindle constantly to try to adopt a tilt–free central position of its longitudinal axis parallel to the bearing axis. The [lacuna] acting counter to the spring force... Original abstract incomplete.



0) US2014217705A – CHILD'S ACTIVE TRANSPORTATION DEVICE AND METHOD...

59) Family number: 57135447 (US2014217705A) © PatBase

Title: CHILD'S ACTIVE TRANSPORTATION DEVICE AND METHOD OF USE

Priority: US20130760630P 20130204 US20140171783 20140204

Family:

Publication number	Publication date	Application number	Application date
US2014217705 AA	20140807	US20140171783	20140204
US9193371 BB	20151124	US20140171783	20140204

Probable Assignee: SHERMAN WILLIAM ALAN

Assignee(s):(std)**:** SHERMAN WILLIAM ALAN

Inventor(s):(std)**:** SHERMAN WILLIAM ALAN

Agent(s): RICHARD MARK

International class (IPC 8–9): B62B3/00 B62B5/08 B62B7/04 B62B7/06 B62B9/20 B62K3/00 B62K9/00 (Advanced/Invention)

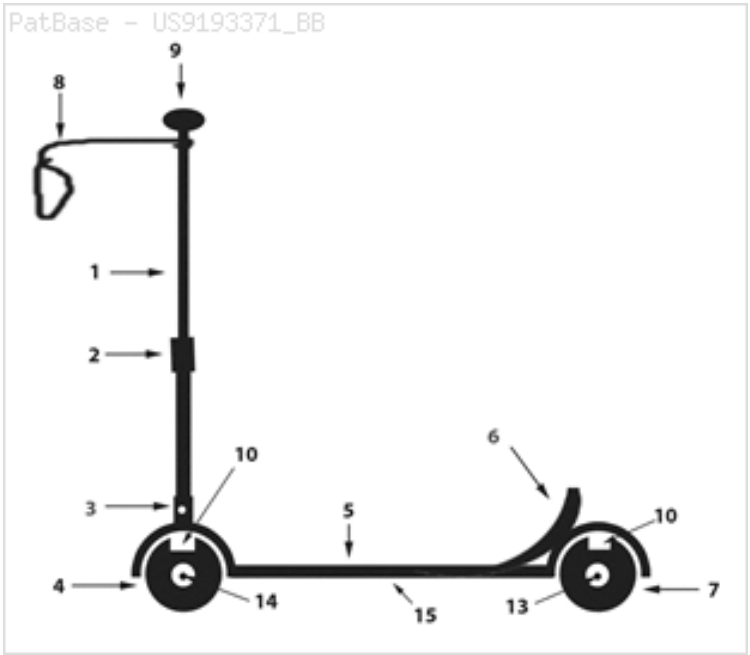
CPC: B62B5/087 B62B7/04 B62B7/042 B62B9/20 B62K3/002 B62K9/00 B62B7/06

US class: 1/1 280/47.11 280/639 280/79.2

Classification Explorer

Cited documents: US7234722 BA, US6585065 BA, US6508479 BA, US5875695 A, US5857695 A, US4087104 A, US3500965 A, US2913250 A, US2006255564 AA, US2001647 A, US1710849 A,

Abstract:
Source: US2014217705A A child's active transportation device comprising: a steering rod permanently or removably affixed to a wheel base, said wheel base having a platform and mechanism or device for affixing a plurality of wheels to said wheel base, and also having a plurality of wheels and associated equipment and method of use.



0) WO14118504A1 – LAID BACK CYCLE BICYCLETTE A EXTENSION VERS L'...

60) Family number: 53472325 (WO14118504A1) © PatBase

Title: LAID BACK CYCLE

Priority: GB20130001873 20130201

Family:

Publication number	Publication date	Application number	Application date
GB201301873 A0	20130320	GB20130001873	20130201
GB201400832 A0	20140305	GB20140000832	20140117
GB2511917 A1	20140917	GB20140000832	20140117
WO14118504 A1	20140807	WO2014GB50131	20140117

Probable Assignee: HELFET KEITH

Assignee(s):(std)**:** HELFET EDSEL K ; HELFET EDSEL KEITH ; HELFET KEITH ; TILLBROOK CHRIS J ; TILLBROOK CHRISTOPHER J ; TILLBROOK CHRISTOPHER JOHN

Assignee(s): CHRISTOPHER JOHN TILLBROOK ; EDSEL KEITH HELFET

Inventor(s):(std)**:** HELFET EDSEL KEITH ; TILLBROOK CHRISTOPHER JOHN

Inventor(s): CHRISTOPHER JOHN TILLBROOK ; EDSEL KEITH HELFET

Agent(s): INTELLECTUAL PROPERTY SHOP LTD

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K21/00 B62K21/18 B62K21/20 B62K21/22 B62K25/30 B62K3/00 B62K3/06 B62K5/00 (Advanced/Invention)

CPC: B62K3/005 B62K3/06 B62K21/00 B62K21/20 B62K21/22 B62K25/30 B62K3/00 B62K5/00 B62K21/18

Classification Explorer

Cited documents: WO9001443 A1, WO05105560 A1, WO0003913 A2, US6247714 BA, US6203043 BA, US2011309596 AA, NL9300370 A, GB252974 A, DE9004067 U, DE3919081 A1, DE29914568 U1, DE29702388 U1, DE20310590 U1, DE19841780 A1,

Forward Citations: WO17029139, US9610996, US9573646, RU2588291, RU2575786, GB2541432,

Abstract:
A cycle configured with a rearward–reach steering input control (12) extending from a forward steerable wheel (17) to a rearward rider seat (11), without a rider having to lean forward, lean or rest weight upon a steering control, to steer; in drive action, a rearward seat with backrest position and a relatively forward and/or upward pedal drive position, such as a pedal crank arm pivot shaft (15), allows a rider a push forward pedal drive action by a rider upper trunk bracing support reaction against a seat backrest; in steering reach, a rearward rider seat and a steering control are juxtaposed in close proximity to and readily within reach of the seat, for a seated rider without stretch or lean, to allow hands on or finger steering while seated by and within reach of outstretched upper arms, without user weight transfer to or support by the steering; in steering transmission, a rear steering control and a steering drive coupling or transmission can be taken through one or more shafts, rotary couplings or a flexible drive to a forward steering actuator for a steerable front wheel.

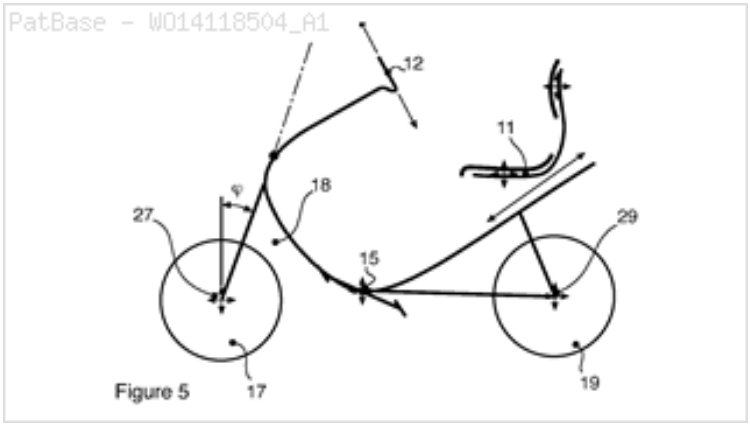


Figure 5

0) GB592732A – POWER STEERING MECHANISM FOR TRACTOR–TRAILER CO...

61) Family number: 20921644 (GB592732A)

© PatBase

Title: Power steering mechanism for tractor–trailer combination

Family:

Publication number	Publication date	Application number	Application date
GB592732 A	19470926	GB19450013594	19450530

Probable Assignee: LETOURNEAU INC

Assignee(s):(std)**:** LETOURNEAU INC

Assignee(s): R G LETOURNEAU INC

International class (IPC 8–9): B62D13/00 (Advanced/Invention); B62D13/00 (Core/Invention)

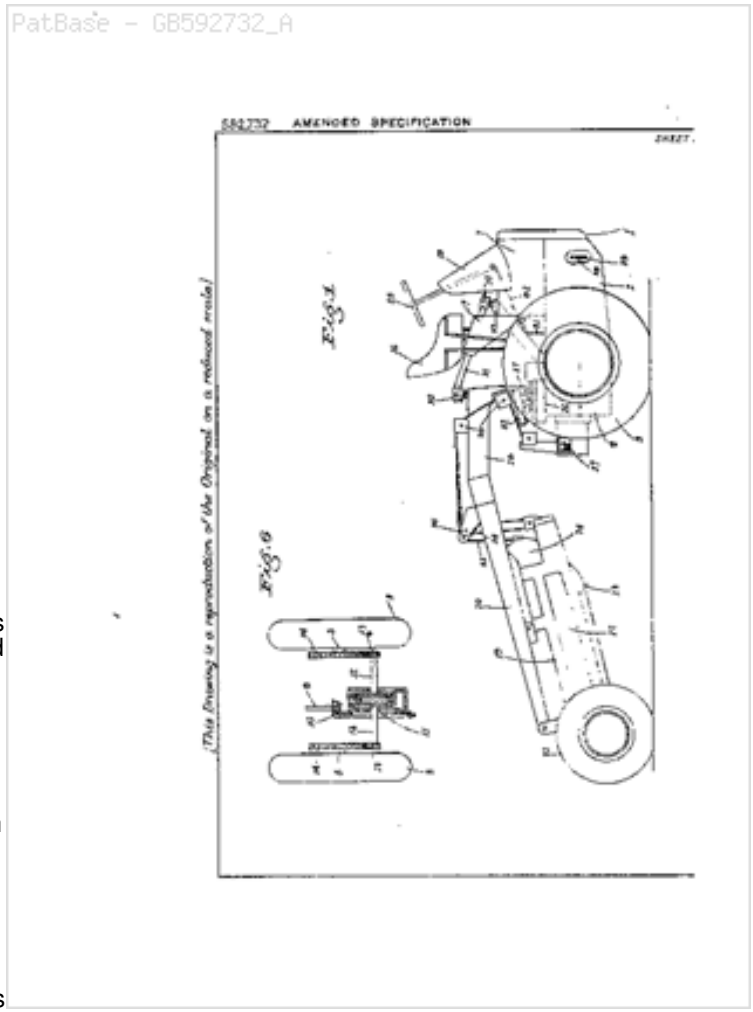
International class (IPC 1–7): B62D53/02

CPC: B62D13/00 B62D13/005

European class: B62D13/00 B62D13/00B

Classification Explorer

Abstract:
Source: GB592732A 592,732. Steering trailers. LETOURNEAU, Inc., R. G. May 30, 1945, No. 13594. Convention date, March 4, 1944, [Classes 79 (i) and 79 (v)] [Also in Groups XXI and XXXII] The coupling between a tractor and trailer is arranged to permit of a lateral tilting movement in addition to a power–driven steering movement. The tractor 1, Fig. 1, draws a trailer 19, the example shown being an earth–carrying scraper (see Group XXI), by a goose–neck 25 connected to a ball–and–socket joint 27, the ball being fixedly mounted on the tractor chassis and steering movement being imparted to the trailer through a member 52, An additional pivoting point is provided by the ball and socket joint 30 connected by rod 31 to a second ball joint 32 on a support 33 located between the driver's legs. The ball 29, Fig. 5, of the ball–and–socket connection 27 is mounted in a support 40 on the tractor chassis. Rotatably mounted on support 40 is a gear 43 to the upper face of which is fixed a bracket 51 terminating in a pin 50.' The latter is journalled in the cross arm 54 of a yokeshaped member 52 whose ends carry trunnions 53 supported in the sides of the socket 28 which embraces the ball 29; thus rotation of the gear 43 causes relative movement between the balland socket 29, 28 to steer the trailer, at the same time permitting lateral tilting of the trailer about the ball 29. The gear 43 is power–driven in either direction as follows. The gear 43, Fig. 3, meshes with a pinion 56 on a vertical shaft 57 integral with a bevel wheel 61. The latter is in permanent engagement with a pair of bevel pinions 66 mounted freely on the shaft 65. Each bevel pinion 66 is integral with the male portion 72 of a cone clutch, the female portions 73 of which are also freely mounted on the shaft 65 and are continuously power driven through peripheral teeth 75 which are in permanent engagement with a pair of pinions on a rotating shaft (not shown) driven by a gear train from the engine crankshaft. Axial movement of the shaft 65 is arranged to displace also the continuously rotating female clutch elements 73, whereby one or the other of them drives the corresponding male clutch member 72 and pinion 66 thereby rotating the pinion 56



and steering gear 43. Axial movement of the shaft 65 is imparted from the steering wheel 83, link 82 and lever 81 to rotate the sleeve 77 which is threaded in the stationary supporting nut 79. To preserve the setting of the steering and to prevent undue looseness in the steering movements, a pre−set brake 84, Fig. 3, permanently provides a light drag on one of the clutch members 72 and hence on one pinion 66 and on the steering gear 56, 43.

0) GB1369649A – LIFT TRUCK

62) Family number: 552311 (GB1369649A) © PatBase

Title: LIFT TRUCK

Priority: DE19702063469 19701223

Family:

Publication number	Publication date	Application number	Application date
DE2063469 A1	19720907	DE19702063469	19701223
DE2063469 B2	19730510	DE19702063469	19701223
DE2063469 C3	19731213	DE19702063469	19701223
FR2119027 A1	19720804	FR19710046270	19711223
FR2119027 B1	19760604	FR19710046270	19711223
GB1369649 A	19741009	GB19710057818	19711213
IT943868 A	19730410	IT19710032283	19711211

Probable Assignee: EATON GMBH

Assignee(s):(std)**:** EATON GMBH

Assignee(s): EATON GMBH 5620 VELBERT

Inventor(s):(std)**:** GRIESENBROCK KARL HEINZ

Inventor(s): GRIESENBROCK KARL HEINZ 4100 DUISBURG

International class(IPC 8–9)**:** B62D21/14 B66F9/075 (Advanced/Invention)

International class(IPC 1–7)**:** B60K1/02 B60K17/10 B60K7/00 B62D21/14 B62D37/00 B66F9/00 B66F9/06

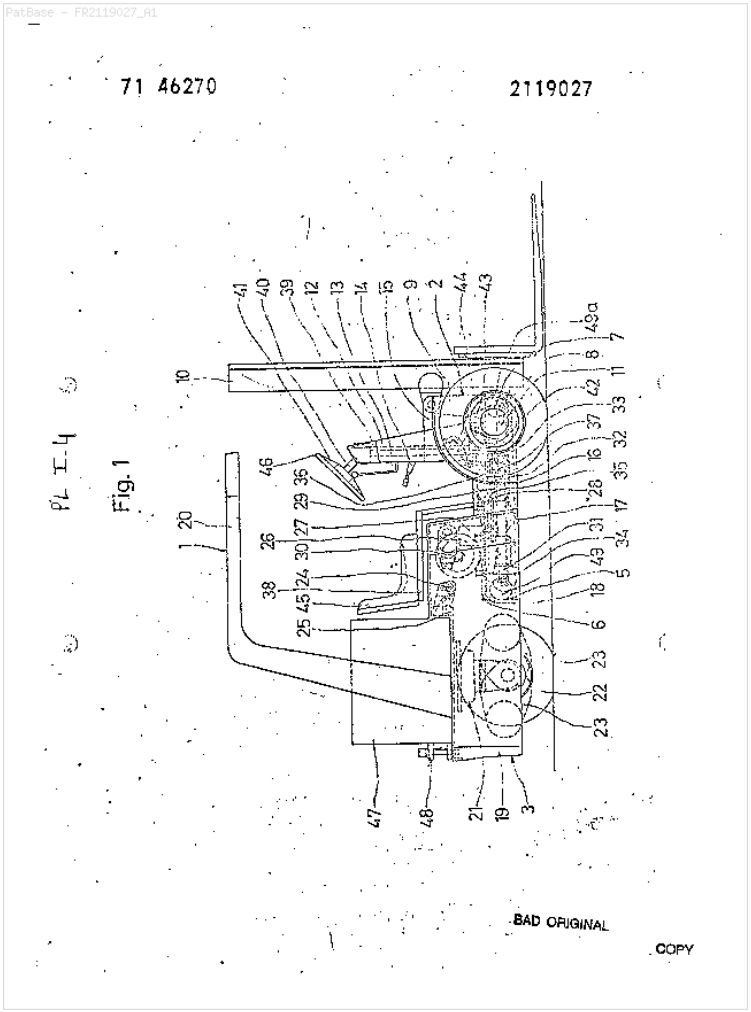
CPC: B62D21/14 B66F9/07522 B66F9/07545 B66F9/0759

European class: B62D21/14 B66F9/075 B66F9/075C4 B66F9/075D B66F9/075T

Classification Explorer

Forward Citations: WO9606768, USRE43943, US9308939, US8602153, US8103418, US6065556, US6022182, GB2327067, GB2327067, ES2276636, CN103193183, AU762562,

Abstract:
Source: GB1369649A 1369649 Fork lift trucks EATON GmbH 13 Dec 1971 [23 Dec 1970] 57818/71 Headings B7B B7D and B7H A fork lift truck 1 has a variable wheelbase and an operator's position 46 which is rotatable through at least 180 degrees. The truck 1 has a pair of unsteered wheels 8 at one end and steerable wheels 22 at the other end, either being the driven wheels. A first truck portion 3 (carrying the steerable wheels 22, the main power unit 23, 47 and an operator's seat/control unit 46) and a second truck portion 2 (carrying the unsteered wheels 8 and the mast assembly 10) are extendable and retractable relative to each other to alter the wheelbase. In the extended position (Fig. 3) the operator's unit 46 can be rotated by at least 180 degrees about an axis adjacent the steering column, while in the retracted position (Fig. 2), a portion of the superstructure of the truck is located beneath the operator's seat 45. In the embodiment shown, the front portion 2 comprises a frame 6 carrying a mast 10, tiltable by rams 11, and two unsteered, brakeable wheels 8 which may be driven. The rear portion 3 of the truck comprises a frame 18 and a pivoted bogie 21 having two wheels 22 which may be driven by electric motors 23 powered by battery 47 or by hydrostatic motors powered by an I.C. engine–driven pump (not shown). Wheelbase change may be effected by braking only the front wheels 8 and driving the rear wheels 22 or by driving, by motor 31 and chains 32, pinions 33 which are mounted on the rear part 3 and which engage racks 5 mounted on the front part #, the two parts 2, 3 being relatively slidable by means of rollers 49, 49a on the parts 2, 3 respectively engaging guides on the frame of the other part. Adjusting cylinders may be used.



Increasing the wheelbase allows the operators position 46 including platform 38, seat 45, steering wheel 41 and control pedals 43, 44 to be rotated about the vertical axis of pivot 37 by releasing the lock 35 and turning the steering wheel 41 so that pinion 42 rolls around gear 36 and trails the operator's position 46 with it. The steering mechanism may comprise a pump 27 which is driven by a gear–wheel and chain 28 from the steering shaft and which directs fluid to a ram 24 which acts on a chain 25 which passes around a sprocket attached to bogie 21. An overhead guard 20 may be provided for the protection of the operator.

0) GB1230562A – PROPELLING INDUSTRIAL TRUCKS.

63) Family number: 323097 (GB1230562A)

© PatBase

Title: Propelling industrial trucks.

Priority: GB19670019699 19670428

Family:

Publication number	Publication date	Application number	Application date
DE1756246 A1	19700319	DE19681756246	19680425
FR1562528 A	19690404		19680425
GB1230562 A	19710505	GB19670019699	19670428

Probable Assignee: BARLOW JOHN ROBERT

Assignee(s):(std)**:** BARLOW JOHN ROBERT

Inventor(s):(std)**:** ROBERT BARLOW JOHN

International class (IPC 8–9)**:** B66F9/075 (Advanced/Invention); B66F9/075 (Core/Invention)

International class (IPC 1–7)**:** B60K17/06 B60L15/00 B62D51/00 B66F9/06 B66F9/22

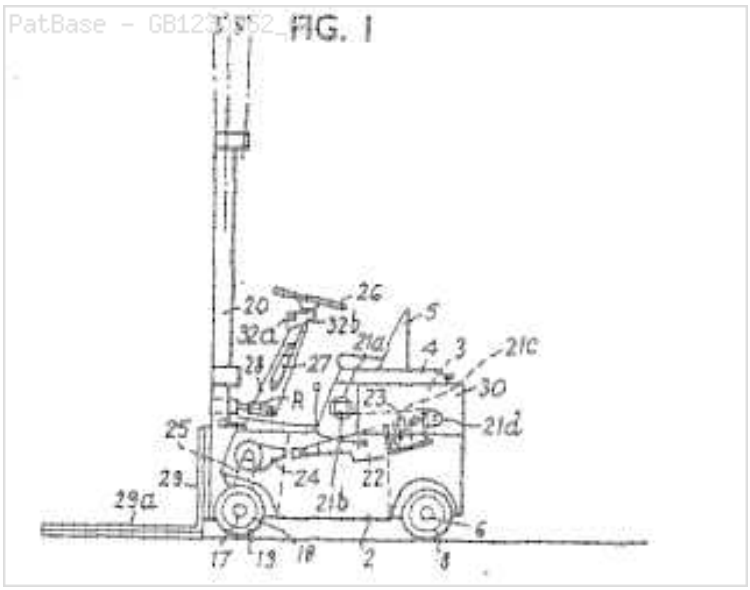
CPC: B66F9/07572

European class: B66F9/075 B66F9/075P

Classification Explorer

Forward Citations: FR2836301, DE3129676,

Abstract:
Source: GB1230562A 1,230,562. Propelling industrial trucks. M.E. MECHANICAL HANDLING Ltd. 23 April, 1968 [28 April, 1967], No. 19699/67. Heading B7H. Propulsion means in a fork–lift truck include an hydraulic motor which drives the truck through change–speed gearing and is fed by a pump coupled to an electric motor, diesel or gas engine. As shown the hydraulic motor 21d is supplied through lines 21c from a pump 21b driven by a battery–fed electric motor 21a and is coupled through a clutch 23 to a changespeed gear–box 22 connected by a flexible drive to differential gearing 24 having chain drives to the front wheels 19. The front wheels 19 rotate on an axle 17 which is secured to the truck frame and supports a lifting mast 20 tiltable about the axle by an hydraulic ram R. Forks 29a on the mast are elevated by cable or chains actuated by a further hydraulic ram. Rear wheels 8 separately pivoted to each end of a rear axle are steered through a chain and sprocket by a telemotor ram connected to a control cylinder actuated by a steering wheel 26. The truck body 1 includes side members each incorporating an hydraulic pannier tank 2 and a battery compartment 3 closed by a cover 4. In an alternative construction two hydraulic motors may be substituted for the one shown with a consequent 50 percent reduction in speed and a corresponding increase in tractive effort.



0) US3921744A – WHEELCHAIR WITH DETACHABLE DRIVE MEANS

64) Family number: 1202855 (US3921744A) © PatBase

Title: WHEELCHAIR WITH DETACHABLE DRIVE MEANS

Priority: FR19730035107 19731002

Family:

Publication number	Publication date	Application number	Application date
BE820208 A1	19750116	BE19740148778	19740923
CH600867 A	19780630	CH19740013165	19750930
DE2446573 A1	19750403	DE19742446573	19740930
DE2446573 B2	19771222	DE19742446573	19740930
DE2446573 C3	19780824	DE19742446573	19740930
FR2245331 A1	19750425	FR19730035107	19731002
FR2245331 B1	19761001	FR19730035107	19731002
GB1472613 A	19770504	GB19740042485	19741001
JP50076744 A2	19750623	JP19740113679	19741002
SE396008 B	19770905	SE19740012300	19740930
SE396008 C	19771215	SE19740012300	19740930
SE7412300 A	19750403	SE19740012300	19740930
US3921744 A	19751125	US19740511363	19741002

Probable Assignee: BENOIR ROBERT

Assignee(s):(std)**:** BENOIR ROBERT ; COTE D OR ; MAIRET ANDRE ; FRANKREIC ; MAIRET A ; BENOIT R ; BENOIT ROBERT

Assignee(s): BENOIT ROBERT DIJON ; ROBERT BENOIT ; BENOIR ROBERT FR ; ANDRE MAIRET

Inventor(s):(std)**:** MAIRET ANDRE ; BENOIT ROBERT

Inventor(s): BENOIT ROBERT DIJON ; ANDRE MAIRET ; ROBERT BENOIT ; SOK

International class (IPC 8–9)**:** A61G5/04 (Advanced/Invention)

International class (IPC 1–7)**:** A61G5/00 A61G5/04 B60K3/00 B61G5/04 B62B3/12

CPC: A61G5/1018 A61G5/047 A61G5/1051

European class: A61G5/04D K61G5/10G

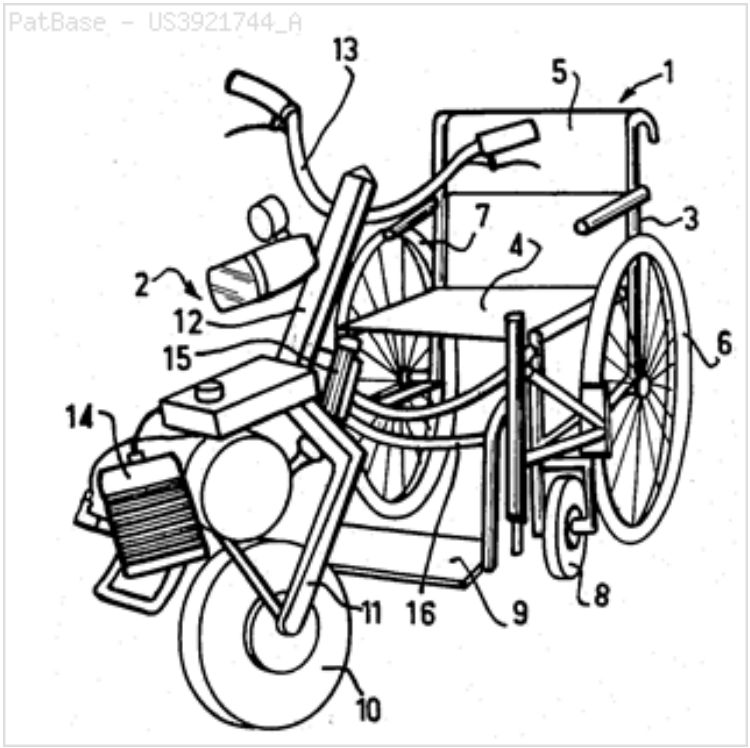
US class: 180/13 180/16 280/250.1

Classification Explorer

Cited documents: US3688857 A, US3387681 A, US3381973 A, US3351148 A, JP48026347 A2,

Forward Citations: WO09094695, US7306250, US7216728, US6883632, US6766871, US6186252, US6176337, US6170585, US6129165, US6050593, US5862874, US5494126, US5020815, US4641847, US4534438, US4452327, US4152005, US2016324705, US2006131084, US2006000664, US2004108147, GB2124985, EP3058922, EP3053563, EP0255457, EP0255457, DE3200157, DE3200153, DE19935506, DE102015102381,

Abstract:
Source: US3921744A A wheelchair has a detachable drive means so that it is useful both indoors under manual power and outdoors under motor power. The drive means is manipulable by the occupant himself, and to this end comprises a drive wheel and motor with steering handle bars, and means to detachably interconnect this assembly at each side of the wheelchair. The connecting means comprises ramps that guide laterally sliding pins toward their sockets, and rotatable cams received in vertical slots at the forward ends of the wheelchair armrests.



0) US4533150A – CURVED–BODY MANEUVERABLE SNOW BOARD

65) Family number: 4829900 (US4533150A) © PatBase

Title: Curved–body maneuverable snow board

Priority: US19830486850 19830420

Family:

Publication number	Publication date	Application number	Application date
US4533150 A	19850806	US19830486850	19830420

Probable Assignee: HARDY CARL D

Assignee(s):(std)**:** HARDY CARL D

Inventor(s):(std)**:** HARDY CARL D

International class (IPC 8–9)**:** A63C5/03 B62B13/04 (Advanced/Invention); B62B13/00 (Advanced/Non–invention)

International class (IPC 1–7)**:** A63C5/04

CPC: A63C5/03 B62B13/043 B62B17/065

European class: A63C5/03 B62B13/04B B62B17/06S2

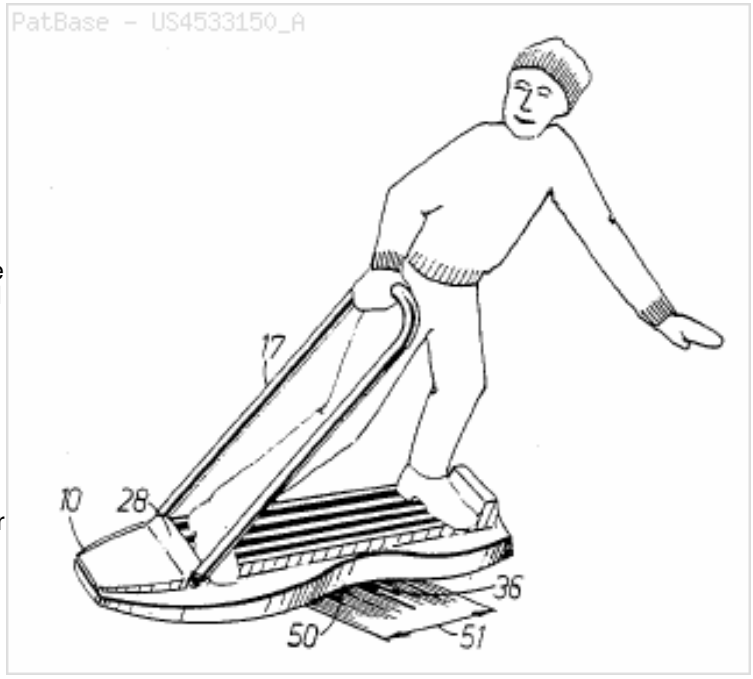
US class: 280/12H 280/14.28 280/18 280/609

Classification Explorer

Cited documents: US4386982 A, US4343485 A, US4305603 A, US4129313 A, US3900204 A, US3628804 A, US3176999 A, US2829902 A, US2181391 A,

Forward Citations: WO9929377, WO03072415, WO03072415, WO0200312, WO0076831, USD697144, USD649212, USD630697, US9511273, US8075014, US7422228, US7368031, US7246804, US7216887, US7204496, US6929267, US6923455, US6908351, US6669887, US6634657, US6520516, US6460868, US6450512, US6419242, US6357781, US6290249, US6270091, US6189912, US5988668, US5957471, US5566959, US5516126, US5340144, US5238434, US5018760, US4995631, US4971349, US4650198, US2013292922, US2009102161, US2007138752, US2006125195, US2006061051, US2005280230, US2005212229, US2005087942, US2005062240, US2004266289, US2004213960, US2004151875, US2004070158, US2004028870, US2004007837, US2003214105, US2003209901, US2003160403, NL1007750, FR2817158, FR2796564, FR2746324, FR2714841, EP1693088, EP1485172, EP1294455, EP1066861, EP0778053,

Abstract:
Source: US4533150A Approximately vertical side walls are equally curved inwardly to form a waistlike narrow portion in the elongated body. A substantially flat bottom contact surface curves convexly downward to form a fulcrum at the low point. The fulcrum aligns with the centerlines of both side curves. A major portion of each side curve intersects a major portion of the bottom fulcrum curve to form a curved turning edge, which contacts the snow for its entire length when the snow board is tilted back over the fulcrum and to one side for steering. Protruding above a top flat ride−on surface are a rear foot stop and a double front foot stop for wedging the foot therebetween. Pivotally secured to an axle through the front foot stop a U−shaped handle pivots up for a stand−up balance and steering hand lever and down below the ride−on surface for storage, for a sit−down hand grip or for no−handle stand−up riding. Additional side grips, handle hold−down and safety release binding are optional.



- **search:** SS2 ft=vehicle and frame and tilt* and steer* and brake (Results 377)
- **search:** SS3 ft=vehicle and frame and tilt* and steer* and brake* and suspension (Results 109)
- **search:** SS4 ft=vehicle and frame and tilt* and steer* and brake* and suspension and handlebar (Results 18)
- List: SS4 1−50 (ft=vehicle and frame and tilt* and steer* and brake* and suspension and handlebar) (Results 18)

0) US2015210338A – VEHICLE

1) Family number: 56089642 (US2015210338A) © PatBase

Title: VEHICLE

Priority:

EP20130838840	20130924	EP20130863895	20131220	JP20120209873	20120924
JP20120209874	20120924	JP20120235605	20121025	EP20130864751	20131220
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WO2013JP84341	20131220	WO2013JP84284	20131220	WO2013JP84266	20131220
WO2014JP67480	20140630	WO2014JP67478	20140630	WO2014JP67479	20140630

Family:

Publication number	Publication date	Application number	Application date
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CO7600652 A2	20160510	CO20160018589	20160127
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Probable Assignee: YAMAHA MOTOR CO LTD

Assignee(s):(std)**:** YAHAMA HATSUDOKI KK ; YAMAHA MOTOR CO LTD

Assignee(s): YAMAHA HATSUDOKI IWATA SHI KK ; YAMAHA HATSUDOKI KK ; YAMAHA HATSUKOKI KK ; YAMAHA MOTOR CO

Inventor(s):(std)**:** HIRAYAMA YOSUKE ; IIZUKA TOSHIO ; KUBO YUTAKA ; MIYAMOTO NOBORU ; OGAWA HIROKATSU ; SASAKI KAORU ; WATANABE TAKAHIRO ; YAMASAKI SHIGETO ; TAKANO KAZUHISA

Inventor(s): TOSHIO IIZUKA ; YOSUKE HIRAYAMA ; YUTAKA KUBO ; TAKAHIRO WATANABE ; NOBORU MIYAMOTO ; KAORU SASAKI ; KAZUHISA TAKANO ; HIROKATSU OGAWA

Agent(s): JUAN PABLO CADENA SARMIENTO; GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; INSAN BUDI MAULANA; ROHALDY MULUK; DIPL ING ROHALDY MULUK; SHIN EI PATENT FIRM PC; KEATING AND BENNETT LLP

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G13/04 B60G17/005 B60G17/016 B60G17/08 B60G21/00 B60G21/05 B60G21/055 B60G3/01 B60G3/20 B60T11/04 B60T11/10 B60T17/04 B60T8/17 B62D35/00 B62D7/00 B62D9/02 B62J15/00 B62J17/00 B62J17/02 B62J23/00 B62K11/02 B62K11/14 B62K19/32 B62K19/38 B62K19/40 B62K21/00 B62K21/02 B62K21/08 B62K21/12 B62K21/16 B62K21/18 B62K21/20 B62K25/00 B62K25/04 B62K25/08 B62K25/24 B62K3/00 B62K5/00 B62K5/01 B62K5/02 B62K5/027 B62K5/05 B62K5/06 B62K5/08 B62K5/10 B62K50/08 B62L1/00 B62L3/02 B62L3/08 B62L5/00 (Advanced/Invention); B60T17/04 B62K5/00 (Advanced/Non–invention); B60G17/005 B62D7/00 B62J15/00 B62J23/00 B62K19/40 B62K21/00 B62K21/02 B62K5/02 B62K5/05 B62K5/08 (Core/Invention)

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US class: 1/1 280/124.103 280/267 280/269 280/5.509 280/62

Classification Explorer

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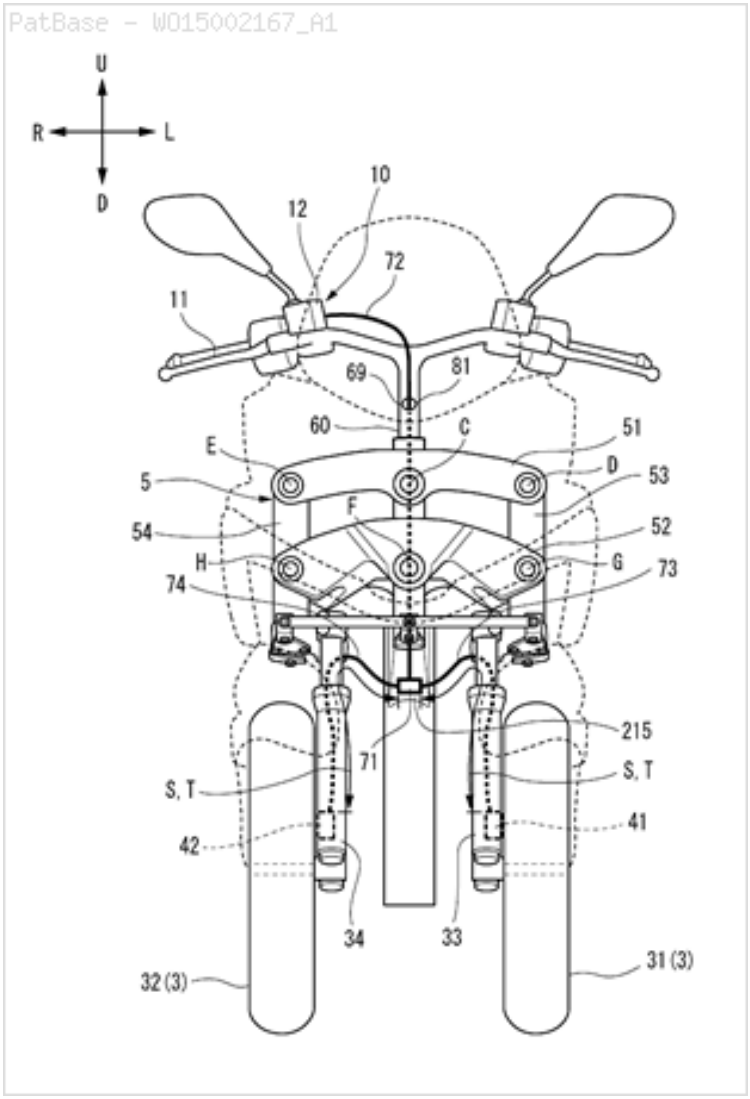
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Forward Citations: WO16052430, WO14181736, WO14181727, US9517807, US9428240, US9428235, US9371106, US9352798, US9340249, US9216790, US2016229480, US2016152292, US2016137253, US2016129964, US2016031520, US2015344091, US2015314827, US2015307149, US2015291241, US2015274244, US2015246704, JP5952516, JP2016175438, EP3144164, EP3069979, EP3069978, EP3069977, EP3069976, EP3002197, EP3002196, CN104743021, CN104554550,

Abstract:
Source: US2015210338A A vehicle includes a center transmission plate, a first center turnable portion configured to turn about a first center turning axis extending in an up−down direction, a second center turnable portion configured to turn about a second center turning axis extending in a front−rear direction, a left transmission plate, a first left turnable portion configured to turn about a first left turning axis extending in the up−down direction, a second left turnable portion configured to turn about a second left turning axis extending in the front−rear direction, a right transmission plate, a first right turnable portion configured to turn about a first right turning axis extending in the up−down direction, and a second right turnable portion configured to turn about a second right turning axis extending in the front−rear direction. A tie rod is supported on the second center turnable portion, the second left turnable portion, and the second right turnable portion.



0) US2001040063A – ENGINE CRADLE FOR A VEHICLE

2) Family number: 31380924 (US2001040063A) © PatBase

Title: Engine cradle for a vehicle

Priority:

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Family:

Publication number	Publication date	Application number	Application date
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Probable Assignee: BOMBARDIER RECREATIONAL PRODUCTS INC

Assignee(s):(std)**:** BOMBARDIER INC ; GIROUARD BRUNO ; FECTEAU BERTHOLD ; DION ANNE MARIE ; BOMBARDIER RECREATIONAL PRODUC ; BOMBARDIER RECREATIONAL PRODUCTS INC ; BOMBARDIER RECREATIONAL PRODUCTS ; AUDET MATHIEU ; BOMBARDIER RECREATIONAL PROD ; WUBBOLTS JEROME ; MASSICOTTE ALAIN

Assignee(s): RASIDESCU MIHAI ; LANGLAIS STEVE ; WATSON PETER ; MALLETTE BERTRAND ; MERCIER DANIEL ; SAVOIE PIERRE ; TALBOT JEAN GUY ; AUBE MARTIN ; GILBERT ANDRE ; COTE MARIO ; FOURNIER ANDRE ; BANK OF MONTREAL ; BEDARD YVON ; BERTRAND ERIC ; BOMBERDIER INC

Inventor(s):(std)**:** AUBE MARTIN ; AUDET MATHIEU ; BEDARD YVON ; BERTHOLD FECTEAU ; BERTRAND ERIC ; BRUNO GIROUARD ; COTE MARIO ; DION ANNE MARIE ; FECTEAU BERTHOLD ; FECTEAU BERTHOLD US ; FOURNIER ANDRE ; GILBERT ANDRE ; GIROUARD BRUNO ; GIROUARD BRUNO 87721201A ; LANGLAIS STEVE ; MALLETTE BERTRAND ; MASSICOTTE ALAIN ; MERCIER DANIEL ; RASIDESCU MIHAI ; SAVOIE PIERRE ; TALBOT JEAN GUY ; WATSON PETER ; WUBBOLTS JER DOT OVER OME ; WUBBOLTS JEROME

Inventor(s): WUBBOLTS JER DOT OVER ; GIROUARD BRUNO 23738400P

Agent(s): SMART AND BIGGAR; OSLER HOSKIN AND HARCOURT LLP; BCF LLP; SOLF ALEXANDER; BOMBARDIER RECREATIONAL PRODUCTS INC, INTELLECTUAL PROPERTY DEPT; BOMBARDIER RECREATIONAL PRODUCTS INC INTELLECTUAL PROPERTY DEPT; OSLER HOSKIN AND HARCOURT LLP (BRP); OSLER HOSKIN AND HARCOURT LLP BRP; PILLSBURY WINTHROP SHAW PITTMAN LLP; BRP LEGAL SERVICES

Designated states: AE AG AL AM AT AU AZ BA BB BE BG BR BY BZ CA CH CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GB GD GE GH GM GR HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK MN MW MX MZ NL NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

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B62J35/00 B62M27/02

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Classification Explorer

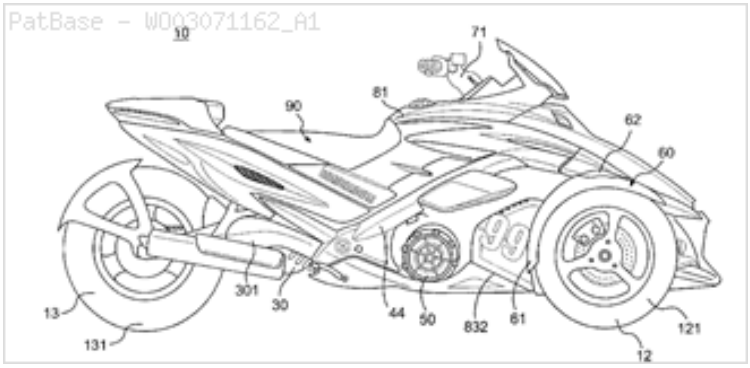
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Forward Citations: WO16193901, WO16030870, WO15122940, WO15036984, WO13019826, WO10062294, WO09114414, WO08100398, WO08100398, WO07130015, WO07100751, WO03070547, WO03070547, USRE44864, USD761692, USD710274, USD701796, USD695657, USD689794, USD682158, USD678124, USD654420, USD632219, USD631803, USD631395, USD629726, USD629724, USD628129, USD627282, USD627269, USD627263, USD626900, USD603775, USD596081, USD593912, USD593908, USD593455, USD592557, USD592556, USD582823, USD582334, USD581846, USD581845, USD581685, USD581320, USD581319, USD580836, USD580822, USD579380, USD573078, USD552506, USD515457, USD512662, USD495274, USD494889, USD494505, USD494504, USD494503, USD494502, USD494100, USD493390, USD493121, USD490018, USD488404, USD479490, US9610986, US9592713, US9586642, US9555678, US9545967, US9540072, US9506407, US9493185, US9476486, US9446810, US9446661, US9428232, US9387902, US9365232, US9352802, US9346508, US9340248, US9267580, US9266580, US9260152, US9248860, US9227507, US9188198, US9187128, US9162731, US9114844, US9057432, US9050869, US9038502, US9010768, US9004214, US8978794, US8944204, US8936380, US8919477, US8899372, US8897966, US8887853, US8851496, US8844999, US8827291, US8820458, US8801001, US8794106, US8783720, US8783394, US8770601, US8746774, US8733773, US8695746, US8622428, US8613543, US8613534, US8613337, US8590654, US8579063, US8567546, US8555801, US8550514, US8544587, US8540045, US8528683, US8506000, US8490731, US8469137, US8430713, US8430197, US8419104, US8413758, US8408348, US8402861, US8397854, US8393426, US8381857, US8360449, US8342548, US8317257, US8313121, US8312945, US8302726, US8302721, US8302711, US8261683, US8245808, US8226120, US8225896, US8191930, US8191929, US8191677, US8191671, US8191665, US8161929, US8079602, US8075007, US8074759, US8037961, US8029004, US8025540, US8016065, US8007005, US7997372, US7988226, US7954853, US7952305, US7950736, US7950486, US7942447, US7942224, US7926607, US7921948, US7921947, US7905310, US7891455, US7891454, US7870920, US7854290, US7832750, US7819272, US7815000, US7806215, US7802816, US7802646, US7780247, US7779944, US7775313, US7770683, US7753154, US7740100, US7708106, US7708096, US7694768, US7686121, US7661714, US7661501, US7658411, US7644791, US7624829, US7610979, US7591337, US7591332, US7588110, US7571787, US7568733, US7559576, US7543673, US7543672, US7543669, US7537499, US7533749, US7513327, US7478694, US7464781, US7464680, US7448635, US7422083, US7410182, US7401816, US7401674, US7398755, US7383824, US7380628, US7377295, US7360617, US7353898, US7328943, US7328765, US7318494, US7311171, US7303037, US7226136, US7213669, US7213668, US7210439, US7207303, US7204331, US7198127, US7198126, US7188693, US7168998, US7147074, US7124848, US7124847, US7124846, US7124845, US7104353, US7080706, US7063178, US7059440, US7051828, US7048293, US7036619, US7025161, US7011173, US7008014, US7004484, US7000931, US6976550, US6971659, US6971466, US6942050, US6926107, US6904990, US6889787, US6880660, US6823957, US6796395, US6767022, US6758497, US6755271, US6691812, US6561302, US2016236527, US2016229479, US2016194021, US2016159392, US2016075405, US2016023709, US2015267792, US2015021893, US2014319801, US2014291948, US2014262586, US2014167399, US2014085903, US2014062059, US2014025246, US2014004984, US2013200604, US2013153325, US2013153319, US2013032418, US2013032417, US2012205902, US2012187645, US2012145471, US2012126565, US2012090908, US2012014105, US2011317441, US2011284299, US2011278083, US2011275256, US2011272906, US2011219911, US2011198831, US2011198830, US2011186371, US2011174569, US2011168473, US2011132679, US2011115180, US2011089649, US2011048816, US2011045715, US2011012334, US2010320023, US2010288574, US2010288572, US2010263956, US2010230192, US2010194088, US2010108428, US2010108427, US2010089668, US2010078254, US2010078245, US2010071982, US2010071981, US2010059305, US2010044134, US2010013420, US2010012415, US2010012414, US2010006019, US2009322045, US2009321169, US2009308039, US2009302590, US2009301830, US2009294199, US2009280718, US2009267407, US2009250281, US2009224497, US2009218153, US2009211827, US2009184484, US2009154287, US2009152940, US2009107754, US2009095113, US2009057509, US2009020347, US2009000845, US2009000837, US2008284124, US2008277184, US2008257627, US2008238149, US2008223639, US2008217088, US2008203795, US2008202280, US2008196958, US2008185204, US2008185203, US2008185202, US2008173491, US2008173287, US2008142287, US2008135318,

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Abstract:
Source: US2001040063A An engine cradle adapted for receiving an engine includes a left side wall defining a C−shaped opening therein. The engine cradle also includes a right side wall, which is essentially a solid wall that provides a reflective surface for reflecting heat to the engine when contained within the engine cradle. The engine cradle also includes a front wall connected between forward portions of the left and right side walls. The engine cradle also includes a bottom panel and a rear panel connected between bottom portions of the front, left side, and right side walls.



0) US2011006498A – CONTROL SYSTEM FOR LEANING VEHICLE

3) Family number: 48148111 (US2011006498A) © PatBase

Title: CONTROL SYSTEM FOR LEANING VEHICLE

Priority: EP20100731902 20100708 US20090501025 20090710 WO2010US41346 20100708 US20120356985 20120124 US20120541804 20120705 US20120724203 20121221

Family:

Publication number	Publication date	Application number	Application date
CA2764904 AA	20111208	CA20102764904	20100708
CN102470909 A	20120523	CN201080030222	20100708
CN102470909 B	20131218	CN201080030222	20100708
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Probable Assignee: BOMBARDIER RECREATIONAL PRODUCTS INC

Assignee(s):(std)**:** BOMBARDIER RECREATIONAL PROD ; BRP US INC ; MERCIER DANIEL

Assignee(s): BOMBARDIER RECREATIONAL PRODUCTS INC ; BOMBARDIER RECREATIONAL PRODUCTS INC VALCOURT ; BANK OF MONTREAL

Inventor(s):(std)**:** DANIEL MERCIER ; MERCIER DANIEL

Agent(s): BCF LLP; PATENT U RECHTSANWAELTE DR SOLF AND ZAPF; CABINET PLASSERAUD; OSLER HOSKIN AND HARCOURT LLP BRP; OSLER HOSKIN AND HARCOURT LLP; CUTLER JONATHAN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

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European class: B62D9/02 B62K5/05 B62K5/10 L60G300/122 L62K207/02 L62K5/00B

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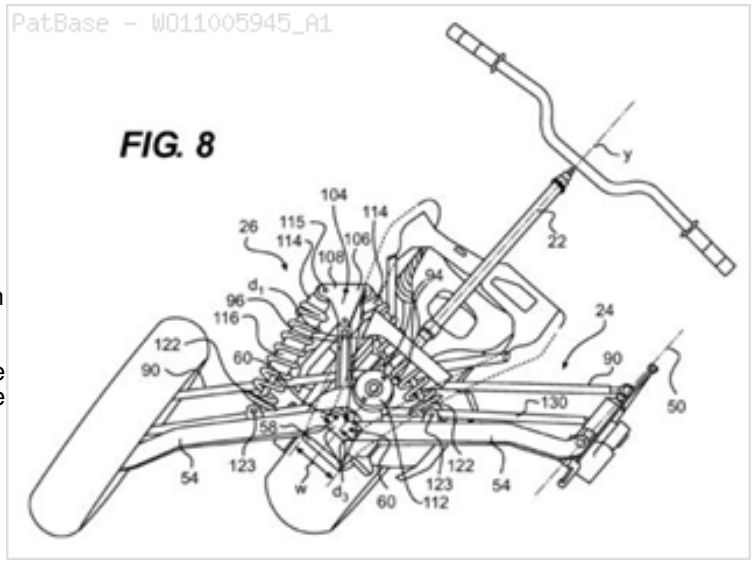
Classification Explorer

Cited documents: WO07041095 A2, WO06130007 A2, WO05075278 A1, US8070172 BA, US7967306 BB, US7931286 BB, US7762368 BB, US7665742 BB, US7648148 BA, US7607695 BB, US7591337 BB, US7568541 BB, US7530419 BB, US7494141 BB, US7487985 BA, US7485984 BB, US7195487 BB, US7076351 BB, US7029014 BB, US6863288 BB, US6859702 BB, US6763905 BB, US6547260 BB, US6435522 BA, US6328125 BA, US6170838 BA, US6170838 B1, US6071032 A, US5927424 A, US5765846 A, US5116069 A, US4951959 A, US4685690 A, US4659106 A, US4632413 A, US3704897

A, US3547466 A, US2843396 A, US2449306 A, US2417316 A, US2260102 A, US2256366 A, US2150199 A, US2063704 A, US2010219598 AA, US2009171530 AA, US2008258415 AA, US2008238005 AA, US2008197597 AA, US2007262656 AA, US2007262549 AA, US2007029751 AA, US2006151968 AA, US2006097471 AA, US2006063137 AA, US2005275181 AA, US2005206101 AA, US2005167174 AA, US2004051269 AA, US2002190494 AA, JP2005053420 A2, JP11005557 A2, EP1798081 A1, EP0251906 A1, DE905577 A, CN2728876 Y, CN101219689 A,

Forward Citations: WO15028767, WO14201463, USD761692, USD710274, USD689794, USD682158, USD678124, US9527543, US9517807, US9511656, US9505459, US9499024, US9493208, US9423795, US9381940, US9381785, US9367066, US9327789, US9327725, US9321472, US9296420, US9283989, US9278711, US9248857, US9238494, US9216763, US9188198, US9145168, US9090281, US9061732, US9061564, US9045015, US9004214, US8887853, US8857551, US8814186, US8781684, US8777242, US8762003, US8746717, US8739914, US8695746, US8657301, US8651503, US8641064, US8607914, US8544587, US8540045, US8408560, US8262111, US2016229480, US2016229246, US2016129967, US2016129937, US2015298736, US2015298735, US2015175184, US2015165855, US2014358369, US2014297124, US2014019006, US2013214503, US2013193656, US2013153311, US2013090828, US2012248717, US2012241238, US2012232758, US2012098225, US2011272906, US2011215544, US2011121524, TWI523789, TWI523787, TWI522269, TWI494242, JP2016175438, GB2476877, GB2476877, EP3059152, EP3059150, EP3059150, EP3056417, EP2765024, DE202014104070, DE102014217247, DE102014217246, CN105813922, CN104520178,

Abstract:
Source: US2011006498A A leaning vehicle has a frame that pivots relative to a pivotable frame member about a pivot axis. A torque exerted on a steering assembly in a first direction causes the frame to pivot relative to the pivotable frame member in a second, opposite direction at least when the speed of the vehicle is above a first threshold speed, to steer the vehicle in the second direction. An actuator urges the frame toward an upright position when the frame is in a leaning position and a speed of the vehicle is below a second threshold speed. A method is also described, in which a torque is exerted on the frame in the direction opposite the steering torque when the speed above the first threshold speed. The torque exerted by the actuator is opposite the leaning angle when the speed of travel is below the second threshold speed.



0) WO11029795A1 – TILT CONTROL FOR TILTING VEHICLES COMMANDE D'I...

4) Family number: 48462139 (WO11029795A1) © PatBase

Title: TILT CONTROL FOR TILTING VEHICLES

Priority: AU20090904277 20090908 EP20100754711 20100906 WO2010EP63040 20100906

Family:

Publication number	Publication date	Application number	Application date
CN102596697 A	20120718	CN201080040011	20100906
CN102596697 B	20141210	CN201080040011	20100906
DE602010008282 D1	20130829	DE201060008282T	20100906
EP2475570 A1	20120718	EP20100754711	20100906
EP2475570 B1	20130703	EP20100754711	20100906
EP2628672 A2	20130821	EP20130168191	20100906
EP2628672 A3	20151111	EP20130168191	20100906
IN00409KN2012 A	20121012	IN2012KN00409	20120223
WO11029795 A1	20110317	WO2010EP63040	20100906

Probable Assignee: INO8 PTY LTD

Assignee(s):(std)**:** INO8 PTY LTD ; WILL FRANK

Inventor(s):(std)**:** FRANK WILL ; WILL FRANK

Agent(s): STUMPF PATENTANWAELTE PARTGMBB; KAUFMANN URSULA JOSEFINE; SPACHMANN HOLGER

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K5/027 B62K5/04 B62K5/05 B62K5/08 B62K5/10 (Advanced/Invention)

CPC: B62K5/10 B62K5/027 B62K5/05 B62K5/08

European class: B62K5/027 B62K5/05 B62K5/08 B62K5/10

Classification Explorer

Cited documents: WO09059099 A2, WO06130007 A2, WO06050809 A1, WO0244008 A2, WO02068228 A1, US4351410 A, JP2006341690 A2, EP1988009 A1, EP1362779 A2, CN1269758 A,

Forward Citations: WO15193705, US9428236, US2015123389, JP6063861, JP2015123959, JP2015123951, EP2889210, DE202014104070, DE202014102328, DE102014217247, DE102014217246, DE102014209329, DE102014209328, CN105492299,

Abstract:
The invention relates to a tilting vehicle (10) including a frame (12) freely tiltable transversely between at least two spaced wheels (14, 114), at least one variable damper (28, 30, 148) with adjustable damping force operatively connected between the frame (12) and the two wheels (14, 114), at least one sensor to generate signals indicative of transverse tilting of the frame (12) relative to a central vertical plane of the vehicle, and a controller in communication with the at least one variable damper (28, 30, 148) and the at least one sensor. The controller is configured to vary transverse damping by the at least one variable damper (28, 30, 148) in accordance with the signals generated by the at least one sensor to passively provide transverse tilt stability to the frame (12) through the force generated in the damper in the opposite direction of the damper movement. The invention suggests to transversly damp a freely tiltable frame in accordance to a damping state for enhancing driving security and comfort of the vehicle.

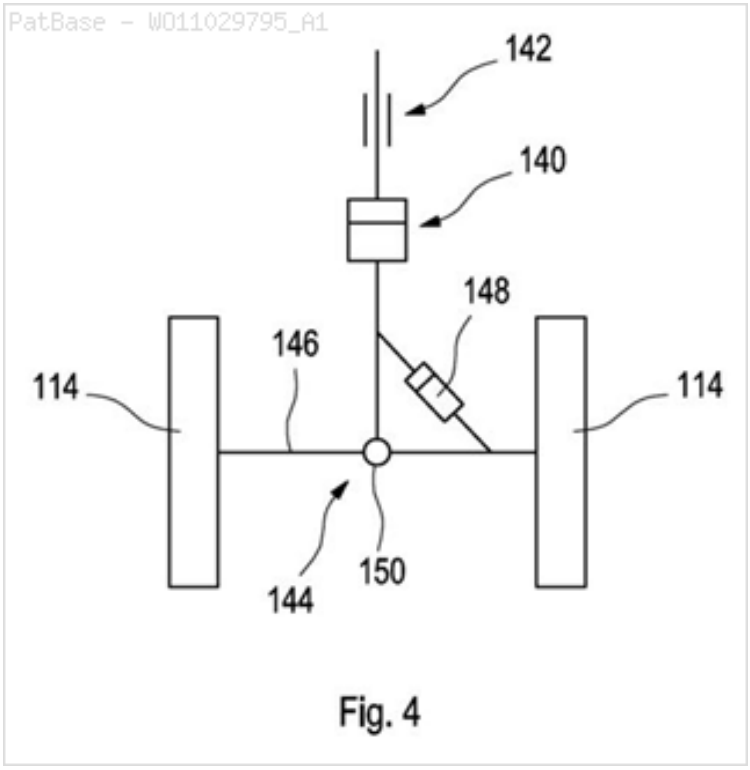


Fig. 4

0) US2012080249A – FRONT WHEEL ENERGY RECOVERY SYSTEM

5) Family number: 50897763 (US2012080249A) © PatBase

Title: FRONT WHEEL ENERGY RECOVERY SYSTEM

Priority: US20100897534 20101004 US20130838989 20130315 US20140305534 20140616

Family:

Publication number	Publication date	Application number	Application date
TW201223822 A	20120616	TW20110135773	20111003
US2012080249 AA	20120405	US20100897534	20101004
US2013226381 AA	20130829	US20130838989	20130315
US2014291050 AA	20141002	US20140305534	20140616
US8761984 BB	20140624	US20130838989	20130315
US8973690 BB	20150310	US20100897534	20101004
US9043067 BB	20150526	US20140305534	20140616
WO12047754 A1	20120412	WO2011US54227	20110930

Probable Assignee: MORRISON CONSULTING GROUP INC W

Assignee(s):(std)**:** INGRAM BENJAMIN T ; MORRISION CONSULTING GROUP INC W ; MORRISON CONSULTING GROUP INC W ; YATES III WILLIAM M ; YATES WILLIAM M III

Assignee(s): YATES WILLIAM M ; W MORRISION CONSULTING GROUP INC ; W MORRISON CONSULTING GROUP INC ; WMORRISON CONSULTING GROUP INC

Inventor(s):(std)**:** INGRAM BENJAMIN T ; YATES III WILLIAM M ; YATES WILLIAM M III ; YATES WILLIAM M

Agent(s): MCKENNA LONG AND ALDRIDGE LLP; JUNG SONG K

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60K1/00 B60L11/00 B60L15/20 B60L7/18 B62K11/04 B62M23/02 B62M6/40 B62M6/80 B62M6/90 B62M7/02 G06F19/00 H02P3/14 (Advanced/Invention)

CPC: B60L11/002 B60L7/18 B60L15/2045 B60L2200/12 B62K11/04 B62K2204/00 B62M7/02 B62M23/02 Y02T10/7283 Y02T10/645 Y02T10/72

European class: B60L15/20E B60L7/18 B62K11/04 B62M23/02 B62M7/02 L60L200/12 L62K204/00 Y02T10/72D6

US class: 180/220 180/65.21 180/65.31 180/65.310P 180/65.6 290/1R 701/22 701/22S

Classification Explorer

Cited documents: WO9011218 A1, WO05044602 A2, WO0058121 A1, US8413748 BB, US8225897 BA, US8151919 BB, US8056693 BB, US8042641 BB, US7775314 BB, US7570012 BB, US7487854 BB, US7328766 BB, US7290629 BB, US7231998 BA, US6888273 BB, US6833642 BA, US6724165 BB, US6663524 BB, US6505699 BA, US6446985 BA, US6439592 BA, US6398683 BA, US6196347 BA, US6182991 BA, US6161855 A, US6161854 A, US6158543 A, US6068279 A, US6039137 A, US5894903 A, US5873428 A, US5865267 A, US5671821 A, US5644202 A, US5491390 A, US5324057 A, US5253889 A, US5113964 A, US5054572 A, US5052705 A, US5050699 A, US5042608 A, US4479660 A, US4397369 A, US3939932 A, US3934669 A, US3199623 A, US3045772 A, US3024860 A, US2012211291 AA, US2012184379 AA, US2012109483 AA, US2012065825 AA, US2012052995 AA, US2011295454 AA, US2011295452 AA, US2011292667 AA, US2011291462 AA, US2011231085 AA, US2011231060 AA, US2011231041 AA, US2011162900 AA, US2011036656 AA, US2010243350 AA, US2010243349 AA, US2010236849 AA, US2010018787 AA, US2009188738 AA, US2008234933 AA, US2008100027 AA, US2008066984 AA, US2007235235 AA, US2007169973 AA, US2005173176 AA, US2004134696 AA, US2003169002 AA, JP8262971 A2, JP5085444 A2, JP5085443 A2, JP5085441 A2, JP5085439 A2, JP5085438 A2, JP5085437 A2, JP4151390 A2, JP2009161026 A2, JP2004210072 A2, EP0798202 A1,

DE202005013929 U1

CN101525024 A,

Forward Citations: WO15006277, US9573590, US9457668, US9415691, US9387764, US9321358, US9168970, US9050905, US8954212, US8950539, US8919483, US8892292, US8880266, US2016325745, US2015274020, US2015274019, US2015258898, US2015203110, US2014358343, US2014297074, US2014262581, US2014034267, US2013299265, US2013284527, US2013282218, US2013274983, US2013168171, US2012296508, US2012203407, EP2946993, EP2910401,

Abstract:
Source: US2012080249A A kinetic energy recovery system ("KERS system") and motorcycle equipped with the same is disclosed. The KERS system may be mechanical, hydraulic, or a combination thereof. In an embodiment, motorcycle includes a rear wheel, an electric motor, a motor shaft, and a front wheel equipped with a wheel hub that includes a sprag clutch. The motor shaft can be fitted with a motor drive sprocket that drives a jackshaft chain that in turn drives a jackshaft input sprocket that is fitted to the jackshaft. Jackshaft input sprocket may be installed in conjunction with a sprag clutch that allows the rear wheel to free wheel during coasting while the front wheel KERS system is engaged. The motor harvests kinetic energy from the front wheel without simultaneously powering the rear wheel while the use of a geared dead zone allows the front and rear wheels to not lock together to improve safety.

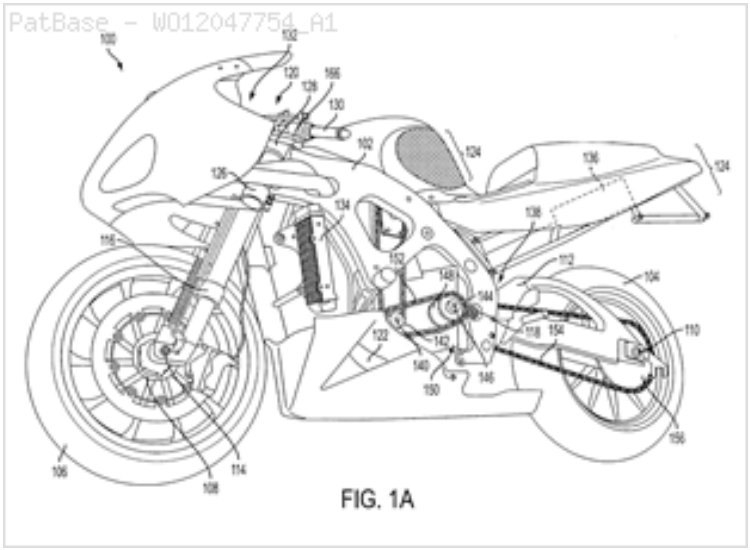


FIG. 1A

0) US2001028154A – VEHICLE HAVING SUSPENSION SYSTEM WITH VARIABLE ...

6) Family number: 31018397 (US2001028154A) © PatBase

Title: Vehicle having suspension system with variable camber and vertical suspension in the plane of the wheel

Priority: DE20012014331U 20010830 FR20000004596 20000410 FR20010011860 20010913 GB20010023903 20011004 US20010922155 20010806

Family:

Publication number	Publication date	Application number	Application date
AT258120 E	20040215	AT20010107977T	20010329
DE20114331 U1	20011025	DE20012014331U	20010830
DE60101809 D1	20040226	DE20016001809	20010329
DE60101809 T2	20041104	DE20016001809T	20010329
EP1145879 A1	20011017	EP20010107977	20010329
EP1145879 B1	20040121	EP20010107977	20010329
FR2807378 A1	20011012	FR20000004596	20000410
FR2829460 A3	20030314	FR20010011860	20010913
FR2829460 B3	20030829	FR20010011860	20010913
GB200123903 A0	20011128	GB20010023903	20011004
GB2380459 A1	20030409	GB20010023903	20011004
JP2002052915 A2	20020219	JP20010111443	20010410
US2001028154 AA	20011011	US20010829058	20010409
US2003025291 AA	20030206	US20010922155	20010806
US6511078 BB	20030128	US20010829058	20010409
US6511087 BA	20030128	US20010922155	20010806

Probable Assignee: CONCEPTION AND DEV MICHELIN SA

Assignee(s):(std)**:** CONCEPTION AND DEV MICHELIN SA ; CONCEPTION ET DEV MICHELIN S A ; FONG CHIN LONG ; MICHELIN RECH TECH

Assignee(s): CONCEPTION ET DEVELOPPEMENT MICHELIN SA ; CONCEPTION ET DEVELOPPEMENT MICHELIN S A ; CHIN LONG FONG ; CONCEPTION ET DEVELOPMENT MICHELIN S A ; CONCEPTION ET DEVELOPMENT MICHELIN S A GIVISIEZ ; CONCEPTION ET DEVELOPPEMENT MICHELIN

Inventor(s):(std)**:** FONG CHIN LONG ; SEBE MARC

Inventor(s): CHIN LONG FONG

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

International class (IPC 8–9)**:** B60G17/015 B60G17/016 B60G21/00 B60G3/01 B60G3/20 B60G7/00 B60G7/02 B62D17/00 B62D7/20 B62D9/02 B62K5/00 B62M1/00 (Advanced/Invention); B60G17/015 B60G21/00 B60G3/00 B60G3/18 B60G7/00 B60G7/02 B62D17/00 B62D7/00 B62D9/00 (Core/Invention)

International class (IPC 1–7)**:** A63B22/02 B60G17/01 B60G17/015 B60G21/00 B60G3/01 B60G3/20 B60G7/02 B62D17/00 B62D7/20 B62D9/02 B62K11/00 B62K3/00 B62K5/00 B62M1/00 B62M9/02

CPC: B62K3/002 B62M1/34 B60G3/01 B60G7/001 B60G17/0162 B60G21/007 B60G2200/144 B60G2200/44 B60G2200/46 B60G2200/462 B60G2200/464 B60G2202/413 B60G2204/143 B60G2204/421 B60G2204/422 B60G2204/82 B60G2204/8302 B60G2206/11 B60G2206/1114 B62D9/02 B62D17/00

European class: B60G17/015A2 B60G17/016F B60G21/00D B60G3/01 B60G7/00A B62D17/00 B62D9/02 L60G200/144 L60G200/440 L60G200/460 L60G200/462 L60G200/464 L60G202/413 L60G204/143 L60G204/421 L60G204/422 L60G204/82 L60G204/8302 L60G206/11 L60G206/1114

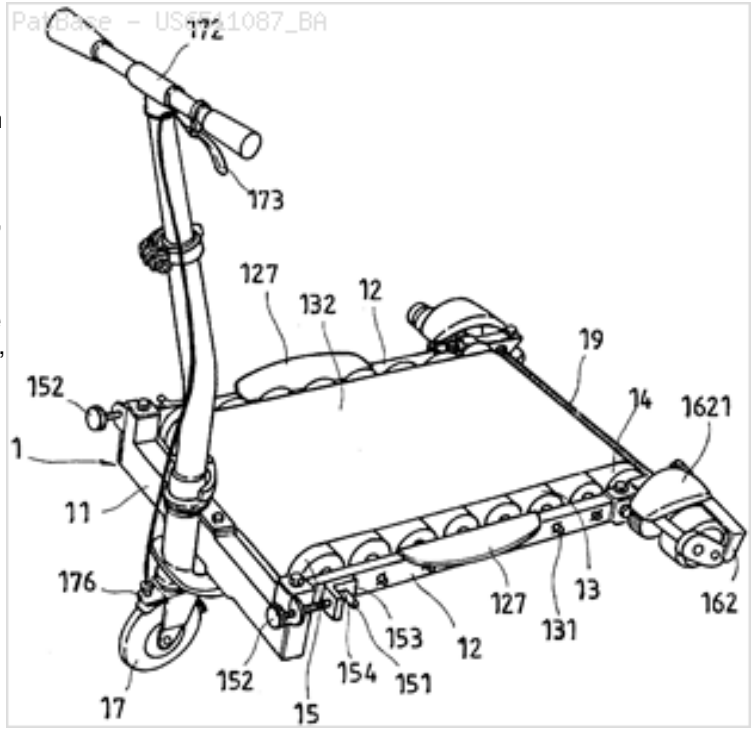
US class: 280/124.103 280/124.127 280/210 280/210P 280/228 280/282 280/5.509 280/5.521 280/86.757

Classification Explorer

Cited documents: WO8702951 A1, US6170838 BA, US6113119 A, US4796720 A, US4700972 A, US4487429 A, US4334695 A, US4159128 A, US3485506 A, US3332704 A, US2152938 A, US1696927 A, US1353011 A, JP63101114 A2, JP46033604 B4, JP46033604 B1, JP11028924 A2, JP10338009 A2, GB210429 A, FR967710 A, EP0878378 A1, EP0878332 A1, DE2822058 A1, DE1214100 B,

Forward Citations: WO05000606, WO04069569, WO03057529, WO03057529, US9283989, US9248857, US9145168, US9090281, US9045015, US9010784, US8818700, US8641064, US8202201, US8128110, US8050820, US7914020, US7905500, US7845666, US7703781, US7673883, US7625000, US7607695, US7591337, US7571787, US7559400, US7425005, US7419175, US7357400, US7246806, US7234708, US7108271, US7013206, US6986519, US6840524, US6695331, US6505845, US2016059661, US2010324808, US2010320023, US2010117313, US2009256326, US2009194965, US2008290618, US2008197597, US2008194386, US2008073168, US2008039289, US2007267883, US2007205576, US2006287165, US2006237941, US2006220335, US2006181050, US2005179225, US2005051976, US2005017471, US2004150179, US2004150178, US2004128040, US2004036443, US2003230443, RU2607691, KR101614701, KR101028058, JP4813360, JP2006027602, FR2858964, EP1944228, EP1889537, EP1736401, EP1506917, DE10241725, DE102014006600, CN103640661, CN102596601, CN102596601,

Abstract:
Source: US2001028154A A ground contact system for a vehicle having a wheel mounted on a wheel carrier, the wheel carrier being mounted on a support by a vertical suspension device, the support being mounted on a chassis by a load transfer arm on one side of which the support is articulated along an essentially horizontal geometrical camber axis, the load transfer arm being connected at its other side to the chassis along an essentially vertical geometrical axis, a camber control rod being mounted articulated to the support some distance from the geometrical suspension axis, the camber control rod being able to move transversely relative to the chassis, a triangulation−forming element connecting the load transfer arm to the chassis around the essentially vertical geometrical axis, such that it controls the moment about the essentially vertical geometrical axis.



0) US6276480B – THREE–WHEEL MOTOR VEHICLE

7) Family number: 20660463 (US6276480B) © PatBase

Title: THREE–WHEEL MOTOR VEHICLE

Priority: CH19960002986 19961206 WO1997CH00452 19971201

Family:

Publication number	Publication date	Application number	Application date
AT236042 E	20030415	AT19970913077T	19971201
AU199850464 A1	19980629	AU19980050464	19971201
DE59709719 D1	20030508	DE19975009719	19971201
EP0941198 A1	19990915	EP19970913077	19971201
EP0941198 B1	20030402	EP19970913077	19971201
JP2001505157 T2	20010417	JP19980525018T	19971201
MY133554 A	20071130	MY19970005833	19971204
TH34964 A	19990914	TH19971004845	19971126
TW350825 B	19990121	TW19970118023	19971201
US6276480 BA	20010821	US19990319410	19990604
WO9824681 A1	19980611	WO1997CH00452	19971201

Probable Assignee: CITYMOBIL AG

Assignee(s):(std)**:** AREGGER KURT ; CITYMOBIL AG ; CITYMOBIL AG EMMENBRUECKE ; CITYMOBIL EMMENBRUECKE AG

Inventor(s):(std)**:** AGREGGER MR KURT ; AREGGER KURT

Inventor(s): KURT AREGGER ; MR KURT AGREGGER

Designated states: AL AM AT AU AZ BA BB BE BG BR BY CA CH CN CU CZ DE DK EE ES FI FR GB GE GH GR HU ID IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK MN MW MX NL NO NZ PL PT RO RU SD SE SG SI SK SL SZ TJ TM TR TT UA UG US UZ VN YU ZW

International class (IPC 8–9)**:** B62D21/00 B62D31/00 B62D37/00 B62D47/00 B62D61/08 B62K11/02 B62K5/027 B62K5/04 (Advanced/Invention); B62D31/00 B62D37/00 B62D47/00 B62D61/00 B62K5/00 (Core/Invention); B62D21/00 (Core/Non–invention)

International class (IPC 1–7)**:** B62D21/00 B62D61/06 B62D61/08 B62K11/02 B62K5/04

CPC: B62D31/003 B62D37/00 B62D47/00 B62D61/08 B62K5/027 B62K5/10

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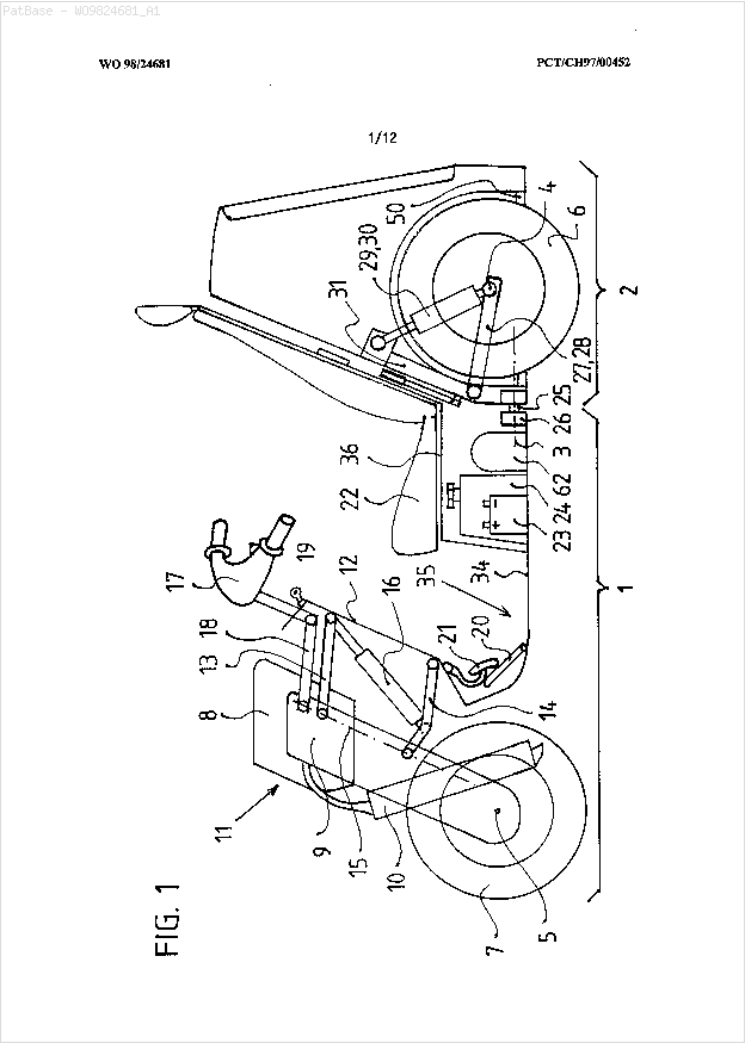
US class: 180/213 180/252 280/62

Classification Explorer

Cited documents: US5495905 A, US5343973 A, US5291406 A, US5116069 A, US4998596 A, US4580797 A, US4412595 A, US4159752 A, US3938609 A, US3605929 A, US2606623 A, US2317412 A, JP5085453 A2, GB2082517 A1, GB2074957 A1, GB2014094 A1, FR2684606 A1, FR1562248 A, EP0529188 A1,

Forward Citations: WO13058694, WO10133968, WO10133968, WO08041243, WO07112118, WO07112118, WO06130007, WO05025972, US9499220, US9440685, US9428236, US8820461, US8781684, US8768570, US8762003, US8646794, US8543291, US7967096, US7600596, US7591337, US7571787, US7311167, US7207408, US7152868, US7090234, US6889784, US6739616, US6655483, US6517111, US6460916, US6457374, US2015203162, US2015123389, US2012247856, US2012232758, US2010072722, US2009295106, US2008251309, US2008245593, US2006097471, US2005077098, US2004188167, US2004144586, US2004119259, US2004075247, GB2394701, EP2768716, EP2551177, EP2364901, EP1713651, EP1422130, DE10259160, DE102007015851, DE102004059347, CN102303667, CN102161363, CN102161363,

Abstract:
Source: US6276480B A three−wheeled vehicle having two parts that can be tilted around a longitudinal axis. A rear part has a chassis for two−track wheels and the front part, which can be tilted relative to the rear part, accommodates a driver seat. Connected to a front end of the front part is a tiltable front wheel suspension to which a front wheel and an engine and gears for the front−wheel drive are attached. The two vehicle parts that can be tilted relative to each other each support or form a body which can also be designed for the front part as a monocoque and forms a closed and heatable driver cabin.



0) DK9600429U – STYREFORBINDELSESSTANG STEERING TIE ROD (MAC...

8) Family number: 17870852 (DK9600429U)

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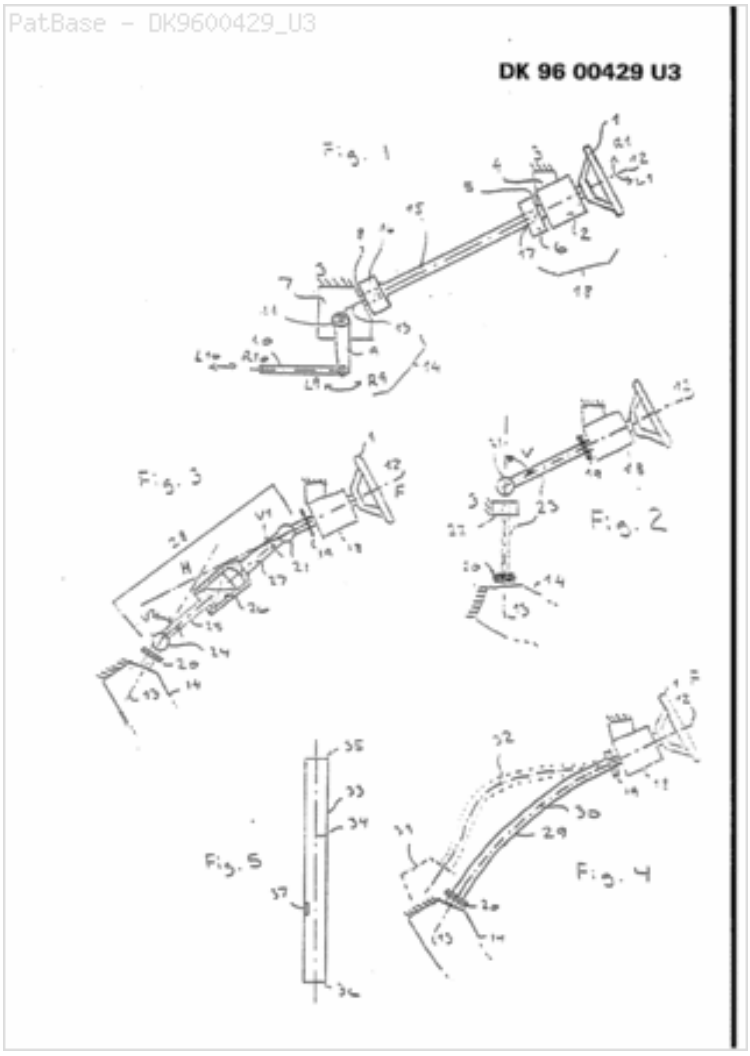
Title:	Styreforbindelsesstang Steering Tie rod (Machine translation)
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Classification Explorer



Abstract:
Source: DK9600429U brugsmodelkrav 1 omhandlede art. 15 Kendt teknik: Styreforbindelsstænger, der overfører en drejende bevægelse fra et lejret håndtag, rat, styrepind eller lignende betjeningsorgan til en lejret tap, stangkobling, 20 akselende eller lignende tilslutningsorgan, som f. eks. igen overfører drejningen, eventuelt,via en udvekslingsanordning og/eller et system af træk–/tryk–stænger, til en drejning af et eller flere hjul på et køretøj for at opnå et styreudslag og dermed kontrol 25 over køreretningen – eller tilsvarende overfører en drejning af hjul via tilslutningsorganet til en drejning af betjeningsorganet – er sædvanligvis udført af rette stænger af ofte homogent materiale, ofte som metalprofiler af tilnærmelsesvist rotationssymmetrisk tværsnit, herunder 30 firkantede. Udover at kunne overføre de for funktionen nødvendige vridningsmomenter med passende grad af overskydende sikkerhed overfor overbelastning, udviser disse 35 sædvanligvis anvendte styreforbindelsesstænger udover den nødvendige vridnings–stivhed og –styrke, samtidig en voldsom modstand mod bøjning. Dette betyder at man f. eks. ved konstruktion af 40 køretøjer, hvor øvrige forhold nødvendiggør at drejningsaksen for betjeningsorganets lejring og drejningsaksen for tilslutningsorganet ikke kan ligge i forlængelse af hinanden – hvor man således ikke kan nøjes med at anvende en ret styreforbindelsesstang imellem 45 betjeningsorgan og tilslutningsorgan – må indføre diverse supplerende elementer på styreforbindelsesstangen for at kunne overføre drejningen mellem organerne, hvis drejningsakser er placeret ude af linie, f eks som sideværts indbyrdes parallelforskudte, som indbyrdes 50 vinkeldrejede eller som en kombination heraf. 55 DK 96 00429 U3 2 Årsagerne til at man konstruktivt beslutter at anvende en styreforbindelsesstang med diverse supplerende elementer kan dels være et overordnet krav om øget rumudnyttelse indenfor en given ydre kontur af et køretøj, hvilket så 5 medfører indbyrdes "akavet" placering af betjeningsorgan og tilslutningsorgan, eller et krav om at kollisionssikre styreforbindelsesstangen, så den ikke ved en kraftig påvirkning, f eks fra en kollision køretøjet er indblandet i, kan forvolde personskade ved at blive trykket

ind mod 10 den person, der håndterer betjeningsorganet og som altså er placeret herudfor modsat styreforbindelsesstangen. De supplerende elementer man oftest ser anvendt for at kunne overføre drejningen mellem organernes forsatte akser 15 er kardanled (universalled), hardy–skiver (gummipladekoblinger) eller tilsvarende – ofte anvendt flere steder på styreforbindelsesstangen, hvilket yderligere nødvendiggør en supplerende støttelejring et sted mellem styreforbindelsesstangens ender. 20 Evt. med samtidig indførte supplerende elementer, kendes styreforbindelsesstænger også udført teleskopiske som en art rotationssikret stempel/prop i en kantet cylinder/bøsning eller lignende, for yderligere at kunne 25 trykkes sammen i længderetningen, således at deformationer fra en kollision kan optages i styreforbindelsesstangen uden at denne skubber betjeningsorganet mod personen på den modsatte side. 30 Det fremgår af foranstående, at der ofte er tale om ganske komplicerede indretninger, der dels fordyrer køretøjernes fremstillingsomkostninger, og som i visse tilfælde kun har en begrænset holdbarhed. Det er således velkendt at styreforbindelsstænger, der er 35 forsynet med temmelig fritliggende kardanled efter en vis tid bliver behæftet med et ubehageligt slør grundet tæring og slid i de bevægelige dele. 40 Det tekniske problem, der skal løses: Med styreforbindelsesstangen ifølge frembringelsen kan en eller flere af de nævnte ulemper ved de kendte typer 45 styreforbindelsesstænger overvindes på en elegant måde, idet den overflødiggør de supplerende elementer. Den nye teknik: 50 Den nye styreforbindelsesstang ifølge frembringelsen er udført i ét stykke i en kontrolleret materialeopbygning, der på én og samme gang indbygger den nødvendige vridnings–stivhed og –styrke i stangen kombineret med en 55 passende begrænset stivhed og styrke mod bøjning. 3 DK 96 00429 U3 Den til formålet velegnede kombination af vridnings– og bøjnings–egenskaber kan især opnås ved anvendelse af laminerede eller viklede fiber–/matrix–materiale– opbygninger, hvor fiberretningerne er krydsende hinanden og 5 styreforbindelsesstangens akseretning. Den tekniske virkning: 10 Med disse nye egenskaber muliggør styrestangen ifølge frembringelsen en funktionel indbygning mellem væsentlig forsatte organ–drejningsakser uden anvendelse af supplerende elementer, idet den kan overføre de nødvendige 15 vridningsmomenter og samtidig "rulle om sig selv" stående i en stabil bue mellem betjeningsorganet og tilslutningsorganet, bestemt af disses akseretninger, styreforbindelsestangens udformning, og geometrien iøvrigt. 20 Det indses, at funktionen er helt slørfri, da der ikke er mekaniske led involveret. De yderligere tiltag for kollisionssikring bliver også 25 unødvendige, da den nye styreforbindelsesstang, når organerne flyttes mod hinanden – hvadenten dette skyldes en flytning af tilslutningsorganet i forhold til betjeningsorganet, f eks ved en kollision, eller en flytning af betjeningsorganet i forhold til 30 tilslutningsorganet f eks ved en kontrolleret indstilling af betjeningsorganets akse–placering – blot vil ændre sin bøjede tilstand (krumning) og evt sluttelig ved en ultimativ bøjningstilstand bryde sammen ved at bukkes eller helt eller delvis knække, dog uden nødvendigvis at 35 flytte betjeningsorganet; personskade undgås således. Figurfortegnelse: 40 Fig. 1 viser stiliseret, set fra siden, en sædvanlig indbyrdes placering af betjeningsorgan og tilslutningsorgan, som tillader en stiv ret styreforbindelssesstang anvendt. 45 Fig. 2 viser stiliseret, set fra siden, en sædvanlig indbyrdes forsat placering af betjeningsorgan og tilslutningsorgan i samme plan, som nødvendiggør anvendelse af supplerende elementer. 50 Fig. 3 viser stiliseret, set fra siden, en sædvanlig indbyrdes placering af betjeningsorgan og styreorgan med akser ude af plan, som nødvendiggør anvendelsen af flere supplerende elementer. 55 5 10 15 20 25 30 35 40 45 50 55 DK 96 00429 U3 Fig. 4 viser den nye styreforbindelssesstang iflg. frembringelsen monteret i konstruktionen iflg. figur 3. Fig. 5 viser en styreforbindelssesstang iflg frembringelsen i en meget enkel udformning og upåvirket af kræfter. Udførelseseksempler: Positionsnumre henviser til en eller flere af figurerne 1 – 5: Et rat eller lignende betjeningsgreb 1 er monteret med en akseltap 5 lejret i en holder 2, der igen er fæstnet til stel 3 f eks i et køretøj, via en konsol 4. Modsat rattet ender akseltappen i en kobling 6. Rattet 1 er monteret som en kobling/bøsning omkring akseltappen 5, ofte med konusvirkning trukket an, af en løs møtrik. Et styrehus 7 er monteret mod stel 3 et andet sted på samme køretøj, og har til formål at omsætte en drejning af tappen 8, der vender mod rattet, til en drejning af svingarmen 9, som igen påvirker en stang 10, så den kan gives en bevægelse omtrent i sin længderetning. Denne bevægelse kan via et yderligere arrangement dreje et eller flere hjul for at kontrollere køretøjets retning på køreunderlaget. Styrehuset 7 rummer normalt mekaniske elementer, hvis funktion er dels at orientere udgangsaksen 11 i ønsket retning i forhold til akseretningen 13 af tappen 8, dels evt at ændre momentforholdene her imellem. Styrehuset 7 er bevidst placeret, så akseretningen 13 af tappen 8 flugter med akseretningen 12 for ratlejringen. Herved kan monteres en ret og stiv styreforbindelsesstang 15 forsynet med tilkoblingsstykker 16 og 17, der passer til hhv. tappen 8 og koblingen 6. Tilkoblingsstykket 16 er vist som en kobling og tilslutningsstykket 17 kan blot være en tap, der passer i koblingen 6. Tap/kobling–kombinationerne kan vendes eller erstattes med f eks flangekoblinger eller andre stive koblingstyper. Det vigtige er, at en aktivering af betjeningsgrebet 1, f eks en drejning i retningen RI, gennem systemet overføres til en entydig tilsvarende bevægelse R9, R10 uden slør, og tilsvarende: en bevægelse f eks L10 af stangen 10 kan blive til en entydig drejning Li af rattet 1. 5 DK 96 00429 U3 Herefter benævnes hele det system, der starter med en akse svarende til tappen 8 og som kræver en drejning heraf for at fungere som ønsket, for tilslutningsorganet 14, uanset om det er et styrehus på et køretøj, eller en roraktivator 5 på en båd, eller blot en drejelig gennemføring af en forgaffel i kronhovedet på en cykel el. lign., og uanset der måtte eksistere et hjælpekraftsystem, der trigges af drejningen af tappen 8. 10 Tilsvarende kaldes rat 1 med lejring 2, aksel 5 og kobling 6, uanset af hvad type det måtte være, samlet for betjeningeorganet 18, uanset det måtte indeholde en indre udveksling (f eks et planetgear). Karakteristisk er, at en drejning af betjeningsgrebet 1 entydigt medfører en 15 tilsvarende drejning om aksen 13 af den enhed 6 der er beregnet for tilslutning til styreforbindelsesstangen 15. Figur 1 viser altså, at udgangsaksen 12 for betjeningsorganet 18 er sammenfaldende med indgangsaksen 20 13 for tilslutningsorganet 14, og at der derfor kan anvendes en stiv styreforbindelsesstang 15. Figur 2 viser, at akserne 12 og 13 fra hhv betjeningsorgan 18 og tilslutningsorgan 14 ligger i samme plan (papirets) 25 med en vinkel V imellem sig. Mindst et led 21 på styreforbindelsesstangen 23 er nødvendigt for for at overføre drejningen af udgangsaksen 12 ved tilkoblingen 19 ved betjeningsorganet 18 til en 30 drejning af indgangsaksen 13 ved tilkoblingen 20 på tilslutningsorganet 14. Leddet er ofte udformet som et universalled (kardanled) eller en gummiskivekobling (hardyskive). Ofte monteres også et støtteleje 22 i forhold til stel 3 i nærheden af 35 leddet 21. Figur 3 viser udgangsaksen 12 hævet over papirets plan og indgangsaksen 13 liggende i papirets plan, så akserne er vindskæve og altså ikke mødes ved H. 40 Det er nødvendigt med 2 vinkelovergange VI og V2 for at overføre drejningen mellem akserne 12 og 13. Vinkelovergangene udføres med leddene 21 og 24, af samme

vridningsstive type. Herimellem er monteret en vridningsstiv teleskopisk enhed, 45 der kan være udformet som en firkantet prop, der passer i et firkantet hul ved hullets indre flade 26, og hvor prop og hul udgør afslutningen på hver sin stang hhv 25 og 27. Med arrangementet monteret i f eks et automobil er herved opnået en kollisionssikring af en fører placeret ved F, 50 idet en tvangsmæssig flytning af tilslutningsorganet 14, der nu repræsenterer det i forenden af køretøjet placerede styretøj, mod H ved en kollision, vil trykke teleskopenheden 25–26–27 kortere. Leddet 21 flyttes ikke ved forkortelsen af teleskopenheden og betjeningsorganet 55 18 forbliver på plads og påvirker ikke føreren ved F. 6 DK 96 00429 U3 Styreforbinclelsesstangen 28 har nu mindst 2 supplerende elementer il:ht 15, nemlig leddene 21 og 24, hertil kan komme støttelejer og de viste dele fra teleskopenheden. 5 Til montering mellem vindskævt placerede ud– og ind–gangsakser hhv 12 og 13 med samtidig tilvejebringelse af kollisionssikring, kræves altså med anvendelsen af den kendte teknik, en kompleks enhed med mange mekaniske præcisionsdele. 10 Figur 4 viser en styreforbindelsesstang 29 iflg frembringelsen, monteret mellem vindskæve akser 12 og 13 som på fig 3. Styreforbindelsesstangens 29 akse 30 har i enderne ved tilkoblingerne 19 og 20 til hhv 15 betjeningsorgan 18 og tilslutningsorgan 14 samme retning som akserne 12 og 13 på den anden side af tilkoblingerne 19 og 20, og disse retninger er tangenter i enderne for den krumme rumkurve som styreforbindelsestangens 29 akse indtager. 20 Formen er afhængig af koblingsstedernes 19 og 20 indbyrdes afstand og vinkeldrejning, samt af styreforbindelsesstangens længde og udførelse iøvrigt. Formen er generelt karakteriseret ved, at den repræsenterer dén bøjede tilstand, hvori der under de 25 givne betingelser er opmagasineret mindst elastisk bøjningsenergi i forhold til at styreforbindlsesstangen er frit udstrakt. Udover de netop nævnte geometriske forhold mellem 30 tilkoblingerne 19 og 20 og længden af styreforbindelsesstangen 29, består de givne betingelser også i: – at akserne!– 12 og 13 har en konstant retning samtidigt med, at de drejes (de er roterende indspændt), 35 – afhængigheden af det materiale, hvoraf styreforbindelsesstangen er fremstillet, – hvordan stivheds– og styrke–egenskaberne administreres langs stangen (de kan varieres ved ændret tværsnit, (evt indbyrdes) aîndret tykkelse af materialelag, og lignende 40 tiltag). De specielle retningsbestemte egenskaber i styreforbindelssesstangens 29 materiale, som kan bestemmes/fremstilles efter behovet, bevirker, at det 45 drejende moment fra betjeningsgrebet 1 kan føres gennem styreforbindelsesstangen 29 tildrejning af indgangsaksen 13 i tilslutningsenhed 14 uden at styreforbindelsesstangen ændrer stilling i rummet. Den drejer i stedet om sin egen akse alle steder. 50 Ved en kollision, hvor tilslutningsenheden 14 flyttes i forhold til betjeningsenheden 18, f eks til den stiplede placering 31, vil styreforbindelsessstangen indtage en ny minimumenergi–tilstand ud fra de nu givne betingelser. Dette er vist ved den rumlige kurveform 32. 55 7 DK 96 00429 U3 Betjeningsenheden er ikke blevet flyttet, se den har ikke påvirket en fører placeret ved F, og systemet kan principielt stadig fungere – især dog afhængig af kolisionsskaderne ved tilslutningsenheen 14. 5 Den netop omtalte effekt kan omvendt udnyttes til at gøre placeringen af betjeningsenheden 18 justerbar i forhold til tilslutningsenheden 14, således at f eks i en bil kan rat–højde og –afstand let tilpasses størrelse af den aktuelle fører af bilen. 10 Styreforbindelsesstangen kan naturligvis også anvendes i de principielle situationer, der er vist i figurerne 1 og 2 og kan selvfølgelig også kombineres med elementer fra den kendte teknik. 15 Figur 5 viser at en styreforbindelsesstang 33 iflg frembringelsen, i fri tilstand (vægtløs, ubevæget etc) indtager en minimum–energi–stilling, der ved en rotationssysmmetrisk konstruktion af materialeopbygningen 20 i styreforbindelsesstangen 33 repræsenteres ved en retlinet akse 34. Der er dog intet i vejen for at materialegenskaberne bevidst disponeres varierende, rundt om og på langs af 25 styreforbindelsesstangen. Dette kan f eks udnyttes til at skabe en styreforbindelsesstang iflg frembringelsen, der under rulning omkring sig selv i en i øvrigt tilnærmelsesvis fast stående rumkurve, udviser en eller flere foretrukne stillinger med et (lokalt) laveste 30 energi–indhold. Denne konstruerede egenskab kan elegant udnyttes til f eks at fremstille et selvoprettende styretøj på et køretøj med 2 eller flere hjul, idet det udnyttes, at den (fortrinsvis 35 eneste) minimum–energi–stilling, under de iøvrigt givne betingelser, svarer til at køretøjet styrer "lige–ud". Styringen overladt til sig selv bringes således til en ønsket stilling karakteriseret ved at være en 40 minimum–energi–stilling efter den udladning af opmagasineret elastisk energi, der flyttede komponenterne i styringen hertil, fra en stilling karakteriseret ved, at den indeholdt en større mængde elastisk energi. 45 Den ønskede stilling kan være en anden stilling end den, styretøjet grundet sin geometri iøvrigt, (bl a grundet hjulophængets karakteristiske vinkler og øvrige dimensioner) ellers ville indstille sig til, hvis det blev overladt til sig selv under de på tidspunktet givne 50 betingelser og uden den elastiske effekt fra styreforbindelsesstangen. 55 DK 96 00429 U3 8 Der er en gensidig påvirkning på hinanden af disse 2 effekter fra hhv styreforbindelsesstang og udførelse af hjulophæng, og det er op til konstruktøren i den givne situation at vælge: dels den absolutte værdi af størrelsen 5 af hver effekt for sig, og dels den indbyrdes vægtning i styretøjets forskellige funktionssammenhænge. Effekten kan også udnyttes til en konstruktiv variant af udformningen af et styretøj, der består i, at indbygge 10 retnings– og steds–afhængige styrke og stivheds–egenskaber i styreforbindelsesstangen iflg frembringelsen, for at kompensere for en uønsket konstruktiv usymmetri i et styretøj iøvrigt. Dette kan f eks vise sig overfor køreren på et 2 hjulet 15 køretøj ved, at det – uden kompenserende virkning fra styreforbindelsesstangen – kræver mere kraft at dreje styret til den ene side end til den anden side, og ved, at styretøjet overladt til sig selv, ikke indstiller sig på "lige–ud", hvilket normalt er den ønskede neutalstilling. 20 Med kompenserende virkning fra styreforbindelsesstangen med til formålet konstruerede og fordelte egenskaber, kan styret for den pågældende 2–hjuls–kører føles ens at dreje til begge sider,ligesom den frie neutralstilling kan være 25 lige–ud. Specielt kan kompenseres, så styret eller rattet i et køretøj føles lige let at dreje ved alle udslag af styretøj og/eller hjul. 30 Effekterne, der skal kompenseres for, kan hidrøre fra en usymmetriske konstruktion, f eks sideværts hældende forhjul på et 2 hjulet køretøj og/eller fra dynamiske effekter, f eks fra styre–drejning af uheldigt placerede akser af roterende inertimasser, herunder forhjul på 35 motorcykler. Den nævnte kompenserende effekt kan bl a udnyttes i en 2–hjulet HPV med kæde/rem–træk til nav i forhjulet fra et stelfikseret krankarrangement, hvor: 4 0 – både kædens/remmens stramme og slappe stræk er ført igennem kronhoved og forgaffelrør, – forhjulet er sideskævt monteret i forgaflen, – den til tilkoblingsdel 20 svarende enhed på kanten af forgaffelrøret under drejning af forgaflen samtidigt 45 foretager en excentrisk bevægelse om kronhovedaksen. Den kompenserende effekt kan på tilsvarende måde anvendes til at konstruere en passende styreforbindelsesstang til en båd. Placeret mellem et rat som betjeningsenhed 18 og 50 eksempelvis styredrejeaksen på en eksternt placeret påhængsmotor som tilslutningsorgan 13, 14 kan opnås, at den velkendte tendens til skævdrejning af motoren i. rorfunktionen (som skyldes den konstruktive usymmetri, der

består i, at kun én skrue danner hvirvel i vandet) kan 55 udbalanceres. DK 96 00429 U3 En sådan påhængsmotor kan være således udformet i sit ophæng, at den stadig kan drejes rundt i samme retning, hvorved det bliver muligt stadigt at kunne efterkomme behovet for et yderligere styreudslag i denne retning. 5 Dette giver meget fine manøvreringsmuligheder, da man undgår den situation, hvor moteren pludseligt skal drejes næsten en hel omgang modsat rundt for at nå til en nærliggende yderligere vinkeldrejet stilling. 10 Nærliggende er også at anvende styreforbindelsesstangen iflg frembringelsen til at drive en skrue på båden rundt for at opnå fremdrift. Figur 5 viser en meget simpel udførelse af en 15 styreforbindelsestang 33, idet denne blot består af et stykke med given længde, afkappet fra en længere stang, evt med– et simpelt rotationssymmetrisk tværsnit. Snitstedet 35 i den ene ende, og den modsatte ende 36, der også kan være et snitsted, er evt nødtørftigt bearbejdet 20 ved at snitsted(er) er renset for grater og lignende fra overkapningen. Herudover kan bearbejdningen være indskrænket til at bestå i en identifikationsmærkning af styreforbindelsesstangen. Koblingsstederne 19 og 20 ved hhv betjeningsorgan 18 og 25 tilslutningsorgan 14 for en sådan simpel styreforbindelsesstang er så tilsvarende indrettet til at kunne fiksere styreforbindelsesstangens ender ved montering. 30 Varianter omkring udformningen af enderne for tilkobling ved elementerne 19 og 20 kan også bestå i: – at den rå stang supplerende bearbejdes, – at den rå stang i en forberedende proces forsynes med adapter(e) af andet materiale for tilkobling, 35 – at de forud fremstillede adaptere indlejres i styreforbindelsesestangen under dens opbygning med et fiberarmeret matrix–materiale, – at styreforbindelsesstangens matrix–materiale udfylder adaptere placeret som dele af en form, 40 eller i: – at adapterne består af ét stykke hvor–på/–om/–i det fiberarmerede matrixmateriale placeres under fremstillingen af styreforbindelsesstangen. 45 Styreforbindelsesstangens karakteristiske retnings– og "sted–på–stangen"–bestemte egenskaber opnås som resultatet en en funktion af: fibermateriale, fibertype, fiberlængde, matrix–materiale, fiber–retning, –tæthed og –mængde på hvert sted, tværsnit på hvert sted af længden, rumkurve 50 for aksen i den frie tilstand, indbygget forspænding i kombination med type af fremstillings– og hærde–proces, som de vigtigste parametre. 55 DK 96 00429 U3 10 De til styreforbindelsesstangen anvendte emner kan være fremstillet med konventionelle fiberprocesser. En variant af en vikleproces består i, at skabe en 5 kontrolleret skrå en fiberretning ifht længdeaksen på et principielt endeløst rør, der dog roterer om egen akse under processen. Denne består i en flyvende spiralpåspoling på en dorn af en eller flere strimler fibervæv med givne fiberretninger 10 og en samtidig/efteføIgende flyvende afhærdning af (evt i vævet for–)doseret matrixmateriale, og udføres på et procesudstyr, der minder om maskineriet til fremstilling af spiralviklede paprør. 15 20 25 30 40 45 50 55 11 DK 96 00429 U3 Brugsmodelkrav 1 – 28: Krav 1: 5 Styreforbindelsesstang (30) som er udformet med en geometri i enderne, der passer for tilslutning til henholdsvis et betjeningsorgan (18) og et tilslutningsorgan (14), og som er ny ved: – at være uden bøjelige led mellem tilslutningerne (19 og 10 20), at være udført som én sammenhængende, integreret enhed, at være udført med mindst ét stykke af længden, hvilket stykke udviser en kontrolleret materialeopbygning, der på én og samme gang indbygger en tilsigtet kombination af 15 vridnings–stivhed/–styrke og bøjnings–stivhed/–styrke. Krav 2: Styreforbindelsesstang iflg. krav 1, som er ny 20 v e d, at stykket af længden, som udviser den kontrollerede materialeopbygning, udviser en tilsigtet variation hen over stykkets længde, af den tilsigtede kombination af vridnings– og bøjnings–egenskaber. 25 Krav 3: Styreforbindelsesstang iflg. krav 1, som er ny v e d, at den tilsigtede kombination af vridnings– og bøjnings–egenskaberne på stykket af længden, udviser en 30 tilsigtet variation rundt tværsnit af styreforbindelsesstangen indenfor pågældende længde. Krav 4: 35 Styreforbindelsesstang iflg. krav 1, som er ny ved, at den tilsigtede kombination af vridnings– og bøjnings–egenskaberne på stykket af længden, udviser en tilsigtet variation, både hen over stykkets længde, og rundt tværsnit af styreforbindelsesstangen indenfor 40 stykket af længden. Krav 5: Styreforbindelsesstang iflg. et eller flere af kravene 1 – 45 4, som er ny ved, at mindst stykket på længden, hvor optræder den tilsigtede kombination af vridnings– og bøjnings–egenskaberne, der eventuelt har en tilsigtet variation, har en udførelse i fiberarmeret matrix–materiale, f. eks. glasfiberarmeret polyester. 50 Krav 6: Styreforbindelssesstang iflg. krav 5, som er ny ved, at have udførelsen i et materiale med 55 fiberarmeringen skabt ved vikling. 12 DK 96 00429 U3 Krav 7: Styreforbindelssesstang iflg. krav 5, som er ny v e d, at have udførelsen i et materiale med fiber–væv–/–måtte–/–non wowen–armering. 5 Krav 8: Styreforbindelssesstang iflg. krav 5, som er ny v e d, at have udførelsen i et materiale 10 med spiralpåspolet fiber–måtte/væv–armering. Krav 9: Styreforbindelssesstang iflg. krav 8, som er ny 15 v e d, at have udførelsen i et materiale med skråt spiralpåspolet fiber–måtte–/–væv–strimmel–armering. Krav 10: 20 Styreforbindelssesstang iflg. krav 5, som er ny v e d, at have udførelsen i et fiberarmeret matrixmateriale med egenskaberne opnået gennem en endeløs strengproces. 25 Krav 11: Styreforbindelssesstang iflg. krav 5, som er ny v e d, at have udførelsen i et fiberarmeret matrixmateriale med egenskaberne opnået gennem håndoplæg. 30 Krav 12: Styreforbindelssesstang iflg. krav 5, som er ny ved, at have udførelsen i et fiberarmeret 35 matrixmateriale med egenskaberne opnået med støbning. Krav 13: Styreforbindelssesstang iflg. et eller flere af kravene 40 5–12, som er ny ved, at have udførelsen i et fiberarmeret matrixmateriale med egenskaberne opnået gennem en kombination af de omhandlede processer. 45 Krav 14: Styreforbindelssesstang iflg. ét eller flere af foregående krav, som er ny ved, helt eller delvis at være udført som et afkappet stykke af en større længde materiale. 55 13 DK 96 00429 U3 10 Krav 15: Styreforbindelssesstang iflg. ét eller flere af foregående krav, som er ny ved, helt eller delvis at være udført som et afkappet stykke af en større længde materiale med den tilsigtede variation af kombinationen af tilsigtede vridnings– og bøjnings–egenskaber, indekseret henover modullængder i det væsentlige svarende til det afkappede stykkes længde. Krav 16: Styreforbindelssesstang iflg. et eller flere af foregående krav, s o m er ny ved, helt eller delvis at være udført som et afkappet stykke af en større længde 15 materiale med samme egenskaber i alle tværsnit. Krav 17: Styreforbindelssesstang iflg. et eller flere af foregående 20 krav, som er ny ved, udelukkende at være udført som et afkappet stykke af en større længde materiale og ikke være yderligere bearbejdet udover simpel fjernelse af grater fra overskæring og evt. påføring af en identifikation. 25 Krav 18: Styreforbindelssesstang iflg. ét eller flere af foregående krav, som er ny ved, at aksen i fri tilstand 30 udgør en ret linie. Krav 19: Styreforbindelssesstang iflg. ét eller flere af foregående 35 krav, som er ny ved, at aksen i fri tilstand udgør en kurve i et plan. Krav 20: 4 0 Styreforbindelssesstang iflg. ét eller flere af foregående krav, som er ny ved, at aksen i fri tilstand udgøre en kurve i rummet. 4 5 Krav 21: Styreforbindelssesstang (30) iflg. ét eller flere af foregående krav, somer ny ved, at være udformet som et udskifteligt element mellem et betjeningsorgan (18) og et tilslutningsorgan (14), hvis 50 akser (12 hhv 13) er sammenfaldende. 55 DK 96 00429 U3 14 Krav 22:

Styreforbindelssesstang (30) iflg. ét eller flere af foregående krav, som er ny ved, at være udformet som et udskifteligt element mellem et 5 betjeningsorgan (18) og et tilslutningsorgan (14), hvis akser (12 hhv 13) danner en vinkel. Krav 23: 10 Styreforbindelssesstang (30) iflg. ét eller flere af foregående krav, som er ny ved, at være udformet som et udskifteligt element mellem et betjeningsorgan (18) og et tilslutningsorgan (14), hvis akser (12 hhv 13) ligger i et plan. 15 Krav 24: Styreforbindelssesstang (30) iflg. ét eller flere af foregående krav, som er ny ved, at være 20 udformet som et udskifteligt element mellem et betjeningsorgan (18) og et tilslutningsorgan (14), hvis akser (12 hhv 13) er vindskæve. 25 Krav 25: Styreforbindelssesstang (30) iflg. ét eller flere af foregående krav, som er ny ved, at være udformet som et udskifteligt element mellem et betjeningsorgari (18) og et tilslutningsorgan (14), hvis 30 akser (12 hhv 13) kan foretage excentrik–bevægelse under drejning. Krav 26: Styreforbindelssesstang (30) iflg. ét eller flere af 35 foregående krav, som er ny ved, at være udformet som et udskifteligt element mellem tilkoblingsstykker i stadig drejning. 40 Krav 27: Styreforbindelssesstang (30) iflg. ét eller flere af foregående.krav, som er ny ved, at være udformet soin et udskifteligt element mellem et betjeningsorgån (18) og et tilslutningsorgan (14), 45 placeret på et to–hjulet køretøj. Krav 28: Styreforbindelssesstang (30) iflg. ét eller flere af 50 foregående krav, som er ny ved, at være udformet soin et udskifteligt element mellem et betjeningsorgan (18) og et tilslutningsorgan (14), placeret på et to–hjulet køretøj, der er udført i det væsentlige iflg. dansk brugsmodelansøgning indleveret 28. 55 november 1996 af Stig Poulsen med ansøgers refnr. IBQ–007. DK 96 00429 U3 wN. Utility model claims 1 type in question. 15 art: Steering Relations rods that transmit a rotational motion from a mounted handles, steering wheel, joystick or other control to a mounted pin, rod coupling 20 shaft end or the like connecting body, such as turn transfers the rotation, possibly via an exchange device and / or system of traek–/tryk–staenger to a rotation of one or more wheels of a vehicle to achieve a steering angle and thus control 25 of the direction – or equivalent transfers a turning of the wheels via connecting means for rotation of the control – is usually done by straight bars often homogeneous material, often metal profiles of approximately rotationally symmetrical cross–section, including 30 square. In addition to being able to transfer the function required torques with the appropriate level of excess collateral against overloading, exhibit these 35 commonly used steering tie rods in addition to the necessary torsional rigidity and strength, while a fierce resistance to bending. This means that, for example, in the construction of 40 vehicles where other circumstances necessitate that the axis of rotation of betjeningsorganets seating and the axis of rotation of the attachment mechanism can not be an extension of each other – where you not only need to use a right steering tie rod between 45 controls and connection body – must introduce various additional elements on the steering tie rod to transfer rotation between agencies if rotation axes are located out of the line, eg laterally mutually parallel staggered, which are 50 angle turned or a combination thereof. 55 DK 96 00429 U3 2 The reasons for constructive decides on a steering tie rod with various additional elements may be partly an overall demand for increased space utilization within a given outer contour of a vehicle, which then leads to approximate 5 "awkward" position of control and connection body, or a requirement to collision–proof steering tie rod, so it does not cause a significant impact, eg from a collision the vehicle is involved in, can cause injury by being pressed against 10 the person who handles the control and which therefore is located herudfor opposite the steering tie rod. The additional items you often see used to transmit rotation between agencies continued axes 15 are universal joints (universal), hardy discs (rubber plate clutches) or equivalent – often several articles on the steering tie rod, which further calls for additional stoettelejring a place between the steering tie rod ends. 20, if any. with simultaneously introduced additional elements known steering tie rods also performed telescopic as a kind of rotation–proof piston / plug in square cylinder / sleeve or other, further to 25 compressed lengthwise, so that the deformation of a collision can be absorbed into the steering tie rod without this pushing the control device to the person on the opposite side. 30 It follows from the foregoing that there often is quite complicated devices, partly increase the cost of vehicle manufacturing costs, and in some cases only have a limited shelf life. It is well known that the steering connection rods 35 provided with universal joints rather detached after a certain time is affected by a nasty blur due to corrosion and wear of the moving parts. 40 The technical problem to be solved: With steering tie rod according to subject matter, one or more of the disadvantages of the known types 45 steering tie rods overcome in an elegant way, as it dispenses with the additional elements. The new technique: 50 The new steering tie rod according to the production is made in one piece in a controlled material structures and which at the same time head of the necessary torsional stiffness and strength of the rod combined with a 55 appropriately limited stiffness and strength against bending. 3 DK 96 00429 U3 The purpose suitable combination of torsional and bending properties can be achieved in particular by the use of laminated or wound fiber–/matrix–material opbyninger in which the fiber directions are crossing each other and 5, the steering tie rod axial direction. The technical performance: 10 With these new features allow the tiller according to the generation functional incorporation of significant continuing body–rotation axes without the use of additional elements, it can transfer the necessary 15 torques while "rolling about himself" standing in a stable arc between the control and the attachment mechanism, determined by its axis directions, steering tie rod shape and geometry in general. 20 It will be appreciated that the function is completely backlash–free, since there is no mechanical joints involved. further action for collision insurance are also 25 unnecessary, as the new steering tie rod when bodies move against each other – whether this is due to a relocation of the connecting means relative to the control, for example by a collision, or a relocation of the control relative to 30 attachment mechanism eg in a controlled setting betjeningsorganets axis location – just a change in its folded state (curvature) and perhaps eventually by an ultimate bending mode collapse by bending or wholly or partially break without necessarily 35 move the control device; injury is thereby avoided. List of Figures: Figure 40. 1 is a stylized side view of a conventional relative position of the control and connection means allowing a rigid right styreforbindelssesstang used. 45 Fig. 2 shows stylized, side view, a usual staggered placement of controls and connection body in the same plane, which requires the use of additional elements. 50 Fig. 3 shows stylized, side, a normal relative position of the operating means and control means with axis out of plane, which necessitates the use of several additional elements. 55 5 10 15 20 25 30 35 40 45 50 55 DK 96 00429 U3 Fig. 4 shows the new styreforbindelssesstang acc. generation mounted in the structure acc. Figure 3 Fig. 5 shows a styreforbindelssesstang according to the generation of a very simple design and not affected by forces. Embodiments: Position numbers refer to one or more of the Figures 1–5: A steering wheel or the like operating lever 1 is fitted with a shaft 5 journalled in a holder 2, which in

turn is attached to the frame 3 e.g. in a vehicle, via a Unlike console 4 wheel stub axle ends in a clutch 6 steering wheel 1 is mounted as a coupling / bushing around the shaft member 5, often with konusvirkning brake is applied by a loose nut. A wheelhouse 7 is mounted to the frame 3 a different location on the same vehicle, and designed to convert a rotation of the pin 8, which faces the steering wheel, to a rotation of the swivel arm 9, which in turn affects a rod 10, so it can be given a movement substantially in its longitudinal direction. This movement can be through a further arrangement of one or more rotary wheel to control the vehicle's driving direction on the substrate. wheelhouse 7 it usually mechanical elements whose function is both to inform the output axis 11 in the desired direction relative to the axial direction 13 of the pin 8, partly perhaps to change the torque conditions in between. wheelhouse 7 is deliberately positioned so that axial direction 13 of the pin 8 is aligned with the axial direction 12 of ratlejringen. This can be fitted to a straight and stiff steering tie rod 15 is provided with connecting pieces 16 and 17 to match respectively. pin 8 and clutch 6 Coupling piece 16 is shown as a clutch and the connecting portion 17 may just be a pin that fits in the clutch 6 Tap / clutch combinations can be reversed or replaced with eg flange couplings or other rigid couplings. The important thing is that activating the control lever 1, eg a turn in the direction RI, through the system is transferred to a unique corresponding movement R9, R10 without veils and similar: a movement eg L10 of the rod 10 can be set to a unique twist Li steering wheel 1 5 DK 96 00429 U3 then called the entire system, starting with an axis corresponding to the pin 8 and which require turning it to function as desired, the attachment mechanism 14, whether it is a wheelhouse of a vehicle or one rudder actuator 5 on a boat, or simply a rotary inlet by a fork in the steering head of a bicycle electricity. the like. and regardless of where they exist an independent power system that is triggered by the rotation of the pin 8 10 Similar called steering wheel 1 with seating 2, wheel 5 and 6 clutch, regardless of what type it may be, collected for the control device 18, whatever it may contain a single exchange (such as a planetary gear). Characteristic is that a rotation of the control lever 1 clearly results in a 15 corresponding rotation about the axis 13 of the unit 6 is intended for connection to the steering tie rod 15 Figure 1 shows therefore that the output axis 12 of the operating member 18 is coincident with the input axis 20 13 of attachment mechanism 14, and therefore can be used a rigid steering tie rod 15 Figure 2 shows that the axes 12 and 13 respectively from the control means 18 and connecting means 14 is located in the same plane (paper) 25 by an angle V between them. least part 21 of the steering tie rod 23 is necessary to transfer the rotation of the output axis 12 by coupling 19 by the control device 18 to a 30 rotation of the input axis 13 by coupling 20 on the attachment mechanism 14 joint is often formed as a universal joint (universal joint) or a rubber disc clutch (Hardy disc). Often, also fit a support bearing 22 relative to frame 3 in the vicinity of 35 stage 21 Figure 3 shows the output axis 12 above the plane of the paper and the input axis 13 lying in the plane so that the axes are twisted and not meet at H. 40 is required angle transitions 2 and V 2 to transmit rotation between the axes 12 and 13 angle transitions performed with the joints 21 and 24, the same torsional rigid type. In between is fitted with a torsionally rigid telescopic device 45 may be shaped as a square plug that fits into a square hole by hole inner surface 26, and the plug and hole represents the end of each rod respectively 25 and 27 arrangement mounted in, eg, an automobile is hereby achieved a collision security of a driver located at F, 50 as a compulsive movement of the connecting means 14, which now represents the front end of the vehicle positioned steering, against H during a collision, the press telescope assembly 25–26–27 shorter. The link 21 is not moved by the abbreviation of the telescope, and the control device 55 18 remains in place and does not affect the driver by F. 6 GB 96 00429 U3 Styreforbinclelsesstangen 28 now has at least two additional elements il: ht 15, namely the joints 21 and 24, this can get support bearings and they showed parts of the telescope assembly. 5 For mounting between warped out of place and the input axes respectively 12 and 13 with simultaneous provision of collision insurance, is thus required the use of the prior art, a complex device with many precision mechanical parts. 10 Figure 4 shows a steering tie rod 29 according to the generation, mounted between the skew axes 12 and 13 as in Figure 3 the steering tie rod 29 axis 30 has at the ends by the connections 19 and 20, respectively, 15 the control means 18 and connecting member 14, the direction of the axes 12 and 13 on the other side of the connections 19 and 20, and these directions are tangent to the ends of the curved space curve as the steering tie rod 29 occupies axis. 20 shape depends on the clutch inspection 19 and 20 spacing and angular, and the steering tie rod length and performance in general. form is generally characterized by the fact that it represents the bent state in which, during the 25 given conditions is stored least elastic boejningsenergi compared to styreforbindlsesstangen is freely extended. In addition to the just mentioned geometrical conditions between 30 the connections 19 and 20 and the length of the steering tie rod 29, comprises the given conditions also: – in that the axes! – 12 and 13 has a constant direction while they rotate (they are rotating clamped), 35 – the dependence of the material from which the steering tie rod are manufactured, – how the stiffness and strength properties is administered along the rod (they can be varied by the modified cross–section, (possibly with each other) aindret thickness of the material layer, and the like 40 approach). special directional properties in styreforbindelssesstangens 29 material, which can be determined / produced according to need, causes the 45 rotating torque of the control lever 1 can be passed through the steering tie rod 29 tildrejning of input axis 13 of the connector unit 14 without the steering tie rod to change its position in space. It is instead on its axis everywhere. 50 In a crash, the connection unit 14 is moved relative to the control unit 18, eg to the dotted position 31 will styreforbindelsessstangen adopt a new minimum energy state from the now prevailing conditions. This is shown by the spatial waveform 32 55 7 GB 96 00429 U3 operating unit has not been moved, check it has not affected a driver located at F, and the system can in principle still work – especially but depending on kolisionsskaderne by tilslutningsenheen 14 5 The just–mentioned effect can be reversed used to make the location of the control unit 18 adjustable relative to the connection unit 14 so that eg in a car steering wheel height and distance easily adapted to the size of the current driver of the car. 10 steering tie rod can of course also be used in the basic situations are shown in Figures 1 and 2, and may of course also be combined with elements from the prior art. 15 Figure 5 shows that a steering tie rod 33 according to the generation of free state (a weightless, unmoved etc) occupies a minimum–energy position at a rotationssysmmetrisk construction material building 20 of the steering tie rod 33 is represented by a linear axis 34 There is nothing in the way of material properties deliberately committed in varying degrees around and along the 25 steering tie rod. This may for example be used to create a steering tie rod according to the generation, during pivoting about themselves in an otherwise substantially stationary space curve, displays one or more preferred positions with a (local) minimum 30

energy content. constructed property can be elegantly exploited to eg to produce a self−aligning steering of a vehicle with two or more wheels as it used to be (preferably 35 only) minimum−energy position in the otherwise prevailing conditions correspond to the vehicle control "just−out". controller left to themselves thus brought to a desired position characterized by being a 40 minimum−energy mode after the discharge of the stored elastic energy that moved the components of control here, from a position characterized by the fact that it contained a greater amount of elastic energy. 45 The desired position can be a different position than the steering due to its geometry otherwise, (among other things due to the suspension characteristic angles and other dimensions) would register for, if it were left to itself under at the time given 50 conditions and without the elastic effect of the steering tie rod. 55 DK 96 00429 U3 8 There is a mutual influence on each of these two effects each from the steering tie rod and execution of suspension, and it is up to the designer in the given situation to choose: first, the absolute value of size 5 each power for themselves, and also the relative importance of the steering various operational contexts. The effect can also be used for a constructive variant of the design of a steering system which consists in incorporating 10 guide−and site−dependent strength and stiffness characteristics of the steering tie rod according to the generation, in order to compensate for an undesired constructive asymmetry in a steering in general. This may for example show up against the rider on a 2 wheel 15 vehicle at that – without compensating effect from the steering tie rod – require more power to turn the handlebar to one side than the other, and by the steering left to themselves, do not set on "just−out", which is usually the desired neutalstilling. 20 With a floating effect from the steering tie rod with purpose−designed and distributed properties, controlled for the 2−wheel−drive feel alike to turn in both directions, like the free neutral position can be 25 straight−out. particular, compensated to the handlebar or steering wheel of a vehicle feels easy to turn all manifestations of steering and / or wheels. 30 effects to be compensated for, can come from an unbalanced structure, eg lateral tilting front wheels on a 2 wheel vehicle and / or dynamic effects, eg from control rotation of poorly sited axes of rotational inertia loads, including front of 35 motorcycles. The said compensating effects among many others may be utilized in a 2−wheel HPV chain / belt drive to the hub of the front wheel from a frame fixed crank arrangement where: 4 0 – both chain / belt tightening and relaxing stretch passing through the crown head and forgaffelroer, – the front wheel is sideskaevt mounted in the front fork – it engaging means 20 corresponding unit on the edge of forgaffelroeret during rotation of the front fork while 45 makes an eccentric movement of the crown main axis. compensating effects may similarly be used to construct an appropriate steering tie rod for a boat. Located between a steering wheel by the steering control unit 18 and 50, for example, the steering pivot axis from a remotely located outboard as the connection means 13, 14 can be achieved, to the well−known tendency for unbalanced rotation of the engine is in. rorfunktionen (because of the constructive asymmetry, which consists in that only one screw forming vortex in the water) can 55 are canceled. DK 96 00429 U3 Such an outboard motor can be designed in his suspension, it still rotates in the same direction, making it possible ever to satisfy the need for further articulated in this direction. 5 This allows very fine maneuvering possibilities as to avoid the situation where moteren suddenly be turned almost a full lap around the opposite to reach a nearby additional angle rotated position. 10 Nearby is also the use of the steering tie rod according to the generation for driving a screw of the boat around to achieve the propulsion. Figure 5 shows a very simple version of a 15 steering tie rod 33, as consisting simply of a piece with the given length, afkappet from a longer rod, possibly with−a simple rotationally symmetrical cross section. incision site 35 at one end and the opposite end 36, which may also be a cut place, any scantily 20 machined by cutting site (s) is cleaned of any burrs and the like from overkapningen. addition, the processing be reduced to simply a means of identification of the steering tie rod. coupling parts 19 and 20, respectively, by the control means 18 and 25 connecting means 14 of such a simple steering tie rod is then similarly arranged to fix the steering tie rod ends during assembly. 30 Variants shaping of the ends for connection of the elements 19 and 20 may also consist of: – the raw bar further processed – that the raw bar in a preparatory process is supplied with the adapter (s) of any material of coupling, 35 – to the pre−mastered adapters embedded in styreforbindelsesestangen during its construction with a fiber reinforced matrix material, – that the steering tie rod matrix material fills adapters positioned as parts of a mold 40 in the following: – that the adapter consists of one piece which, on / −om/−i the fiber reinforced matrix material is placed during the manufacture of the steering tie rod. 45 Steering Tie rod characteristic direction and "place−in−rod"−specific properties are obtained as the result is a function of: fiber material, fiber type, fiber length, matrix material, fiber orientation, density and volume at each location, cross section at each location on the length, space curve 50 of the axis in the free mode, built−in bias in combination with the type of manufacturing and curing process, the most important parameters. 55 DK 96 00429 U3 10 to the steering tie rod used items can be manufactured with conventional fiber processes. A variant of a winding process consists in creating a 5 controlled slanted fiber direction is allowed for the longitudinal axis of a principle, endless tube, which however is rotating about its own axis during the process. This constitutes a flying spiralpaspoling on a mandrel of one or more strips of fibrous web with given fiber direction 10 and a simultaneous / imi following flying purification (if necessary in the tissue−) dosed matrix material, and is carried out at a process equipment, similar to the machinery for the manufacture of spiral wound cardboard tube. 15 20 25 30 40 45 50 55 11 DK 96 00429 U3 Usage Model Requirements 1−28: Requirement 1: 5 Steering Tie rod (30) which is designed with a geometry at the ends to suit for connecting respectively a control (18) and a connecting means (14) which is new by: – being without flexible joints between the connections (19 and 10 20), to be performed as a single, integrated unit to be provided with at least one piece of length, while exhibiting a controlled material structures and which at the same time incorporate a deliberate combination of 15 vridnings−stivhed/−styrke and boejnings−stivhed/−styrke. Requirement 2: Steering Tie rod acc. claim 1, which is a new 20 in that the length of the piece, which exhibit the controlled material build−up, exhibit a deliberate variation across the length of the piece, of the intended combination of torsional and flexural properties. 25 Requirement 3: Steering Tie rod acc. to claim 1, which is novel in that the desired combination of torsional and flexural properties of the piece of length 30 exhibits a circular cross−section intended variation of the steering tie rod within that length. Requirement 4: 35 Steering Tie rod acc. to claim 1, which is novel in that the desired combination of torsional and flexural properties of the piece of the length, exhibiting an intentional variation, both across the gauge length of, and around the cross−section of the steering tie rod within 40 the piece of the length. Requirement 5: Steering Tie rod acc. one or more of claims 1 to 45 4, which is new in that at least part on the length in which occurs the intended combination

of torsional and flexural properties, which may have an intentional variation, the one embodiment of the fiber reinforced matrix material, for example, glass fiber reinforced polyester. 50 Requirement 6: Styreforbindelssesstang acc. Claim 5, a newcomer know that having the performance of a material with 55 fiber reinforcement created by the development. 12 DK 96 00429 U3 Requirement 7: Styreforbindelssesstang acc. Claim 5, a newcomer know that having the performance of a material with fiber–vaev–/–matte–/–non–woven reinforcement. 5 Requirement 8: Styreforbindelssesstang acc. Claim 5, a newcomer know that having the performance of a material 10 with spiralpaspolet fiber–matte/vaev–armering. Requirement 9: Styreforbindelssesstang acc. Claim 8, which is a new 15 by having the performance of a material with inclined spiralpaspolet fiber–matte–/–vaev–strimmel–armering. Requirement 10: 20 Styreforbindelssesstang acc. Claim 5, a newcomer know that having the performance of a fiber–reinforced matrix material properties obtained through an endless string process. 25 Requirement 11: Styreforbindelssesstang acc. Claim 5, a newcomer know that having the performance of a fiber–reinforced matrix material properties obtained through hand–crafted. 30 Requirement 12: Styreforbindelssesstang acc. Claim 5, a newcomer know that having the performance of a fiber–reinforced 35 matrix material properties obtained with the casting. Requirement 13: Styreforbindelssesstang acc. one or more of claims 40 5–12, which is the new, having the embodiment of a fiber–reinforced matrix material with the properties achieved through a combination of these processes. 45 Requirement 14: Styreforbindelssesstang acc. one or more of the preceding claims, which is new in whole or in part to be performed as a afkappet piece of a greater length material. 55 13 DK 96 00429 U3 10 Requirement 15: Styreforbindelssesstang acc. one or more of the preceding claims, which is new in whole or in part to be designed as a afkappet piece of a larger length material with the desired variation of the combination of the desired torsional and flexural properties, indexed over the module length is substantially equal to the afkappede paragraph length. Requirement 16: Styreforbindelssesstang acc. one or more of the preceding claims, which is new in whole or in part to be performed as a afkappet piece of a larger length 15 material with the same properties in all cross sections. Requirement 17: Styreforbindelssesstang acc. any of the previous 20 requirements that are new to know only to be carried out as a afkappet piece of a greater length material and not be further worked than simply removing burrs from cutting and possible. application of an identification. 25 Requirement 18: Styreforbindelssesstang acc. one or more of the preceding claims, which is new in that the axis of the free state 30 represents a straight line. Requirement 19: Styreforbindelssesstang acc. one or more of the previous 35 requirements that are new in that the axis in free mode represents a curve in a plane. Requirement 20: 4 0 Styreforbindelssesstang acc. one or more of the preceding claims, which is new in that the axis in the free state constitute a curve in space. 4 5 Requirement 21: Styreforbindelssesstang (30) acc. one or more of the preceding claims, somer by new, to be designed as a replaceable component of an operating member (18) and a connector body (14), the axes 50 (12 respectively 13) are the same. 55 DK 96 00429 U3 14 Requirement 22: Styreforbindelssesstang (30) acc. one or more of the preceding claims, which is novel in that it is configured as an interchangeable element between a 5 control (18) and a connector body (14), whose axes (12, respectively 13) form an angle. Requirement 23: 10 Styreforbindelssesstang (30) acc. one or more of the preceding claims, which is novel in that it is configured as a replaceable component of an operating member (18) and a connector body (14), whose axes (12, respectively 13) lying in a plane. 15 Requirement 24: Styreforbindelssesstang (30) acc. one or more of the preceding claims, which is new in that to 20 designed as an interchangeable element between an operating means (18) and a connector body (14), whose axes (12, respectively 13) is twisted. 25 Requirement 25: Styreforbindelssesstang (30) acc. one or more of the preceding claims, which is novel in that it is configured as an interchangeable element between a betjeningsorgari (18) and a connector body (14), the 30 axes (12, respectively 13) is capable of eccentric motion during rotation. Requirement 26: Styreforbindelssesstang (30) acc. one or more of the 35 preceding claims, which is novel in that it is configured as an interchangeable element between the coupling pieces still in rotation. 40 Requirement 27: Styreforbindelssesstang (30) acc. one or more of foregaende.krav which are new by being formed aggregates as an interchangeable element between a betjeningsorgan (18) and a connector body (14), 45 located on a two–wheeled vehicle. Requirement 28: Styreforbindelssesstang (30) acc. one or more of the 50 preceding claims, which is novel in that it is configured aggregates as a replaceable component of an operating member (18) and a connector body (14), located on a two–wheeled vehicle that is performed essentially acc. Danish utility model application filed 28 55 November 1996 by Stig Poulsen applicant Ref. no IBQ–007th DK 96 00429 U3 wN.

0) US2003102657A – ENCLOSED MOTORCYCLE

9) Family number: 28630235 (US2003102657A) © PatBase

Title: ENCLOSED MOTORCYCLE

Priority: US20010002901 20011205

Family:

Publication number	Publication date	Application number	Application date
US2003102657 AA	20030605	US20010002901	20011205
US6637763 BB	20031028	US20010002901	20011205

Probable Assignee: KUO MING C

Assignee(s):(std)**:** KUO MING C

Inventor(s):(std)**:** KUO MING C

International class (IPC 8–9)**:** B62H1/12 B62J17/08 B62K11/00 B62K3/00 (Advanced/Invention); B62H1/00 B62J17/00 B62K11/00 B62K3/00 (Core/Invention)

International class (IPC 1–7)**:** B60S9/00 B62K13/06

CPC: B62H1/12 B62J17/08 B62K3/005 B62K11/00

European class: B62H1/12 B62J17/08 B62K11/00 B62K3/00C

US class: 180/219 280/209 280/748 280/755

Classification Explorer

Cited documents: US6106054 A, US5904392 A, US5685388 A, US5518259 A, US5458390 A, US5401055 A, US5181740 A, US5029894 A, US4293052 A, US4133402 A, US4065144 A, US3700059 A, US3322224 A,

Forward Citations: WO10026585, US9499229, US9316267, US9163707, US8851221, US8762003, US8562010, US8480111, US8333398, US8308232, US8139810, US7970530, US7819455, US7594843, US7445539, US7445070, US7407187, US6942053, US6859753, US2016031504, US2015031463, US2014346751, US2013193661, US2012232758, US2012133116, US2012056403, US2011163557, US2010250107, US2010244468, US2008179125, US2008157557, US2007017754, US2006211333, US2006160464, US2006099879, US2005197195, US2005049824, US2005035583, US2004201271, US2004091313, EP2323895, EP2323895, EP1564388, CN103802993, CN103802993,

Abstract:
Source: US2003102657A An enclosed motorcycle (10) that utilizes a structural frame(14), a pair of tandem wheels (36,38), an engine (40) and a handlebar assembly (46) provides transportation for a single driver. A foot brake pedal assembly (96) is pivotally affixed to the frame for stopping the motorcycle and a bench seat (132) is rigidly attached to the frame for seating the driver. A pair of outrigger landing wheels (140) are attached to the motorcycle frame on a common axle and have automatic control to extend the wheels at a predetermined road speed, for preventing tipping at low speeds and when stopped. An enclosure (16) is disposed over and attached to the frame which includes a pair of entrance doors (172) and a pair of leg doors (170), one on each side of the motorcycle for access to the seat for minimizing the enclosure envelope and providing effortless entry into the motorcycle. A two piece external passenger seat (272) is provided over the engine with a fold down cargo compartment underneath. When the seats are hinged upward the cargo compartment mechanically unfolds providing storage space.

PatBase - US6637763_BB

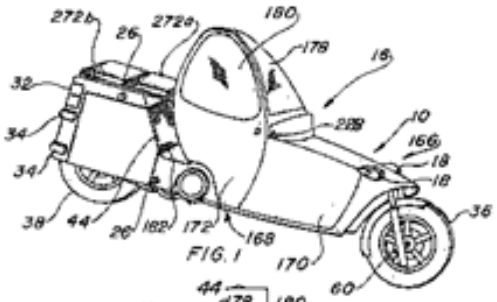


FIG. 1

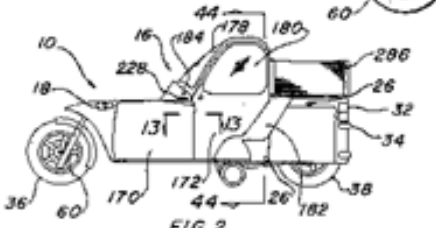


FIG. 2

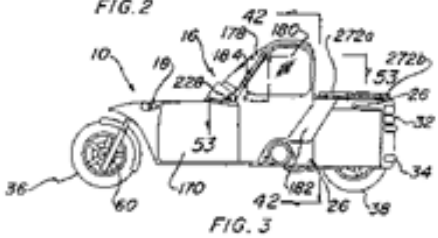


FIG. 3

0) US2014375015A – MOTORIZED REVERSE TRIKE WITH TILTABLE BODY

10) Family number: 51919259 (US2014375015A) © PatBase

Title: MOTORIZED REVERSE TRIKE WITH TILTABLE BODY

Priority: CN201220033590U 20120114 WO2013CN70385 20130111

Family:

Publication number	Publication date	Application number	Application date
CN202414056 U	20120905	CN201220033590U	20120114
US2014375015 AA	20141225	US20130371315	20130111
US8991542 BB	20150331	US20130371315	20130111
WO13104335 A1	20130718	WO2013CN70385	20130111

Probable Assignee: YU JINJUN

Assignee(s):(std)**:** JINJUN YU ; YU JINJUN

Inventor(s):(std)**:** JINJUN YU ; YU JINJUN

Agent(s): TAROLLI SUNDHEIM COVELL AND TUMMINO LLP; DAN SAMS AND ASSOCIATES

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** B62D61/06 B62K11/02 B62K11/14 B62K25/08 B62K25/24 B62K5/027 B62K5/05 B62K5/08 B62K5/10 B62L1/02 (Advanced/Invention); B62K5/00 B62L1/02 (Advanced/Non–invention)

CPC: B62K25/24 B62K5/08 B62K2005/001 B62K5/10 B62K5/027 B62K5/05

US class: 180/209 180/210 180/76 280/124.103 280/267

Classification Explorer

Cited documents: US8596660 BB, US8317207 BB, US7562885 BB, US7264251 BB, US6763905 BB, US4887829 A, US4020914 A, US2007029751 AA, US2006151232 AA, US2005167217 AA, US2005167174 AA, US2005012291 AA, TW201117997 A, TW200530057 A, EP1666346 A1, CN202414056 U, CN201670311 U,

Forward Citations: WO13104335, US9545967, US9517807, US9428240, US9428235, US9371106, US9352798, US9340249, US9296420, US9278711, US9238494, US9216790, US8991542, US2016152292, US2016137253, US2016114850, US2015344091, US2015314827, US2015298736, US2015274245, US2015274244, TWI532629, TWI522273, TWI522269, JP5687378, JP2016175439, EP2923931, EP2913256, EP2899105, CN104703870,

Abstract:
Source: US2014375015A A motorized reverse trike with a tiltable body comprises a frame with a header pipe, two front wheels, a tilting mechanism arranged on the header pipe, two suspension mechanisms hinged between the two front wheels and the tilting mechanism respectively, a steering mechanism with handlebars hinged between the header pipe and the two suspension mechanisms, and a locking mechanism for locking the tilting mechanism.

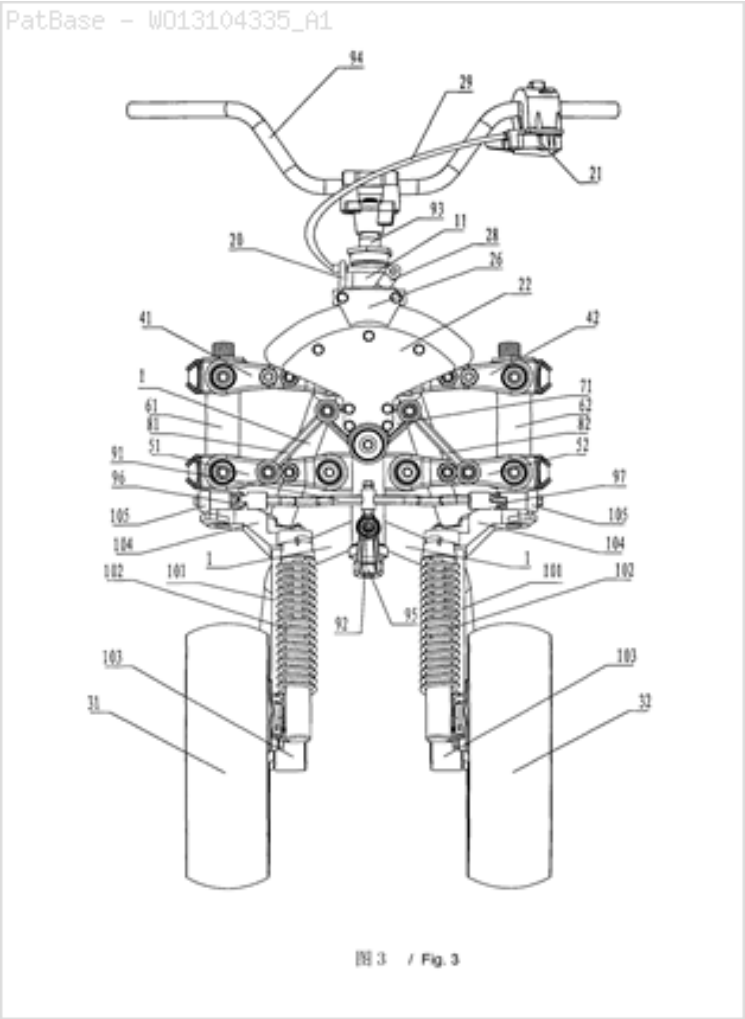


Fig. 3

0) DE202016105367U1 – PERSONENFAHRZEUG MIT EINER ERSTEN UND EINER ZWE...

11) Family number: 64371349 (DE202016105367U1) © PatBase

Title: PERSONENFAHRZEUG MIT EINER ERSTEN UND EINER ZWEITEN HINTEREN RADAUFHAENGUNG PASSENGER CAR WITH A FIRST AND A SECOND REAR SUSPENSION (Machine translation)

Priority: DE201620105367U 20160927

Family:

Publication number	Publication date	Application number	Application date
DE202016105367 U1	20161215	DE201620105367U	20160927

Probable Assignee: TUEV SUED AUTO SERVICE GMBH

Assignee(s):(std)**:** TUEV SUED AUTO SERVICE GMBH

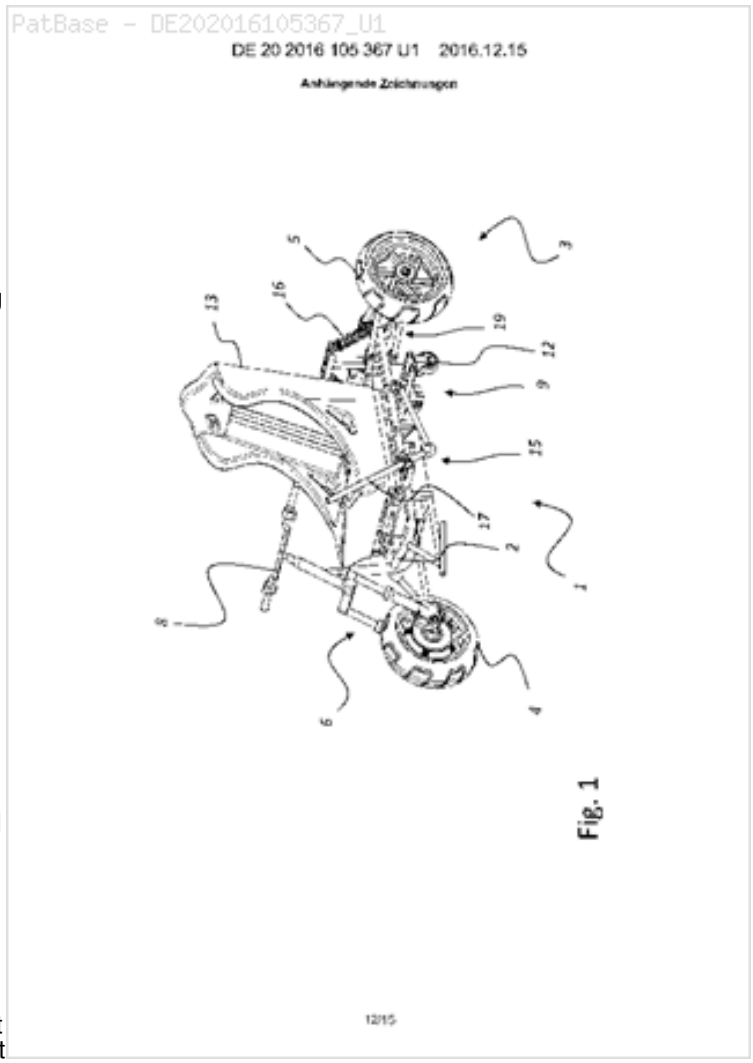
International class (IPC 8–9): B62K5/00 (Advanced/Invention)

CPC: B60G2200/144 B60G2300/45 B60G3/20

Classification Explorer

Cited documents: US8262111 BB,

Abstract:
Source: DE202016105367U1
Personenfahrzeug (1), umfassend – einen Fahrzeugrahmen (2), – mindestens ein mechanisch mit dem Fahrzeugrahmen (2) in Verbindung stehendes lenkbares Vorderrad (4), – eine erste hintere Radaufhaengung (3), welche wenigstens ein erstes Radpaar neigungsbeweglich traegt sowie – eine zweite hintere Radaufhaengung (9), bei welcher wenigstens ein zweites Radpaar ueber eine starre oder im Wesentlichen starre Verbindung neigungsunbeweglich aneinander gekoppelt sind, wobei – selektiv die erste hintere Radaufhaengung (3) mit dem wenigsten einen ersten Radpaar oder die zweite hintere Radaufhaengung (9) mit dem wenigstens einen zweiten Radpaar in eine jeweilige Betriebslage gebracht und/oder in einer jeweiligen Betriebslage festgesetzt werden kann, in welcher jeweiligen Betriebslage das jeweilige wenigstens eine erste oder wenigstens eine zweite Radpaar sowie das mindestens eine mechanisch an den Fahrzeugrahmen gekoppelte lenkbare Vorderrad (4) Kontakt zu einer Bodenflaeche besitzen. Passenger car (1), comprehensive – a vehicle frame (2), – at least one mechanically with the frame of the vehicle (2) related swivelling front wheel (4), – a first rear suspension (3), which tilt mobile carries at least a first pair of wheel well as – a second rear suspension (9), in which at least a second wheel pair through a rigid or essentially rigid connection are tilt–immobile together coupled with – selectively the first rear suspension (3) with the least a first pair or the second rear suspension (9) with at least one second pair can be placed in a particular position and/or set in a respective operating position in which each operating position the have at least a first or at least a second pair, as well as the at least a steerable front wheel linked mechanically to the vehicle frame (4) contact with a ground surface.



12) Family number: 49152065 (WO11075860A1) © PatBase

Title: DEVICE FOR CONTROLLING THE STEERING OF A MOTORCYCLE OR THE LIKE

Priority: CH20090001966 20091221

Family:

Publication number	Publication date	Application number	Application date
CH702447 A2	20110630	CH20090001966	20091221
WO11075860 A1	20110630	WO2010CH00321	20101221

Probable Assignee: SERIO EMILE DI

Assignee(s):(std)**:** SBARRO FRANCESCO ; SERIO EMILE DI

Assignee(s): DI SERIO EMILE ; FRANCESCO SBARRO

Inventor(s):(std)**:** SBARRO FRANCESCO

Inventor(s): FRANCESCO SBARRO

Agent(s): NITHARDT ROLAND

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K25/16 B62K3/00 B62K5/02 B62K5/08 (Advanced/Invention)

CPC: B62K5/027 B62K5/05 B62K5/08 B62K5/10 B62K11/00 B62K25/16

European class: B62K11/00 B62K25/16 B62K5/027 B62K5/05 B62K5/08 B62K5/10

Classification Explorer

Cited documents: WO07127783, WO06075411, JP5139357, EP1694555, EP0466624,

Forward Citations: FR2995869,

Abstract:
The invention relates to a device for controlling the steering of a motorcycle or the like that makes it possible for a motorcyclist to benefit easily and at a low cost from the advantages of three−wheel scooters in terms of stability, safety and available room. The steering control device (10) includes a frame (11), handle bars (12), a steering fork (13) to which the handle bars (12) are attached, a rotary assembly (14) supported by the steering fork (13), and two suspension shock−absorbing members (15) mounted on the steering fork (13) for monitoring the vertical movements of the rotary assembly (14). The rotary assembly (14) comprises two independent wheels (14a, 14b) freely mounted respectively on two fixed axes (16) each carried by an A arm (17) including a suspension arm (18) hinged on an element of the frame (11) and a suspension shock−absorbing member (15). The suspension shock−absorbing members (15) are attached to a rocker member (20) hinged at the middle thereof to the steering fork (13).

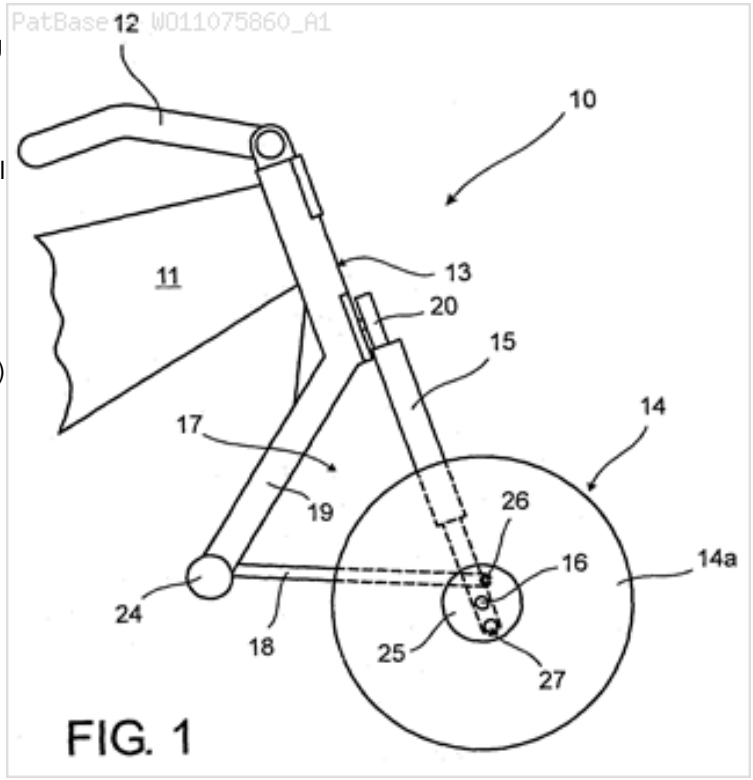


FIG. 1

13) Family number: 2824477 (US4619462A) © PatBase

Title: CYCLE APPARATUS HAVING THERAPEUTIC AND UTILITY ASPECTS

Priority: US19840618193 19840607 US19860897383 19860818

Family:

Publication number	Publication date	Application number	Application date
US4619462 A	19861028	US19840618193	19840607
US4798395 A	19890117	US19860897383	19860818

Probable Assignee: MILYARD EMMERT

Assignee(s):(std)**:** MILYARD EMMERT ; SHAFFER DON T

Inventor(s):(std)**:** SHAFFER DON T ; MILYARD EMMERT

International class (IPC 8–9)**:** A61G5/02 B62K5/04 B62L3/02 B62M1/14 (Advanced/Invention); B62K5/00 B62L3/00 (Core/Invention)

International class (IPC 1–7)**:** A61H3/00 A63B21/00 B62L1/00 B62M1/14

CPC: A61G5/023 A61G5/025 B62K5/023 A61G5/02 A61G5/1051 B62L3/02 B62M1/14

European class: A61G5/02 A61G5/02A4 A61G5/02B2 B62K5/023 B62L3/02 B62M1/14 K61G5/10G

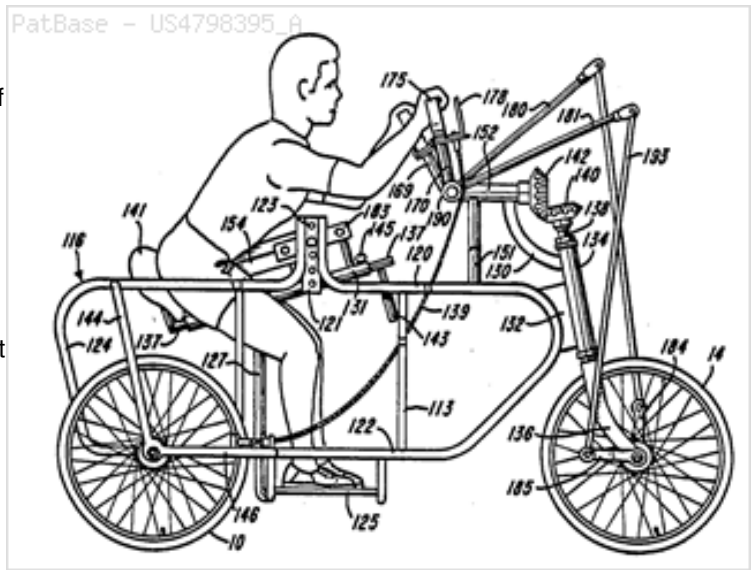
US class: 188/24.11 272/70.3 272/73 280/240 280/242.1 280/242R 280/246 280/282 280/87.04R 482/62 482/68 D12/131 D34/018 D34/18

Classification Explorer

Cited documents: US93751 A, US637821 A, US626852 A, US588472 A, US575936 A, US4411443 A, US4312505 A, US3871421 A, US3854754 A, US3042131 A, US280473 A, US2317606 A, US2312606 A, US1518037 A, US149416 A, GB4393, GB3815, GB190703815 A, GB190204393 A, FR766717 A, FR2455540 A1, DE827167 A, CH173599 A,

Forward Citations: WO9210156, WO16159822, WO16159821, WO12148220, WO12148220, WO07032629, US9555852, US9428243, US9422023, US8827874, US8651505, US7900940, US7497453, US7458918, US7341543, US7140626, US6193253, US5848955, US5836856, US5820096, US5501476, US5487590, US5431614, US5314392, US5297810, US5280937, US2012094809, US2010289246, US2010022356, US2008146415, US2008023933, US2008023932, US2006089241, US2005085349, US2004063550, RU2592972, KR101075843, KR100935441, KR100893274, KR100636544, GR91100306, GR91100306, GR910100306,

Abstract:



Source: US4619462A Apparatus having particular but not limited use for exercise purposes by persons handicapped as to use of their lower limbs or having cardio–pulmonary or ancillary physical problems comprises a body support adapted to maintain the trunk of the body supported thereby in a substantially dynamic balance leaving the lower limbs or limb of the body to depend free of load from the trunk of the body, the support being limited to maintaining the trunk of the body in an attitude which is other than vertical. In a preferred mobile embodiment the body support has a wheel base and provides a cycle structure. An improved braking system used with the cycle structure is simply controlled through grips illustrated in connection with a handlebar, a slight forward rotation of which achieves a safe braking action with great ease and little exertion or coordination being required. Another invention embodiment is a hand operated propulsion system ideal for those severely handicapped, including paraplegics, hand grips rotating on a steering bar of a cycle structure being linked to a drive wheel and simple limited back and forth motion of the hands and arms bending sufficient to

achieve a highly effective propulsive effect.

0) BRPI0902106A – VEICULO ARTICULADO I PROPAGATE ARTICULATED (...

14) Family number: 48382975 (BRPI0902106A) © PatBase

Title:	veiculo articulado I propagate articulated (Machine translation)
Priority:	BR2009PI02106 20090619

Family:

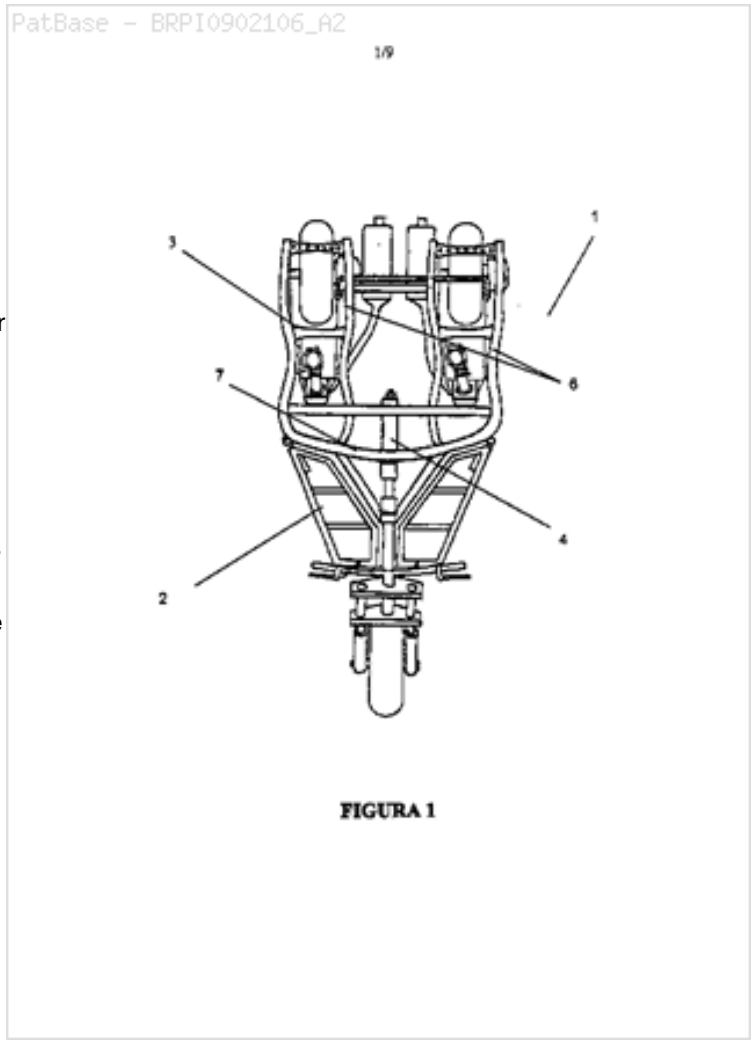
Publication number	Publication date	Application number	Application date
BRPI0902106 A2	20110222	BR2009PI02106	20090619

Probable Assignee:	HANNUD JOAO GUILHERME ZURITA
Assignee(s):(std)**:**	HANNUD JOAO GUILHERME ZURITA
Assignee(s):	JOAO GUILHERME ZURITA HANNUD
Inventor(s):(std)**:**	HANNUD JOAO GUILHERME ZURITA
Inventor(s):	JOAO GUILHERME ZURITA HANNUD
International class (IPC 8–9):	B62K13/04 B62K5/02 (Advanced/Invention)

Classification Explorer

Abstract:
Source: BRPI0902106A VEICULO ARTICULADO A presente invencao e direcionada para a industria automobilistica, no segmento de motocicletas e suas variacoes. Mais especificamente, o objeto revelado pela presente invencao compreende um veiculo articulado provido de 3 (tres) rodas cuja disposicao aplicada em sua conformacao estrutural permite que o condutor tenha a sensacao de estar pilotando um veiculo de apenas 2 (duas) rodas e ainda, referido veiculo e provido da capacidade de transportar ate 2 (dois) passageiros comtotal seguranca e estabilidade.

Machine translation: I PROPAGATE ARTICULATED the present directed invention and for the automobile industry, in the segment of motorcycles and its variations. More specifically, the object disclosed for the present invention understands one propagates articulated provided with 3 (three) wheels whose disposal applied in its structural conformation allows that the conductor has the sensation to be piloting one still propagates of only 2 (two) wheels and, related I propagate and provided with the capacity to carry it ties 2 (two) temporary comtotal security and stability.



0) DE9015936U1 –

15) Family number: 17659047 (DE9015936U1) © PatBase

Priority: DE19900015936U 19901122

Family:

Publication number	Publication date	Application number	Application date
DE9015936 U1	19910207	DE19900015936U	19901122

Probable Assignee: ABRAHAM SIEGFRIED 6115 MUENSTER DE

Assignee(s): ABRAHAM SIEGFRIED 6115 MUENSTER DE

International class (IPC 8–9): B60T17/22 B62H1/12 B62J1/00 B62K19/36 B62K3/00 B62L1/00 (Advanced/Invention)

International class (IPC 1–7): B60R22/00 B62H1/12 B62J1/00 B62J17/00 B62J6/00 B62K25/00 B62K3/02 B62L1/00 B62L3/00 B62M1/00 B62M7/00

CPC: B62L1/00 B60T17/22 B62H1/12 B62J1/00 B62J2017/083 B62K3/005 B62K19/36

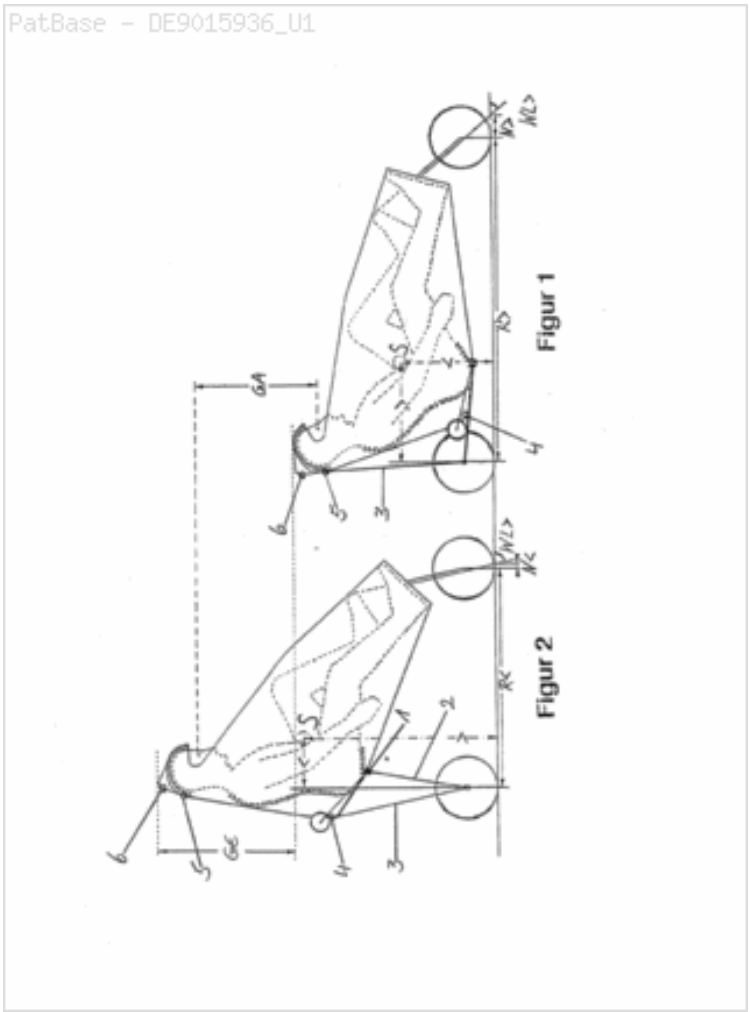
European class: B60T17/22 B62H1/12 B62J1/00 B62K19/36 B62K3/00C B62L1/00 L62J17/08B

Classification Explorer

Forward Citations: WO11078719, WO05105560, DE4223519, DE19838181, DE19838181, DE102011051451, DE102011051451, DE102010004701,

Abstract:
Source: DE9015936U1 (Claim 1)
Schutzansprueche (1) Sesselrad – ohne Kabine und – mit Kabine, sowie als Sesselzweirad – ohne Stuetzraeder und – mit Stuetzraedern, bei dem der Fahrer waehrend der Fahrt – mindestens den Sitz und sich selbst sowie – ggf.

Machine translation: (Claim 1)
Schutzansprueche (1) Sesselrad – without cabin and – with the cabin, as well as two–wheeled chair – without Stuetzraeder and – with Stuetzraedern, in which the driver during the trip – at least the seat and himself as well – possibly



0) DE2922691A1 – DREIRAD TRICYCLE WITH DRIVEN REAR WHEEL – HAS ...

16) Family number: 1801258 (DE2922691A1) © PatBase

Title: DREIRAD TRICYCLE WITH DRIVEN REAR WHEEL – HAS STEERABLE FRONT WHEELS ON PARALLELOGRAM LINKAGES PERMITTING STEERING AND INCLINATION FROM VERTICAL

Priority: DE19792922691 19790602

Family:

Publication number	Publication date	Application number	Application date
DE2922691 A1	19801211	DE19792922691	19790602

Probable Assignee: MUELLER JOSEF

Assignee(s):(std)**:** MUELLER JOSEF

Inventor(s):(std)**:** MUELLER JOSEF

International class (IPC 8–9)**:** B62K3/00 B62K5/04 B62K5/05 (Advanced/Invention); B62K3/00 B62K5/00 (Core/Invention)

International class (IPC 1–7)**:** B62K5/02

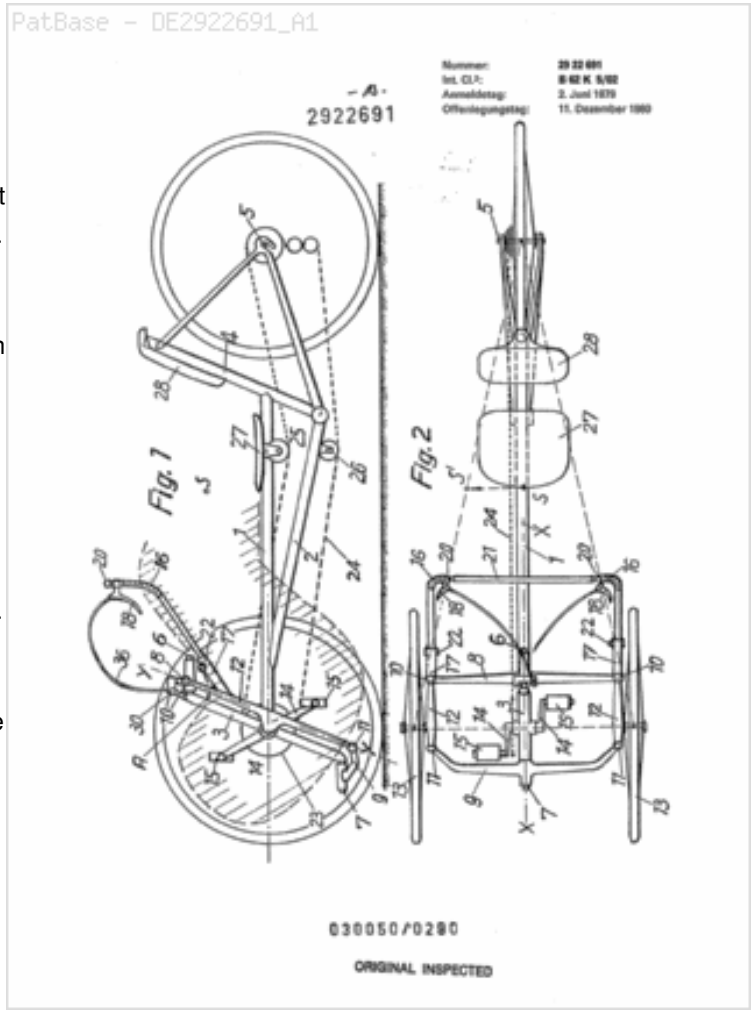
CPC: B62K3/005 B62K5/05 B62K5/10

European class: B62K3/00C B62K5/05 B62K5/10

Classification Explorer

Forward Citations: WO9313470, WO04062994, US5437467, US5415422, US5388847, US4410198, JP5703130, JP5687378, JP2012245861, FR2848152, FR2688465, FR2499015, EP0560670,

Abstract:
Source: DE2922691A1
Patentansprueche,reirad mit zwei an Achsschenkeln gelenkten Vorderraedern, schmaler Spurweite und angetriebenem Hinterrad, dadurch gekennzeichnet, dass die Achsschenkel (12,12) an den oberen und unteren Enden ueber Kugelgelenke (10,11) mit Querschwingen (8,9) so untereinander verbunden sind, dass sie zusammen mit in der Mitte der Schwingen (8,9) an Achszapfen (6,7) aufge haengten Mittelrohrrahmen (3,1,2,4) ein doppeltes Gelenk viereck (10,11,7,6) bilden, wobei die beiden Achszapfen(6,7) am Rahmen (3,1,2,4) nur eine zur Laengsachse // Achse (Achse x–x) Schwingbewegungen zulassen, die vier Kugelgelenke an den Schwingen– und Achsschenkelenden (10,11,zO,1t dagegen sowohl eine Drehung zur Laengsachse // Achse, als auch eine Drehbewegung um die Achsen (y–y) der Achsschenkel (12,1zu zwecks Lenkung des Fahrzeugs ermoeglichen 2. The triangle has two front wheels (13) with narrow track width carried on steering arms (12), as well as a driven rear wheel. The upper and lower ends of the arms are coupled by ball–joints (10, 11) to transverse rods (8, 9) whose centres are pivoted (6, 7) to the main frame (1) and to a central rod (3) parallel to the arms respectively, to form a double parallelogram linkage. The pivots only allow rotation about axes parallel to the longitudinal tricycle axis (x–x), whilst the four ball joints allow rotation about axes parallel to this axis and about the arm centre lines to permit steering motion.



0) DE2800514A1 – TRANSPORTABLER PISTENROLLER TRANSPORTABLE MOUNT...

17) Family number: 1686329 (DE2800514A1)

© PatBase

Title: TRANSPORTABLER PISTENROLLER TRANSPORTABLE MOUNTAIN DESCENT SCOOTER – HAS DOUBLE FRAME WITH STEERING WHEEL WITH PNEUMATIC TYRE AND THREE ROLLERS OPERATING THROUGH SKID CUT=OUTS

Priority: DE19782800514 19780105

Family:

Publication number	Publication date	Application number	Application date
DE2800514 A1	19790712	DE19782800514	19780105

Probable Assignee: BOEHM RICHARD

Assignee(s):(std)**:** BOEHM RICHARD ; WAGNER LIESELOTTE

Inventor(s):(std)**:** BOEHM RICHARD ; WAGNER LIESELOTTE

International class (IPC 8–9)**:** B60T1/14 B62B13/18 (Advanced/Invention); B60T1/00 B62B13/00 (Core/Invention)

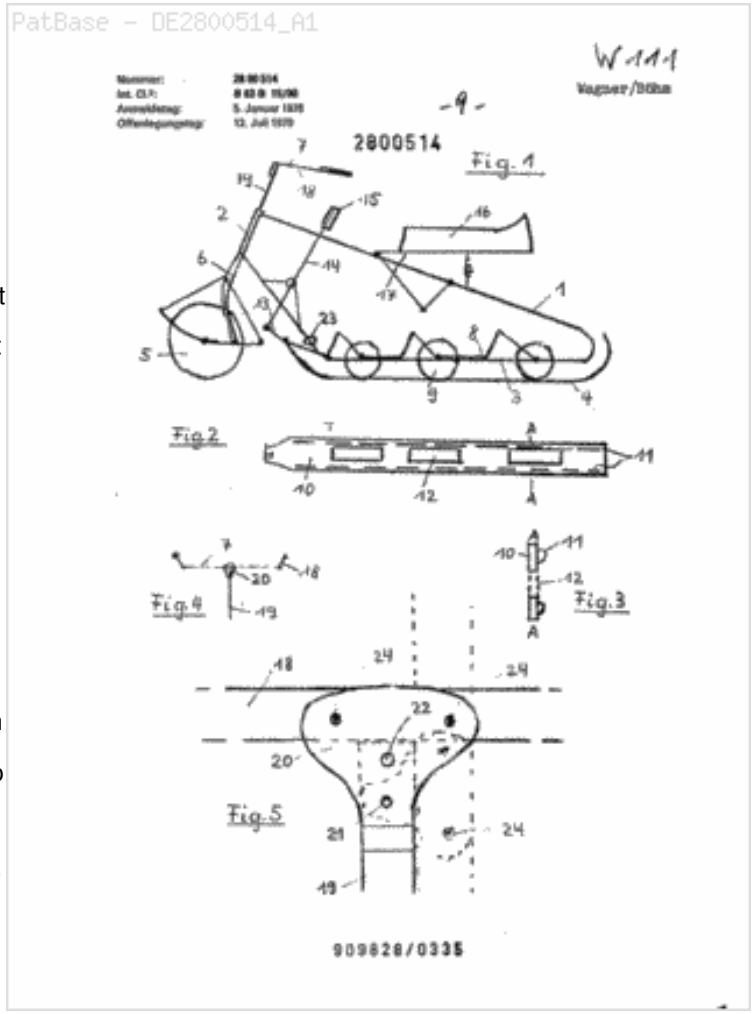
International class (IPC 1–7)**:** B60T1/14 B62B15/00 B62K5/00

CPC: B60T1/14 B62B13/18

European class: B60T1/14 B62B13/18

Classification Explorer

Abstract:
Source: DE2800514A1 Patentansprueche Transportabler Pistenroller g e k e n n z e i c h n e t d u r c h einen geschlossenen Doppeischleifenrahmen (1) mit Lenkwerk (2) und Laufwerk (3) und beweglicher Brems kufe (4), wobei das Lenkwerk (2) aus einem luftbereiften Vorderrad (5) in einem gummigefederten Doppelschwingarm (6) und einem Lenker (7) besteht, das Laufwerk (3) aus 3 am Rahmen (1) gelagerten, an Schwing armen (8) gefederten Rollerraedern (9) besteht und die bewegliche Bremskufe (4) aus einer vorne und hinten aufgebogenen Platte (10) mit Gummibelaegen (11) und Roller radaussparungen (12) besteht und durch Excenterhebel (13) beweglich am Fahr– und Bremshebel (14) mit Feststell griff (15) verbunden ist, sowie einen Sattel (16) mit Federungseinrichtung (15) 2. The descent scooter is light enough to be carried by the user while ascending a mountain and serves for descending down the slope in a controlled way. The scotter has a double frame (1) in a closed loop–shape with a connecting element (2) at the front in which the column (19) of the steering wheel (5) is seated. The lower horizontal side of the loop has three rollers (9) which work together with skid (4) provided with oblong cutouts through which part of the roller circumferences protrude, allowing the rollers to travel over the surface of the terrain. The skid is hinged to the frame and is connected by a linkage to the brake arm (14). To achieve braking the arm is moved to lower the skid into the surface.



0) DE29819182U1 – TRICYCLE DREIRAD

18) Family number: 16992596 (DE29819182U1) © PatBase

Title:	Tricycle
Priority:	DE19982019182U 19981028

Family:

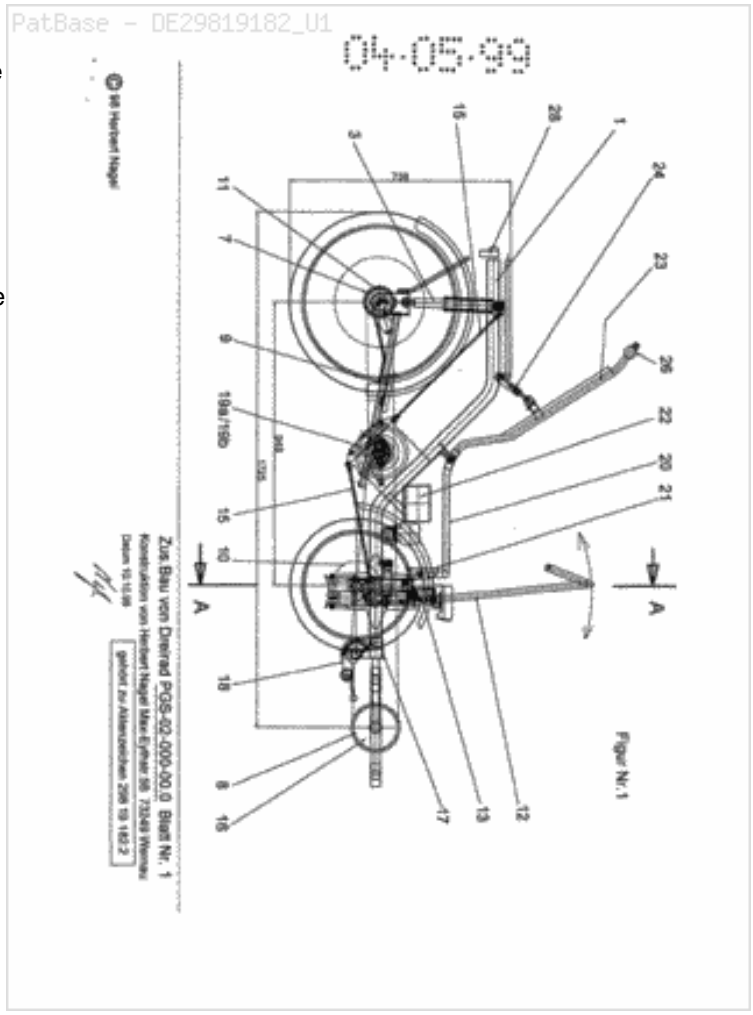
Publication number	Publication date	Application number	Application date
DE29819182 U1	19990610	DE19982019182U	19981028

Probable Assignee:	NAGEL HERBERT DIPL ING
Assignee(s):(std):	NAGEL HERBERT DIPL ING
Assignee(s):	NAGEL HERBERT DIPL ING 73249 WERNAU DE
International class (IPC 8–9):	B62K3/00 B62K5/04 B62K5/05 (Advanced/Invention); B62K3/00 B62K5/00 (Core/Invention)
International class (IPC 1–7):	B62K11/00 B62K5/04
CPC:	B62K3/005 B62K5/05 B62K5/06
European class:	B62K3/00C B62K5/05 B62K5/06

Classification Explorer

Abstract:
Source: DE29819182U1 (Claim 1) Seite Nr. l Aktenzeichen 298 19 182.2 Schutzansprueche f ue r Dreirad (Korrektur vo m 2.5.99)1) Das Dreirad ist dadurch gekennzeichnet, dass der Radrahmen (Pos.l) mit der zweiraedrigenVorderachse (Pos.

Machine translation: (Claim 1) Page No. l file number 298 19 182.2 Schutzansprueche f u r tricycle (Correction 02/05/99 vo m) 1) The tricycle is characterized in that the wheel frame td (Pos.l) with the zweiraedrigenVorderachse (item



- **search:** SS5 ft=vehicle and tilt* and handlebar and brake* and suspension (Results 28)
- List: SS5 1–50 (ft=vehicle and tilt* and handlebar and brake* and suspension) (Results 28)

0) US2015210338A – VEHICLE

1) Family number: 56089642 (US2015210338A) © PatBase

Title: VEHICLE

Priority:

EP20130838840	20130924	EP20130863895	20131220	JP20120209873	20120924
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Family:

Publication number	Publication date	Application number	Application date
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Probable Assignee: YAMAHA MOTOR CO LTD

Assignee(s):(std)**:** YAHAMA HATSUDOKI KK ; YAMAHA MOTOR CO LTD

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Inventor(s):(std)**:** HIRAYAMA YOSUKE ; IIZUKA TOSHIO ; KUBO YUTAKA ; MIYAMOTO NOBORU ; OGAWA HIROKATSU ; SASAKI KAORU ; WATANABE TAKAHIRO ; YAMASAKI SHIGETO ; TAKANO KAZUHISA

Inventor(s): TOSHIO IIZUKA ; YOSUKE HIRAYAMA ; YUTAKA KUBO ; TAKAHIRO WATANABE ; NOBORU MIYAMOTO ; KAORU SASAKI ; KAZUHISA TAKANO ; HIROKATSU OGAWA

Agent(s): JUAN PABLO CADENA SARMIENTO; GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; INSAN BUDI MAULANA; ROHALDY MULUK; DIPL ING ROHALDY MULUK; SHIN EI PATENT FIRM PC; KEATING AND BENNETT LLP

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G13/04 B60G17/005 B60G17/016 B60G17/08 B60G21/00 B60G21/05 B60G21/055 B60G3/01 B60G3/20 B60T11/04 B60T11/10 B60T17/04 B60T8/17 B62D35/00 B62D7/00 B62D9/02 B62J15/00 B62J17/00 B62J17/02 B62J23/00 B62K11/02 B62K11/14 B62K19/32 B62K19/38 B62K19/40 B62K21/00 B62K21/02 B62K21/08 B62K21/12 B62K21/16 B62K21/18 B62K21/20 B62K25/00 B62K25/04 B62K25/08 B62K25/24 B62K3/00 B62K5/00 B62K5/01 B62K5/02 B62K5/027 B62K5/05 B62K5/06 B62K5/08 B62K5/10 B62K50/08 B62L1/00 B62L3/02 B62L3/08 B62L5/00 (Advanced/Invention); B60T17/04 B62K5/00 (Advanced/Non–invention); B60G17/005 B62D7/00 B62J15/00 B62J23/00 B62K19/40 B62K21/00 B62K21/02 B62K5/02 B62K5/05 B62K5/08 (Core/Invention)

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US class: 1/1 280/124.103 280/267 280/269 280/5.509 280/62

Classification Explorer

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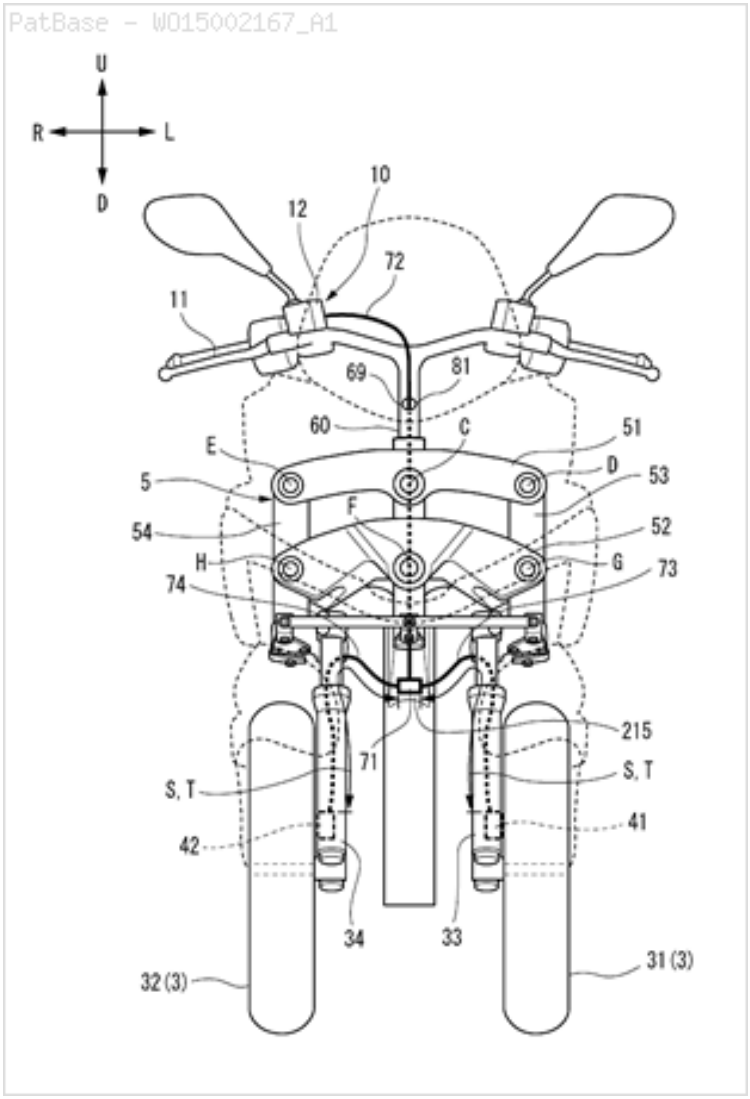
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Forward Citations: WO16052430, WO14181736, WO14181727, US9517807, US9428240, US9428235, US9371106, US9352798, US9340249, US9216790, US2016229480, US2016152292, US2016137253, US2016129964, US2016031520, US2015344091, US2015314827, US2015307149, US2015291241, US2015274244, US2015246704, JP5952516, JP2016175438, EP3144164, EP3069979, EP3069978, EP3069977, EP3069976, EP3002197, EP3002196, CN104743021, CN104554550,

Abstract:
Source: US2015210338A A vehicle includes a center transmission plate, a first center turnable portion configured to turn about a first center turning axis extending in an up−down direction, a second center turnable portion configured to turn about a second center turning axis extending in a front−rear direction, a left transmission plate, a first left turnable portion configured to turn about a first left turning axis extending in the up−down direction, a second left turnable portion configured to turn about a second left turning axis extending in the front−rear direction, a right transmission plate, a first right turnable portion configured to turn about a first right turning axis extending in the up−down direction, and a second right turnable portion configured to turn about a second right turning axis extending in the front−rear direction. A tie rod is supported on the second center turnable portion, the second left turnable portion, and the second right turnable portion.



0) US2001040063A – ENGINE CRADLE FOR A VEHICLE

2) Family number: 31380924 (US2001040063A) © PatBase

Title: Engine cradle for a vehicle

Priority:

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Family:

Publication number	Publication date	Application number	Application date
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Probable Assignee: BOMBARDIER RECREATIONAL PRODUCTS INC

Assignee(s):(std)**:** BOMBARDIER INC ; GIROUARD BRUNO ; FECTEAU BERTHOLD ; DION ANNE MARIE ; BOMBARDIER RECREATIONAL PRODUC ; BOMBARDIER RECREATIONAL PRODUCTS INC ; BOMBARDIER RECREATIONAL PRODUCTS ; AUDET MATHIEU ; BOMBARDIER RECREATIONAL PROD ; WUBBOLTS JEROME ; MASSICOTTE ALAIN

Assignee(s): RASIDESCU MIHAI ; LANGLAIS STEVE ; WATSON PETER ; MALLETTE BERTRAND ; MERCIER DANIEL ; SAVOIE PIERRE ; TALBOT JEAN GUY ; AUBE MARTIN ; GILBERT ANDRE ; COTE MARIO ; FOURNIER ANDRE ; BANK OF MONTREAL ; BEDARD YVON ; BERTRAND ERIC ; BOMBERDIER INC

Inventor(s):(std)**:** AUBE MARTIN ; AUDET MATHIEU ; BEDARD YVON ; BERTHOLD FECTEAU ; BERTRAND ERIC ; BRUNO GIROUARD ; COTE MARIO ; DION ANNE MARIE ; FECTEAU BERTHOLD ; FECTEAU BERTHOLD US ; FOURNIER ANDRE ; GILBERT ANDRE ; GIROUARD BRUNO ; GIROUARD BRUNO 87721201A ; LANGLAIS STEVE ; MALLETTE BERTRAND ; MASSICOTTE ALAIN ; MERCIER DANIEL ; RASIDESCU MIHAI ; SAVOIE PIERRE ; TALBOT JEAN GUY ; WATSON PETER ; WUBBOLTS JER DOT OVER OME ; WUBBOLTS JEROME

Inventor(s): WUBBOLTS JER DOT OVER ; GIROUARD BRUNO 23738400P

Agent(s): SMART AND BIGGAR; OSLER HOSKIN AND HARCOURT LLP; BCF LLP; SOLF ALEXANDER; BOMBARDIER RECREATIONAL PRODUCTS INC, INTELLECTUAL PROPERTY DEPT; BOMBARDIER RECREATIONAL PRODUCTS INC INTELLECTUAL PROPERTY DEPT; OSLER HOSKIN AND HARCOURT LLP (BRP); OSLER HOSKIN AND HARCOURT LLP BRP; PILLSBURY WINTHROP SHAW PITTMAN LLP; BRP LEGAL SERVICES

Designated states: AE AG AL AM AT AU AZ BA BB BE BG BR BY BZ CA CH CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GB GD GE GH GM GR HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK MN MW MX MZ NL NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

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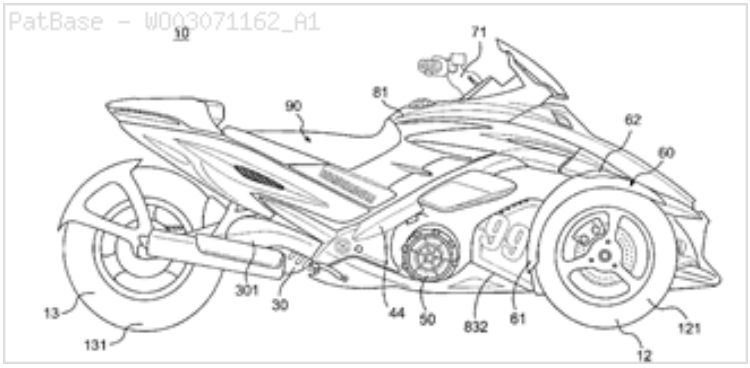
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Forward Citations: WO16193901, WO16030870, WO15122940, WO15036984, WO13019826, WO10062294, WO09114414, WO08100398, WO08100398, WO07130015, WO07100751, WO03070547, WO03070547, USRE44864, USD761692, USD710274, USD701796, USD695657, USD689794, USD682158, USD678124, USD654420, USD632219, USD631803, USD631395, USD629726, USD629724, USD628129, USD627282, USD627269, USD627263, USD626900, USD603775, USD596081, USD593912, USD593908, USD593455, USD592557, USD592556, USD582823, USD582334, USD581846, USD581845, USD581685, USD581320, USD581319, USD580836, USD580822, USD579380, USD573078, USD552506, USD515457, USD512662, USD495274, USD494889, USD494505, USD494504, USD494503, USD494502, USD494100, USD493390, USD493121, USD490018, USD488404, USD479490, US9610986, US9592713, US9586642, US9555678, US9545967, US9540072, US9506407, US9493185, US9476486, US9446810, US9446661, US9428232, US9387902, US9365232, US9352802, US9346508, US9340248, US9267580, US9266580, US9260152, US9248860, US9227507, US9188198, US9187128, US9162731, US9114844, US9057432, US9050869, US9038502, US9010768, US9004214, US8978794, US8944204, US8936380, US8919477, US8899372, US8897966, US8887853, US8851496, US8844999, US8827291, US8820458, US8801001, US8794106, US8783720, US8783394, US8770601, US8746774, US8733773, US8695746, US8622428, US8613543, US8613534, US8613337, US8590654, US8579063, US8567546, US8555801, US8550514, US8544587, US8540045, US8528683, US8506000, US8490731, US8469137, US8430713, US8430197, US8419104, US8413758, US8408348, US8402861, US8397854, US8393426, US8381857, US8360449, US8342548, US8317257, US8313121, US8312945, US8302726, US8302721, US8302711, US8261683, US8245808, US8226120, US8225896, US8191930, US8191929, US8191677, US8191671, US8191665, US8161929, US8079602, US8075007, US8074759, US8037961, US8029004, US8025540, US8016065, US8007005, US7997372, US7988226, US7954853, US7952305, US7950736, US7950486, US7942447, US7942224, US7926607, US7921948, US7921947, US7905310, US7891455, US7891454, US7870920, US7854290, US7832750, US7819272, US7815000, US7806215, US7802816, US7802646, US7780247, US7779944, US7775313, US7770683, US7753154, US7740100, US7708106, US7708096, US7694768, US7686121, US7661714, US7661501, US7658411, US7644791, US7624829, US7610979, US7591337, US7591332, US7588110, US7571787, US7568733, US7559576, US7543673, US7543672, US7543669, US7537499, US7533749, US7513327, US7478694, US7464781, US7464680, US7448635, US7422083, US7410182, US7401816, US7401674, US7398755, US7383824, US7380628, US7377295, US7360617, US7353898, US7328943, US7328765, US7318494, US7311171, US7303037, US7226136, US7213669, US7213668, US7210439, US7207303, US7204331, US7198127, US7198126, US7188693, US7168998, US7147074, US7124848, US7124847, US7124846, US7124845, US7104353, US7080706, US7063178, US7059440, US7051828, US7048293, US7036619, US7025161, US7011173, US7008014, US7004484, US7000931, US6976550, US6971659, US6971466, US6942050, US6926107, US6904990, US6889787, US6880660, US6823957, US6796395, US6767022, US6758497, US6755271, US6691812, US6561302, US2016236527, US2016229479, US2016194021, US2016159392, US2016075405, US2016023709, US2015267792, US2015021893, US2014319801, US2014291948, US2014262586, US2014167399, US2014085903, US2014062059, US2014025246, US2014004984, US2013200604, US2013153325, US2013153319, US2013032418, US2013032417, US2012205902, US2012187645, US2012145471, US2012126565, US2012090908, US2012014105, US2011317441, US2011284299, US2011278083, US2011275256, US2011272906, US2011219911, US2011198831, US2011198830, US2011186371, US2011174569, US2011168473, US2011132679, US2011115180, US2011089649, US2011048816, US2011045715, US2011012334, US2010320023, US2010288574, US2010288572, US2010263956, US2010230192, US2010194088, US2010108428, US2010108427, US2010089668, US2010078254, US2010078245, US2010071982, US2010071981, US2010059305, US2010044134, US2010013420, US2010012415, US2010012414, US2010006019, US2009322045, US2009321169, US2009308039, US2009302590, US2009301830, US2009294199, US2009280718, US2009267407, US2009250281, US2009224497, US2009218153, US2009211827, US2009184484, US2009154287, US2009152940, US2009107754, US2009095113, US2009057509, US2009020347, US2009000845, US2009000837, US2008284124, US2008277184, US2008257627, US2008238149, US2008223639, US2008217088, US2008203795, US2008202280, US2008196958, US2008185204, US2008185203, US2008185202, US2008173491, US2008173287, US2008142287, US2008135318,

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Abstract:
Source: US2001040063A An engine cradle adapted for receiving an engine includes a left side wall defining a C−shaped opening therein. The engine cradle also includes a right side wall, which is essentially a solid wall that provides a reflective surface for reflecting heat to the engine when contained within the engine cradle. The engine cradle also includes a front wall connected between forward portions of the left and right side walls. The engine cradle also includes a bottom panel and a rear panel connected between bottom portions of the front, left side, and right side walls.



0) US2011006498A – CONTROL SYSTEM FOR LEANING VEHICLE

3) Family number: 48148111 (US2011006498A) © PatBase

Title: CONTROL SYSTEM FOR LEANING VEHICLE

Priority: EP20100731902 20100708 US20090501025 20090710 WO2010US41346 20100708 US20120356985 20120124 US20120541804 20120705 US20120724203 20121221

Family:

Publication number	Publication date	Application number	Application date
CA2764904 AA	20111208	CA20102764904	20100708
CN102470909 A	20120523	CN201080030222	20100708
CN102470909 B	20131218	CN201080030222	20100708
DE602010032235 D1	20160525	DE201060032235T	20100708
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US2013113174 AA	20130509	US20120724203	20121221
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US8235398 BB	20120807	US20120356985	20120124
US8360440 BB	20130129	US20120541804	20120705
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WO11005945 A1	20110113	WO2010US41346	20100708

Probable Assignee: BOMBARDIER RECREATIONAL PRODUCTS INC

Assignee(s):(std)**:** BOMBARDIER RECREATIONAL PROD ; BRP US INC ; MERCIER DANIEL

Assignee(s): BOMBARDIER RECREATIONAL PRODUCTS INC ; BOMBARDIER RECREATIONAL PRODUCTS INC VALCOURT ; BANK OF MONTREAL

Inventor(s):(std)**:** DANIEL MERCIER ; MERCIER DANIEL

Agent(s): BCF LLP; PATENT U RECHTSANWAELTE DR SOLF AND ZAPF; CABINET PLASSERAUD; OSLER HOSKIN AND HARCOURT LLP BRP; OSLER HOSKIN AND HARCOURT LLP; CUTLER JONATHAN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G21/00 B62D3/02 B62D9/02 B62D9/04 B62K5/00 B62K5/02 B62K5/027 B62K5/05 B62K5/10 (Advanced/Invention); B62K5/00 (Advanced/Non–invention)

CPC: B60G21/00 B60G2300/122 B62D9/02 B62K5/05 B62K5/10 B62K2005/001 B62K2207/02 B60G2300/45

European class: B62D9/02 B62K5/05 B62K5/10 L60G300/122 L62K207/02 L62K5/00B

US class: 180/210 280/124.103 280/124.103P 280/5.5 280/5.506 280/5.509 280/5.51 280/5.510P 280/93.512

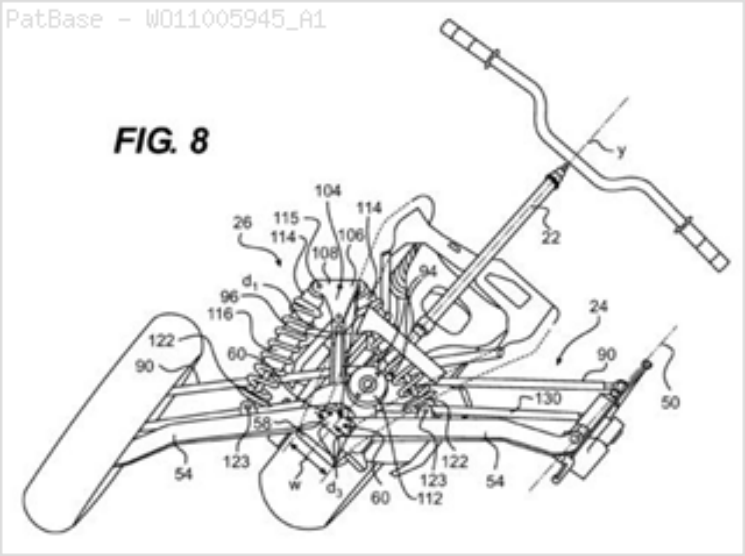
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Abstract:
Source: US2011006498A A leaning vehicle has a frame that pivots relative to a pivotable frame member about a pivot axis. A torque exerted on a steering assembly in a first direction causes the frame to pivot relative to the pivotable frame member in a second, opposite direction at least when the speed of the vehicle is above a first threshold speed, to steer the vehicle in the second direction. An actuator urges the frame toward an upright position when the frame is in a leaning position and a speed of the vehicle is below a second threshold speed. A method is also described, in which a torque is exerted on the frame in the direction opposite the steering torque when the speed above the first threshold speed. The torque exerted by the actuator is opposite the leaning angle when the speed of travel is below the second threshold speed.



0) WO11029795A1 – TILT CONTROL FOR TILTING VEHICLES COMMANDE D'I...

4) Family number: 48462139 (WO11029795A1) © PatBase

Title: TILT CONTROL FOR TILTING VEHICLES

Priority: AU20090904277 20090908 EP20100754711 20100906 WO2010EP63040 20100906

Family:

Publication number	Publication date	Application number	Application date
CN102596697 A	20120718	CN201080040011	20100906
CN102596697 B	20141210	CN201080040011	20100906
DE602010008282 D1	20130829	DE201060008282T	20100906
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IN00409KN2012 A	20121012	IN2012KN00409	20120223
WO11029795 A1	20110317	WO2010EP63040	20100906

Probable Assignee: INO8 PTY LTD

Assignee(s):(std)**:** INO8 PTY LTD ; WILL FRANK

Inventor(s):(std)**:** FRANK WILL ; WILL FRANK

Agent(s): STUMPF PATENTANWAELTE PARTGMBB; KAUFMANN URSULA JOSEFINE; SPACHMANN HOLGER

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K5/027 B62K5/04 B62K5/05 B62K5/08 B62K5/10 (Advanced/Invention)

CPC: B62K5/10 B62K5/027 B62K5/05 B62K5/08

European class: B62K5/027 B62K5/05 B62K5/08 B62K5/10

Classification Explorer

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Forward Citations: WO15193705, US9428236, US2015123389, JP6063861, JP2015123959, JP2015123951, EP2889210, DE202014104070, DE202014102328, DE102014217247, DE102014217246, DE102014209329, DE102014209328, CN105492299,

Abstract:
The invention relates to a tilting vehicle (10) including a frame (12) freely tiltable transversely between at least two spaced wheels (14, 114), at least one variable damper (28, 30, 148) with adjustable damping force operatively connected between the frame (12) and the two wheels (14, 114), at least one sensor to generate signals indicative of transverse tilting of the frame (12) relative to a central vertical plane of the vehicle, and a controller in communication with the at least one variable damper (28, 30, 148) and the at least one sensor. The controller is configured to vary transverse damping by the at least one variable damper (28, 30, 148) in accordance with the signals generated by the at least one sensor to passively provide transverse tilt stability to the frame (12) through the force generated in the damper in the opposite direction of the damper movement. The invention suggests to transversly damp a freely tiltable frame in accordance to a damping state for enhancing driving security and comfort of the vehicle.

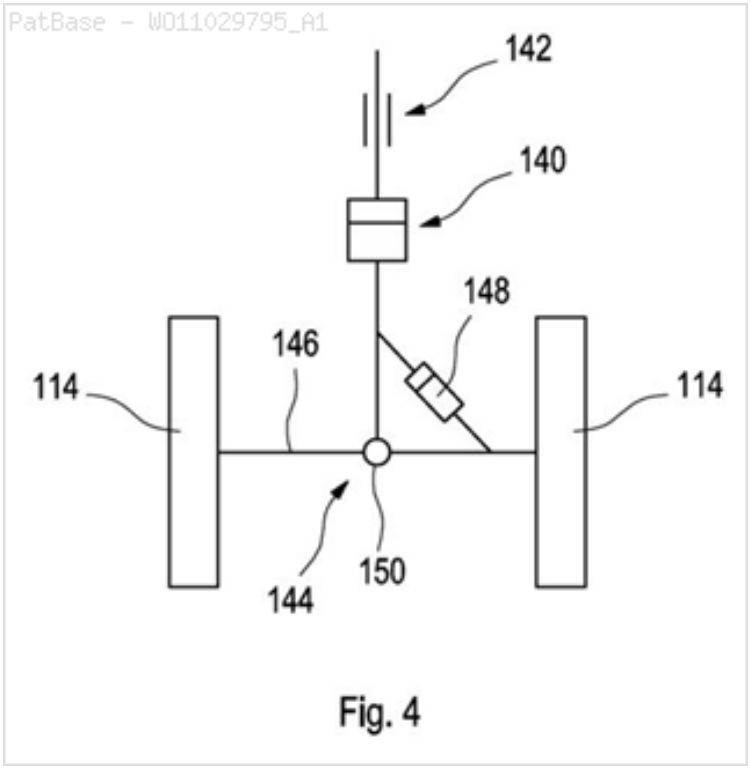


Fig. 4

0) US2012080249A – FRONT WHEEL ENERGY RECOVERY SYSTEM

5) Family number: 50897763 (US2012080249A) © PatBase

Title: FRONT WHEEL ENERGY RECOVERY SYSTEM

Priority: US20100897534 20101004 US20130838989 20130315 US20140305534 20140616

Family:

Publication number	Publication date	Application number	Application date
TW201223822 A	20120616	TW20110135773	20111003
US2012080249 AA	20120405	US20100897534	20101004
US2013226381 AA	20130829	US20130838989	20130315
US2014291050 AA	20141002	US20140305534	20140616
US8761984 BB	20140624	US20130838989	20130315
US8973690 BB	20150310	US20100897534	20101004
US9043067 BB	20150526	US20140305534	20140616
WO12047754 A1	20120412	WO2011US54227	20110930

Probable Assignee: MORRISON CONSULTING GROUP INC W

Assignee(s):(std)**:** INGRAM BENJAMIN T ; MORRISION CONSULTING GROUP INC W ; MORRISON CONSULTING GROUP INC W ; YATES III WILLIAM M ; YATES WILLIAM M III

Assignee(s): YATES WILLIAM M ; W MORRISION CONSULTING GROUP INC ; W MORRISON CONSULTING GROUP INC ; WMORRISON CONSULTING GROUP INC

Inventor(s):(std)**:** INGRAM BENJAMIN T ; YATES III WILLIAM M ; YATES WILLIAM M III ; YATES WILLIAM M

Agent(s): MCKENNA LONG AND ALDRIDGE LLP; JUNG SONG K

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60K1/00 B60L11/00 B60L15/20 B60L7/18 B62K11/04 B62M23/02 B62M6/40 B62M6/80 B62M6/90 B62M7/02 G06F19/00 H02P3/14 (Advanced/Invention)

CPC: B60L11/002 B60L7/18 B60L15/2045 B60L2200/12 B62K11/04 B62K2204/00 B62M7/02 B62M23/02 Y02T10/7283 Y02T10/645 Y02T10/72

European class: B60L15/20E B60L7/18 B62K11/04 B62M23/02 B62M7/02 L60L200/12 L62K204/00 Y02T10/72D6

US class: 180/220 180/65.21 180/65.31 180/65.310P 180/65.6 290/1R 701/22 701/22S

Classification Explorer

Cited documents: WO9011218 A1, WO05044602 A2, WO0058121 A1, US8413748 BB, US8225897 BA, US8151919 BB, US8056693 BB, US8042641 BB, US7775314 BB, US7570012 BB, US7487854 BB, US7328766 BB, US7290629 BB, US7231998 BA, US6888273 BB, US6833642 BA, US6724165 BB, US6663524 BB, US6505699 BA, US6446985 BA, US6439592 BA, US6398683 BA, US6196347 BA, US6182991 BA, US6161855 A, US6161854 A, US6158543 A, US6068279 A, US6039137 A, US5894903 A, US5873428 A, US5865267 A, US5671821 A, US5644202 A, US5491390 A, US5324057 A, US5253889 A, US5113964 A, US5054572 A, US5052705 A, US5050699 A, US5042608 A, US4479660 A, US4397369 A, US3939932 A, US3934669 A, US3199623 A, US3045772 A, US3024860 A, US2012211291 AA, US2012184379 AA, US2012109483 AA, US2012065825 AA, US2012052995 AA, US2011295454 AA, US2011295452 AA, US2011292667 AA, US2011291462 AA, US2011231085 AA, US2011231060 AA, US2011231041 AA, US2011162900 AA, US2011036656 AA, US2010243350 AA, US2010243349 AA, US2010236849 AA, US2010018787 AA, US2009188738 AA, US2008234933 AA, US2008100027 AA, US2008066984 AA, US2007235235 AA, US2007169973 AA, US2005173176 AA, US2004134696 AA, US2003169002 AA, JP8262971 A2, JP5085444 A2, JP5085443 A2, JP5085441 A2, JP5085439 A2, JP5085438 A2, JP5085437 A2, JP4151390 A2, JP2009161026 A2, JP2004210072 A2, EP0798202 A1,

DE202005013929 U1

CN101525024 A,

Forward Citations: WO15006277, US9573590, US9457668, US9415691, US9387764, US9321358, US9168970, US9050905, US8954212, US8950539, US8919483, US8892292, US8880266, US2016325745, US2015274020, US2015274019, US2015258898, US2015203110, US2014358343, US2014297074, US2014262581, US2014034267, US2013299265, US2013284527, US2013282218, US2013274983, US2013168171, US2012296508, US2012203407, EP2946993, EP2910401,

Abstract:
Source: US2012080249A A kinetic energy recovery system ("KERS system") and motorcycle equipped with the same is disclosed. The KERS system may be mechanical, hydraulic, or a combination thereof. In an embodiment, motorcycle includes a rear wheel, an electric motor, a motor shaft, and a front wheel equipped with a wheel hub that includes a sprag clutch. The motor shaft can be fitted with a motor drive sprocket that drives a jackshaft chain that in turn drives a jackshaft input sprocket that is fitted to the jackshaft. Jackshaft input sprocket may be installed in conjunction with a sprag clutch that allows the rear wheel to free wheel during coasting while the front wheel KERS system is engaged. The motor harvests kinetic energy from the front wheel without simultaneously powering the rear wheel while the use of a geared dead zone allows the front and rear wheels to not lock together to improve safety.

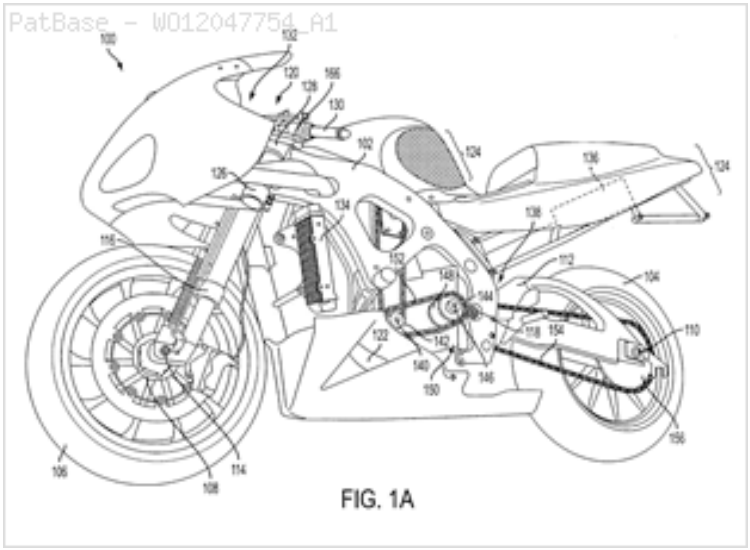


FIG. 1A

0) US6276480B – THREE–WHEEL MOTOR VEHICLE

6) Family number: 20660463 (US6276480B) © PatBase

Title: THREE–WHEEL MOTOR VEHICLE

Priority: CH19960002986 19961206 WO1997CH00452 19971201

Family:

Publication number	Publication date	Application number	Application date
AT236042 E	20030415	AT19970913077T	19971201
AU199850464 A1	19980629	AU19980050464	19971201
DE59709719 D1	20030508	DE19975009719	19971201
EP0941198 A1	19990915	EP19970913077	19971201
EP0941198 B1	20030402	EP19970913077	19971201
JP2001505157 T2	20010417	JP19980525018T	19971201
MY133554 A	20071130	MY19970005833	19971204
TH34964 A	19990914	TH19971004845	19971126
TW350825 B	19990121	TW19970118023	19971201
US6276480 BA	20010821	US19990319410	19990604
WO9824681 A1	19980611	WO1997CH00452	19971201

Probable Assignee: CITYMOBIL AG

Assignee(s):(std)**:** AREGGER KURT ; CITYMOBIL AG ; CITYMOBIL AG EMMENBRUECKE ; CITYMOBIL EMMENBRUECKE AG

Inventor(s):(std)**:** AGREGGER MR KURT ; AREGGER KURT

Inventor(s): KURT AREGGER ; MR KURT AGREGGER

Designated states: AL AM AT AU AZ BA BB BE BG BR BY CA CH CN CU CZ DE DK EE ES FI FR GB GE GH GR HU ID IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK MN MW MX NL NO NZ PL PT RO RU SD SE SG SI SK SL SZ TJ TM TR TT UA UG US UZ VN YU ZW

International class (IPC 8–9)**:** B62D21/00 B62D31/00 B62D37/00 B62D47/00 B62D61/08 B62K11/02 B62K5/027 B62K5/04 (Advanced/Invention); B62D31/00 B62D37/00 B62D47/00 B62D61/00 B62K5/00 (Core/Invention); B62D21/00 (Core/Non–invention)

International class (IPC 1–7)**:** B62D21/00 B62D61/06 B62D61/08 B62K11/02 B62K5/04

CPC: B62D31/003 B62D37/00 B62D47/00 B62D61/08 B62K5/027 B62K5/10

European class: B62D31/00B B62D37/00 B62D47/00 B62D61/08 B62K5/027 B62K5/10

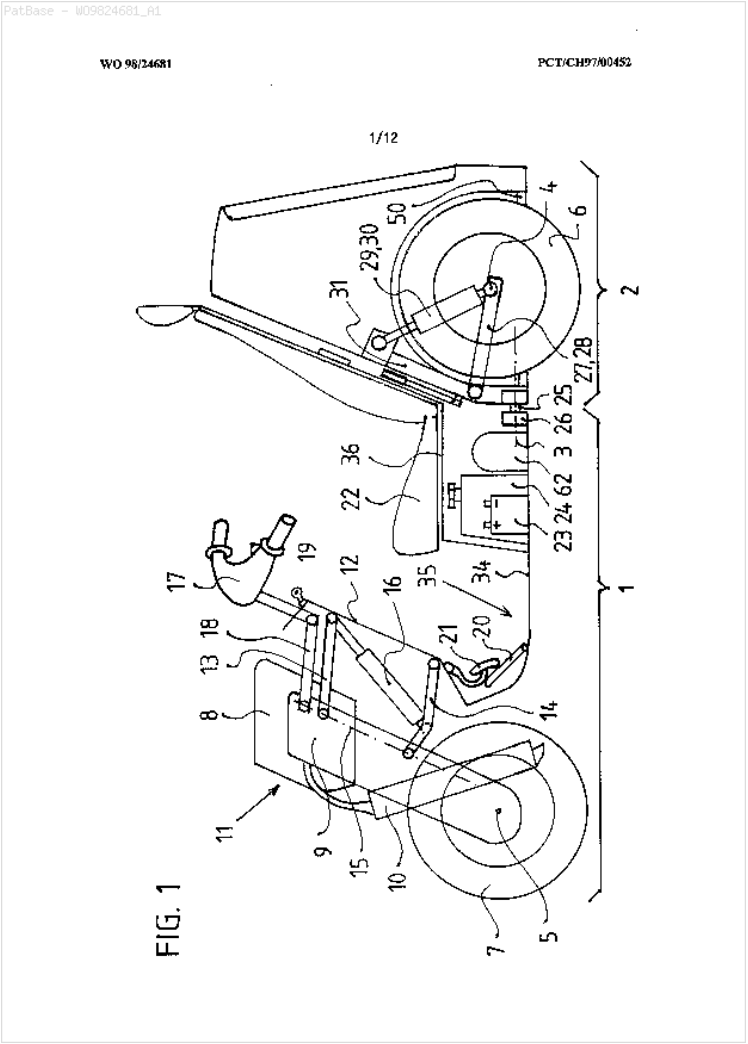
US class: 180/213 180/252 280/62

Classification Explorer

Cited documents: US5495905 A, US5343973 A, US5291406 A, US5116069 A, US4998596 A, US4580797 A, US4412595 A, US4159752 A, US3938609 A, US3605929 A, US2606623 A, US2317412 A, JP5085453 A2, GB2082517 A1, GB2074957 A1, GB2014094 A1, FR2684606 A1, FR1562248 A, EP0529188 A1,

Forward Citations: WO13058694, WO10133968, WO10133968, WO08041243, WO07112118, WO07112118, WO06130007, WO05025972, US9499220, US9440685, US9428236, US8820461, US8781684, US8768570, US8762003, US8646794, US8543291, US7967096, US7600596, US7591337, US7571787, US7311167, US7207408, US7152868, US7090234, US6889784, US6739616, US6655483, US6517111, US6460916, US6457374, US2015203162, US2015123389, US2012247856, US2012232758, US2010072722, US2009295106, US2008251309, US2008245593, US2006097471, US2005077098, US2004188167, US2004144586, US2004119259, US2004075247, GB2394701, EP2768716, EP2551177, EP2364901, EP1713651, EP1422130, DE10259160, DE102007015851, DE102004059347, CN102303667, CN102161363, CN102161363,

Abstract:
Source: US6276480B A three−wheeled vehicle having two parts that can be tilted around a longitudinal axis. A rear part has a chassis for two−track wheels and the front part, which can be tilted relative to the rear part, accommodates a driver seat. Connected to a front end of the front part is a tiltable front wheel suspension to which a front wheel and an engine and gears for the front−wheel drive are attached. The two vehicle parts that can be tilted relative to each other each support or form a body which can also be designed for the front part as a monocoque and forms a closed and heatable driver cabin.



0) US2001028154A – VEHICLE HAVING SUSPENSION SYSTEM WITH VARIABLE ...

7) Family number: 31018397 (US2001028154A) © PatBase

Title: Vehicle having suspension system with variable camber and vertical suspension in the plane of the wheel

Priority: DE20012014331U 20010830 FR20000004596 20000410 FR20010011860 20010913 GB20010023903 20011004 US20010922155 20010806

Family:

Publication number	Publication date	Application number	Application date
AT258120 E	20040215	AT20010107977T	20010329
DE20114331 U1	20011025	DE20012014331U	20010830
DE60101809 D1	20040226	DE20016001809	20010329
DE60101809 T2	20041104	DE20016001809T	20010329
EP1145879 A1	20011017	EP20010107977	20010329
EP1145879 B1	20040121	EP20010107977	20010329
FR2807378 A1	20011012	FR20000004596	20000410
FR2829460 A3	20030314	FR20010011860	20010913
FR2829460 B3	20030829	FR20010011860	20010913
GB200123903 A0	20011128	GB20010023903	20011004
GB2380459 A1	20030409	GB20010023903	20011004
JP2002052915 A2	20020219	JP20010111443	20010410
US2001028154 AA	20011011	US20010829058	20010409
US2003025291 AA	20030206	US20010922155	20010806
US6511078 BB	20030128	US20010829058	20010409
US6511087 BA	20030128	US20010922155	20010806

Probable Assignee: CONCEPTION AND DEV MICHELIN SA

Assignee(s):(std)**:** CONCEPTION AND DEV MICHELIN SA ; CONCEPTION ET DEV MICHELIN S A ; FONG CHIN LONG ; MICHELIN RECH TECH

Assignee(s): CONCEPTION ET DEVELOPPEMENT MICHELIN SA ; CONCEPTION ET DEVELOPPEMENT MICHELIN S A ; CHIN LONG FONG ; CONCEPTION ET DEVELOPMENT MICHELIN S A ; CONCEPTION ET DEVELOPMENT MICHELIN S A GIVISIEZ ; CONCEPTION ET DEVELOPPEMENT MICHELIN

Inventor(s):(std)**:** FONG CHIN LONG ; SEBE MARC

Inventor(s): CHIN LONG FONG

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

International class (IPC 8–9)**:** B60G17/015 B60G17/016 B60G21/00 B60G3/01 B60G3/20 B60G7/00 B60G7/02 B62D17/00 B62D7/20 B62D9/02 B62K5/00 B62M1/00 (Advanced/Invention); B60G17/015 B60G21/00 B60G3/00 B60G3/18 B60G7/00 B60G7/02 B62D17/00 B62D7/00 B62D9/00 (Core/Invention)

International class (IPC 1–7)**:** A63B22/02 B60G17/01 B60G17/015 B60G21/00 B60G3/01 B60G3/20 B60G7/02 B62D17/00 B62D7/20 B62D9/02 B62K11/00 B62K3/00 B62K5/00 B62M1/00 B62M9/02

CPC: B62K3/002 B62M1/34 B60G3/01 B60G7/001 B60G17/0162 B60G21/007 B60G2200/144 B60G2200/44 B60G2200/46 B60G2200/462 B60G2200/464 B60G2202/413 B60G2204/143 B60G2204/421 B60G2204/422 B60G2204/82 B60G2204/8302 B60G2206/11 B60G2206/1114 B62D9/02 B62D17/00

European class: B60G17/015A2 B60G17/016F B60G21/00D B60G3/01 B60G7/00A B62D17/00 B62D9/02 L60G200/144 L60G200/440 L60G200/460 L60G200/462 L60G200/464 L60G202/413 L60G204/143 L60G204/421 L60G204/422 L60G204/82 L60G204/8302 L60G206/11 L60G206/1114

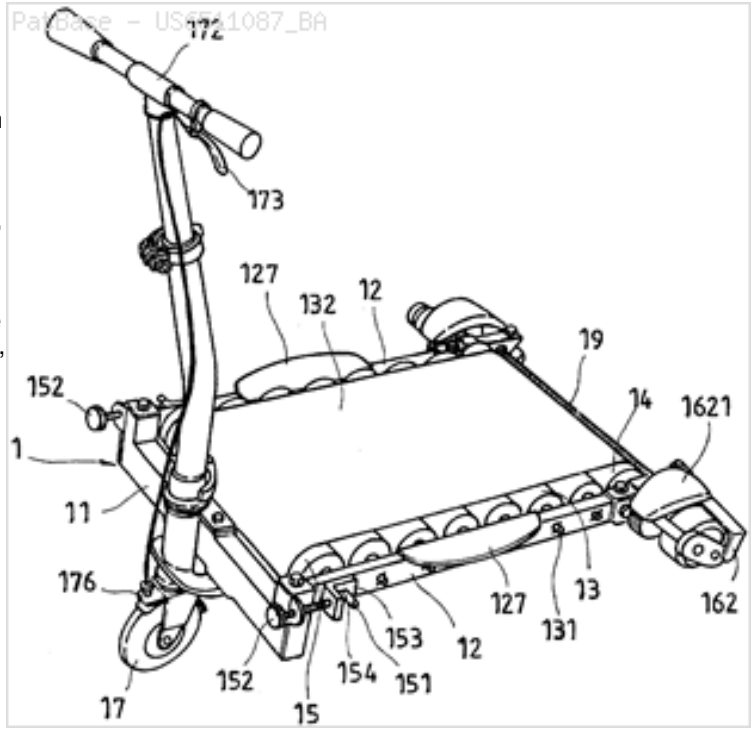
US class: 280/124.103 280/124.127 280/210 280/210P 280/228 280/282 280/5.509 280/5.521 280/86.757

Classification Explorer

Cited documents: WO8702951 A1, US6170838 BA, US6113119 A, US4796720 A, US4700972 A, US4487429 A, US4334695 A, US4159128 A, US3485506 A, US3332704 A, US2152938 A, US1696927 A, US1353011 A, JP63101114 A2, JP46033604 B4, JP46033604 B1, JP11028924 A2, JP10338009 A2, GB210429 A, FR967710 A, EP0878378 A1, EP0878332 A1, DE2822058 A1, DE1214100 B,

Forward Citations: WO05000606, WO04069569, WO03057529, WO03057529, US9283989, US9248857, US9145168, US9090281, US9045015, US9010784, US8818700, US8641064, US8202201, US8128110, US8050820, US7914020, US7905500, US7845666, US7703781, US7673883, US7625000, US7607695, US7591337, US7571787, US7559400, US7425005, US7419175, US7357400, US7246806, US7234708, US7108271, US7013206, US6986519, US6840524, US6695331, US6505845, US2016059661, US2010324808, US2010320023, US2010117313, US2009256326, US2009194965, US2008290618, US2008197597, US2008194386, US2008073168, US2008039289, US2007267883, US2007205576, US2006287165, US2006237941, US2006220335, US2006181050, US2005179225, US2005051976, US2005017471, US2004150179, US2004150178, US2004128040, US2004036443, US2003230443, RU2607691, KR101614701, KR101028058, JP4813360, JP2006027602, FR2858964, EP1944228, EP1889537, EP1736401, EP1506917, DE10241725, DE102014006600, CN103640661, CN102596601, CN102596601,

Abstract:
Source: US2001028154A A ground contact system for a vehicle having a wheel mounted on a wheel carrier, the wheel carrier being mounted on a support by a vertical suspension device, the support being mounted on a chassis by a load transfer arm on one side of which the support is articulated along an essentially horizontal geometrical camber axis, the load transfer arm being connected at its other side to the chassis along an essentially vertical geometrical axis, a camber control rod being mounted articulated to the support some distance from the geometrical suspension axis, the camber control rod being able to move transversely relative to the chassis, a triangulation−forming element connecting the load transfer arm to the chassis around the essentially vertical geometrical axis, such that it controls the moment about the essentially vertical geometrical axis.



0) US2003102657A – ENCLOSED MOTORCYCLE

8) Family number: 28630235 (US2003102657A) © PatBase

Title: ENCLOSED MOTORCYCLE

Priority: US20010002901 20011205

Family:

Publication number	Publication date	Application number	Application date
US2003102657 AA	20030605	US20010002901	20011205
US6637763 BB	20031028	US20010002901	20011205

Probable Assignee: KUO MING C

Assignee(s):(std)**:** KUO MING C

Inventor(s):(std)**:** KUO MING C

International class (IPC 8–9)**:** B62H1/12 B62J17/08 B62K11/00 B62K3/00 (Advanced/Invention); B62H1/00 B62J17/00 B62K11/00 B62K3/00 (Core/Invention)

International class (IPC 1–7)**:** B60S9/00 B62K13/06

CPC: B62H1/12 B62J17/08 B62K3/005 B62K11/00

European class: B62H1/12 B62J17/08 B62K11/00 B62K3/00C

US class: 180/219 280/209 280/748 280/755

Classification Explorer

Cited documents: US6106054 A, US5904392 A, US5685388 A, US5518259 A, US5458390 A, US5401055 A, US5181740 A, US5029894 A, US4293052 A, US4133402 A, US4065144 A, US3700059 A, US3322224 A,

Forward Citations: WO10026585, US9499229, US9316267, US9163707, US8851221, US8762003, US8562010, US8480111, US8333398, US8308232, US8139810, US7970530, US7819455, US7594843, US7445539, US7445070, US7407187, US6942053, US6859753, US2016031504, US2015031463, US2014346751, US2013193661, US2012232758, US2012133116, US2012056403, US2011163557, US2010250107, US2010244468, US2008179125, US2008157557, US2007017754, US2006211333, US2006160464, US2006099879, US2005197195, US2005049824, US2005035583, US2004201271, US2004091313, EP2323895, EP2323895, EP1564388, CN103802993, CN103802993,

Abstract:
Source: US2003102657A An enclosed motorcycle (10) that utilizes a structural frame(14), a pair of tandem wheels (36,38), an engine (40) and a handlebar assembly (46) provides transportation for a single driver. A foot brake pedal assembly (96) is pivotally affixed to the frame for stopping the motorcycle and a bench seat (132) is rigidly attached to the frame for seating the driver. A pair of outrigger landing wheels (140) are attached to the motorcycle frame on a common axle and have automatic control to extend the wheels at a predetermined road speed, for preventing tipping at low speeds and when stopped. An enclosure (16) is disposed over and attached to the frame which includes a pair of entrance doors (172) and a pair of leg doors (170), one on each side of the motorcycle for access to the seat for minimizing the enclosure envelope and providing effortless entry into the motorcycle. A two piece external passenger seat (272) is provided over the engine with a fold down cargo compartment underneath. When the seats are hinged upward the cargo compartment mechanically unfolds providing storage space.

PatBase - US6637763_BB

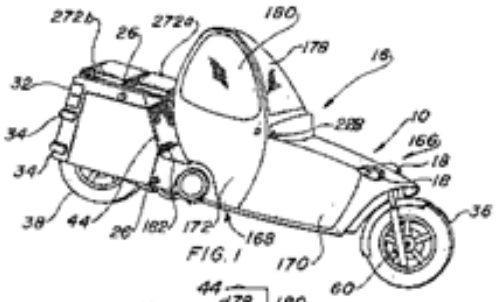


FIG. 1

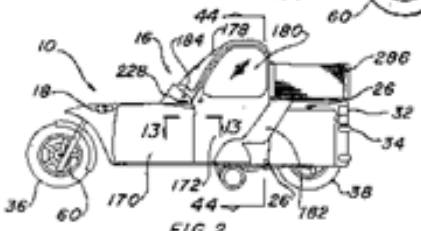


FIG. 2

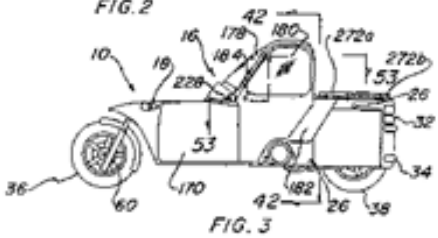


FIG. 3

0) DE202016105367U1 – PERSONENFAHRZEUG MIT EINER ERSTEN UND EINER ZWE...

9) Family number: 64371349 (DE202016105367U1) © PatBase

Title: PERSONENFAHRZEUG MIT EINER ERSTEN UND EINER ZWEITEN HINTEREN RADAUFHAENGUNG PASSENGER CAR WITH A FIRST AND A SECOND REAR SUSPENSION (Machine translation)

Priority: DE201620105367U 20160927

Family:

Publication number	Publication date	Application number	Application date
DE202016105367 U1	20161215	DE201620105367U	20160927

Probable Assignee: TUEV SUED AUTO SERVICE GMBH

Assignee(s):(std)**:** TUEV SUED AUTO SERVICE GMBH

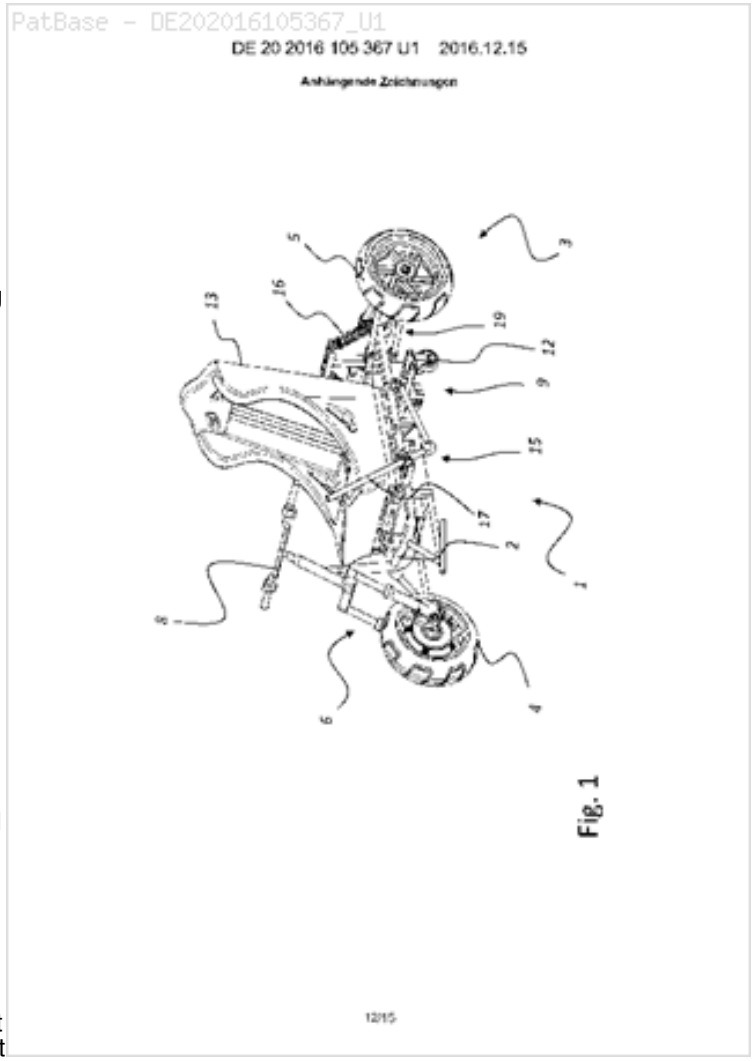
International class (IPC 8–9): B62K5/00 (Advanced/Invention)

CPC: B60G2200/144 B60G2300/45 B60G3/20

Classification Explorer

Cited documents: US8262111 BB,

Abstract:
Source: DE202016105367U1
Personenfahrzeug (1), umfassend – einen Fahrzeugrahmen (2), – mindestens ein mechanisch mit dem Fahrzeugrahmen (2) in Verbindung stehendes lenkbares Vorderrad (4), – eine erste hintere Radaufhaengung (3), welche wenigstens ein erstes Radpaar neigungsbeweglich traegt sowie – eine zweite hintere Radaufhaengung (9), bei welcher wenigstens ein zweites Radpaar ueber eine starre oder im Wesentlichen starre Verbindung neigungsunbeweglich aneinander gekoppelt sind, wobei – selektiv die erste hintere Radaufhaengung (3) mit dem wenigsten einen ersten Radpaar oder die zweite hintere Radaufhaengung (9) mit dem wenigstens einen zweiten Radpaar in eine jeweilige Betriebslage gebracht und/oder in einer jeweiligen Betriebslage festgesetzt werden kann, in welcher jeweiligen Betriebslage das jeweilige wenigstens eine erste oder wenigstens eine zweite Radpaar sowie das mindestens eine mechanisch an den Fahrzeugrahmen gekoppelte lenkbare Vorderrad (4) Kontakt zu einer Bodenflaeche besitzen. Passenger car (1), comprehensive – a vehicle frame (2), – at least one mechanically with the frame of the vehicle (2) related swivelling front wheel (4), – a first rear suspension (3), which tilt mobile carries at least a first pair of wheel well as – a second rear suspension (9), in which at least a second wheel pair through a rigid or essentially rigid connection are tilt–immobile together coupled with – selectively the first rear suspension (3) with the least a first pair or the second rear suspension (9) with at least one second pair can be placed in a particular position and/or set in a respective operating position in which each operating position the have at least a first or at least a second pair, as well as the at least a steerable front wheel linked mechanically to the vehicle frame (4) contact with a ground surface.



0) US2014375015A – MOTORIZED REVERSE TRIKE WITH TILTABLE BODY

10) Family number: 51919259 (US2014375015A) © PatBase

Title: MOTORIZED REVERSE TRIKE WITH TILTABLE BODY

Priority: CN201220033590U 20120114 WO2013CN70385 20130111

Family:

Publication number	Publication date	Application number	Application date
CN202414056 U	20120905	CN201220033590U	20120114
US2014375015 AA	20141225	US20130371315	20130111
US8991542 BB	20150331	US20130371315	20130111
WO13104335 A1	20130718	WO2013CN70385	20130111

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Assignee(s):(std)**:** JINJUN YU ; YU JINJUN

Inventor(s):(std)**:** JINJUN YU ; YU JINJUN

Agent(s): TAROLLI SUNDHEIM COVELL AND TUMMINO LLP; DAN SAMS AND ASSOCIATES

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** B62D61/06 B62K11/02 B62K11/14 B62K25/08 B62K25/24 B62K5/027 B62K5/05 B62K5/08 B62K5/10 B62L1/02 (Advanced/Invention); B62K5/00 B62L1/02 (Advanced/Non–invention)

CPC: B62K25/24 B62K5/08 B62K2005/001 B62K5/10 B62K5/027 B62K5/05

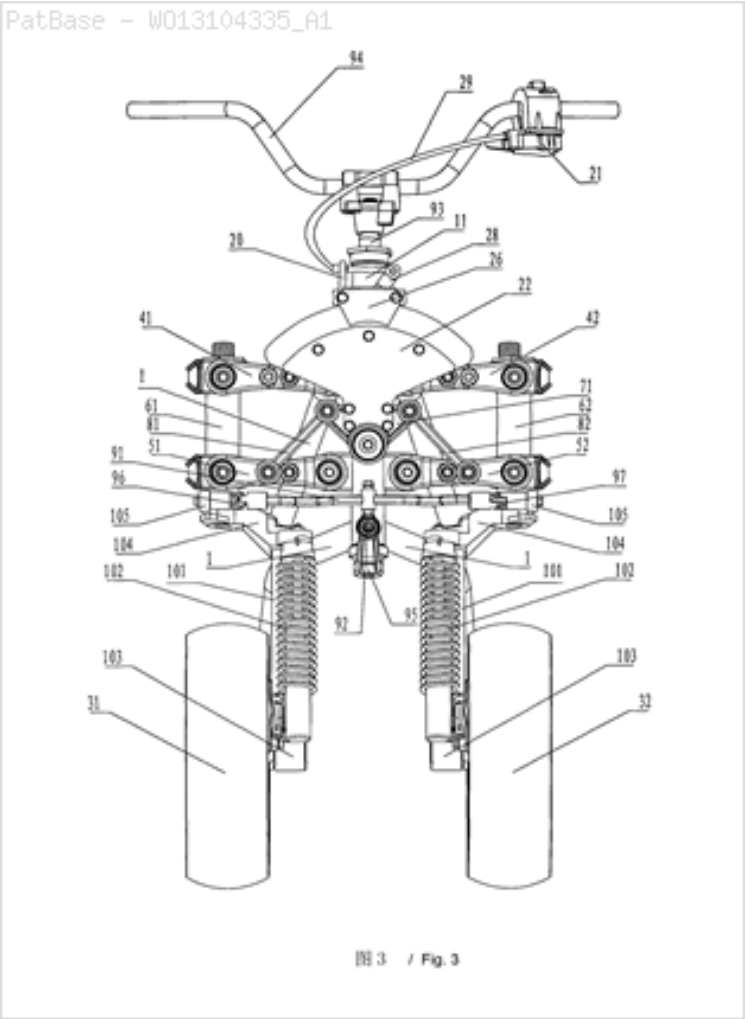
US class: 180/209 180/210 180/76 280/124.103 280/267

Classification Explorer

Cited documents: US8596660 BB, US8317207 BB, US7562885 BB, US7264251 BB, US6763905 BB, US4887829 A, US4020914 A, US2007029751 AA, US2006151232 AA, US2005167217 AA, US2005167174 AA, US2005012291 AA, TW201117997 A, TW200530057 A, EP1666346 A1, CN202414056 U, CN201670311 U,

Forward Citations: WO13104335, US9545967, US9517807, US9428240, US9428235, US9371106, US9352798, US9340249, US9296420, US9278711, US9238494, US9216790, US8991542, US2016152292, US2016137253, US2016114850, US2015344091, US2015314827, US2015298736, US2015274245, US2015274244, TWI532629, TWI522273, TWI522269, JP5687378, JP2016175439, EP2923931, EP2913256, EP2899105, CN104703870,

Abstract:
Source: US2014375015A A motorized reverse trike with a tiltable body comprises a frame with a header pipe, two front wheels, a tilting mechanism arranged on the header pipe, two suspension mechanisms hinged between the two front wheels and the tilting mechanism respectively, a steering mechanism with handlebars hinged between the header pipe and the two suspension mechanisms, and a locking mechanism for locking the tilting mechanism.



0) WO9846474A2 – PORTABLE SCOOTER TROTTINETTE PORTABLE

11) Family number: 15103134 (WO9846474A2) © PatBase

Title: PORTABLE SCOOTER

Priority: US19970843423 19970415 US19980013322 19980126 WO1998US07360 19980414

Family:

Publication number	Publication date	Application number	Application date
AU199868989 A1	19981111	AU19980068989	19980414
EP0973674 A2	20000126	EP19980914691	19980414
TW391938 B	20000601	TW19980105698	19980415
WO9846474 A2	19981022	WO1998US07360	19980414
WO9846474 A3	19981217	WO1998US07360	19980414

Probable Assignee: EMPOWER CORP

Assignee(s):(std)**:** EMPOWER CORP ; LANG JEFFREY H ; NIELSEN PETER ; SCHOONMAKER JAMES ; STAELIN DAVID ; ULRICH NATHAN ; WALLACE DAVID ; STAELIN PAUL H

Inventor(s):(std)**:** DAVID STAELIN ; DAVID WALLACE ; JAMES SCHOONMAKER ; JEFFREY H LANG ; LANG JEFFREY H ; MARKER JAMES SCHOON ; MARKER JAMES SCHOON AND ; NATHAN ULRICH ; NIELSEN PETER ; NIELSON PETER ; PAUL H STAELIN ; PETER NIELSEN ; SCHOONMAKER JAMES ; STAELIN DAVID ; STAELIN PAUL H ; ULRICH NATHAN ; WALLACE DAVID

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HU ID IE IL IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZW

International class (IPC 8–9): B62K15/00 B62K3/00 (Advanced/Invention); B62K15/00 B62K3/00 (Core/Invention)

International class (IPC 1–7): B62K15/00

CPC: B62K3/002 B62K15/006

European class: B62K15/00F B62K3/00B

Classification Explorer

Cited documents: US5388659 A, US5265695 A, US5097922 A, US5039121 A, US4570739 A, US4087108 A, US1951277 A,

Forward Citations: WO15086274, WO13122461, WO12163789, WO08090309, WO04093595, WO04045943, WO0236419, WO0230730, WO0115967, US9545963, US9529365, US9477228, US9459627, US9442492, US9442491, US9442486, US9429955, US9411339, US9411336, US9400502, US9268333, US9205890, US9188984, US9168966, US8740230, US8662508, US8636293, US8562005, US8467941, US8453768, US8322477, US8170780, US7979179, US7962256, US7900725, US7857088, US7757794, US7740099, US7712937, US7690452, US7690447, US7546889, US7407175, US7275607, US7210544, US7182166, US7174976, US7090040, US7023330, US7004271, US7000933, US6969079, US6915878, US6874591, US6868931, US6866107, US6827163, US6815919, US6779621, US6609584, US6538411, US6431302, US6347681, NL2008301, GB2453796, GB2453796, ES2257894, EP2762395, EP2223847, EP2025587, EP1736400, EP1565371, EP1401543, EP1096980, EP1004505, EP1004505, CN104379437, CN104024098, AT411747,

Abstract:
A portable, personal scooter is disclosed which is small, lightweight, and foldable for enhanced portability. A motorized version is controlled by a controller sensitive to platform load, among other things. Brake and suspension systems are shown, as are skids ahead of the rear wheels for navigating road hazards. Advantageous combinations of pivotable bearings and joints enable the scooter to be tilt−steered and easily folded for portage and storage. The arrangement of bearings and pivots provides for several folded configurations. The "half−folded" configuration is partially collapsed and permits the user either to carry it or to tow it on its rear wheels, much like wheeled airport luggage. The "fully−folded" configuration can be the size of a briefcase and easily carried, stored, or shipped. A collapsible brace provides rigidity for the steering shaft while allowing it to be turned for steering and to be tilted laterally. A special wheel suspension mechanism helps the front road wheel pass over an obstacle such as a curb. Wheel braking and suspension systems are also disclosed. Methods of collapsing and transporting the scooter are also disclosed.

PatBase - WO9846474_A2

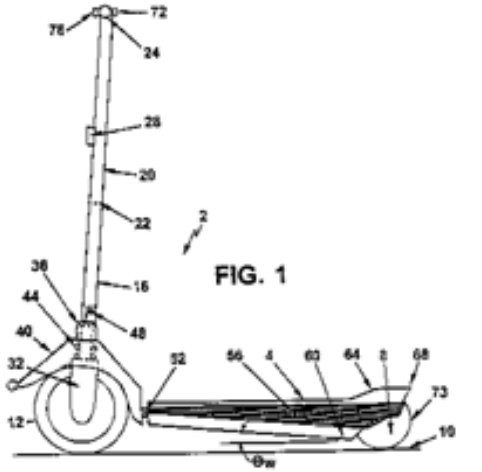


FIG. 1

FIG. 2

12) Family number: 49152065 (WO11075860A1) © PatBase

Title: DEVICE FOR CONTROLLING THE STEERING OF A MOTORCYCLE OR THE LIKE

Priority: CH20090001966 20091221

Family:

Publication number	Publication date	Application number	Application date
CH702447 A2	20110630	CH20090001966	20091221
WO11075860 A1	20110630	WO2010CH00321	20101221

Probable Assignee: SERIO EMILE DI

Assignee(s):(std): SBARRO FRANCESCO ; SERIO EMILE DI

Assignee(s): DI SERIO EMILE ; FRANCESCO SBARRO

Inventor(s):(std): SBARRO FRANCESCO

Inventor(s): FRANCESCO SBARRO

Agent(s): NITHARDT ROLAND

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K25/16 B62K3/00 B62K5/02 B62K5/08 (Advanced/Invention)

CPC: B62K5/027 B62K5/05 B62K5/08 B62K5/10 B62K11/00 B62K25/16

European class: B62K11/00 B62K25/16 B62K5/027 B62K5/05 B62K5/08 B62K5/10

Classification Explorer

Cited documents: WO07127783, WO06075411, JP5139357, EP1694555, EP0466624,

Forward Citations: FR2995869,

Abstract:
The invention relates to a device for controlling the steering of a motorcycle or the like that makes it possible for a motorcyclist to benefit easily and at a low cost from the advantages of three−wheel scooters in terms of stability, safety and available room. The steering control device (10) includes a frame (11), handle bars (12), a steering fork (13) to which the handle bars (12) are attached, a rotary assembly (14) supported by the steering fork (13), and two suspension shock−absorbing members (15) mounted on the steering fork (13) for monitoring the vertical movements of the rotary assembly (14). The rotary assembly (14) comprises two independent wheels (14a, 14b) freely mounted respectively on two fixed axes (16) each carried by an A arm (17) including a suspension arm (18) hinged on an element of the frame (11) and a suspension shock−absorbing member (15). The suspension shock−absorbing members (15) are attached to a rocker member (20) hinged at the middle thereof to the steering fork (13).

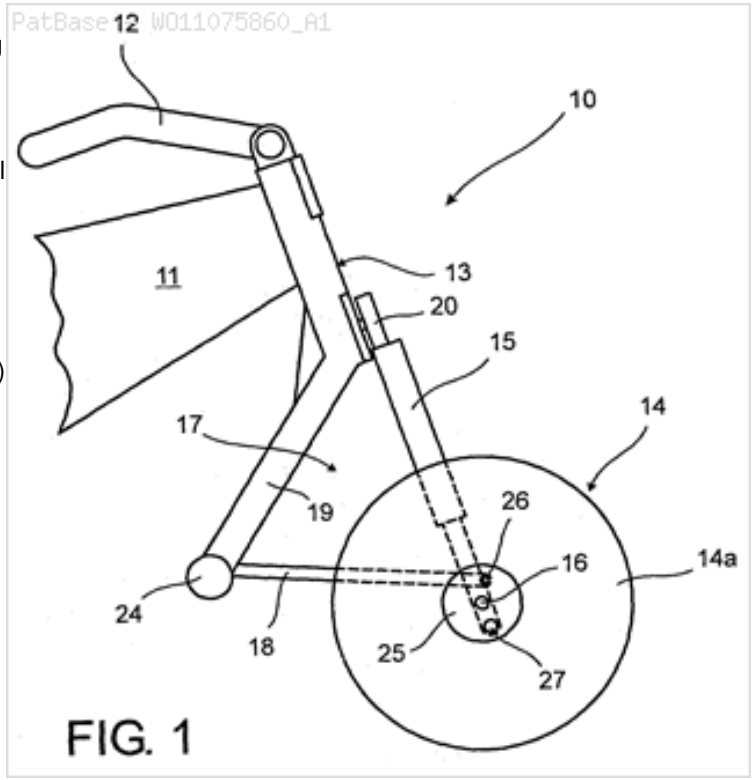


FIG. 1

13) Family number: 17870852 (DK9600429U)

© PatBase

Title: Styreforbindelsesstang Steering Tie rod (Machine translation)

Priority: DK19960000429U 19961128

Family:

Publication number	Publication date	Application number	Application date
DK9600429 U3	19970214	DK19960000429U	19961128

Probable Assignee: POULSEN STIG

Assignee(s):(std)**:** POULSEN STIG

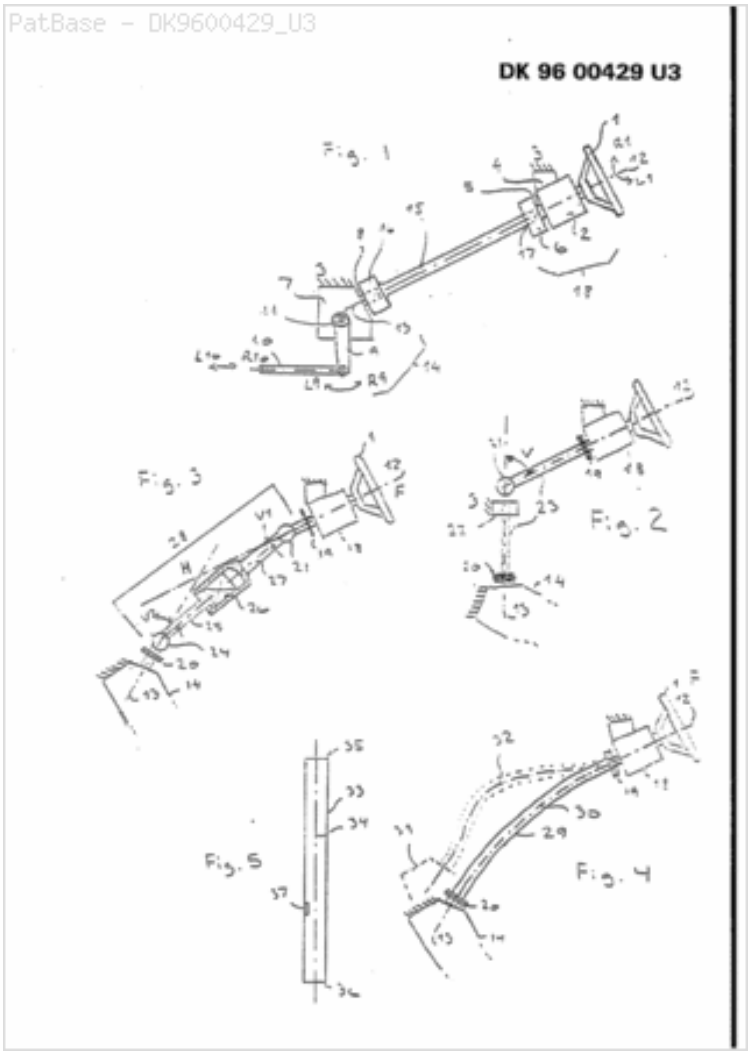
Inventor(s):(std)**:** POULSEN STIG

International class (IPC 8–9): B62D1/18 B62D1/20 (Advanced/Invention); B62D1/16 B62D1/18 (Core/Invention)

International class (IPC 1–7): B62D1/18 B62D1/20

Classification Explorer

Abstract:
Source: DK9600429U brugsmodelkrav 1 omhandlede art. 15 Kendt teknik: Styreforbindelsstænger, der overfører en drejende bevægelse fra et lejret håndtag, rat, styrepind eller lignende betjeningsorgan til en lejret tap, stangkobling, 20 akselende eller lignende tilslutningsorgan, som f. eks. igen overfører drejningen, eventuelt,via en udvekslingsanordning og/eller et system af træk–/tryk–stænger, til en drejning af et eller flere hjul på et køretøj for at opnå et styreudslag og dermed kontrol 25 over køreretningen – eller tilsvarende overfører en drejning af hjul via tilslutningsorganet til en drejning af betjeningsorganet – er sædvanligvis udført af rette stænger af ofte homogent materiale, ofte som metalprofiler af tilnærmelsesvist rotationssymmetrisk tværsnit, herunder 30 firkantede. Udover at kunne overføre de for funktionen nødvendige vridningsmomenter med passende grad af overskydende sikkerhed overfor overbelastning, udviser disse 35 sædvanligvis anvendte styreforbindelsesstænger udover den nødvendige vridnings–stivhed og –styrke, samtidig en voldsom modstand mod bøjning. Dette betyder at man f. eks. ved konstruktion af 40 køretøjer, hvor øvrige forhold nødvendiggør at drejningsaksen for betjeningsorganets lejring og drejningsaksen for tilslutningsorganet ikke kan ligge i forlængelse af hinanden – hvor man således ikke kan nøjes med at anvende en ret styreforbindelsesstang imellem 45 betjeningsorgan og tilslutningsorgan – må indføre diverse supplerende elementer på styreforbindelsesstangen for at kunne overføre drejningen mellem organerne, hvis drejningsakser er placeret ude af linie, f eks som sideværts indbyrdes parallelforskudte, som indbyrdes 50 vinkeldrejede eller som en kombination heraf. 55 DK 96 00429 U3 2 Årsagerne til at man konstruktivt beslutter at anvende en styreforbindelsesstang med diverse supplerende elementer kan dels være et overordnet krav om øget rumudnyttelse indenfor en given ydre kontur af et køretøj, hvilket så 5 medfører indbyrdes "akavet" placering af betjeningsorgan og tilslutningsorgan, eller et krav om at kollisionssikre styreforbindelsesstangen, så den ikke ved en kraftig påvirkning, f eks fra en kollision køretøjet er indblandet i, kan forvolde personskade ved at blive trykket



ind mod 10 den person, der håndterer betjeningsorganet og som altså er placeret herudfor modsat styreforbindelsesstangen. De supplerende elementer man oftest ser anvendt for at kunne overføre drejningen mellem organernes forsatte akser 15 er kardanled (universalled), hardy–skiver (gummipladekoblinger) eller tilsvarende – ofte anvendt flere steder på styreforbindelsesstangen, hvilket yderligere nødvendiggør en supplerende støttelejring et sted mellem styreforbindelsesstangens ender. 20 Evt. med samtidig indførte supplerende elementer, kendes styreforbindelsesstænger også udført teleskopiske som en art rotationssikret stempel/prop i en kantet cylinder/bøsning eller lignende, for yderligere at kunne 25 trykkes sammen i længderetningen, således at deformationer fra en kollision kan optages i styreforbindelsesstangen uden at denne skubber betjeningsorganet mod personen på den modsatte side. 30 Det fremgår af foranstående, at der ofte er tale om ganske komplicerede indretninger, der dels fordyrer køretøjernes fremstillingsomkostninger, og som i visse tilfælde kun har en begrænset holdbarhed. Det er således velkendt at styreforbindelsstænger, der er 35 forsynet med temmelig fritliggende kardanled efter en vis tid bliver behæftet med et ubehageligt slør grundet tæring og slid i de bevægelige dele. 40 Det tekniske problem, der skal løses: Med styreforbindelsesstangen ifølge frembringelsen kan en eller flere af de nævnte ulemper ved de kendte typer 45 styreforbindelsesstænger overvindes på en elegant måde, idet den overflødiggør de supplerende elementer. Den nye teknik: 50 Den nye styreforbindelsesstang ifølge frembringelsen er udført i ét stykke i en kontrolleret materialeopbygning, der på én og samme gang indbygger den nødvendige vridnings–stivhed og –styrke i stangen kombineret med en 55 passende begrænset stivhed og styrke mod bøjning. 3 DK 96 00429 U3 Den til formålet velegnede kombination af vridnings– og bøjnings–egenskaber kan især opnås ved anvendelse af laminerede eller viklede fiber–/matrix–materiale– opbygninger, hvor fiberretningerne er krydsende hinanden og 5 styreforbindelsesstangens akseretning. Den tekniske virkning: 10 Med disse nye egenskaber muliggør styrestangen ifølge frembringelsen en funktionel indbygning mellem væsentlig forsatte organ–drejningsakser uden anvendelse af supplerende elementer, idet den kan overføre de nødvendige 15 vridningsmomenter og samtidig "rulle om sig selv" stående i en stabil bue mellem betjeningsorganet og tilslutningsorganet, bestemt af disses akseretninger, styreforbindelsestangens udformning, og geometrien iøvrigt. 20 Det indses, at funktionen er helt slørfri, da der ikke er mekaniske led involveret. De yderligere tiltag for kollisionssikring bliver også 25 unødvendige, da den nye styreforbindelsesstang, når organerne flyttes mod hinanden – hvadenten dette skyldes en flytning af tilslutningsorganet i forhold til betjeningsorganet, f eks ved en kollision, eller en flytning af betjeningsorganet i forhold til 30 tilslutningsorganet f eks ved en kontrolleret indstilling af betjeningsorganets akse–placering – blot vil ændre sin bøjede tilstand (krumning) og evt sluttelig ved en ultimativ bøjningstilstand bryde sammen ved at bukkes eller helt eller delvis knække, dog uden nødvendigvis at 35 flytte betjeningsorganet; personskade undgås således. Figurfortegnelse: 40 Fig. 1 viser stiliseret, set fra siden, en sædvanlig indbyrdes placering af betjeningsorgan og tilslutningsorgan, som tillader en stiv ret styreforbindelsesstang anvendt. 45 Fig. 2 viser stiliseret, set fra siden, en sædvanlig indbyrdes forsat placering af betjeningsorgan og tilslutningsorgan i samme plan, som nødvendiggør anvendelse af supplerende elementer. 50 Fig. 3 viser stiliseret, set fra siden, en sædvanlig indbyrdes placering af betjeningsorgan og styreorgan med akser ude af plan, som nødvendiggør anvendelsen af flere supplerende elementer. 55 5 10 15 20 25 30 35 40 45 50 55 DK 96 00429 U3 Fig. 4 viser den nye styreforbindelssesstang iflg. frembringelsen monteret i konstruktionen iflg. figur 3. Fig. 5 viser en styreforbindelssesstang iflg frembringelsen i en meget enkel udformning og upåvirket af kræfter. Udførelseseksempler: Positionsnumre henviser til en eller flere af figurerne 1 – 5: Et rat eller lignende betjeningsgreb 1 er monteret med en akseltap 5 lejret i en holder 2, der igen er fæstnet til stel 3 f eks i et køretøj, via en konsol 4. Modsat rattet ender akseltappen i en kobling 6. Rattet 1 er monteret som en kobling/bøsning omkring akseltappen 5, ofte med konusvirkning trukket an, af en løs møtrik. Et styrehus 7 er monteret mod stel 3 et andet sted på samme køretøj, og har til formål at omsætte en drejning af tappen 8, der vender mod rattet, til en drejning af svingarmen 9, som igen påvirker en stang 10, så den kan gives en bevægelse omtrent i sin længderetning. Denne bevægelse kan via et yderligere arrangement dreje et eller flere hjul for at kontrollere køretøjets retning på køreunderlaget. Styrehuset 7 rummer normalt mekaniske elementer, hvis funktion er dels at orientere udgangsaksen 11 i ønsket retning i forhold til akseretningen 13 af tappen 8, dels evt at ændre momentforholdene her imellem. Styrehuset 7 er bevidst placeret, så akseretningen 13 af tappen 8 flugter med akseretningen 12 for ratlejringen. Herved kan monteres en ret og stiv styreforbindelsesstang 15 forsynet med tilkoblingsstykker 16 og 17, der passer til hhv. tappen 8 og koblingen 6. Tilkoblingsstykket 16 er vist som en kobling og tilslutningsstykket 17 kan blot være en tap, der passer i koblingen 6. Tap/kobling–kombinationerne kan vendes eller erstattes med f eks flangekoblinger eller andre stive koblingstyper. Det vigtige er, at en aktivering af betjeningsgrebet 1, f eks en drejning i retningen RI, gennem systemet overføres til en entydig tilsvarende bevægelse R9, R10 uden slør, og tilsvarende: en bevægelse f eks L10 af stangen 10 kan blive til en entydig drejning Li af rattet 1. 5 DK 96 00429 U3 Herefter benævnes hele det system, der starter med en akse svarende til tappen 8 og som kræver en drejning heraf for at fungere som ønsket, for tilslutningsorganet 14, uanset om det er et styrehus på et køretøj, eller en roraktivator 5 på en båd, eller blot en drejelig gennemføring af en forgaffel i kronhovedet på en cykel el. lign., og uanset der måtte eksistere et hjælpekraftsystem, der trigges af drejningen af tappen 8. 10 Tilsvarende kaldes rat 1 med lejring 2, aksel 5 og kobling 6, uanset af hvad type det måtte være, samlet for betjeningeorganet 18, uanset det måtte indeholde en indre udveksling (f eks et planetgear). Karakteristisk er, at en drejning af betjeningsgrebet 1 entydigt medfører en 15 tilsvarende drejning om aksen 13 af den enhed 6 der er beregnet for tilslutning til styreforbindelsesstangen 15. Figur 1 viser altså, at udgangsaksen 12 for betjeningsorganet 18 er sammenfaldende med indgangsaksen 20 13 for tilslutningsorganet 14, og at der derfor kan anvendes en stiv styreforbindelsesstang 15. Figur 2 viser, at akserne 12 og 13 fra hhv betjeningsorgan 18 og tilslutningsorgan 14 ligger i samme plan (papirets) 25 med en vinkel V imellem sig. Mindst et led 21 på styreforbindelsesstangen 23 er nødvendigt for for at overføre drejningen af udgangsaksen 12 ved tilkoblingen 19 ved betjeningsorganet 18 til en 30 drejning af indgangsaksen 13 ved tilkoblingen 20 på tilslutningsorganet 14. Leddet er ofte udformet som et universalled (kardanled) eller en gummiskivekobling (hardyskive). Ofte monteres også et støtteleje 22 i forhold til stel 3 i nærheden af 35 leddet 21. Figur 3 viser udgangsaksen 12 hævet over papirets plan og indgangsaksen 13 liggende i papirets plan, så akserne er vindskæve og altså ikke mødes ved H. 40 Det er nødvendigt med 2 vinkelovergange VI og V2 for at overføre drejningen mellem akserne 12 og 13. Vinkelovergangene udføres med leddene 21 og 24, af samme

vridningsstive type. Herimellem er monteret en vridningsstiv teleskopisk enhed, 45 der kan være udformet som en firkantet prop, der passer i et firkantet hul ved hullets indre flade 26, og hvor prop og hul udgør afslutningen på hver sin stang hhv 25 og 27. Med arrangementet monteret i f eks et automobil er herved opnået en kollisionssikring af en fører placeret ved F, 50 idet en tvangsmæssig flytning af tilslutningsorganet 14, der nu repræsenterer det i forenden af køretøjet placerede styretøj, mod H ved en kollision, vil trykke teleskopenheden 25–26–27 kortere. Leddet 21 flyttes ikke ved forkortelsen af teleskopenheden og betjeningsorganet 55 18 forbliver på plads og påvirker ikke føreren ved F. 6 DK 96 00429 U3 Styreforbinclelsesstangen 28 har nu mindst 2 supplerende elementer il:ht 15, nemlig leddene 21 og 24, hertil kan komme støttelejer og de viste dele fra teleskopenheden. 5 Til montering mellem vindskævt placerede ud– og ind–gangsakser hhv 12 og 13 med samtidig tilvejebringelse af kollisionssikring, kræves altså med anvendelsen af den kendte teknik, en kompleks enhed med mange mekaniske præcisionsdele. 10 Figur 4 viser en styreforbindelsesstang 29 iflg frembringelsen, monteret mellem vindskæve akser 12 og 13 som på fig 3. Styreforbindelsesstangens 29 akse 30 har i enderne ved tilkoblingerne 19 og 20 til hhv 15 betjeningsorgan 18 og tilslutningsorgan 14 samme retning som akserne 12 og 13 på den anden side af tilkoblingerne 19 og 20, og disse retninger er tangenter i enderne for den krumme rumkurve som styreforbindelsestangens 29 akse indtager. 20 Formen er afhængig af koblingsstedernes 19 og 20 indbyrdes afstand og vinkeldrejning, samt af styreforbindelsesstangens længde og udførelse iøvrigt. Formen er generelt karakteriseret ved, at den repræsenterer dén bøjede tilstand, hvori der under de 25 givne betingelser er opmagasineret mindst elastisk bøjningsenergi i forhold til at styreforbindlsesstangen er frit udstrakt. Udover de netop nævnte geometriske forhold mellem 30 tilkoblingerne 19 og 20 og længden af styreforbindelsesstangen 29, består de givne betingelser også i: – at akserne!– 12 og 13 har en konstant retning samtidigt med, at de drejes (de er roterende indspændt), 35 – afhængigheden af det materiale, hvoraf styreforbindelsesstangen er fremstillet, – hvordan stivheds– og styrke–egenskaberne administreres langs stangen (de kan varieres ved ændret tværsnit, (evt indbyrdes) aîndret tykkelse af materialelag, og lignende 40 tiltag). De specielle retningsbestemte egenskaber i styreforbindelssesstangens 29 materiale, som kan bestemmes/fremstilles efter behovet, bevirker, at det 45 drejende moment fra betjeningsgrebet 1 kan føres gennem styreforbindelsesstangen 29 tildrejning af indgangsaksen 13 i tilslutningsenhed 14 uden at styreforbindelsesstangen ændrer stilling i rummet. Den drejer i stedet om sin egen akse alle steder. 50 Ved en kollision, hvor tilslutningsenheden 14 flyttes i forhold til betjeningsenheden 18, f eks til den stiplede placering 31, vil styreforbindelsessstangen indtage en ny minimumenergi–tilstand ud fra de nu givne betingelser. Dette er vist ved den rumlige kurveform 32. 55 7 DK 96 00429 U3 Betjeningsenheden er ikke blevet flyttet, se den har ikke påvirket en fører placeret ved F, og systemet kan principielt stadig fungere – især dog afhængig af kolisionsskaderne ved tilslutningsenheen 14. 5 Den netop omtalte effekt kan omvendt udnyttes til at gøre placeringen af betjeningsenheden 18 justerbar i forhold til tilslutningsenheden 14, således at f eks i en bil kan rat–højde og –afstand let tilpasses størrelse af den aktuelle fører af bilen. 10 Styreforbindelsesstangen kan naturligvis også anvendes i de principielle situationer, der er vist i figurerne 1 og 2 og kan selvfølgelig også kombineres med elementer fra den kendte teknik. 15 Figur 5 viser at en styreforbindelsesstang 33 iflg frembringelsen, i fri tilstand (vægtløs, ubevæget etc) indtager en minimum–energi–stilling, der ved en rotationssysmmetrisk konstruktion af materialeopbygningen 20 i styreforbindelsesstangen 33 repræsenteres ved en retlinet akse 34. Der er dog intet i vejen for at materialegenskaberne bevidst disponeres varierende, rundt om og på langs af 25 styreforbindelsesstangen. Dette kan f eks udnyttes til at skabe en styreforbindelsesstang iflg frembringelsen, der under rulning omkring sig selv i en i øvrigt tilnærmelsesvis fast stående rumkurve, udviser en eller flere foretrukne stillinger med et (lokalt) laveste 30 energi–indhold. Denne konstruerede egenskab kan elegant udnyttes til f eks at fremstille et selvoprettende styretøj på et køretøj med 2 eller flere hjul, idet det udnyttes, at den (fortrinsvis 35 eneste) minimum–energi–stilling, under de iøvrigt givne betingelser, svarer til at køretøjet styrer "lige–ud". Styringen overladt til sig selv bringes således til en ønsket stilling karakteriseret ved at være en 40 minimum–energi–stilling efter den udladning af opmagasineret elastisk energi, der flyttede komponenterne i styringen hertil, fra en stilling karakteriseret ved, at den indeholdt en større mængde elastisk energi. 45 Den ønskede stilling kan være en anden stilling end den, styretøjet grundet sin geometri iøvrigt, (bl a grundet hjulophængets karakteristiske vinkler og øvrige dimensioner) ellers ville indstille sig til, hvis det blev overladt til sig selv under de på tidspunktet givne 50 betingelser og uden den elastiske effekt fra styreforbindelsesstangen. 55 DK 96 00429 U3 8 Der er en gensidig påvirkning på hinanden af disse 2 effekter fra hhv styreforbindelsesstang og udførelse af hjulophæng, og det er op til konstruktøren i den givne situation at vælge: dels den absolutte værdi af størrelsen 5 af hver effekt for sig, og dels den indbyrdes vægtning i styretøjets forskellige funktionssammenhænge. Effekten kan også udnyttes til en konstruktiv variant af udformningen af et styretøj, der består i, at indbygge 10 retnings– og steds–afhængige styrke og stivheds–egenskaber i styreforbindelsesstangen iflg frembringelsen, for at kompensere for en uønsket konstruktiv usymmetri i et styretøj iøvrigt. Dette kan f eks vise sig overfor køreren på et 2 hjulet 15 køretøj ved, at det – uden kompenserende virkning fra styreforbindelsesstangen – kræver mere kraft at dreje styret til den ene side end til den anden side, og ved, at styretøjet overladt til sig selv, ikke indstiller sig på "lige–ud", hvilket normalt er den ønskede neutalstilling. 20 Med kompenserende virkning fra styreforbindelsesstangen med til formålet konstruerede og fordelte egenskaber, kan styret for den pågældende 2–hjuls–kører føles ens at dreje til begge sider,ligesom den frie neutralstilling kan være 25 lige–ud. Specielt kan kompenseres, så styret eller rattet i et køretøj føles lige let at dreje ved alle udslag af styretøj og/eller hjul. 30 Effekterne, der skal kompenseres for, kan hidrøre fra en usymmetriske konstruktion, f eks sideværts hældende forhjul på et 2 hjulet køretøj og/eller fra dynamiske effekter, f eks fra styre–drejning af uheldigt placerede akser af roterende inertimasser, herunder forhjul på 35 motorcykler. Den nævnte kompenserende effekt kan bl a udnyttes i en 2–hjulet HPV med kæde/rem–træk til nav i forhjulet fra et stelfikseret krankarrangement, hvor: 4 0 – både kædens/remmens stramme og slappe stræk er ført igennem kronhoved og forgaffelrør, – forhjulet er sideskævt monteret i forgaflen, – den til tilkoblingsdel 20 svarende enhed på kanten af forgaffelrøret under drejning af forgaflen samtidigt 45 foretager en excentrisk bevægelse om kronhovedaksen. Den kompenserende effekt kan på tilsvarende måde anvendes til at konstruere en passende styreforbindelsesstang til en båd. Placeret mellem et rat som betjeningsenhed 18 og 50 eksempelvis styredrejeaksen på en eksternt placeret påhængsmotor som tilslutningsorgan 13, 14 kan opnås, at den velkendte tendens til skævdrejning af motoren i. rorfunktionen (som skyldes den konstruktive usymmetri, der

består i, at kun én skrue danner hvirvel i vandet) kan 55 udbalanceres. DK 96 00429 U3 En sådan påhængsmotor kan være således udformet i sit ophæng, at den stadig kan drejes rundt i samme retning, hvorved det bliver muligt stadigt at kunne efterkomme behovet for et yderligere styreudslag i denne retning. 5 Dette giver meget fine manøvreringsmuligheder, da man undgår den situation, hvor moteren pludseligt skal drejes næsten en hel omgang modsat rundt for at nå til en nærliggende yderligere vinkeldrejet stilling. 10 Nærliggende er også at anvende styreforbindelsesstangen iflg frembringelsen til at drive en skrue på båden rundt for at opnå fremdrift. Figur 5 viser en meget simpel udførelse af en 15 styreforbindelsestang 33, idet denne blot består af et stykke med given længde, afkappet fra en længere stang, evt med– et simpelt rotationssymmetrisk tværsnit. Snitstedet 35 i den ene ende, og den modsatte ende 36, der også kan være et snitsted, er evt nødtørftigt bearbejdet 20 ved at snitsted(er) er renset for grater og lignende fra overkapningen. Herudover kan bearbejdningen være indskrænket til at bestå i en identifikationsmærkning af styreforbindelsesstangen. Koblingsstederne 19 og 20 ved hhv betjeningsorgan 18 og 25 tilslutningsorgan 14 for en sådan simpel styreforbindelsesstang er så tilsvarende indrettet til at kunne fiksere styreforbindelsesstangens ender ved montering. 30 Varianter omkring udformningen af enderne for tilkobling ved elementerne 19 og 20 kan også bestå i: – at den rå stang supplerende bearbejdes, – at den rå stang i en forberedende proces forsynes med adapter(e) af andet materiale for tilkobling, 35 – at de forud fremstillede adaptere indlejres i styreforbindelsesestangen under dens opbygning med et fiberarmeret matrix–materiale, – at styreforbindelsesstangens matrix–materiale udfylder adaptere placeret som dele af en form, 40 eller i: – at adapterne består af ét stykke hvor–på/–om/–i det fiberarmerede matrixmateriale placeres under fremstillingen af styreforbindelsesstangen. 45 Styreforbindelsesstangens karakteristiske retnings– og "sted–på–stangen"–bestemte egenskaber opnås som resultatet en en funktion af: fibermateriale, fibertype, fiberlængde, matrix–materiale, fiber–retning, –tæthed og –mængde på hvert sted, tværsnit på hvert sted af længden, rumkurve 50 for aksen i den frie tilstand, indbygget forspænding i kombination med type af fremstillings– og hærde–proces, som de vigtigste parametre. 55 DK 96 00429 U3 10 De til styreforbindelsesstangen anvendte emner kan være fremstillet med konventionelle fiberprocesser. En variant af en vikleproces består i, at skabe en 5 kontrolleret skrå en fiberretning ifht længdeaksen på et principielt endeløst rør, der dog roterer om egen akse under processen. Denne består i en flyvende spiralpåspoling på en dorn af en eller flere strimler fibervæv med givne fiberretninger 10 og en samtidig/efteføIgende flyvende afhærdning af (evt i vævet for–)doseret matrixmateriale, og udføres på et procesudstyr, der minder om maskineriet til fremstilling af spiralviklede paprør. 15 20 25 30 40 45 50 55 11 DK 96 00429 U3 Brugsmodelkrav 1 – 28: Krav 1: 5 Styreforbindelsesstang (30) som er udformet med en geometri i enderne, der passer for tilslutning til henholdsvis et betjeningsorgan (18) og et tilslutningsorgan (14), og som er ny ved: – at være uden bøjelige led mellem tilslutningerne (19 og 10 20), at være udført som én sammenhængende, integreret enhed, at være udført med mindst ét stykke af længden, hvilket stykke udviser en kontrolleret materialeopbygning, der på én og samme gang indbygger en tilsigtet kombination af 15 vridnings–stivhed/–styrke og bøjnings–stivhed/–styrke. Krav 2: Styreforbindelsesstang iflg. krav 1, som er ny 20 v e d, at stykket af længden, som udviser den kontrollerede materialeopbygning, udviser en tilsigtet variation hen over stykkets længde, af den tilsigtede kombination af vridnings– og bøjnings–egenskaber. 25 Krav 3: Styreforbindelsesstang iflg. krav 1, som er ny v e d, at den tilsigtede kombination af vridnings– og bøjnings–egenskaberne på stykket af længden, udviser en 30 tilsigtet variation rundt tværsnit af styreforbindelsesstangen indenfor pågældende længde. Krav 4: 35 Styreforbindelsesstang iflg. krav 1, som er ny ved, at den tilsigtede kombination af vridnings– og bøjnings–egenskaberne på stykket af længden, udviser en tilsigtet variation, både hen over stykkets længde, og rundt tværsnit af styreforbindelsesstangen indenfor 40 stykket af længden. Krav 5: Styreforbindelsesstang iflg. et eller flere af kravene 1 – 45 4, som er ny ved, at mindst stykket på længden, hvor optræder den tilsigtede kombination af vridnings– og bøjnings–egenskaberne, der eventuelt har en tilsigtet variation, har en udførelse i fiberarmeret matrix–materiale, f. eks. glasfiberarmeret polyester. 50 Krav 6: Styreforbindelssesstang iflg. krav 5, som er ny ved, at have udførelsen i et materiale med 55 fiberarmeringen skabt ved vikling. 12 DK 96 00429 U3 Krav 7: Styreforbindelssesstang iflg. krav 5, som er ny v e d, at have udførelsen i et materiale med fiber–væv–/–måtte–/–non wowen–armering. 5 Krav 8: Styreforbindelssesstang iflg. krav 5, som er ny v e d, at have udførelsen i et materiale 10 med spiralpåspolet fiber–måtte/væv–armering. Krav 9: Styreforbindelssesstang iflg. krav 8, som er ny 15 v e d, at have udførelsen i et materiale med skråt spiralpåspolet fiber–måtte–/–væv–strimmel–armering. Krav 10: 20 Styreforbindelssesstang iflg. krav 5, som er ny v e d, at have udførelsen i et fiberarmeret matrixmateriale med egenskaberne opnået gennem en endeløs strengproces. 25 Krav 11: Styreforbindelssesstang iflg. krav 5, som er ny v e d, at have udførelsen i et fiberarmeret matrixmateriale med egenskaberne opnået gennem håndoplæg. 30 Krav 12: Styreforbindelssesstang iflg. krav 5, som er ny ved, at have udførelsen i et fiberarmeret 35 matrixmateriale med egenskaberne opnået med støbning. Krav 13: Styreforbindelssesstang iflg. et eller flere af kravene 40 5–12, som er ny ved, at have udførelsen i et fiberarmeret matrixmateriale med egenskaberne opnået gennem en kombination af de omhandlede processer. 45 Krav 14: Styreforbindelssesstang iflg. ét eller flere af foregående krav, som er ny ved, helt eller delvis at være udført som et afkappet stykke af en større længde materiale. 55 13 DK 96 00429 U3 10 Krav 15: Styreforbindelssesstang iflg. ét eller flere af foregående krav, som er ny ved, helt eller delvis at være udført som et afkappet stykke af en større længde materiale med den tilsigtede variation af kombinationen af tilsigtede vridnings– og bøjnings–egenskaber, indekseret henover modullængder i det væsentlige svarende til det afkappede stykkes længde. Krav 16: Styreforbindelssesstang iflg. et eller flere af foregående krav, s o m er ny ved, helt eller delvis at være udført som et afkappet stykke af en større længde 15 materiale med samme egenskaber i alle tværsnit. Krav 17: Styreforbindelssesstang iflg. et eller flere af foregående 20 krav, som er ny ved, udelukkende at være udført som et afkappet stykke af en større længde materiale og ikke være yderligere bearbejdet udover simpel fjernelse af grater fra overskæring og evt. påføring af en identifikation. 25 Krav 18: Styreforbindelssesstang iflg. ét eller flere af foregående krav, som er ny ved, at aksen i fri tilstand 30 udgør en ret linie. Krav 19: Styreforbindelssesstang iflg. ét eller flere af foregående 35 krav, som er ny ved, at aksen i fri tilstand udgør en kurve i et plan. Krav 20: 4 0 Styreforbindelssesstang iflg. ét eller flere af foregående krav, som er ny ved, at aksen i fri tilstand udgøre en kurve i rummet. 4 5 Krav 21: Styreforbindelssesstang (30) iflg. ét eller flere af foregående krav, somer ny ved, at være udformet som et udskifteligt element mellem et betjeningsorgan (18) og et tilslutningsorgan (14), hvis 50 akser (12 hhv 13) er sammenfaldende. 55 DK 96 00429 U3 14 Krav 22:

Styreforbindelssesstang (30) iflg. ét eller flere af foregående krav, som er ny ved, at være udformet som et udskifteligt element mellem et 5 betjeningsorgan (18) og et tilslutningsorgan (14), hvis akser (12 hhv 13) danner en vinkel. Krav 23: 10 Styreforbindelssesstang (30) iflg. ét eller flere af foregående krav, som er ny ved, at være udformet som et udskifteligt element mellem et betjeningsorgan (18) og et tilslutningsorgan (14), hvis akser (12 hhv 13) ligger i et plan. 15 Krav 24: Styreforbindelssesstang (30) iflg. ét eller flere af foregående krav, som er ny ved, at være 20 udformet som et udskifteligt element mellem et betjeningsorgan (18) og et tilslutningsorgan (14), hvis akser (12 hhv 13) er vindskæve. 25 Krav 25: Styreforbindelssesstang (30) iflg. ét eller flere af foregående krav, som er ny ved, at være udformet som et udskifteligt element mellem et betjeningsorgari (18) og et tilslutningsorgan (14), hvis 30 akser (12 hhv 13) kan foretage excentrik–bevægelse under drejning. Krav 26: Styreforbindelssesstang (30) iflg. ét eller flere af 35 foregående krav, som er ny ved, at være udformet som et udskifteligt element mellem tilkoblingsstykker i stadig drejning. 40 Krav 27: Styreforbindelssesstang (30) iflg. ét eller flere af foregående.krav, som er ny ved, at være udformet soin et udskifteligt element mellem et betjeningsorgån (18) og et tilslutningsorgan (14), 45 placeret på et to–hjulet køretøj. Krav 28: Styreforbindelssesstang (30) iflg. ét eller flere af 50 foregående krav, som er ny ved, at være udformet soin et udskifteligt element mellem et betjeningsorgan (18) og et tilslutningsorgan (14), placeret på et to–hjulet køretøj, der er udført i det væsentlige iflg. dansk brugsmodelansøgning indleveret 28. 55 november 1996 af Stig Poulsen med ansøgers refnr. IBQ–007. DK 96 00429 U3 wN. Utility model claims 1 type in question. 15 art: Steering Relations rods that transmit a rotational motion from a mounted handles, steering wheel, joystick or other control to a mounted pin, rod coupling 20 shaft end or the like connecting body, such as turn transfers the rotation, possibly via an exchange device and / or system of traek–/tryk–staenger to a rotation of one or more wheels of a vehicle to achieve a steering angle and thus control 25 of the direction – or equivalent transfers a turning of the wheels via connecting means for rotation of the control – is usually done by straight bars often homogeneous material, often metal profiles of approximately rotationally symmetrical cross–section, including 30 square. In addition to being able to transfer the function required torques with the appropriate level of excess collateral against overloading, exhibit these 35 commonly used steering tie rods in addition to the necessary torsional rigidity and strength, while a fierce resistance to bending. This means that, for example, in the construction of 40 vehicles where other circumstances necessitate that the axis of rotation of betjeningsorganets seating and the axis of rotation of the attachment mechanism can not be an extension of each other – where you not only need to use a right steering tie rod between 45 controls and connection body – must introduce various additional elements on the steering tie rod to transfer rotation between agencies if rotation axes are located out of the line, eg laterally mutually parallel staggered, which are 50 angle turned or a combination thereof. 55 DK 96 00429 U3 2 The reasons for constructive decides on a steering tie rod with various additional elements may be partly an overall demand for increased space utilization within a given outer contour of a vehicle, which then leads to approximate 5 "awkward" position of control and connection body, or a requirement to collision–proof steering tie rod, so it does not cause a significant impact, eg from a collision the vehicle is involved in, can cause injury by being pressed against 10 the person who handles the control and which therefore is located herudfor opposite the steering tie rod. The additional items you often see used to transmit rotation between agencies continued axes 15 are universal joints (universal), hardy discs (rubber plate clutches) or equivalent – often several articles on the steering tie rod, which further calls for additional stoettelejring a place between the steering tie rod ends. 20, if any. with simultaneously introduced additional elements known steering tie rods also performed telescopic as a kind of rotation–proof piston / plug in square cylinder / sleeve or other, further to 25 compressed lengthwise, so that the deformation of a collision can be absorbed into the steering tie rod without this pushing the control device to the person on the opposite side. 30 It follows from the foregoing that there often is quite complicated devices, partly increase the cost of vehicle manufacturing costs, and in some cases only have a limited shelf life. It is well known that the steering connection rods 35 provided with universal joints rather detached after a certain time is affected by a nasty blur due to corrosion and wear of the moving parts. 40 The technical problem to be solved: With steering tie rod according to subject matter, one or more of the disadvantages of the known types 45 steering tie rods overcome in an elegant way, as it dispenses with the additional elements. The new technique: 50 The new steering tie rod according to the production is made in one piece in a controlled material structures and which at the same time head of the necessary torsional stiffness and strength of the rod combined with a 55 appropriately limited stiffness and strength against bending. 3 DK 96 00429 U3 The purpose suitable combination of torsional and bending properties can be achieved in particular by the use of laminated or wound fiber–/matrix–material opbyninger in which the fiber directions are crossing each other and 5, the steering tie rod axial direction. The technical performance: 10 With these new features allow the tiller according to the generation functional incorporation of significant continuing body–rotation axes without the use of additional elements, it can transfer the necessary 15 torques while "rolling about himself" standing in a stable arc between the control and the attachment mechanism, determined by its axis directions, steering tie rod shape and geometry in general. 20 It will be appreciated that the function is completely backlash–free, since there is no mechanical joints involved. further action for collision insurance are also 25 unnecessary, as the new steering tie rod when bodies move against each other – whether this is due to a relocation of the connecting means relative to the control, for example by a collision, or a relocation of the control relative to 30 attachment mechanism eg in a controlled setting betjeningsorganets axis location – just a change in its folded state (curvature) and perhaps eventually by an ultimate bending mode collapse by bending or wholly or partially break without necessarily 35 move the control device; injury is thereby avoided. List of Figures: Figure 40. 1 is a stylized side view of a conventional relative position of the control and connection means allowing a rigid right styreforbindelssesstang used. 45 Fig. 2 shows stylized, side view, a usual staggered placement of controls and connection body in the same plane, which requires the use of additional elements. 50 Fig. 3 shows stylized, side, a normal relative position of the operating means and control means with axis out of plane, which necessitates the use of several additional elements. 55 5 10 15 20 25 30 35 40 45 50 55 DK 96 00429 U3 Fig. 4 shows the new styreforbindelssesstang acc. generation mounted in the structure acc. Figure 3 Fig. 5 shows a styreforbindelssesstang according to the generation of a very simple design and not affected by forces. Embodiments: Position numbers refer to one or more of the Figures 1–5: A steering wheel or the like operating lever 1 is fitted with a shaft 5 journalled in a holder 2, which in

turn is attached to the frame 3 e.g. in a vehicle, via a Unlike console 4 wheel stub axle ends in a clutch 6 steering wheel 1 is mounted as a coupling / bushing around the shaft member 5, often with konusvirkning brake is applied by a loose nut. A wheelhouse 7 is mounted to the frame 3 a different location on the same vehicle, and designed to convert a rotation of the pin 8, which faces the steering wheel, to a rotation of the swivel arm 9, which in turn affects a rod 10, so it can be given a movement substantially in its longitudinal direction. This movement can be through a further arrangement of one or more rotary wheel to control the vehicle's driving direction on the substrate. wheelhouse 7 it usually mechanical elements whose function is both to inform the output axis 11 in the desired direction relative to the axial direction 13 of the pin 8, partly perhaps to change the torque conditions in between. wheelhouse 7 is deliberately positioned so that axial direction 13 of the pin 8 is aligned with the axial direction 12 of ratlejringen. This can be fitted to a straight and stiff steering tie rod 15 is provided with connecting pieces 16 and 17 to match respectively. pin 8 and clutch 6 Coupling piece 16 is shown as a clutch and the connecting portion 17 may just be a pin that fits in the clutch 6 Tap / clutch combinations can be reversed or replaced with eg flange couplings or other rigid couplings. The important thing is that activating the control lever 1, eg a turn in the direction RI, through the system is transferred to a unique corresponding movement R9, R10 without veils and similar: a movement eg L10 of the rod 10 can be set to a unique twist Li steering wheel 1 5 DK 96 00429 U3 then called the entire system, starting with an axis corresponding to the pin 8 and which require turning it to function as desired, the attachment mechanism 14, whether it is a wheelhouse of a vehicle or one rudder actuator 5 on a boat, or simply a rotary inlet by a fork in the steering head of a bicycle electricity. the like. and regardless of where they exist an independent power system that is triggered by the rotation of the pin 8 10 Similar called steering wheel 1 with seating 2, wheel 5 and 6 clutch, regardless of what type it may be, collected for the control device 18, whatever it may contain a single exchange (such as a planetary gear). Characteristic is that a rotation of the control lever 1 clearly results in a 15 corresponding rotation about the axis 13 of the unit 6 is intended for connection to the steering tie rod 15 Figure 1 shows therefore that the output axis 12 of the operating member 18 is coincident with the input axis 20 13 of attachment mechanism 14, and therefore can be used a rigid steering tie rod 15 Figure 2 shows that the axes 12 and 13 respectively from the control means 18 and connecting means 14 is located in the same plane (paper) 25 by an angle V between them. least part 21 of the steering tie rod 23 is necessary to transfer the rotation of the output axis 12 by coupling 19 by the control device 18 to a 30 rotation of the input axis 13 by coupling 20 on the attachment mechanism 14 joint is often formed as a universal joint (universal joint) or a rubber disc clutch (Hardy disc). Often, also fit a support bearing 22 relative to frame 3 in the vicinity of 35 stage 21 Figure 3 shows the output axis 12 above the plane of the paper and the input axis 13 lying in the plane so that the axes are twisted and not meet at H. 40 is required angle transitions 2 and V 2 to transmit rotation between the axes 12 and 13 angle transitions performed with the joints 21 and 24, the same torsional rigid type. In between is fitted with a torsionally rigid telescopic device 45 may be shaped as a square plug that fits into a square hole by hole inner surface 26, and the plug and hole represents the end of each rod respectively 25 and 27 arrangement mounted in, eg, an automobile is hereby achieved a collision security of a driver located at F, 50 as a compulsive movement of the connecting means 14, which now represents the front end of the vehicle positioned steering, against H during a collision, the press telescope assembly 25–26–27 shorter. The link 21 is not moved by the abbreviation of the telescope, and the control device 55 18 remains in place and does not affect the driver by F. 6 GB 96 00429 U3 Styreforbinclelsesstangen 28 now has at least two additional elements il: ht 15, namely the joints 21 and 24, this can get support bearings and they showed parts of the telescope assembly. 5 For mounting between warped out of place and the input axes respectively 12 and 13 with simultaneous provision of collision insurance, is thus required the use of the prior art, a complex device with many precision mechanical parts. 10 Figure 4 shows a steering tie rod 29 according to the generation, mounted between the skew axes 12 and 13 as in Figure 3 the steering tie rod 29 axis 30 has at the ends by the connections 19 and 20, respectively, 15 the control means 18 and connecting member 14, the direction of the axes 12 and 13 on the other side of the connections 19 and 20, and these directions are tangent to the ends of the curved space curve as the steering tie rod 29 occupies axis. 20 shape depends on the clutch inspection 19 and 20 spacing and angular, and the steering tie rod length and performance in general. form is generally characterized by the fact that it represents the bent state in which, during the 25 given conditions is stored least elastic boejningsenergi compared to styreforbindlsesstangen is freely extended. In addition to the just mentioned geometrical conditions between 30 the connections 19 and 20 and the length of the steering tie rod 29, comprises the given conditions also: – in that the axes! – 12 and 13 has a constant direction while they rotate (they are rotating clamped), 35 – the dependence of the material from which the steering tie rod are manufactured, – how the stiffness and strength properties is administered along the rod (they can be varied by the modified cross–section, (possibly with each other) aindret thickness of the material layer, and the like 40 approach). special directional properties in styreforbindelssesstangens 29 material, which can be determined / produced according to need, causes the 45 rotating torque of the control lever 1 can be passed through the steering tie rod 29 tildrejning of input axis 13 of the connector unit 14 without the steering tie rod to change its position in space. It is instead on its axis everywhere. 50 In a crash, the connection unit 14 is moved relative to the control unit 18, eg to the dotted position 31 will styreforbindelsessstangen adopt a new minimum energy state from the now prevailing conditions. This is shown by the spatial waveform 32 55 7 GB 96 00429 U3 operating unit has not been moved, check it has not affected a driver located at F, and the system can in principle still work – especially but depending on kolisionsskaderne by tilslutningsenheen 14 5 The just–mentioned effect can be reversed used to make the location of the control unit 18 adjustable relative to the connection unit 14 so that eg in a car steering wheel height and distance easily adapted to the size of the current driver of the car. 10 steering tie rod can of course also be used in the basic situations are shown in Figures 1 and 2, and may of course also be combined with elements from the prior art. 15 Figure 5 shows that a steering tie rod 33 according to the generation of free state (a weightless, unmoved etc) occupies a minimum–energy position at a rotationssysmmetrisk construction material building 20 of the steering tie rod 33 is represented by a linear axis 34 There is nothing in the way of material properties deliberately committed in varying degrees around and along the 25 steering tie rod. This may for example be used to create a steering tie rod according to the generation, during pivoting about themselves in an otherwise substantially stationary space curve, displays one or more preferred positions with a (local) minimum 30

energy content. constructed property can be elegantly exploited to eg to produce a self–aligning steering of a vehicle with two or more wheels as it used to be (preferably 35 only) minimum–energy position in the otherwise prevailing conditions correspond to the vehicle control "just–out". controller left to themselves thus brought to a desired position characterized by being a 40 minimum–energy mode after the discharge of the stored elastic energy that moved the components of control here, from a position characterized by the fact that it contained a greater amount of elastic energy. 45 The desired position can be a different position than the steering due to its geometry otherwise, (among other things due to the suspension characteristic angles and other dimensions) would register for, if it were left to itself under at the time given 50 conditions and without the elastic effect of the steering tie rod. 55 DK 96 00429 U3 8 There is a mutual influence on each of these two effects each from the steering tie rod and execution of suspension, and it is up to the designer in the given situation to choose: first, the absolute value of size 5 each power for themselves, and also the relative importance of the steering various operational contexts. The effect can also be used for a constructive variant of the design of a steering system which consists in incorporating 10 guide–and site–dependent strength and stiffness characteristics of the steering tie rod according to the generation, in order to compensate for an undesired constructive asymmetry in a steering in general. This may for example show up against the rider on a 2 wheel 15 vehicle at that – without compensating effect from the steering tie rod – require more power to turn the handlebar to one side than the other, and by the steering left to themselves, do not set on "just–out", which is usually the desired neutalstilling. 20 With a floating effect from the steering tie rod with purpose–designed and distributed properties, controlled for the 2–wheel–drive feel alike to turn in both directions, like the free neutral position can be 25 straight–out. particular, compensated to the handlebar or steering wheel of a vehicle feels easy to turn all manifestations of steering and / or wheels. 30 effects to be compensated for, can come from an unbalanced structure, eg lateral tilting front wheels on a 2 wheel vehicle and / or dynamic effects, eg from control rotation of poorly sited axes of rotational inertia loads, including front of 35 motorcycles. The said compensating effects among many others may be utilized in a 2–wheel HPV chain / belt drive to the hub of the front wheel from a frame fixed crank arrangement where: 4 0 – both chain / belt tightening and relaxing stretch passing through the crown head and forgaffelroer, – the front wheel is sideskaevt mounted in the front fork – it engaging means 20 corresponding unit on the edge of forgaffelroeret during rotation of the front fork while 45 makes an eccentric movement of the crown main axis. compensating effects may similarly be used to construct an appropriate steering tie rod for a boat. Located between a steering wheel by the steering control unit 18 and 50, for example, the steering pivot axis from a remotely located outboard as the connection means 13, 14 can be achieved, to the well–known tendency for unbalanced rotation of the engine is in. rorfunktionen (because of the constructive asymmetry, which consists in that only one screw forming vortex in the water) can 55 are canceled. DK 96 00429 U3 Such an outboard motor can be designed in his suspension, it still rotates in the same direction, making it possible ever to satisfy the need for further articulated in this direction. 5 This allows very fine maneuvering possibilities as to avoid the situation where moteren suddenly be turned almost a full lap around the opposite to reach a nearby additional angle rotated position. 10 Nearby is also the use of the steering tie rod according to the generation for driving a screw of the boat around to achieve the propulsion. Figure 5 shows a very simple version of a 15 steering tie rod 33, as consisting simply of a piece with the given length, afkappet from a longer rod, possibly with–a simple rotationally symmetrical cross section. incision site 35 at one end and the opposite end 36, which may also be a cut place, any scantily 20 machined by cutting site (s) is cleaned of any burrs and the like from overkapningen. addition, the processing be reduced to simply a means of identification of the steering tie rod. coupling parts 19 and 20, respectively, by the control means 18 and 25 connecting means 14 of such a simple steering tie rod is then similarly arranged to fix the steering tie rod ends during assembly. 30 Variants shaping of the ends for connection of the elements 19 and 20 may also consist of: – the raw bar further processed – that the raw bar in a preparatory process is supplied with the adapter (s) of any material of coupling, 35 – to the pre–mastered adapters embedded in styreforbindelsesestangen during its construction with a fiber reinforced matrix material, – that the steering tie rod matrix material fills adapters positioned as parts of a mold 40 in the following: – that the adapter consists of one piece which, on / –om/–i the fiber reinforced matrix material is placed during the manufacture of the steering tie rod. 45 Steering Tie rod characteristic direction and "place–in–rod"–specific properties are obtained as the result is a function of: fiber material, fiber type, fiber length, matrix material, fiber orientation, density and volume at each location, cross section at each location on the length, space curve 50 of the axis in the free mode, built–in bias in combination with the type of manufacturing and curing process, the most important parameters. 55 DK 96 00429 U3 10 to the steering tie rod used items can be manufactured with conventional fiber processes. A variant of a winding process consists in creating a 5 controlled slanted fiber direction is allowed for the longitudinal axis of a principle, endless tube, which however is rotating about its own axis during the process. This constitutes a flying spiralpaspoling on a mandrel of one or more strips of fibrous web with given fiber direction 10 and a simultaneous / imi following flying purification (if necessary in the tissue–) dosed matrix material, and is carried out at a process equipment, similar to the machinery for the manufacture of spiral wound cardboard tube. 15 20 25 30 40 45 50 55 11 DK 96 00429 U3 Usage Model Requirements 1–28: Requirement 1: 5 Steering Tie rod (30) which is designed with a geometry at the ends to suit for connecting respectively a control (18) and a connecting means (14) which is new by: – being without flexible joints between the connections (19 and 10 20), to be performed as a single, integrated unit to be provided with at least one piece of length, while exhibiting a controlled material structures and which at the same time incorporate a deliberate combination of 15 vridnings–stivhed/–styrke and boejnings–stivhed/–styrke. Requirement 2: Steering Tie rod acc. claim 1, which is a new 20 in that the length of the piece, which exhibit the controlled material build–up, exhibit a deliberate variation across the length of the piece, of the intended combination of torsional and flexural properties. 25 Requirement 3: Steering Tie rod acc. to claim 1, which is novel in that the desired combination of torsional and flexural properties of the piece of length 30 exhibits a circular cross–section intended variation of the steering tie rod within that length. Requirement 4: 35 Steering Tie rod acc. to claim 1, which is novel in that the desired combination of torsional and flexural properties of the piece of the length, exhibiting an intentional variation, both across the gauge length of, and around the cross–section of the steering tie rod within 40 the piece of the length. Requirement 5: Steering Tie rod acc. one or more of claims 1 to 45 4, which is new in that at least part on the length in which occurs the intended combination

of torsional and flexural properties, which may have an intentional variation, the one embodiment of the fiber reinforced matrix material, for example, glass fiber reinforced polyester. 50 Requirement 6: Styreforbindelssesstang acc. Claim 5, a newcomer know that having the performance of a material with 55 fiber reinforcement created by the development. 12 DK 96 00429 U3 Requirement 7: Styreforbindelssesstang acc. Claim 5, a newcomer know that having the performance of a material with fiber–vaev–/–matte–/–non–woven reinforcement. 5 Requirement 8: Styreforbindelssesstang acc. Claim 5, a newcomer know that having the performance of a material 10 with spiralpaspolet fiber–matte/vaev–armering. Requirement 9: Styreforbindelssesstang acc. Claim 8, which is a new 15 by having the performance of a material with inclined spiralpaspolet fiber–matte–/–vaev–strimmel–armering. Requirement 10: 20 Styreforbindelssesstang acc. Claim 5, a newcomer know that having the performance of a fiber–reinforced matrix material properties obtained through an endless string process. 25 Requirement 11: Styreforbindelssesstang acc. Claim 5, a newcomer know that having the performance of a fiber–reinforced matrix material properties obtained through hand–crafted. 30 Requirement 12: Styreforbindelssesstang acc. Claim 5, a newcomer know that having the performance of a fiber–reinforced 35 matrix material properties obtained with the casting. Requirement 13: Styreforbindelssesstang acc. one or more of claims 40 5–12, which is the new, having the embodiment of a fiber–reinforced matrix material with the properties achieved through a combination of these processes. 45 Requirement 14: Styreforbindelssesstang acc. one or more of the preceding claims, which is new in whole or in part to be performed as a afkappet piece of a greater length material. 55 13 DK 96 00429 U3 10 Requirement 15: Styreforbindelssesstang acc. one or more of the preceding claims, which is new in whole or in part to be designed as a afkappet piece of a larger length material with the desired variation of the combination of the desired torsional and flexural properties, indexed over the module length is substantially equal to the afkappede paragraph length. Requirement 16: Styreforbindelssesstang acc. one or more of the preceding claims, which is new in whole or in part to be performed as a afkappet piece of a larger length 15 material with the same properties in all cross sections. Requirement 17: Styreforbindelssesstang acc. any of the previous 20 requirements that are new to know only to be carried out as a afkappet piece of a greater length material and not be further worked than simply removing burrs from cutting and possible. application of an identification. 25 Requirement 18: Styreforbindelssesstang acc. one or more of the preceding claims, which is new in that the axis of the free state 30 represents a straight line. Requirement 19: Styreforbindelssesstang acc. one or more of the previous 35 requirements that are new in that the axis in free mode represents a curve in a plane. Requirement 20: 4 0 Styreforbindelssesstang acc. one or more of the preceding claims, which is new in that the axis in the free state constitute a curve in space. 4 5 Requirement 21: Styreforbindelssesstang (30) acc. one or more of the preceding claims, somer by new, to be designed as a replaceable component of an operating member (18) and a connector body (14), the axes 50 (12 respectively 13) are the same. 55 DK 96 00429 U3 14 Requirement 22: Styreforbindelssesstang (30) acc. one or more of the preceding claims, which is novel in that it is configured as an interchangeable element between a 5 control (18) and a connector body (14), whose axes (12, respectively 13) form an angle. Requirement 23: 10 Styreforbindelssesstang (30) acc. one or more of the preceding claims, which is novel in that it is configured as a replaceable component of an operating member (18) and a connector body (14), whose axes (12, respectively 13) lying in a plane. 15 Requirement 24: Styreforbindelssesstang (30) acc. one or more of the preceding claims, which is new in that to 20 designed as an interchangeable element between an operating means (18) and a connector body (14), whose axes (12, respectively 13) is twisted. 25 Requirement 25: Styreforbindelssesstang (30) acc. one or more of the preceding claims, which is novel in that it is configured as an interchangeable element between a betjeningsorgari (18) and a connector body (14), the 30 axes (12, respectively 13) is capable of eccentric motion during rotation. Requirement 26: Styreforbindelssesstang (30) acc. one or more of the 35 preceding claims, which is novel in that it is configured as an interchangeable element between the coupling pieces still in rotation. 40 Requirement 27: Styreforbindelssesstang (30) acc. one or more of foregaende.krav which are new by being formed aggregates as an interchangeable element between a betjeningsorgan (18) and a connector body (14), 45 located on a two–wheeled vehicle. Requirement 28: Styreforbindelssesstang (30) acc. one or more of the 50 preceding claims, which is novel in that it is configured aggregates as a replaceable component of an operating member (18) and a connector body (14), located on a two–wheeled vehicle that is performed essentially acc. Danish utility model application filed 28 55 November 1996 by Stig Poulsen applicant Ref. no IBQ–007th DK 96 00429 U3 wN.

0) DE9015936U1 –

14) Family number: 17659047 (DE9015936U1) © PatBase

Priority: DE19900015936U 19901122

Family:

Publication number	Publication date	Application number	Application date
DE9015936 U1	19910207	DE19900015936U	19901122

Probable Assignee: ABRAHAM SIEGFRIED 6115 MUENSTER DE

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International class (IPC 8–9): B60T17/22 B62H1/12 B62J1/00 B62K19/36 B62K3/00 B62L1/00 (Advanced/Invention)

International class (IPC 1–7): B60R22/00 B62H1/12 B62J1/00 B62J17/00 B62J6/00 B62K25/00 B62K3/02 B62L1/00 B62L3/00 B62M1/00 B62M7/00

CPC: B62L1/00 B60T17/22 B62H1/12 B62J1/00 B62J2017/083 B62K3/005 B62K19/36

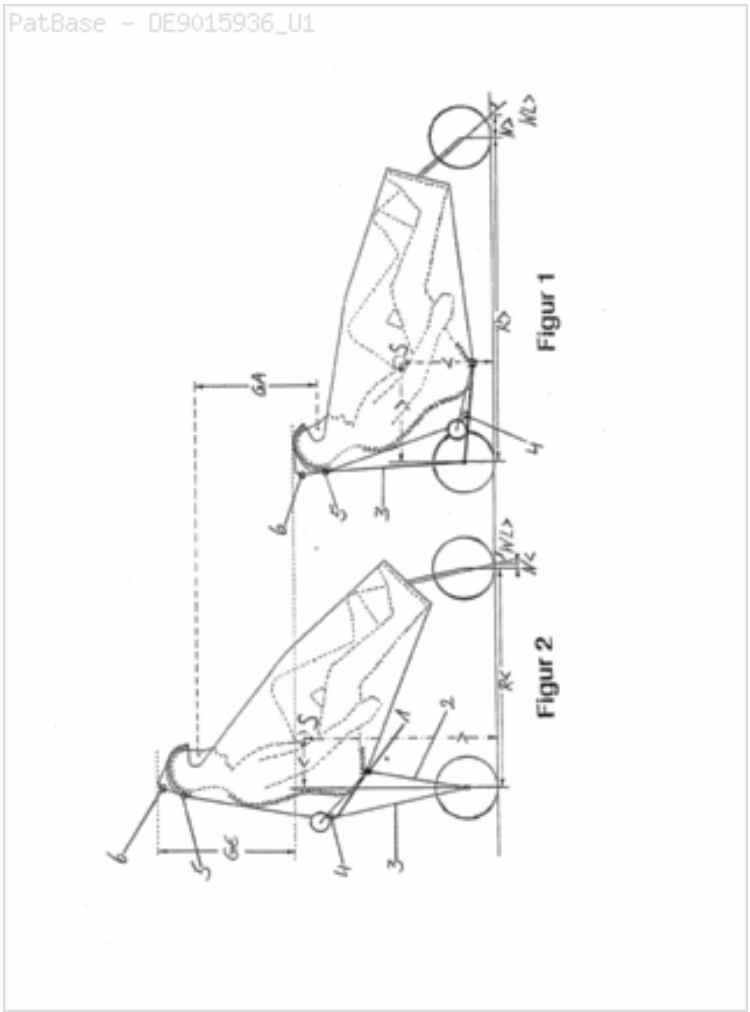
European class: B60T17/22 B62H1/12 B62J1/00 B62K19/36 B62K3/00C B62L1/00 L62J17/08B

Classification Explorer

Forward Citations: WO11078719, WO05105560, DE4223519, DE19838181, DE19838181, DE102011051451, DE102011051451, DE102010004701,

Abstract:
Source: DE9015936U1 (Claim 1)
Schutzansprueche (1) Sesselrad – ohne Kabine und – mit Kabine, sowie als Sesselzweirad – ohne Stuetzraeder und – mit Stuetzraedern, bei dem der Fahrer waehrend der Fahrt – mindestens den Sitz und sich selbst sowie – ggf.

Machine translation: (Claim 1)
Schutzansprueche (1) Sesselrad – without cabin and – with the cabin, as well as two–wheeled chair – without Stuetzraeder and – with Stuetzraedern, in which the driver during the trip – at least the seat and himself as well – possibly



15) Family number: 2824477 (US4619462A) © PatBase

Title: CYCLE APPARATUS HAVING THERAPEUTIC AND UTILITY ASPECTS

Priority: US19840618193 19840607 US19860897383 19860818

Family:

Publication number	Publication date	Application number	Application date
US4619462 A	19861028	US19840618193	19840607
US4798395 A	19890117	US19860897383	19860818

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Assignee(s):(std)**:** MILYARD EMMERT ; SHAFFER DON T

Inventor(s):(std)**:** SHAFFER DON T ; MILYARD EMMERT

International class (IPC 8–9)**:** A61G5/02 B62K5/04 B62L3/02 B62M1/14 (Advanced/Invention); B62K5/00 B62L3/00 (Core/Invention)

International class (IPC 1–7)**:** A61H3/00 A63B21/00 B62L1/00 B62M1/14

CPC: A61G5/023 A61G5/025 B62K5/023 A61G5/02 A61G5/1051 B62L3/02 B62M1/14

European class: A61G5/02 A61G5/02A4 A61G5/02B2 B62K5/023 B62L3/02 B62M1/14 K61G5/10G

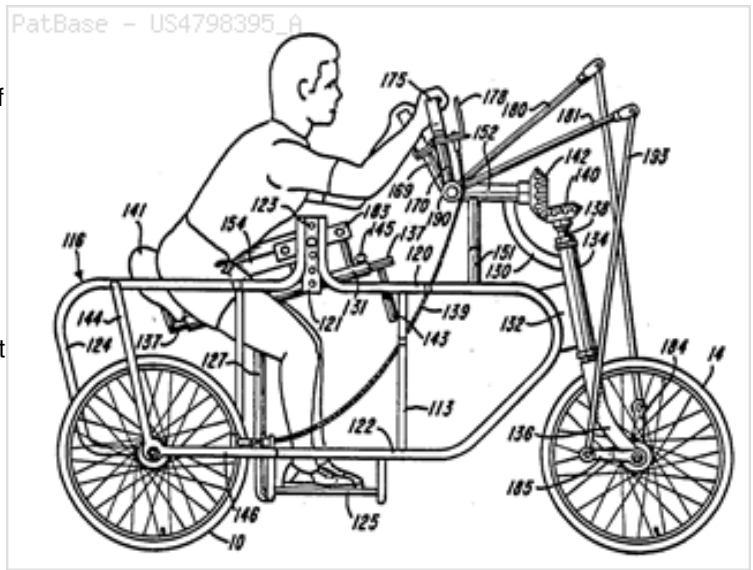
US class: 188/24.11 272/70.3 272/73 280/240 280/242.1 280/242R 280/246 280/282 280/87.04R 482/62 482/68 D12/131 D34/018 D34/18

Classification Explorer

Cited documents: US93751 A, US637821 A, US626852 A, US588472 A, US575936 A, US4411443 A, US4312505 A, US3871421 A, US3854754 A, US3042131 A, US280473 A, US2317606 A, US2312606 A, US1518037 A, US149416 A, GB4393, GB3815, GB190703815 A, GB190204393 A, FR766717 A, FR2455540 A1, DE827167 A, CH173599 A,

Forward Citations: WO9210156, WO16159822, WO16159821, WO12148220, WO12148220, WO07032629, US9555852, US9428243, US9422023, US8827874, US8651505, US7900940, US7497453, US7458918, US7341543, US7140626, US6193253, US5848955, US5836856, US5820096, US5501476, US5487590, US5431614, US5314392, US5297810, US5280937, US2012094809, US2010289246, US2010022356, US2008146415, US2008023933, US2008023932, US2006089241, US2005085349, US2004063550, RU2592972, KR101075843, KR100935441, KR100893274, KR100636544, GR91100306, GR91100306, GR910100306,

Abstract:



Source: US4619462A Apparatus having particular but not limited use for exercise purposes by persons handicapped as to use of their lower limbs or having cardio–pulmonary or ancillary physical problems comprises a body support adapted to maintain the trunk of the body supported thereby in a substantially dynamic balance leaving the lower limbs or limb of the body to depend free of load from the trunk of the body, the support being limited to maintaining the trunk of the body in an attitude which is other than vertical. In a preferred mobile embodiment the body support has a wheel base and provides a cycle structure. An improved braking system used with the cycle structure is simply controlled through grips illustrated in connection with a handlebar, a slight forward rotation of which achieves a safe braking action with great ease and little exertion or coordination being required. Another invention embodiment is a hand operated propulsion system ideal for those severely handicapped, including paraplegics, hand grips rotating on a steering bar of a cycle structure being linked to a drive wheel and simple limited back and forth motion of the hands and arms bending sufficient to

achieve a highly effective propulsive effect.

0) BRPI0902106A – VEICULO ARTICULADO I PROPAGATE ARTICULATED (...

16) Family number: 48382975 (BRPI0902106A) © PatBase

Title:	veiculo articulado I propagate articulated (Machine translation)
Priority:	BR2009PI02106 20090619

Family:

Publication number	Publication date	Application number	Application date
BRPI0902106 A2	20110222	BR2009PI02106	20090619

Probable Assignee:	HANNUD JOAO GUILHERME ZURITA
Assignee(s):(std)**:**	HANNUD JOAO GUILHERME ZURITA
Assignee(s):	JOAO GUILHERME ZURITA HANNUD
Inventor(s):(std)**:**	HANNUD JOAO GUILHERME ZURITA
Inventor(s):	JOAO GUILHERME ZURITA HANNUD
International class (IPC 8–9):	B62K13/04 B62K5/02 (Advanced/Invention)

Classification Explorer

Abstract:
Source: BRPI0902106A VEICULO ARTICULADO A presente invencao e direcionada para a industria automobilistica, no segmento de motocicletas e suas variacoes. Mais especificamente, o objeto revelado pela presente invencao compreende um veiculo articulado provido de 3 (tres) rodas cuja disposicao aplicada em sua conformacao estrutural permite que o condutor tenha a sensacao de estar pilotando um veiculo de apenas 2 (duas) rodas e ainda, referido veiculo e provido da capacidade de transportar ate 2 (dois) passageiros comtotal seguranca e estabilidade.

Machine translation: I PROPAGATE ARTICULATED the present directed invention and for the automobile industry, in the segment of motorcycles and its variations. More specifically, the object disclosed for the present invention understands one propagates articulated provided with 3 (three) wheels whose disposal applied in its structural conformation allows that the conductor has the sensation to be piloting one still propagates of only 2 (two) wheels and, related I propagate and provided with the capacity to carry it ties 2 (two) temporary comtotal security and stability.

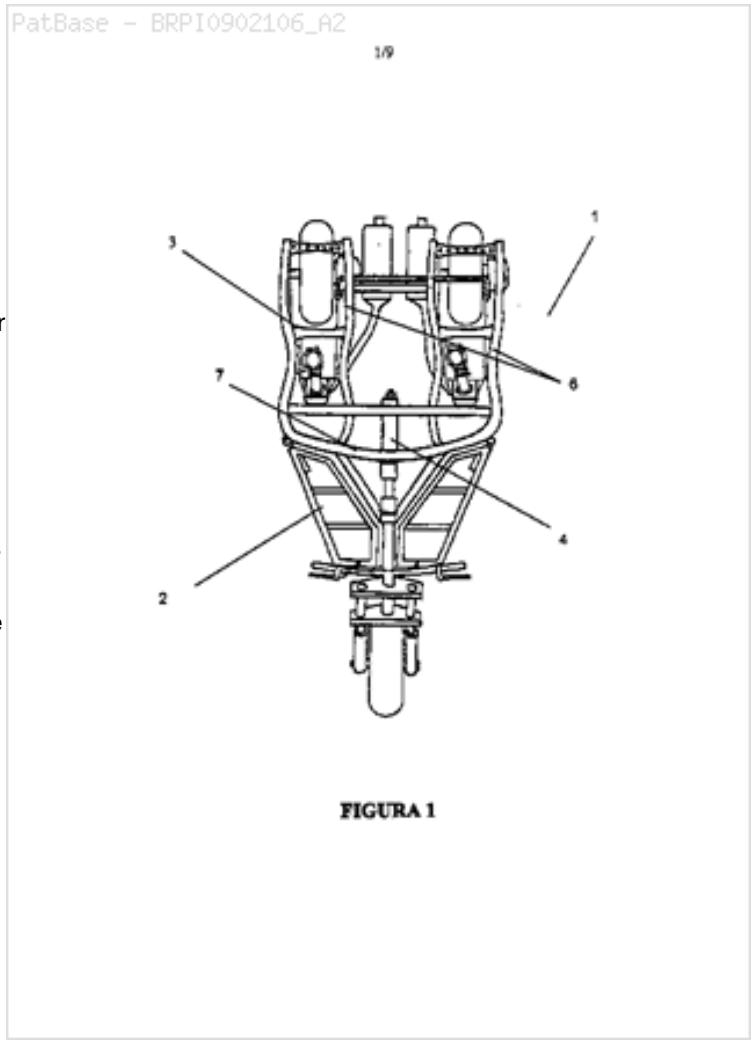


FIGURA 1

0) DE3743477A1 – BRAKE APPARATUS FOR A WHEELCHAIR BREMSVORRICHT...

17) Family number: 7466583 (DE3743477A1) © PatBase

Title: BRAKE APPARATUS FOR A WHEELCHAIR

Priority: DE19873743477 19871222 DE19873744774 19871222

Family:

Publication number	Publication date	Application number	Application date
DE3743477 A1	19890713	DE19873743477	19871222
DE3743477 C2	19910801	DE19873743477	19871222
DE3744774 A1	19890713	DE19873744774	19871222
DE3744774 C2	19910328	DE19873744774	19871222

Probable Assignee: FLICKE ROLF

Assignee(s):(std)**:** FLICKE ROLF

Assignee(s): FLICKE ROLF 3008 GARBSEN DE

Inventor(s):(std)**:** FLICKE ROLF

Inventor(s): FLICKE ROLF 3008 GARBSEN DE

International class (IPC 8–9)**:** A61G5/00 B62B5/04 B62K13/04 B62K5/04 B62K5/05 B62L1/06 (Advanced/Invention); B62B5/04 (Advanced/Non–invention); A61G5/00 B62B5/00 B62K13/00 B62K5/00 B62L1/00 (Core/Invention); B62B5/00 (Core/Non–invention)

International class (IPC 1–7)**:** A41G5/00 A61G5/00 A61G5/02 B62B5/04 B62K27/12 B62K5/00 B62K5/02 B62K5/08 B62K7/00 B62L1/06 B62L3/08

CPC: A61G5/1008 A61G5/1037 B62K3/16 A61G5/1016 B62K5/05 A61G5/003 A61G5/1054 B62B5/0476 B62K5/06 B62K13/00 B62K13/04 B62L1/06

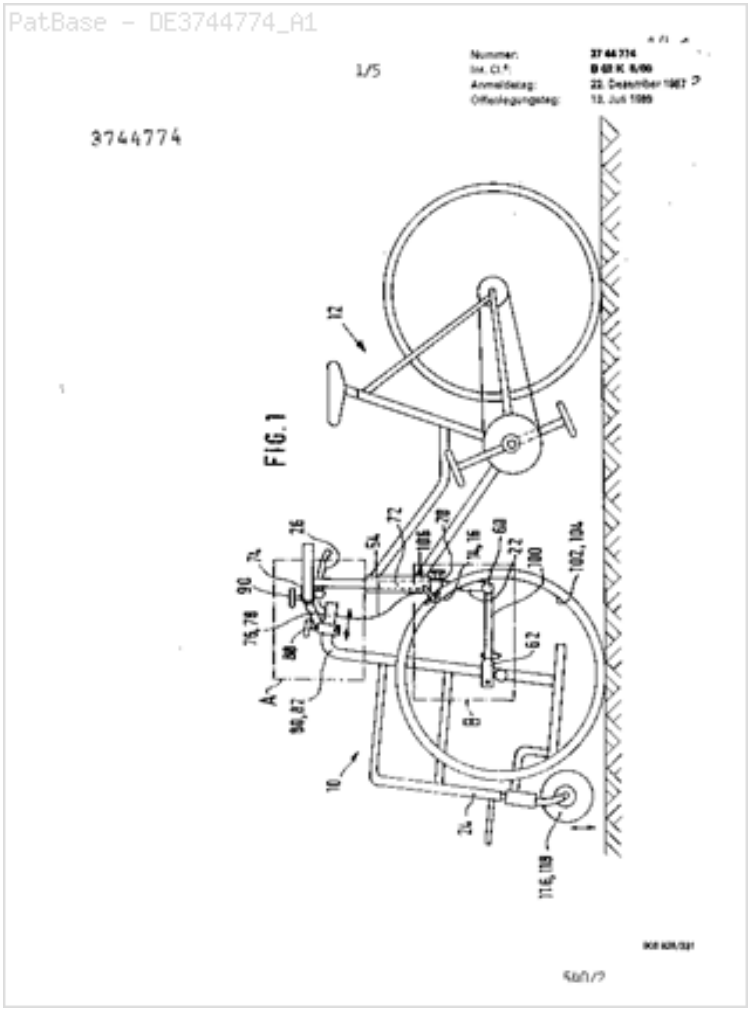
European class: B62K13/00 B62K13/04 B62K5/05 B62K5/06 K61G5/10H L62B5/04W

Classification Explorer

Cited documents: US1661257 A, FR836062 A, DE8710562 U, DE710299 A, DE3724242 A1, DE3303218 A1,

Forward Citations: WO15004299, US6688437, US6341791, FR2855492, FR2680148, ES2443085, EP2209697, EP1690782, EP0863067, DE9405760, CN105411768,

Abstract:
Source: DE3743477A1 Ordinary wheelchairs are equipped, for the most part, only with a parking brake. This can be disadvantageous on ascending gradients and downhill sections, and, furthermore, in the case of combination vehicles comprising a wheelchair with a bicycle, roadworthiness is not provided. The invention describes a brake apparatus which can subsequently be attached to the wheelchair or to the bicycle which is to be connected to the wheelchair. This brake apparatus comprises rim brakes which can be adjusted in terms of their track width and are arranged on a brake carrier so as to be adjustable in a swivelling manner about their axis which is horizontal in the operating position. The brake apparatus can thus be adapted, in a simple manner, to different wheelchairs. The brake carrier has a fastening apparatus with which it can be attached to frame parts of the bicycle or of the wheelchair. Rim brakes can be operated synchronously by means of an operating apparatus. By this means, a uniform braking effect on both wheels of the wheelchair is achieved.



0) WO11113091A1 – A COMBINED CLUTCH AND BRAKE ACTUATOR FOR A MOTO...

18) Family number: 49605749 (WO11113091A1) © PatBase

Title: A COMBINED CLUTCH AND BRAKE ACTUATOR FOR A MOTORIZED VEHICLE WHICH MAY BE OPERATED BY EITHER A HANDLE BAR OPERATED LEVER OR A SEPARATE PEDAL. THE COMBINED ACTUATOR LINKING IN TO A 'FLY BY WIRE' TYPE ELECTRONIC CONTROL SYSTEM WITH AT LEAST ONE DYNAMIC

Priority: AU20100901066 20100315

Family:

Publication number	Publication date	Application number	Application date
WO11113091 A1	20110922	WO2011AU00286	20110314

Probable Assignee: INNOVATIVE MOTORCYCLE TECHNOLOGY PTY LTD

Assignee(s):(std)**:** HUTCHINSON OWEN ; INNOVATIVE MOTORCYCLE TECHNOLOGY PTY LTD

Inventor(s):(std)**:** HUTCHINSON OWEN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** B60K17/00 B60K20/00 B60K23/00 B60T1/06 B60T7/12 B60T7/22 B60W10/02 B60W10/184 B60W30/18 B62D1/00 B62D6/00 (Advanced/Invention)

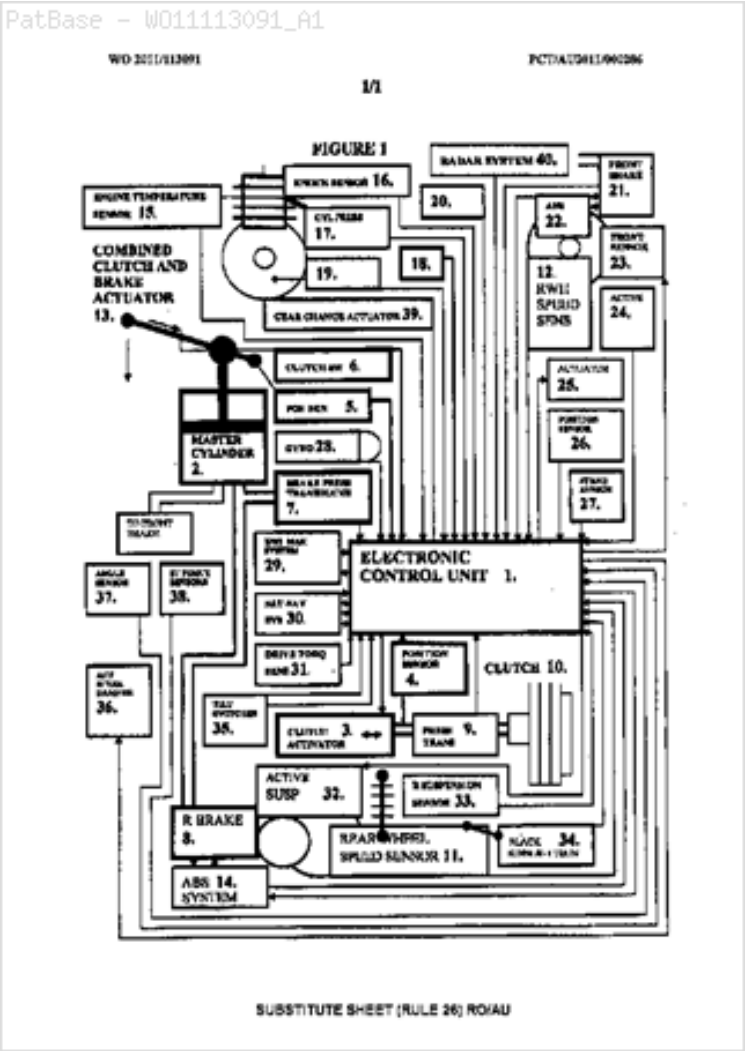
CPC: B60W30/18181 B60K23/02 B60T7/22 B60T8/1706 B60T8/1755 B60T2210/36 B60T2230/03 B60T2260/04 B60W10/02 B60W10/184 B60W30/18136

European class: B60T7/22 B60T8/1755 B60T8/17P7 B60W10/02 B60W10/184 B60W30/18R9F B60W30/18W L60K23/02 L60T210/36 L60T230/03 L60T260/04

Classification Explorer

Cited documents: US6253140, US5058014, US2005258011, CN2815853,

Abstract:
A means by which the control of both the clutch and brake functions may be achieved by the actuation of a single lever or pedal.



0) DE2751997A1 – STARRACHSE FUER FAHRZEUGE STABILISED REAR BEAM ...

19) Family number: 1677304 (DE2751997A1) © PatBase

Title: STARRACHSE FUER FAHRZEUGE STABILISED REAR BEAM AXLE – HAS TRAILING ARM SIDE SECTIONS AND FORWARD SET MIDDLE BRACED BY DAMPERS

Priority: DE19772751997 19771122

Family:

Publication number	Publication date	Application number	Application date
DE2751997 A1	19790523	DE19772751997	19771122

Probable Assignee: PAULY AXEL

Assignee(s):(std)**:** PAULY AXEL

Inventor(s):(std)**:** PAULY AXEL

International class (IPC 8–9)**:** B60G9/02 (Advanced/Invention); B60G9/00 (Core/Invention)

International class (IPC 1–7)**:** B60G9/02

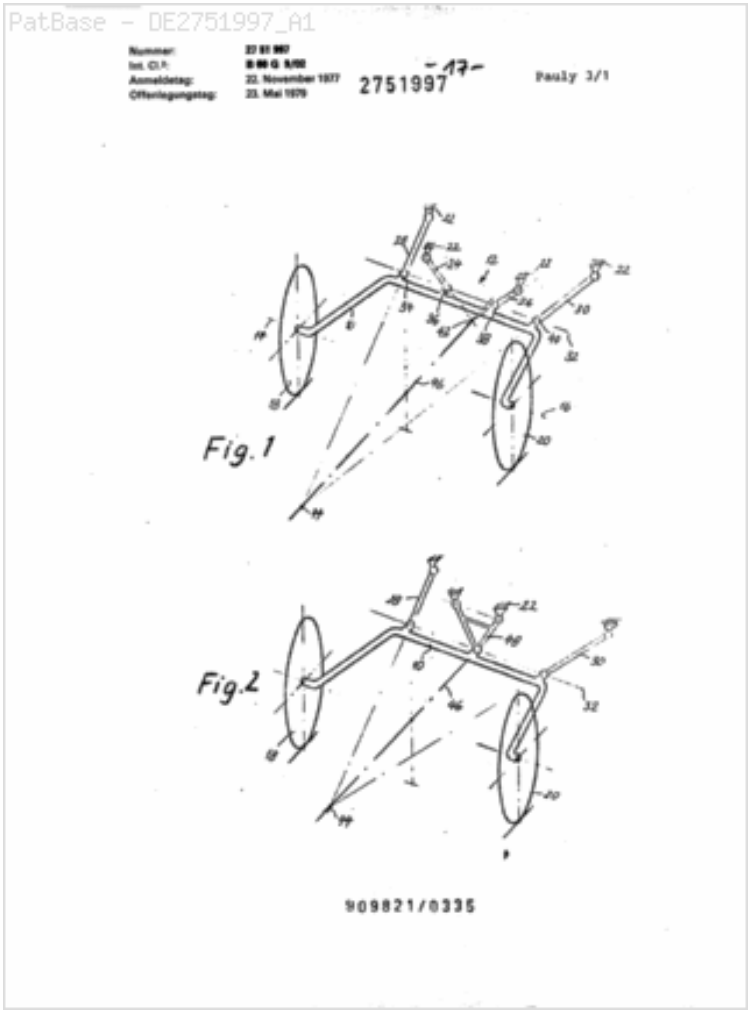
CPC: B60G9/027 B60G2200/314 B60G2200/324 B60G2200/34 B60G2200/342 B60G2200/343 B60G2200/347

European class: B60G9/02D L60G200/314 L60G200/324 L60G200/340 L60G200/342 L60G200/343 L60G200/347

Classification Explorer

Forward Citations: WO14111199, US5566969, US4802689, FR2720691, FR2634696, FR2568521, FR2509233, FR2483334, DE4422875, DE4422875, DE4419221, DE4112061, DE3804029,

Abstract:
Source: DE2751997A1 Starrachse fuer Fahrzeuge Patentansprueche Starrachse fuer Fahrzeuge mit jeweils wenig steins einem Rad an den Enden der Starrachse und einer Achsfuehrung in Bezug auf einen zugehoerigen Fahrzeugaufbau, die eine Hubbewegung und eine Neigungsbewegung zwischen Starrachse und Fahrzeugaufbau gestattet, dadurch g e k e nn z e i c h n e t, dass die Starrachse (10) im mittleren Bereich (12) im wesentlichen in der oder gegen die Fahrtrichtung bogenfoermig gekroepft ist, im Bereich der Kroepfung an den Fahrzeugaufbau (22) angelenkt ist und um eine durch den oder die achsseitigen Anlenkpunkte (36,38,50,56,58,78,100) verlaufende waagerechte Querachse (32) drehbar ist 2. The rigid axle is bent into a U shape with the central section of the profile forming the transverse part across the vehicle and the two arms as the trailing supports for the wheels. The middle section is braced on the chassis by angles dampers. The dampers are mounted between elastic supports for improved suspension. The axle has torsional properties to allow some amount of independent suspension.



0) AT394694B – CHASSIS HAVING TILTING STEERING, IN PARTICULAR ...

20) Family number: 2820021 (AT394694B) © PatBase

Title: CHASSIS HAVING TILTING STEERING, IN PARTICULAR FOR THREE– WHEELED BUBBLE CARS

Priority: AT19890001707 19890714

Family:

Publication number	Publication date	Application number	Application date
AT170789 A	19911115	AT19890001707	19890714
AT394694 B	19920525	AT19890001707	19890714

Probable Assignee: PICHLER HUBERT

Assignee(s):(std)**:** PICHLER HUBERT

International class (IPC 8–9)**:** B62D9/02 (Advanced/Invention); B62D9/00 (Core/Invention)

International class (IPC 1–7)**:** B62D9/02 G06F7/544

CPC: B62D9/02

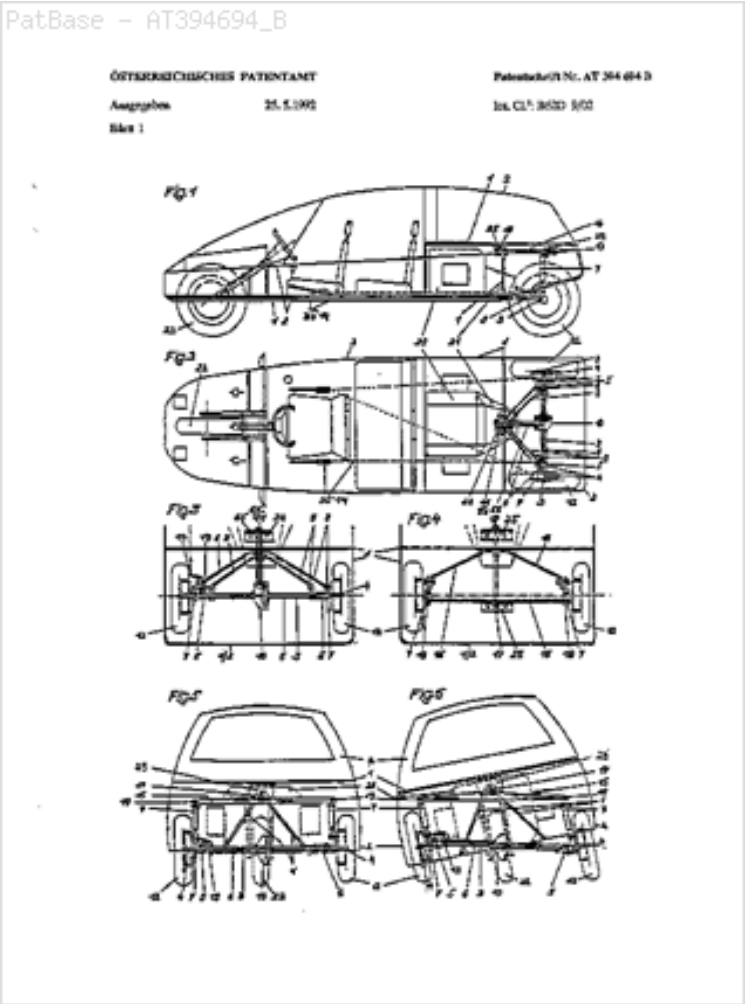
European class: B62D9/02

Classification Explorer

Cited documents: US4624469 A, US4546997 A, US3360066 A, US2961254 A, DE2455183 A1,

Forward Citations: WO9709223, US8911332, US8535206, EP0788443, CZ303511,

Abstract:
Source: AT394694B A chassis with tilting steering has axle stubs 4 which are coupled in an articulated manner to the ends of the axle 3 and pass through bearing heads; uprights or shock absorbers 7, which are fastened on the bearing heads 4, are connected to a slide rod 15; steering and retaining brackets are coupled rotatably to the said slide rod and to the bearing and connecting shafts 11, 18, as a result of which a connection is produced between the under body and chassis; telescopic sliders 37, 39 or the like, which are articulated in the central region of the axle 3 and lead diagonally to the upper ends of the shock absorbers 7, together with the slide rod 15 on the bearing and connecting shaft 18, push the vehicle into the opposite tilting position on occurrence of the centrifugal and gravitational force. A spherical centrifugal–force switch 33 automatically controls the tilting steering.



0) BRMU8900910U – TRICICLO DE CARGA LOAD TRICYCLE (MACHINE TRA...

21) Family number: 48194502 (BRMU8900910U) © PatBase

Title: triciclo de carga load tricycle (Machine translation)

Priority: BR2009MU00910U 20090508

Family:

Publication number	Publication date	Application number	Application date
BRMU8900910 U2	20110118	BR2009MU00910U	20090508

Probable Assignee: MUZI MARCO ANTONIO TAVARES

Assignee(s):(std)**:** MUZI MARCO ANTONIO TAVARES

Assignee(s): MARCO ANTONIO TAVARES MUZI

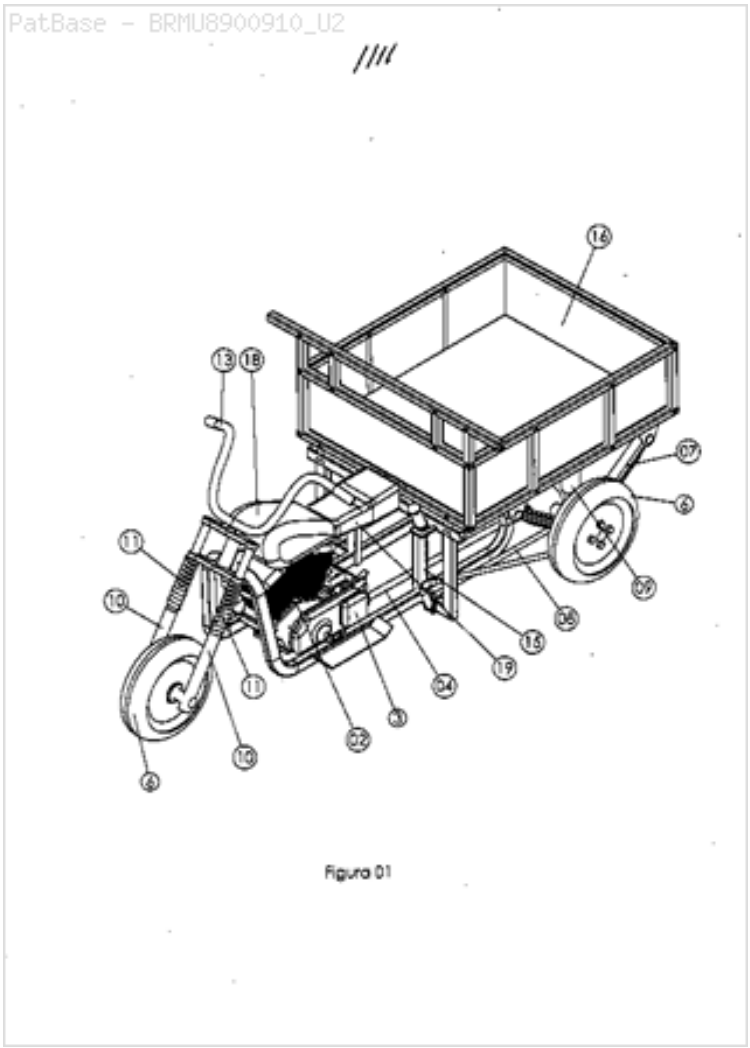
Inventor(s):(std)**:** MUZI MARCO ANTONIO TAVARES

Inventor(s): MARCO ANTONIO TAVARES MUZI

International class (IPC 8–9): B62K5/02 B62K7/04 (Advanced/Invention)

Classification Explorer

Abstract:
Source: BRMU8900910U RESUMO TRICICLO DE CARGAvformado por um chassi unico (01), um motor de motocicleta (02), uma caixa de cambio com marcha a re (03), um eixo de transmissao com cardan (04), um diferencial (05), tres rodas (06), dois feixes de molas traseiras (07), duas barras estabilizadoras traseiras (08), dois amortecedores traseiros (09), um garfo telescopico (10), duas molas externas de reforco (11), um amortecedor de direcao (12), um guidao (13), um pedal do sistema de freio (14), uma alavanca do sistema de freio estacionario (15), uma carroceria (16), um estepe (17), um tanque de combustivel (18) e um assento (19). ABSTRACT TRICYCLE CARGAvformado by a single chassis (01), a motorcycle engine (02), one gearbox with gear re (03), an axis of transmission with PTO (04), a differential (05), three wheels (06), two beams of rear springs (07), two rear stabilizer bars (08), two rear shock absorbers (09), one telescopic fork (10), two external springs of reinforcement (11), a buffer direction (12), a handlebar (13), a brake system pedal (14), a lever stationary brake system (15), a body (16), a spare (17), a fuel tank (18) and a seat (19).



0) DE3732088A1 – COMPOUND LINK REAR AXLE

22) Family number: 7355301 (DE3732088A1) © PatBase

Title: Compound link rear axle

Priority: DE19873732088 19870924

Family:

Publication number	Publication date	Application number	Application date
DE3732088 A1	19890420	DE19873732088	19870924
DE3732088 C2	19920326	DE19873732088	19870924

Probable Assignee: OPEL ADAM AG

Assignee(s):(std)**:** OPEL ADAM AG

Assignee(s): ADAM OPEL AG ; ADAM OPEL AG 6090 RUESSELSHEIM DE

Inventor(s):(std)**:** KIRSCHNER JOCHEM DIPL ING ; BAUSCH PAUL ING GRAD

Inventor(s): BAUSCH PAUL ING ; BAUSCH PAUL ING GRAD 6229 HATTENHEIM DE ; KIRSCHNER JOCHEM DIPL ING 6094 BISCHOFSHEIM DE

International class(IPC 8–9)**:** B60G17/00 B60G21/05 B60G7/00 (Advanced/Invention); B60G17/00 B60G21/00 B60G7/00 (Core/Invention)

International class(IPC 1–7)**:** B60G3/14 B60G7/02

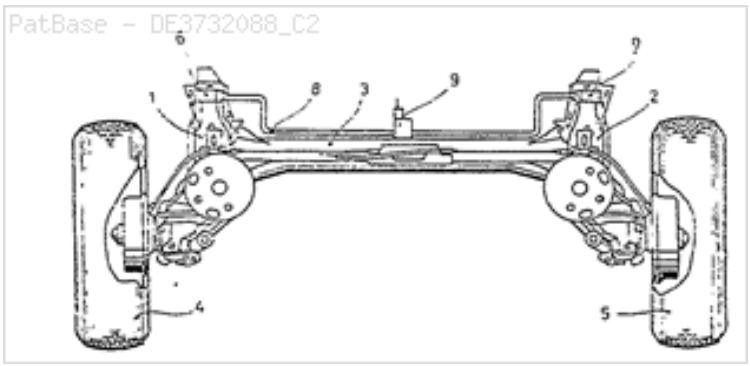
CPC: B60G7/006 B60G17/00 B60G21/053 B60G2204/14 B60G2800/22

European class: B60G17/00 B60G21/05C1C B60G7/00D L60G204/14 L60G800/22

Classification Explorer

Cited documents: DE3703618 A1, DE3139792 A1, DE2748193 A1,

Abstract:
Source: DE3732088A1 In a compound link rear axle, a fluid chamber is provided at the front in each link bearing (6, 7). A connecting line (9) connects these fluid chambers to one another. If one–sided braking forces occur as a result of differences in the coefficient of friction, fluid is fed from one fluid chamber to the other. As a result, the axle tilts in such a way that the vehicle maintains its course despite the effect of the yawing moment.



0) WO08113906A1 – MEANS FOR QUICKLY REMOVING THE WHEELS OR AT LEA...

23) Family number: 42081085 (WO08113906A1) © PatBase

Title: MEANS FOR QUICKLY REMOVING THE WHEELS OR AT LEAST THE TYRES OF A SINGLE TRACK TWO–WHEEL VEHICLE

Priority: FR20070000858 20070207

Family:

Publication number	Publication date	Application number	Application date
FR2912109 A1	20080808	FR20070000858	20070207
WO08113906 A1	20080925	WO2008FR00143	20080207
WO08113906 B1	20081113	WO2008FR00143	20080207

Probable Assignee: FRANCK JEAN SAVARD

Assignee(s):(std)**:** SAVARD FRANCK ; SAVARD FRANCK JEAN

Assignee(s): FRANCK JEAN SAVARD

Inventor(s):(std)**:** SAVARD FRANCK ; SAVARD FRANCK JEAN

Inventor(s): FRANCK JEAN SAVARD

Agent(s): FRANCK SAVARD

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K21/02 B62K25/00 B62K25/02 B62K25/04 (Advanced/Invention); B62K21/00 B62K25/00 B62K25/04 (Core/Invention)

CPC: B62K21/02 B62K25/02 B62K2206/00

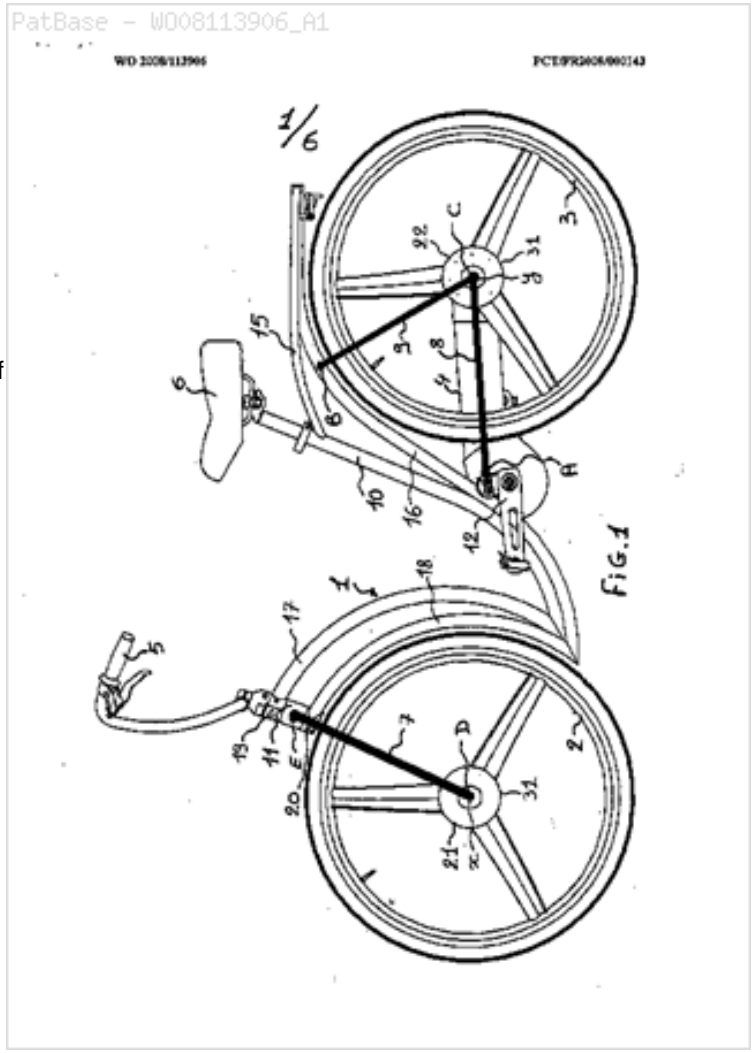
European class: B62K21/02 B62K25/02 L62K206/00

Classification Explorer

Cited documents: US5121973 A, US2005218624 AA, EP1227033 A1, EP0825098 A2,

Forward Citations: WO11056084, WO09019476,

Abstract:
The invention relates to a means for attaching the rear and/or front wheel of a two−wheel vehicle, the rear wheel (3) and/or the front wheel (2) being each maintained by the two ends of their axis, respectively, at the ends (C, D) of a right side holder and of a left side holder (also called bases (8) or fork arms (7) defining a rear fork and a front fork, wherein one at least of said holders includes at the level of its end: means for rigidly attaching, while allowing the spacing thereof, the rear holder (8) and/or the front holder (7) in association with a means for the ad hoc attachment of the related corresponding end of the wheel axis in order to dismantle the wheel alone or at least to allow the passage of the dismantled tyre directly by a quick−opening attachment means of the fixation (C, D) or the dismantled tyre alone indirectly by a quick−opening attachment means of the fixation(s) (A, B, E) by passing the tyre about the holder of the rear wheel (3) or the front wheel (2).



0) DE2922691A1 – DREIRAD TRICYCLE WITH DRIVEN REAR WHEEL – HAS ...

24) Family number: 1801258 (DE2922691A1) © PatBase

Title: DREIRAD TRICYCLE WITH DRIVEN REAR WHEEL – HAS STEERABLE FRONT WHEELS ON PARALLELOGRAM LINKAGES PERMITTING STEERING AND INCLINATION FROM VERTICAL

Priority: DE19792922691 19790602

Family:

Publication number	Publication date	Application number	Application date
DE2922691 A1	19801211	DE19792922691	19790602

Probable Assignee: MUELLER JOSEF

Assignee(s):(std)**:** MUELLER JOSEF

Inventor(s):(std)**:** MUELLER JOSEF

International class (IPC 8–9)**:** B62K3/00 B62K5/04 B62K5/05 (Advanced/Invention); B62K3/00 B62K5/00 (Core/Invention)

International class (IPC 1–7)**:** B62K5/02

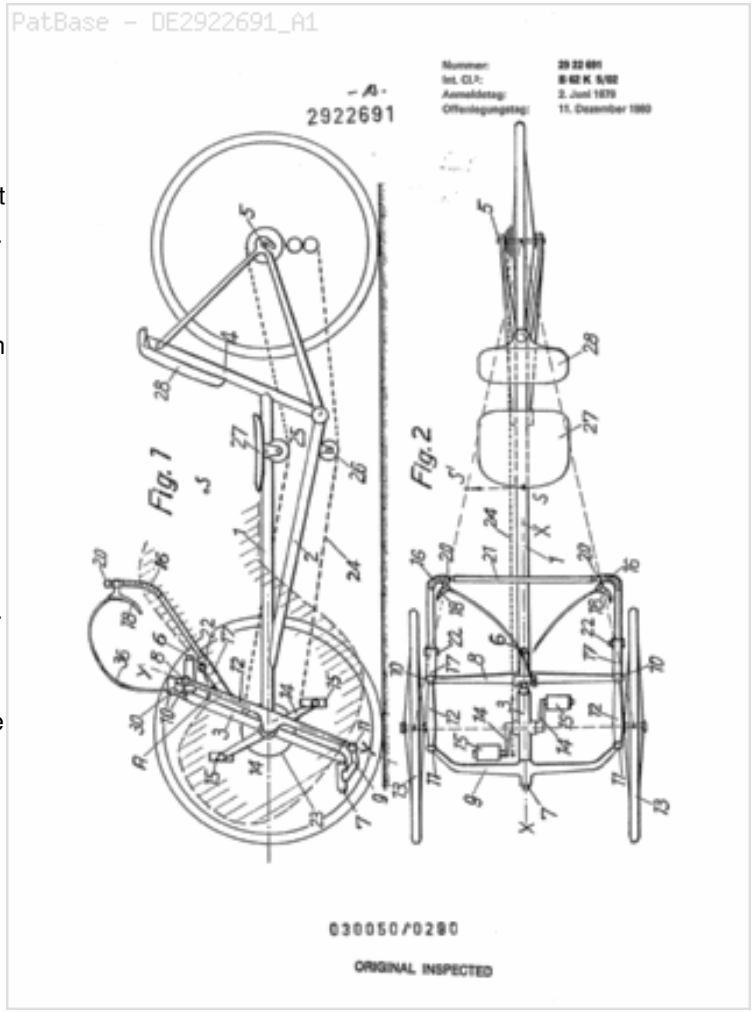
CPC: B62K3/005 B62K5/05 B62K5/10

European class: B62K3/00C B62K5/05 B62K5/10

Classification Explorer

Forward Citations: WO9313470, WO04062994, US5437467, US5415422, US5388847, US4410198, JP5703130, JP5687378, JP2012245861, FR2848152, FR2688465, FR2499015, EP0560670,

Abstract:
Source: DE2922691A1
Patentansprueche,reirad mit zwei an Achsschenkeln gelenkten Vorderraedern, schmaler Spurweite und angetriebenem Hinterrad, dadurch gekennzeichnet, dass die Achsschenkel (12,12) an den oberen und unteren Enden ueber Kugelgelenke (10,11) mit Querschwingen (8,9) so untereinander verbunden sind, dass sie zusammen mit in der Mitte der Schwingen (8,9) an Achszapfen (6,7) aufge haengten Mittelrohrrahmen (3,1,2,4) ein doppeltes Gelenk viereck (10,11,7,6) bilden, wobei die beiden Achszapfen(6,7) am Rahmen (3,1,2,4) nur eine zur Laengsachse // Achse (Achse x–x) Schwingbewegungen zulassen, die vier Kugelgelenke an den Schwingen– und Achsschenkelenden (10,11,zO,1t dagegen sowohl eine Drehung zur Laengsachse // Achse, als auch eine Drehbewegung um die Achsen (y–y) der Achsschenkel (12,1zu zwecks Lenkung des Fahrzeugs ermoeglichen 2. The triangle has two front wheels (13) with narrow track width carried on steering arms (12), as well as a driven rear wheel. The upper and lower ends of the arms are coupled by ball–joints (10, 11) to transverse rods (8, 9) whose centres are pivoted (6, 7) to the main frame (1) and to a central rod (3) parallel to the arms respectively, to form a double parallelogram linkage. The pivots only allow rotation about axes parallel to the longitudinal tricycle axis (x–x), whilst the four ball joints allow rotation about axes parallel to this axis and about the arm centre lines to permit steering motion.



0) BRMU8902661U – DISPOSICAO CONSTRUTIVA APLICADA EM MOTOCICLETA ...

25) Family number: 49334674 (BRMU8902661U) © PatBase

Title:	DISPOSICAO CONSTRUTIVA APLICADA EM MOTOCICLETA Constructive disposition APPLIED IN MOTORCYCLE (Machine translation)
Priority:	BR2009MU02661U 20091124

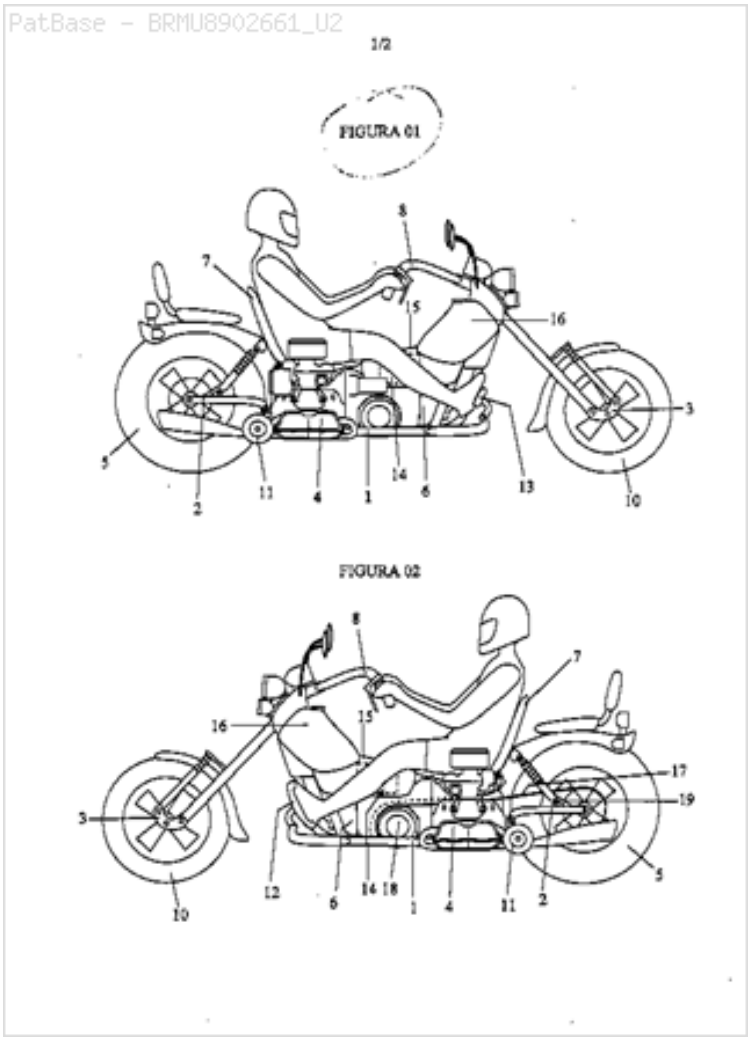
Family:

Publication number	Publication date	Application number	Application date
BRMU8902661 U2	20110719	BR2009MU02661U	20091124

Probable Assignee:	GOMES VALTER DE SOUZA
Assignee(s):(std):	GOMES VALTER DE SOUZA
Assignee(s):	VALTER DE SOUZA GOMES
Inventor(s):(std):	GOMES VALTER DE SOUZA
Inventor(s):	VALTER DE SOUZA GOMES
International class (IPC 8–9):	B62K11/04 B62M7/06 (Advanced/Invention)

Classification Explorer

Abstract:
Source: BRMU8902661U 1 RESUMO "DISPOSICAO CONSTRUTIVA APLICADA EM MOTOCICLETA", a uma motocicleta com o motor posicionado proximo ao eixo traseiro, com a caixa de marchas voltada para a parte frontal da 5 motocicleta, apresentando–se de maneira invertida e com baixo centro de gravidade, que melhora a distribuicao do seu peso os pneus, aumenta a estabilidade e oferece mais conforto para o motociclista, que pilota como se estivesse dirigindo um carro. Apresente "DISPOSICAO CONSTRUTIVA APLICADA EM 10 MOTOCICLETA" e basicamente composta por um chassi (1) robusto, com balanca (2) na suspensao traseira e balancim (3) na suspensao dianteira, com seu motor (4) posicionado proximo ao pneu traseiro (5) e a caixa de marchas (6) voltada para a parte frontal da motocicleta, alem de que, possui o banco (7) do piloto inclinado para traz, um guidao (8) com cruzeta (9) na 15 coluna de giro do pneu frontal (10) e com duas pequenas rodas (11) nas laterais, dentre outras partes comuns as motocicletas. 1 SUMMARY "constructive disposition APPLIED IN MOTORCYCLE," a motorcycle with the positioned engine next to the rear axle with the gearbox facing the front of the 5 motorcycle, presenting inverted manner and with low center of gravity, which improves the distribution of its weight the tires, increases stability and offers more comfort to the rider, who rides as if driving a car. Table "CONSTRUCTIVE APPLIED willingness to 10 MOTORCYCLE" and basically consists of a chassis (1) robust, with balanca (2) on the rear suspension and beam (3) on the front suspension, with its motor (4) positioned next to the rear wheel (5) and the gearbox (6) facing the front of the motorcycle, beyond that has the bank (7) of the inclined pilot brings a handlebar (8) with crosspiece (9) at 15 Front tire spin column (10) and with two small wheels (11) on the sides, among other parts common motorcycles.



0) WO08037822A1 – TRANSPORTABLE AND DISMANTLEABLE CRANE GRUE TRAN...

26) Family number: 34332645 (WO08037822A1) © PatBase

Title: TRANSPORTABLE AND DISMANTLEABLE CRANE

Priority: ES20060002126U 20060928 ES20060002126 20060928

Family:

Publication number	Publication date	Application number	Application date
ES1063810 UA	20061201	ES20060002126U	20060928
ES1063810 Y1	20070301	ES20060002126U	20060928
WO08037822 A1	20080403	WO2007ES00455	20070725

Probable Assignee: MARTINEZ PALAZON MARIA CAROLIN

Assignee(s):(std)**:** MARTINEZ PALAZON MARIA CAROLIN ; PAGAN RUIZ JUAN PEDRO

Assignee(s): MARTINEZ PALAZON MARIA CAROLINA

Inventor(s):(std)**:** MARTINEZ PALAZON MARIA CAROLIN ; PAGAN RUIZ JUAN PEDRO

Inventor(s): MARTINEZ PALAZON MARIA CAROLINA

Agent(s): CARVAJAL Y URQUIJO ISABEL ET AL

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B66C23/48 B66F9/06 (Advanced/Invention); B66C23/00 B66F9/06 (Core/Invention)

CPC: B66C23/48 B66F9/06

European class: B66C23/48 B66F9/06

Classification Explorer

Cited documents: US5224612, US3801069, GB2138749, GB1432040,

Abstract:
Transportable and dismantleable crane for manoeuvring small loads, preferably condenser units of air−conditioning equipment, to the balconies or surfaces on which such units are placed. The crane is formed of scales in the form of a double "T", the transverse branches (3−3') of which are offset by 90 Degrees, and the lower transverse branch (3) of which is provided with wheels, while the upper transverse branch (3') is provided with means for fixing a relatively long lever which is provided with a support (9) for a hoist (10) whose cable is suitably guided towards that free end of said lever which is opposite the operating end, from which it is suspended in order to support, raise and lower the corresponding load. The middle branches (1−1') of the double "T" of the scales comprise two telescopic tubes for regulating the effective length of said scales by means of alignments of holes (2) and a blocking pin. The operating lever (8') of the scales is also telescopic and its free end ends in a handlebar−shaped structure (15).

PatBase - WO08037822_A1

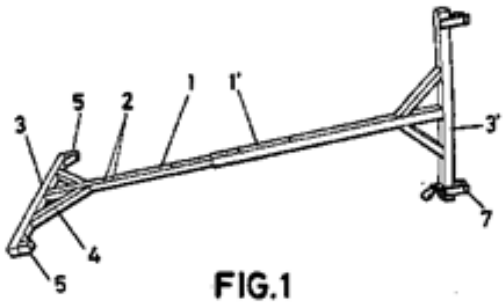


FIG.1

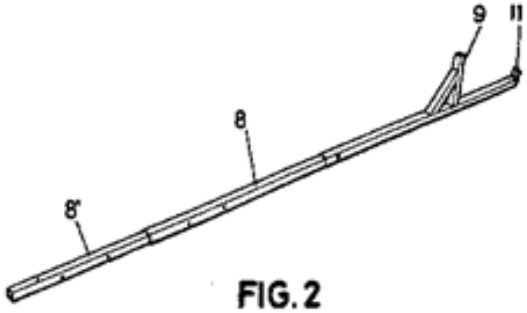


FIG.2

0) DE29819182U1 – TRICYCLE DREIRAD

27) Family number: 16992596 (DE29819182U1) © PatBase

Title:	Tricycle
Priority:	DE19982019182U 19981028

Family:

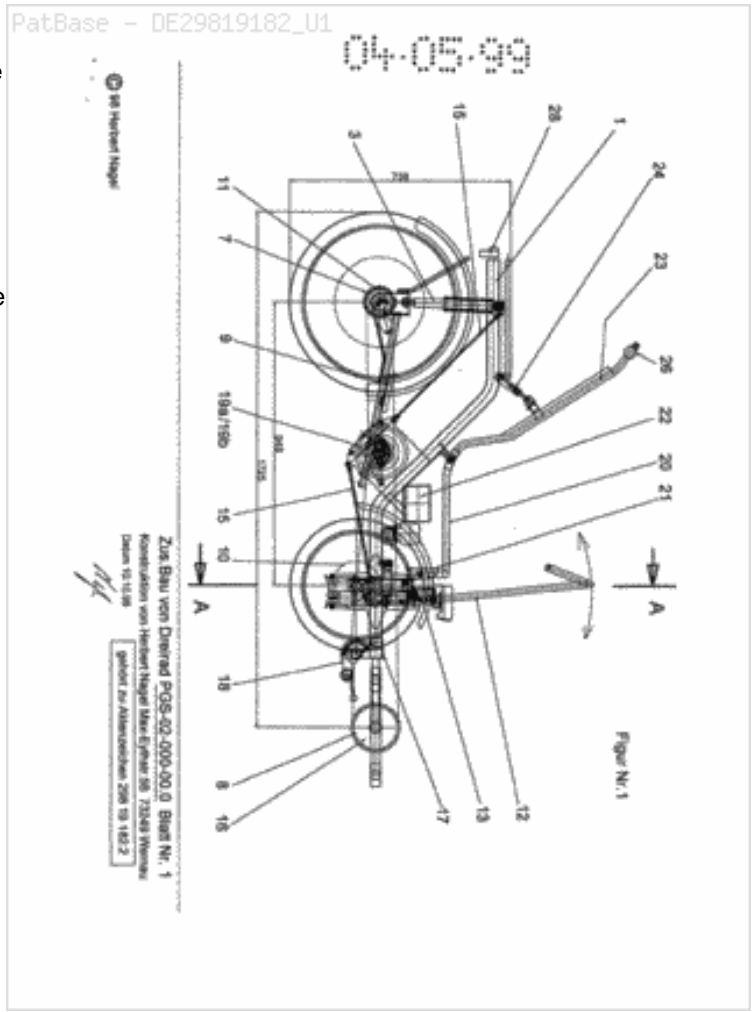
Publication number	Publication date	Application number	Application date
DE29819182 U1	19990610	DE19982019182U	19981028

Probable Assignee:	NAGEL HERBERT DIPL ING
Assignee(s):(std):	NAGEL HERBERT DIPL ING
Assignee(s):	NAGEL HERBERT DIPL ING 73249 WERNAU DE
International class (IPC 8–9):	B62K3/00 B62K5/04 B62K5/05 (Advanced/Invention); B62K3/00 B62K5/00 (Core/Invention)
International class (IPC 1–7):	B62K11/00 B62K5/04
CPC:	B62K3/005 B62K5/05 B62K5/06
European class:	B62K3/00C B62K5/05 B62K5/06

Classification Explorer

Abstract:
Source: DE29819182U1 (Claim 1) Seite Nr. l Aktenzeichen 298 19 182.2 Schutzansprueche f ue r Dreirad (Korrektur vo m 2.5.99)1) Das Dreirad ist dadurch gekennzeichnet, dass der Radrahmen (Pos.l) mit der zweiraedrigenVorderachse (Pos.

Machine translation: (Claim 1) Page No. l file number 298 19 182.2 Schutzansprueche f u r tricycle (Correction 02/05/99 vo m) 1) The tricycle is characterized in that the wheel frame td (Pos.l) with the zweiraedrigenVorderachse (item



0) DE2800514A1 – TRANSPORTABLER PISTENROLLER TRANSPORTABLE MOUNT...

28) Family number: 1686329 (DE2800514A1) © PatBase

Title: TRANSPORTABLER PISTENROLLER TRANSPORTABLE MOUNTAIN DESCENT SCOOTER – HAS DOUBLE FRAME WITH STEERING WHEEL WITH PNEUMATIC TYRE AND THREE ROLLERS OPERATING THROUGH SKID CUT=OUTS

Priority: DE19782800514 19780105

Family:

Publication number	Publication date	Application number	Application date
DE2800514 A1	19790712	DE19782800514	19780105

Probable Assignee: BOEHM RICHARD

Assignee(s):(std)**:** BOEHM RICHARD ; WAGNER LIESELOTTE

Inventor(s):(std)**:** BOEHM RICHARD ; WAGNER LIESELOTTE

International class (IPC 8–9): B60T1/14 B62B13/18 (Advanced/Invention); B60T1/00 B62B13/00 (Core/Invention)

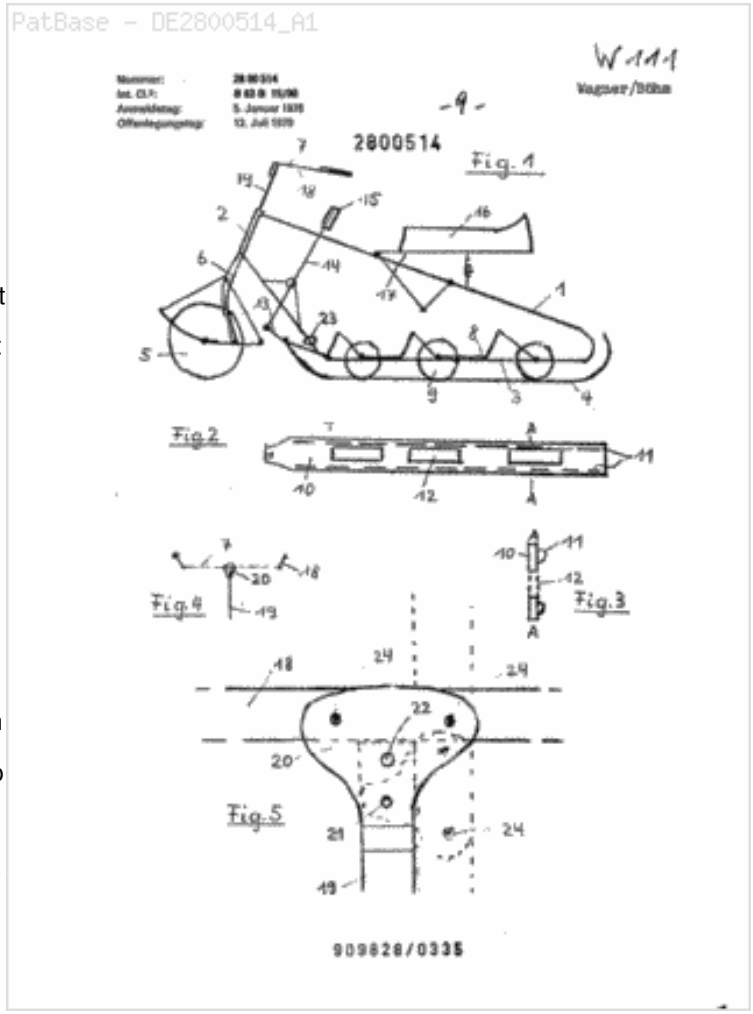
International class (IPC 1–7): B60T1/14 B62B15/00 B62K5/00

CPC: B60T1/14 B62B13/18

European class: B60T1/14 B62B13/18

Classification Explorer

Abstract:
Source: DE2800514A1 Patentansprueche Transportabler Pistenroller g e k e n n z e i c h n e t d u r c h einen geschlossenen Doppeischleifenrahmen (1) mit Lenkwerk (2) und Laufwerk (3) und beweglicher Brems kufe (4), wobei das Lenkwerk (2) aus einem luftbereiften Vorderrad (5) in einem gummigefederten Doppelschwingarm (6) und einem Lenker (7) besteht, das Laufwerk (3) aus 3 am Rahmen (1) gelagerten, an Schwing armen (8) gefederten Rollerraedern (9) besteht und die bewegliche Bremskufe (4) aus einer vorne und hinten aufgebogenen Platte (10) mit Gummibelaegen (11) und Roller radaussparungen (12) besteht und durch Excenterhebel (13) beweglich am Fahr– und Bremshebel (14) mit Feststell griff (15) verbunden ist, sowie einen Sattel (16) mit Federungseinrichtung (15) 2. The descent scooter is light enough to be carried by the user while ascending a mountain and serves for descending down the slope in a controlled way. The scotter has a double frame (1) in a closed loop–shape with a connecting element (2) at the front in which the column (19) of the steering wheel (5) is seated. The lower horizontal side of the loop has three rollers (9) which work together with skid (4) provided with oblong cutouts through which part of the roller circumferences protrude, allowing the rollers to travel over the surface of the terrain. The skid is hinged to the frame and is connected by a linkage to the brake arm (14). To achieve braking the arm is moved to lower the skid into the surface.



- **search:** SS6 ft=vehicle and tilt* and brake* and suspension and two front wheels (Results 16)
- List: SS6 1–50 (ft=vehicle and tilt* and brake* and suspension and two front wheels) (Results 16)

0) US2015210338A – VEHICLE

1) Family number: 56089642 (US2015210338A) © PatBase

Title: VEHICLE

Priority:

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Family:

Publication number	Publication date	Application number	Application date
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Probable Assignee: YAMAHA MOTOR CO LTD

Assignee(s):(std)**:** YAHAMA HATSUDOKI KK ; YAMAHA MOTOR CO LTD

Assignee(s): YAMAHA HATSUDOKI IWATA SHI KK ; YAMAHA HATSUDOKI KK ; YAMAHA HATSUKOKI KK ; YAMAHA MOTOR CO

Inventor(s):(std)**:** HIRAYAMA YOSUKE ; IIZUKA TOSHIO ; KUBO YUTAKA ; MIYAMOTO NOBORU ; OGAWA HIROKATSU ; SASAKI KAORU ; WATANABE TAKAHIRO ; YAMASAKI SHIGETO ; TAKANO KAZUHISA

Inventor(s): TOSHIO IIZUKA ; YOSUKE HIRAYAMA ; YUTAKA KUBO ; TAKAHIRO WATANABE ; NOBORU MIYAMOTO ; KAORU SASAKI ; KAZUHISA TAKANO ; HIROKATSU OGAWA

Agent(s): JUAN PABLO CADENA SARMIENTO; GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; INSAN BUDI MAULANA; ROHALDY MULUK; DIPL ING ROHALDY MULUK; SHIN EI PATENT FIRM PC; KEATING AND BENNETT LLP

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G13/04 B60G17/005 B60G17/016 B60G17/08 B60G21/00 B60G21/05 B60G21/055 B60G3/01 B60G3/20 B60T11/04 B60T11/10 B60T17/04 B60T8/17 B62D35/00 B62D7/00 B62D9/02 B62J15/00 B62J17/00 B62J17/02 B62J23/00 B62K11/02 B62K11/14 B62K19/32 B62K19/38 B62K19/40 B62K21/00 B62K21/02 B62K21/08 B62K21/12 B62K21/16 B62K21/18 B62K21/20 B62K25/00 B62K25/04 B62K25/08 B62K25/24 B62K3/00 B62K5/00 B62K5/01 B62K5/02 B62K5/027 B62K5/05 B62K5/06 B62K5/08 B62K5/10 B62K50/08 B62L1/00 B62L3/02 B62L3/08 B62L5/00 (Advanced/Invention); B60T17/04 B62K5/00 (Advanced/Non–invention); B60G17/005 B62D7/00 B62J15/00 B62J23/00 B62K19/40 B62K21/00 B62K21/02 B62K5/02 B62K5/05 B62K5/08 (Core/Invention)

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US class: 1/1 280/124.103 280/267 280/269 280/5.509 280/62

Classification Explorer

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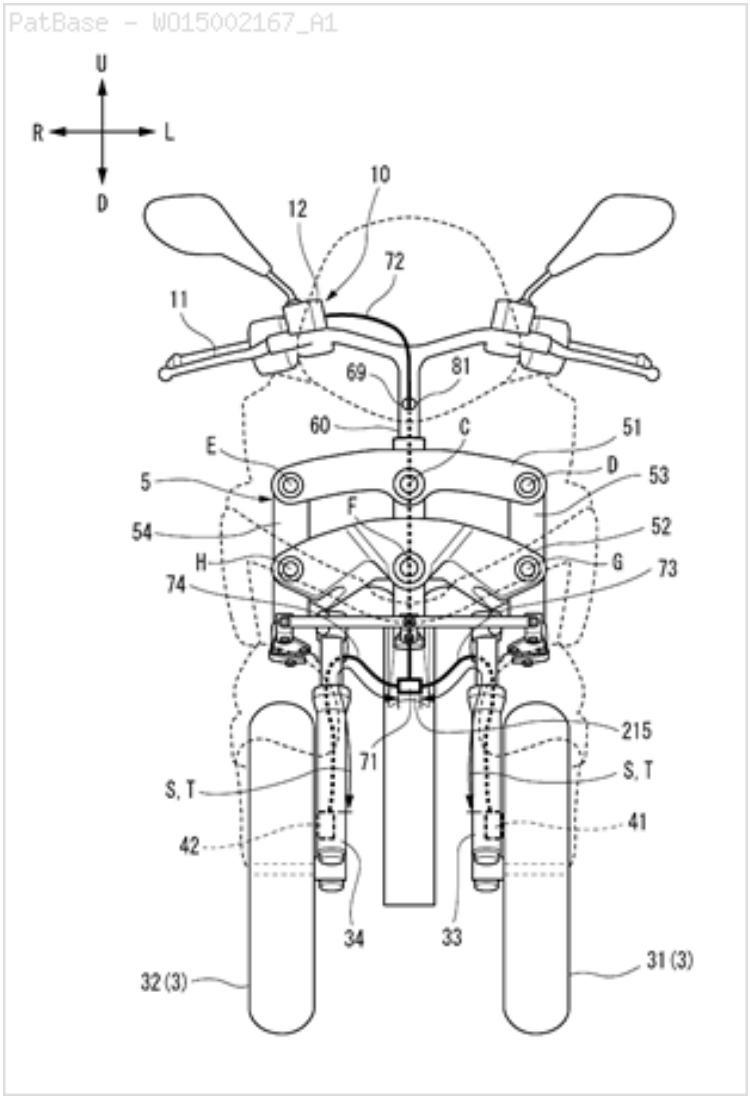
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Forward Citations: WO16052430, WO14181736, WO14181727, US9517807, US9428240, US9428235, US9371106, US9352798, US9340249, US9216790, US2016229480, US2016152292, US2016137253, US2016129964, US2016031520, US2015344091, US2015314827, US2015307149, US2015291241, US2015274244, US2015246704, JP5952516, JP2016175438, EP3144164, EP3069979, EP3069978, EP3069977, EP3069976, EP3002197, EP3002196, CN104743021, CN104554550,

Abstract:
Source: US2015210338A A vehicle includes a center transmission plate, a first center turnable portion configured to turn about a first center turning axis extending in an up−down direction, a second center turnable portion configured to turn about a second center turning axis extending in a front−rear direction, a left transmission plate, a first left turnable portion configured to turn about a first left turning axis extending in the up−down direction, a second left turnable portion configured to turn about a second left turning axis extending in the front−rear direction, a right transmission plate, a first right turnable portion configured to turn about a first right turning axis extending in the up−down direction, and a second right turnable portion configured to turn about a second right turning axis extending in the front−rear direction. A tie rod is supported on the second center turnable portion, the second left turnable portion, and the second right turnable portion.



0) US2001040063A – ENGINE CRADLE FOR A VEHICLE

2) Family number: 31380924 (US2001040063A) © PatBase

Title: Engine cradle for a vehicle

Priority:

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Family:

Publication number	Publication date	Application number	Application date
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Probable Assignee: BOMBARDIER RECREATIONAL PRODUCTS INC

Assignee(s):(std)**:** BOMBARDIER INC ; GIROUARD BRUNO ; FECTEAU BERTHOLD ; DION ANNE MARIE ; BOMBARDIER RECREATIONAL PRODUC ; BOMBARDIER RECREATIONAL PRODUCTS INC ; BOMBARDIER RECREATIONAL PRODUCTS ; AUDET MATHIEU ; BOMBARDIER RECREATIONAL PROD ; WUBBOLTS JEROME ; MASSICOTTE ALAIN

Assignee(s): RASIDESCU MIHAI ; LANGLAIS STEVE ; WATSON PETER ; MALLETTE BERTRAND ; MERCIER DANIEL ; SAVOIE PIERRE ; TALBOT JEAN GUY ; AUBE MARTIN ; GILBERT ANDRE ; COTE MARIO ; FOURNIER ANDRE ; BANK OF MONTREAL ; BEDARD YVON ; BERTRAND ERIC ; BOMBERDIER INC

Inventor(s):(std)**:** AUBE MARTIN ; AUDET MATHIEU ; BEDARD YVON ; BERTHOLD FECTEAU ; BERTRAND ERIC ; BRUNO GIROUARD ; COTE MARIO ; DION ANNE MARIE ; FECTEAU BERTHOLD ; FECTEAU BERTHOLD US ; FOURNIER ANDRE ; GILBERT ANDRE ; GIROUARD BRUNO ; GIROUARD BRUNO 87721201A ; LANGLAIS STEVE ; MALLETTE BERTRAND ; MASSICOTTE ALAIN ; MERCIER DANIEL ; RASIDESCU MIHAI ; SAVOIE PIERRE ; TALBOT JEAN GUY ; WATSON PETER ; WUBBOLTS JER DOT OVER OME ; WUBBOLTS JEROME

Inventor(s): WUBBOLTS JER DOT OVER ; GIROUARD BRUNO 23738400P

Agent(s): SMART AND BIGGAR; OSLER HOSKIN AND HARCOURT LLP; BCF LLP; SOLF ALEXANDER; BOMBARDIER RECREATIONAL PRODUCTS INC, INTELLECTUAL PROPERTY DEPT; BOMBARDIER RECREATIONAL PRODUCTS INC INTELLECTUAL PROPERTY DEPT; OSLER HOSKIN AND HARCOURT LLP (BRP); OSLER HOSKIN AND HARCOURT LLP BRP; PILLSBURY WINTHROP SHAW PITTMAN LLP; BRP LEGAL SERVICES

Designated states: AE AG AL AM AT AU AZ BA BB BE BG BR BY BZ CA CH CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GB GD GE GH GM GR HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK MN MW MX MZ NL NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

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Classification Explorer

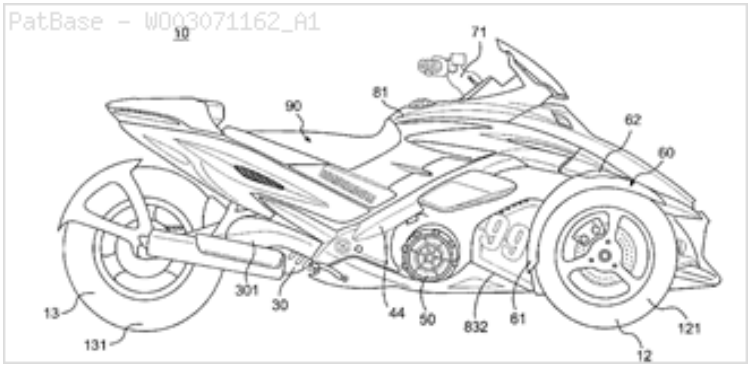
Cited documents: WO9843873 A1, WO0218820 A1, WO0218751 A1, USD449018 S1, USD389440 S1, USD283113 S1, USD175866 S1, USD175666 S1, US7213669 BB, US7014004 BB, US6889787 BB, US6889787 BA, US6868932 BA, US6823957 BB, US6823957 BA, US6796607 BB, US6758197 BB, US6749036 BA, US6733406 BB, US6691812 BB, US6691812 BA, US6685349 BB, US6655487 BB, US6655487 BA, US6651764 BB, US6631925 BA, US6604594 BB, US6604594 BA, US6569056 BB, US6561302 BB, US6561302 BA, US6547027 BA, US6499551 BB, US6499551 BA, US6491125 BB, US6491125 BA, US6491124 BA, US6474662 BA, US6446744 BB, US6446744 BA, US6435522 BA, US6386630 BA, US6357543 BA, US6343666 BA, US6328124 BA, US6286619 BA, US6276482 BA, US6253868 BA, US6235263 BA, US6234263 BA, US6227323 BA, US6224134 BA, US6213514 BA, US6206398 BA, US6170590 BA, US6170590 B1, US6170589 BA, US6155371 A, US6149540 A, US6149288 A, US6109621 A, US6109217 A, US6099097 A, US6086149 A, US6039137 A, US60358436, US60358397, US60358395, US60358394, US60358390, US6024185 A, US6022035 A, US6015022 A, US601418355, US601358439, US601358398, US6009966 A, US6006847 A, US5996717 A, US5992552 A, US5979417 A, US5975624 A, US5960902 A, US5960901 A, US5957230 A, US5947222 A, US5944380 A, US5944133 A, US5904217 A, US5893424 A, US5890558 A, US5860665 A, US5860486 A, US5857538 A, US5855250 A, US5816357 A, US5791760 A, US5791431 A, US5782312 A, US5765846 A, US5762351 A, US5743590 A, US5697452 A, US5685387 A, US5660245 A, US5641180 A, US5634685 A, US5611572 A, US5605642 A, US5586614 A, US5570753 A, US5564517 A, US5544906 A, US5533325 A, US5518081 A, US5515940 A, US5511808 A, US5503242 A, US5495910 A, US5474146 A, US5413187 A, US5372215 A, US5370198 A, US5357775 A, US5279381 A, US5251948 A, US5251773 A, US5251718 A, US5249636 A, US5248011 A, US5236060 A, US5172786 A, US5169367 A, US5127432 A, US5072340 A, US5042606 A, US5038882 A, US5036937 A, US5036931 A, US5031795 A, US5029664 A, US5010989 A, US4913253 A, US4893692 A, US4892165 A, US4892164 A, US4875536 A, US4848503 A, US4848498 A, US4844278 A, US4823895 A, US4804198 A, US4787470 A, US4781264 A, US4779695 A, US4770262 A, US4740004 A, US4735275 A, US4703824 A, US4699229 A, US4697663 A, US4690235 A, US4679647 A, US4662468 A, US4653604 A, US4650442 A, US4650027 A, US4641854 A, US4636922 A, US4633964 A, US4630702 A, US4624469 A, US4620604 A, US4613006 A, US4606429 A, US4600216 A, US4593921 A, US4592737 A, US4573948 A, US4546997 A, US4506753 A, US4505492 A, US4502560 A, US4432107 A, US4421193 A, US4418782 A, US4407383 A, US4361339 A, US4360224 A, US4351410 A, US4348197 A, US4337958 A, US4337529 A, US4325449 A, US4322107 A, US4222453 A, US4204582 A, US4204581 A, US4195702 A, US4184697 A, US4179036 A, US4162605 A, US4088199 A, US4087109 A, US4072325 A, US4058181 A, US4027544 A, US4022484 A, US4020914 A, US4008777 A, US3981373 A, US3931862 A, US3912030 A, US3884314 A, US3884152 A, US3883152 A, US3871460 A, US3870115 A, US3827516 A, US3815696 A, US3804455 A, US3774706 A, US3746118 A, US3736020 A, US3734221 A, US3734219 A, US3698497 A, US3692130 A, US3678635 A, US3666035 A, US3653453 A, US3627073 A, US3622196 A, US3610358 A, US35873702 P, US35843902 P, US35843602 P, US358400, US35839702 P, US35839502 P, US35839402 P, US35839002 P, US3583507 A, US3583506 A, US3578095 A, US3534701 A, US346189, US346188, US3447623 A, US3419098 A, US2987934 A, US2986043 A, US2773392 A, US2746081 A, US2732581 A, US2656904 A, US2493817 A, US2256904 A, US2005205322 AA, US2005205321 AA, US2005205320 AA, US2005126839 AA, US2005115754 AA, US2004134702 AA, US2003201129 AB, US2003201128 AA, US2003183436 AA, US2003127265 AA, US2002053477 AA, US2002020573 AA, US2002017765 AA, US2001047900 AA, US2001040064 AA, US1963273 A, US15602802, US15596402, US1274347 A, US09944159, JPS61163081, JPS5682674, JP9272480, JP8025501, JP7081651, JP64027910 A2, JP63038032, JP63025996 A2, JP6199255 A2, JP61178281 A2, JP61169382 A2, JP61163081 A2, JP61113579 A2, JP61032196 A2, JP61011833 A2, JP60116572 A2, JP60092121 A2, JP6000455, JP59195477 A2, JP59195421 A2, JP59149879 A2, JP59149874 A2, JP59114183 A2, JP59029466 A2, JP58003872 A2, JP56082674 A2, JP53026044 A2, JP5043554 A2, JP5043553 A2, JP5007236 A2,

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Forward Citations: WO16193901, WO16030870, WO15122940, WO15036984, WO13019826, WO10062294, WO09114414, WO08100398, WO08100398, WO07130015, WO07100751, WO03070547, WO03070547, USRE44864, USD761692, USD710274, USD701796, USD695657, USD689794, USD682158, USD678124, USD654420, USD632219, USD631803, USD631395, USD629726, USD629724, USD628129, USD627282, USD627269, USD627263, USD626900, USD603775, USD596081, USD593912, USD593908, USD593455, USD592557, USD592556, USD582823, USD582334, USD581846, USD581845, USD581685, USD581320, USD581319, USD580836, USD580822, USD579380, USD573078, USD552506, USD515457, USD512662, USD495274, USD494889, USD494505, USD494504, USD494503, USD494502, USD494100, USD493390, USD493121, USD490018, USD488404, USD479490, US9610986, US9592713, US9586642, US9555678, US9545967, US9540072, US9506407, US9493185, US9476486, US9446810, US9446661, US9428232, US9387902, US9365232, US9352802, US9346508, US9340248, US9267580, US9266580, US9260152, US9248860, US9227507, US9188198, US9187128, US9162731, US9114844, US9057432, US9050869, US9038502, US9010768, US9004214, US8978794, US8944204, US8936380, US8919477, US8899372, US8897966, US8887853, US8851496, US8844999, US8827291, US8820458, US8801001, US8794106, US8783720, US8783394, US8770601, US8746774, US8733773, US8695746, US8622428, US8613543, US8613534, US8613337, US8590654, US8579063, US8567546, US8555801, US8550514, US8544587, US8540045, US8528683, US8506000, US8490731, US8469137, US8430713, US8430197, US8419104, US8413758, US8408348, US8402861, US8397854, US8393426, US8381857, US8360449, US8342548, US8317257, US8313121, US8312945, US8302726, US8302721, US8302711, US8261683, US8245808, US8226120, US8225896, US8191930, US8191929, US8191677, US8191671, US8191665, US8161929, US8079602, US8075007, US8074759, US8037961, US8029004, US8025540, US8016065, US8007005, US7997372, US7988226, US7954853, US7952305, US7950736, US7950486, US7942447, US7942224, US7926607, US7921948, US7921947, US7905310, US7891455, US7891454, US7870920, US7854290, US7832750, US7819272, US7815000, US7806215, US7802816, US7802646, US7780247, US7779944, US7775313, US7770683, US7753154, US7740100, US7708106, US7708096, US7694768, US7686121, US7661714, US7661501, US7658411, US7644791, US7624829, US7610979, US7591337, US7591332, US7588110, US7571787, US7568733, US7559576, US7543673, US7543672, US7543669, US7537499, US7533749, US7513327, US7478694, US7464781, US7464680, US7448635, US7422083, US7410182, US7401816, US7401674, US7398755, US7383824, US7380628, US7377295, US7360617, US7353898, US7328943, US7328765, US7318494, US7311171, US7303037, US7226136, US7213669, US7213668, US7210439, US7207303, US7204331, US7198127, US7198126, US7188693, US7168998, US7147074, US7124848, US7124847, US7124846, US7124845, US7104353, US7080706, US7063178, US7059440, US7051828, US7048293, US7036619, US7025161, US7011173, US7008014, US7004484, US7000931, US6976550, US6971659, US6971466, US6942050, US6926107, US6904990, US6889787, US6880660, US6823957, US6796395, US6767022, US6758497, US6755271, US6691812, US6561302, US2016236527, US2016229479, US2016194021, US2016159392, US2016075405, US2016023709, US2015267792, US2015021893, US2014319801, US2014291948, US2014262586, US2014167399, US2014085903, US2014062059, US2014025246, US2014004984, US2013200604, US2013153325, US2013153319, US2013032418, US2013032417, US2012205902, US2012187645, US2012145471, US2012126565, US2012090908, US2012014105, US2011317441, US2011284299, US2011278083, US2011275256, US2011272906, US2011219911, US2011198831, US2011198830, US2011186371, US2011174569, US2011168473, US2011132679, US2011115180, US2011089649, US2011048816, US2011045715, US2011012334, US2010320023, US2010288574, US2010288572, US2010263956, US2010230192, US2010194088, US2010108428, US2010108427, US2010089668, US2010078254, US2010078245, US2010071982, US2010071981, US2010059305, US2010044134, US2010013420, US2010012415, US2010012414, US2010006019, US2009322045, US2009321169, US2009308039, US2009302590, US2009301830, US2009294199, US2009280718, US2009267407, US2009250281, US2009224497, US2009218153, US2009211827, US2009184484, US2009154287, US2009152940, US2009107754, US2009095113, US2009057509, US2009020347, US2009000845, US2009000837, US2008284124, US2008277184, US2008257627, US2008238149, US2008223639, US2008217088, US2008203795, US2008202280, US2008196958, US2008185204, US2008185203, US2008185202, US2008173491, US2008173287, US2008142287, US2008135318,

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Abstract:
Source: US2001040063A An engine cradle adapted for receiving an engine includes a left side wall defining a C−shaped opening therein. The engine cradle also includes a right side wall, which is essentially a solid wall that provides a reflective surface for reflecting heat to the engine when contained within the engine cradle. The engine cradle also includes a front wall connected between forward portions of the left and right side walls. The engine cradle also includes a bottom panel and a rear panel connected between bottom portions of the front, left side, and right side walls.



0) US2013068550A – TILTING VEHICLE AND A METHOD OF TILTING A VEHIC...

3) Family number: 44603093 (US2013068550A) © PatBase

Title: TILTING VEHICLE AND A METHOD OF TILTING A VEHICLE WITH REAR WHEEL SUPPORTS HAVING HYDRAULIC CYLINDERS COMMUNICATING THROUGH A PUMP

Priority: GB20100000244 20100108 JP20120547548T 20110107 WO2011GB50018 20110107 JP20160000212 20160104

Family:

Publication number	Publication date	Application number	Application date
EP2521659 A2	20121114	EP20110700575	20110107
GB201000244 A0	20100224	GB20100000244	20100108
GB201100226 A0	20110223	GB20110000226	20110107
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GB2476877 A1	20110713	GB20110000226	20110107
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JP2013516354 T2	20130513	JP20120547548T	20110107
JP2016074427 A2	20160512	JP20160000212	20160104
US2013068550 AA	20130321	US20110520889	20110107
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WO11083335 A2	20110714	WO2011GB50018	20110107
WO11083335 A3	20111006	WO2011GB50018	20110107

Probable Assignee: GALE DAVID A

Assignee(s):(std)**:** DAVID ANDREW GALE ; GALE DAVID A ; GALE DAVID ANDREW

Inventor(s):(std)**:** DAVID ANDREW GALE ; GALE DAVID ANDREW

Agent(s): MARKHAM JONATHAN; ASAMURA PATENT OFFICE PC; ASAMURA KIYOSHI; ASAMURA HAJIME; CONLEY ROSE PC

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G17/005 B60G17/015 B60G17/016 B60G21/00 B60G21/073 B60G21/10 B60G3/14 B60G7/00 B60K5/10 B60W30/02 B62D5/12 B62D9/02 B62D9/04 B62J17/00 B62K25/04 B62K25/18 B62K25/20 B62K5/01 B62K5/027 B62K5/04 B62K5/08 B62K5/10 F16F9/22 (Advanced/Invention)

CPC: B60G3/14 B60G17/015 B62D5/12 B62K25/18 B60G21/073 B60G17/005 B62K5/027 B60W30/02 B62D9/04 B60G21/106 B62K5/08 B60G3/145 B60G7/006 B60G7/008 B60G17/0152 B60G17/0162 B60G21/007 B60G2200/132 B60G2200/1324 B60G2200/144 B60G2200/445 B60G2200/46 B60G2200/462 B60G2202/32 B60G2202/322 B60G2202/413 B60G2202/414 B60G2202/416 B60G2204/12 B60G2204/13 B60G2204/14 B60G2204/4605 B60G2204/62 B60G2204/82 B60G2204/8304 B60G2206/10 B60G2300/122 B60G2300/13 B60G2300/37 B60G2300/45 B60G2400/052 B60G2400/10 B60G2400/204 B60G2400/30 B60G2500/02 B60G2500/40 B60G2800/012 B60G2800/24 B62D9/02 B62K5/10 F16F9/22

European class: B60G17/005 B60G17/015B B60G17/016F B60G21/00D B60G21/073 B60G3/14B B60G7/00D B60G7/00W B62D9/02 B62K5/027 B62K5/10 F16F9/22 L60G200/132 L60G200/1324 L60G200/144 L60G200/445 L60G200/460 L60G200/462 L60G202/32 L60G202/322 L60G202/413 L60G202/414 L60G202/416 L60G204/12 L60G204/130 L60G204/14 L60G204/4605 L60G204/62 L60G204/82 L60G204/8304 L60G206/10 L60G300/122 L60G300/13 L60G300/37 L60G300/45 L60G400/052 L60G400/10 L60G400/204 L60G400/30 L60G500/02 L60G500/40 L60G800/012 L60G800/24

US class: 1/1 180/215 180/216 180/432 280/5.5 280/5.509 280/62

Classification Explorer

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CN201023543 Y, AU1467183 A1,

Forward Citations: WO16001722, WO15193705, WO15123993, WO13186572, WO13005007, WO12104295, USD695644, US9573435, US9381940, US9381785, US9327725, US9283989, US9248857, US9193384, US9186951, US9145168, US9090281, US9045015, US2016082802, US2015165860, US2015091261, US2014358369, US2014312580, US2014252734, US2014252733, JP5952459, GB2533477, GB2528608, GB2528608, GB2492757, GB2492757, DE102014218492, DE102014201670, CN104002902,

Abstract:
Source: US2013068550A There is disclosed herein a vehicle configuration comprising a chassis, at least one front wheel, two rear wheels, and a propulsion unit driving the rear wheels. The rear wheels are connected to the chassis by a wheel support assembly configured for allowing movement of each rear wheel relative to the chassis, a hydraulic cylinder connected to the chassis and the rear wheel supports, and a piston connected the rear wheel supports and the chassis. The piston dividing the hydraulic cylinder into fluidly connected first and second chambers such that movement of hydraulic fluid from the first or second chamber of a hydraulic cylinder to the respective first or second chamber of another hydraulic cylinder displaces the pistons of the hydraulic cylinders in opposing directions relative to the respective housings and causes the chassis to articulate with respect to the surface.

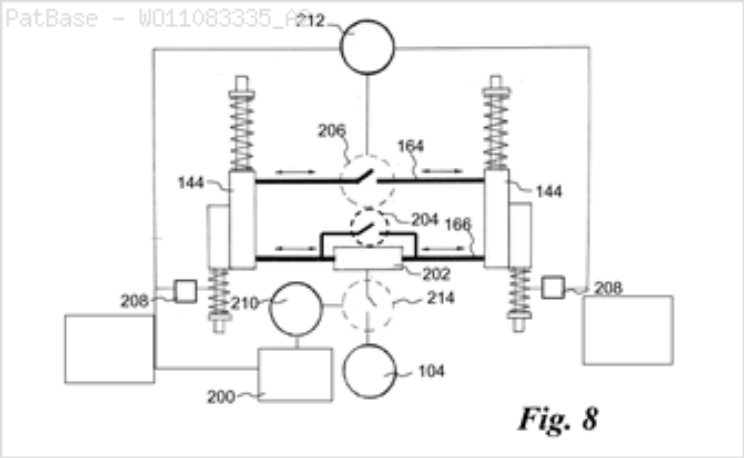


Fig. 8

0) US2003075881A – SEAMLESS CONTROL OF SPRING STIFFNESS IN A LIQUI...

4) Family number: 28517505 (US2003075881A) © PatBase

Title: SEAMLESS CONTROL OF SPRING STIFFNESS IN A LIQUID SPRING SYSTEM

Priority: US20010001128 20011023 US20040493557 20040423 US20090610212 20091030 WO2002US31230 20020930

Family:

Publication number	Publication date	Application number	Application date
AT476306 E	20100815	AT20020802112T	20020930
AU2002363060 AA	20030506	AU20020363060	20020930
DE60237226 D1	20100916	DE20026037226	20020930
EP1446592 A2	20040818	EP20020802112	20020930
EP1446592 A4	20050720	EP20020802112	20020930
EP1446592 B1	20100804	EP20020802112	20020930
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US2010044978 AA	20100225	US20090610212	20091030
US6679504 BB	20040120	US20010001128	20011023
US7891673 BB	20110222	US20040493557	20040423
WO03036125 A2	20030501	WO2002US31230	20020930
WO03036125 A3	20030918	WO2002US31230	20020930

Probable Assignee: LIQUIDSPRING TECHNOLOGIES INC

Assignee(s):(std)**:** CAJULIS CONRAD ; DELORENZIS DAMON ; LIQUIDSPRING TECHNOLOGIES INC ; MEYER RICHARD J

Inventor(s):(std)**:** CAJULIS CONRAD ; DELORENZIS DAMON ; MEYER RICHARD J ; MEYER RICHARD

Inventor(s): RICHARD J MEYER ; CONRAD CAJULIS ; DAMON DELORENZIS

Agent(s): MANITZ FINSTERWALD AND PARTNER GBR; CHRISTIE PARKER AND HALE LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): B60G17/00 B60G17/015 B60G17/019 B60G17/04 E04H9/02 F16F15/02 F16F5/00 F16F9/10 (Advanced/Invention) ; B60G17/00 B60G17/015 B60G17/04 E04H9/02 F16F15/02 F16F5/00 F16F9/10 (Core/Invention)

International class (IPC 1–7): B60G17/00 B60G17/015 B60G17/04 E04H9/02 F16F1/00 F16F15/02 F16F9/10

CPC: B60G17/0432 F16F5/00

European class: B60G17/04H2 F16F5/00

US class: 280/5.5 280/5.500P 280/5.507 280/5.512 280/5.519 280/5.519P 280/6.159 280/6.159P 280/61.59 701/38

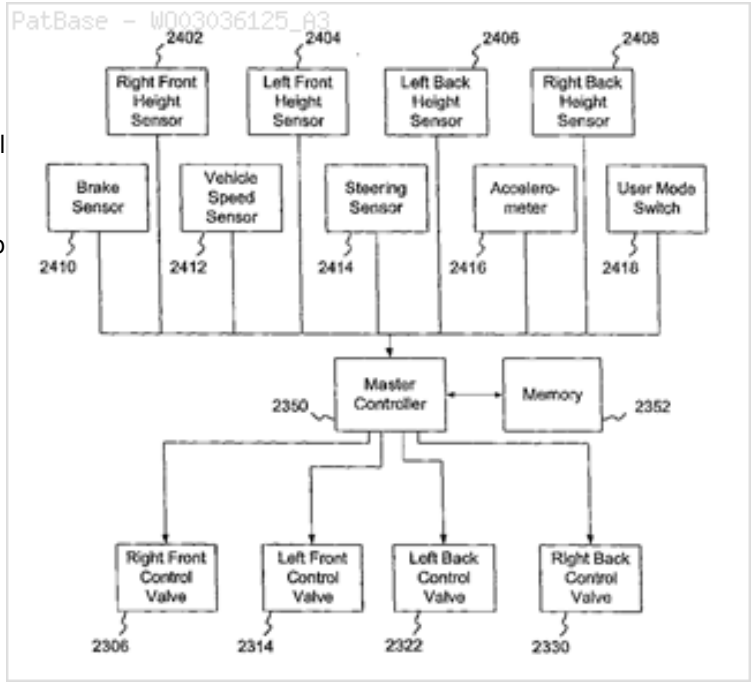
Classification Explorer

Cited documents: WO9423222 A1, US92779592, US6305673 BA, US6295493 BA, US6293530 BA, US5481459 A, US5360230 A, US5347457 A, US5316272 A, US5297653 A, US5269556 A, US5265704 A, US5230529 A, US5152547 A, US5145205 A, US5102161 A, US5099884 A, US5097419 A, US5062659 A, US5020826 A, US5018756 A, US5004264 A, US4975849 A, US4916632 A, US4826205 A, US4793451 A, US4770438 A, US4741516 A, US4733883 A, US4729459 A, US4693493 A, US4686626 A, US4671392 A, US4652008 A, US4638895 A, US4638670 A, US4561641 A, US4546960 A, US4513833 A, US4402527 A, US4333668 A, US4305486 A, US4212087 A, US4182529 A, US4099602 A, US4079923 A, US4031978 A, US3933344 A, US3618928 A,

US3483952 A, US3146862 A, US2225986 A, US2072701 A, US2008048405 AA, JP60226311 A2, JP60179315 A2, JP57160707 A2, GB2227981 A1, GB2192967 A1, FR993524 A, FR933524 A, EP0655356 A1, DK144808 B, DK144808 A, DE3608738 A1,

Forward Citations: WO14176371, WO14176371, US9597940, US9597939, US9574582, US9550404, US9440507, US9428022, US9260011, US9211776, US9174508, US9150076, US9075417, US9035477, US8868294, US8818633, US8774971, US8700191, US8534687, US8517396, US8448962, US8352086, US8075002, US7970516, US7963547, US7770909, US7751959, US7722056, US7679306, US7644943, US7621538, US7509220, US7416189, US7322580, US7287760, US7240906, US6935639, US2016185179, US2014225345, US2014209779, US2014107892, US2013179037, US2010211225, US2010109277, US2010044978, US2009196722, US2009138126, US2009133881, US2009079145, US2008284072, US2008249689, US2008164664, US2008042863, US2007216334, US2006287791, US2006267297, US2006181034, US2005023789, US2004113377, JP2009184663, EP2085299,

Abstract:
Source: US2003075881A A vibration control system for a structure having a first structural member and a second structural member. The vibration control system having a liquid spring operably interposed between the first structural member and the second structural member. The liquid spring uses a compressible liquid to seamlessly generate spring and/or damping forces in the suspension system in response to relative displacement between the first structural member and the second structural member. A second volume of compressible liquid is located in a second chamber. The second volume is removably connected to the liquid spring by a fluid passage. A valve is coupled to the fluid passage, the valve selectively operable to place the second volume in communication with the liquid spring. A controller is electrically coupled to the valve. The controller emitting a control signal to control the valve.



0) WO11029795A1 – TILT CONTROL FOR TILTING VEHICLES COMMANDE D'I...

5) Family number: 48462139 (WO11029795A1) © PatBase

Title: TILT CONTROL FOR TILTING VEHICLES

Priority: AU20090904277 20090908 EP20100754711 20100906 WO2010EP63040 20100906

Family:

Publication number	Publication date	Application number	Application date
CN102596697 A	20120718	CN201080040011	20100906
CN102596697 B	20141210	CN201080040011	20100906
DE602010008282 D1	20130829	DE201060008282T	20100906
EP2475570 A1	20120718	EP20100754711	20100906
EP2475570 B1	20130703	EP20100754711	20100906
EP2628672 A2	20130821	EP20130168191	20100906
EP2628672 A3	20151111	EP20130168191	20100906
IN00409KN2012 A	20121012	IN2012KN00409	20120223
WO11029795 A1	20110317	WO2010EP63040	20100906

Probable Assignee: INO8 PTY LTD

Assignee(s):(std)**:** INO8 PTY LTD ; WILL FRANK

Inventor(s):(std)**:** FRANK WILL ; WILL FRANK

Agent(s): STUMPF PATENTANWAELTE PARTGMBB; KAUFMANN URSULA JOSEFINE; SPACHMANN HOLGER

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K5/027 B62K5/04 B62K5/05 B62K5/08 B62K5/10 (Advanced/Invention)

CPC: B62K5/10 B62K5/027 B62K5/05 B62K5/08

European class: B62K5/027 B62K5/05 B62K5/08 B62K5/10

Classification Explorer

Cited documents: WO09059099 A2, WO06130007 A2, WO06050809 A1, WO0244008 A2, WO02068228 A1, US4351410 A, JP2006341690 A2, EP1988009 A1, EP1362779 A2, CN1269758 A,

Forward Citations: WO15193705, US9428236, US2015123389, JP6063861, JP2015123959, JP2015123951, EP2889210, DE202014104070, DE202014102328, DE102014217247, DE102014217246, DE102014209329, DE102014209328, CN105492299,

Abstract:
The invention relates to a tilting vehicle (10) including a frame (12) freely tiltable transversely between at least two spaced wheels (14, 114), at least one variable damper (28, 30, 148) with adjustable damping force operatively connected between the frame (12) and the two wheels (14, 114), at least one sensor to generate signals indicative of transverse tilting of the frame (12) relative to a central vertical plane of the vehicle, and a controller in communication with the at least one variable damper (28, 30, 148) and the at least one sensor. The controller is configured to vary transverse damping by the at least one variable damper (28, 30, 148) in accordance with the signals generated by the at least one sensor to passively provide transverse tilt stability to the frame (12) through the force generated in the damper in the opposite direction of the damper movement. The invention suggests to transversly damp a freely tiltable frame in accordance to a damping state for enhancing driving security and comfort of the vehicle.

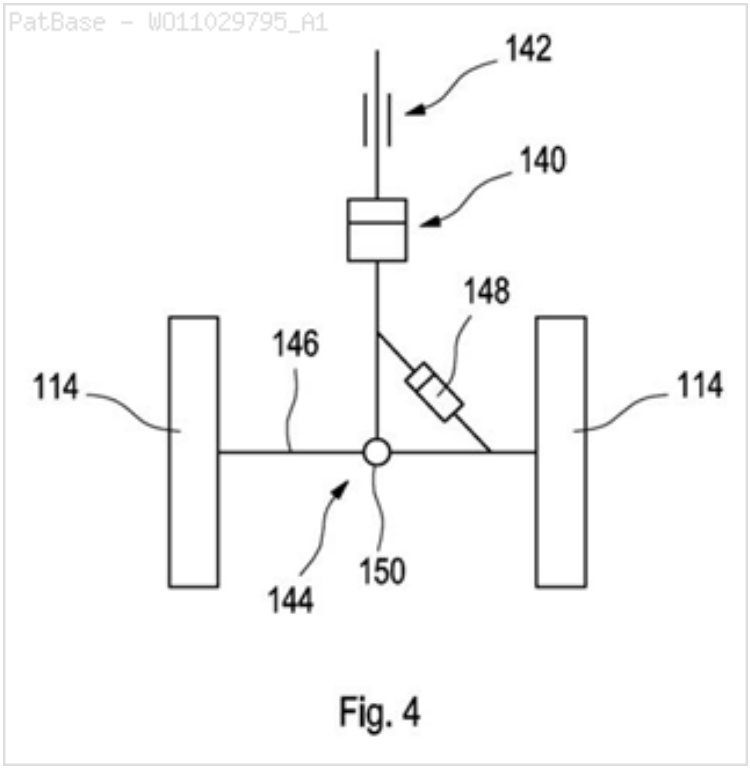


Fig. 4

0) US4217970A – CONFIGURATION AND CONSTRUCTION OF FOUR WHEELED ...

6) Family number: 7850569 (US4217970A) © PatBase

Title: Configuration and construction of four wheeled motor vehicles

Priority: US19740437482 19740128 US19750597311 19750808 US19770857567 19771205 US19770857568 19771205 US19770857566 19771205

Family:

Publication number	Publication date	Application number	Application date
US4217970 A	19800819	US19770857568	19771205
US4227589 A	19801014	US19770857567	19771205
US4229018 A	19801021	US19770857566	19771205
US4290620 A	19810922	US19750597311	19750808

Probable Assignee: CHIKA JOHN J

Assignee(s):(std)**:** CHIKA JOHN J

Inventor(s):(std)**:** CHIKA JOHN J

International class (IPC 8–9)**:** B60G21/055 B62D23/00 B62D31/00 B62K13/06 B62K27/02 B62M6/10 B62M6/25 B62M6/35 (Advanced/Invention)

International class (IPC 1–7)**:** B60K17/00 B62D21/12 B62D61/00 B62K13/06 B62K27/12

CPC: B60G21/055 B62D23/005 B62K5/08 B62K13/06 B62K27/00 B62D31/003 B62K27/02 B62M6/10 B62M6/25

European class: B60G21/055 B62D23/00B B62D31/00B B62K13/06 B62K27/00 B62K27/02 B62K5/08 B62M6/10 B62M6/25

US class: 180/205.7 180/206 180/221 180/298 180/342 180/366 180/89.1 280/203 280/209 280/282 280/283 280/93.514 296/193.05 296/205

Classification Explorer

Cited documents: US784042, US739633 A, US646791 A, US636155 A, US4093258 A, US4028957, US3961807, US3951427, US3941075, US3902738 A, US3894615, US3887210, US3794352 A, US3768834 A, US3517764, US3435701, US3429584, US3013814 A, US2891804, US2691421, US2625230, US2578886 A, US2409887 A, US2248223 A, US1848451 A, US1478316 A, SU553132 T, SU231326 T, IT443900 A, GB728346, GB506208 A, GB189818531 A, GB189622529 A, GB1078535 A, FR971572, FR605567 A, FR601057 A, DE812643 A, DE121044 A, AT182323 B,

Forward Citations: WO9627518, WO16022493, WO15155697, WO15119506, WO14039761, WO13030225, WO11004093, WO07103188, WO07103188, WO07068000, WO04067367, WO04067367, WO03037679, WO0249889, WO0063065, USD766137, USD638333, USD586696, USD586695, USD586261, USD586260, USD585790, USD585789, USD585788, USD575675, USD564410, USD563274, USD507993, USD505364, USD503661, US9394027, US9365251, US9340250, US9321494, US9284007, US9217501, US9211924, US9205730, US9174693, US9114851, US9085335, US9016774, US9004535, US8998216, US8955632, US8944492, US8944301, US8899615, US8894081, US8851558, US8827028, US8827020, US8827019, US8752743, US8746719, US8640796, US8613336, US8613335, US8596405, US8486846, US8397844, US8382125, US8146937, US8141668, US7967312, US7874566, US7819220, US7775538, US7770682, US7721836, US7695393, US7658258, US7530411, US7473204, US7461864, US7213866, US7066530, US7017702, US7004502, US6994179, US6905138, US6860512, US6755265, US6634701, US6631925, US6623067, US6578904, US6561532, US6554308, US6527290, US6435601, US6428086, US6419304, US6311997, US6250711, US6250410, US6170844, US6145922, US6065557, US6059058, US6022036, US6010155, US5934745, US5845937, US5806620, US5741045, US5613918, US5511809, US5292142, US5251721, US4924959, US4834410, US4787647, US4740004, US4425976, US2017021893, US2015210319, US2015069732, US2015042063, US2015014957, US2014224564, US2014224557, US2013263696, US2013187407, US2013092466, US2013056293, US2012318595, US2012242110, US2012098300, US2012037672, US2011308872, US2011285170, US2011272925, US2011048828, US2011018225, US2010314852, US2009178871, US2009114465, US2009001764, US2008314668, US2008246301, US2008023249, US2008023240, US2007261900, US2007207889, US2007144799, US2007000715, US2006151224, US2006033361,

US2005285415, US2005280254, US2005280217, US2005034904, US2004245745, US2004154854, US2004129489, US2004124033, US2004104065, US2004084889, US2004066025, US2004026144, RU2507086, GB2492786, FR2947797, FR2727377, FR2720048, FR2640575, FR2559119, FR2530212, ES2412031, EP2060477, EP1977922, EP1717138, EP0534831, DE4125832, DE19804104, DE19613446,

Abstract:
Source: US4217970A A four−wheeled motor vehicle constructed by operatively coupling two exclusively configured left and right longitudinal side structures by plural, transversely positioned connecting and bracing members. Each side structure operatively supported by its own front wheel adapted for steering and rear wheel adapted for propelling the vehicle. Each of the connecting members comprising a longer mid−portion positioned transversely between the two longitudinal sides, and two shorter end−portions which are secured to correspondingly positioned structurally rigid sections of them. Steering system operatively couples the two front wheels of the two sides for steering thus coupled vehicle. A propulsion plant propels at least one of the wheels. All operating controls are configured for safe and legal operation of the vehicle by its driver. The longer mid−portions of said connecting members support body panels positioned intermediate the two side structures, vehicle floor and seats. The basic configuration is adaptable to be combined into variously configured, open, closed and convertible vehicle bodies. Various facets of the basic concept are adaptable for partial application in construction of new and conversion of existing conventionally constructed motor vehicles of all types.



0) US2911230A – RECIPROCAL SUSPENSION SYSTEM WITH HYDRAULIC TRA...

7) Family number: 20552722 (US2911230A) © PatBase

Title: RECIPROCAL SUSPENSION SYSTEM WITH HYDRAULIC TRANSMISSION

Priority: 19560605 US19570662198 19570528 DE1957R021267 19570601

Family:

Publication number	Publication date	Application number	Application date
DE1121484 B	19620104	DE1957R021267	19570601
FR1151204 A	19580127		19560605
GB857670 A	19610104	GB19570016258	19570522
US2911230 A	19591103	US19570662198	19570528

Probable Assignee: RENAULT

Assignee(s):(std)**:** RENAULT

Assignee(s): REGIE NATIONALE DES USINES RENAULT

Inventor(s):(std)**:** LUCIEN PERAS

Inventor(s): PERAS LUCIEN

International class(IPC 8–9)**:** B60G21/06 (Advanced/Invention); B60G21/00 (Core/Invention)

International class(IPC 1–7)**:** B60G11/32 B60G19/02 B60G19/06 B60G19/10

CPC: B60G21/06

European class: B60G21/06

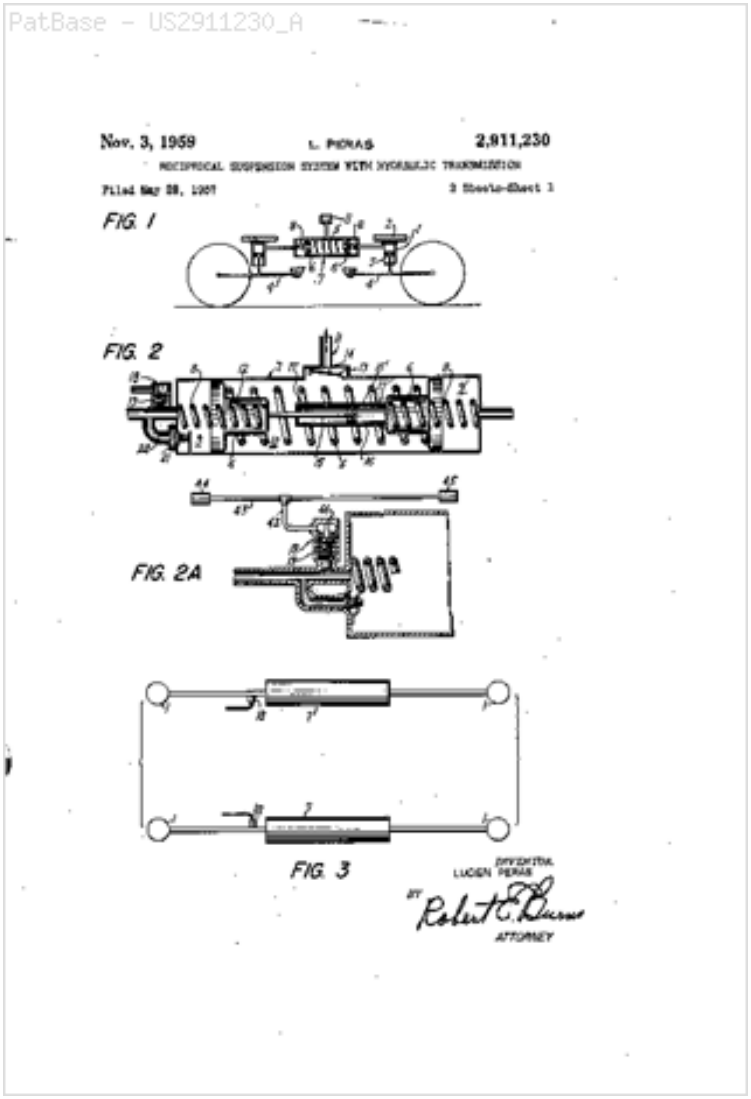
US class: 280/104 280/5.504

Classification Explorer

Cited documents: US1071547 A, FR511468 A, DE905096 A, DE881054 A, DE662850 A, DE32287 A,

Forward Citations: US8777543, US3363913, US3153425, US2012121368, US2010012646, FR2708529, DE1285899, DE10349655,

Abstract:
Source: GB857670A 857,670. Road vehicle spring suspensions. REGIE NATIONALE DES USINES RENAULT. May 22, 1957 [June 5, 1956], No. 16258/57. Class 108(2) In a vehicle suspension system the front and rear wheels on the same side of a vehicle are hydraulically interconnected, through pistons 3, Fig. 1, cylinders 1, or a central cylinder 7. The cylinder 7, Fig. 2, houses a compression spring 5 between pistons 6 which transmit pressure from the road wheels, and a rebounddamping cylinder and piston 16, 15 which allows relatively free compression and damped expansion of the spring 5. Return springs 8 assist in maintaining the system in balanced condition. Spring compression may be retarded if necessary by an orifice 14 in a non−return valve 13. In the embodiment shown in Fig. 3, partial choking of the pipe lines to the front axles is provided during braking by brake actuated pistons 18, Figs. 2, 3, thus stiffening the front suspension and, preventing longitudinal tilting of the vehicle body. A branch pipe 20 and a gaged valve 21 limit the stiffness in case the brakes are applied whilst traversing rough ground. The lateral assemblies may be connected by pipe line 22, Fig. 4. A valve 23, controlled either mechanically or by an inertial weight, closes the pipe 22 when the vehicle body is laterally inclined beyond a predetermined limit. The two lateral assemblies may be connected at both front and rear, by pipes 24, Fig. 5, each having a rolling movement corrector. When a valve 34 is actuated, in the same way as the valve 23, fluid is supplied under pressure through a pipe 37 to either end compartment 29 or 29^1. This pressure acting on either piston 28 or 28^1 moves a three piston assembly 28, 26, 28^1, connected by a rod 30, either right or left, to close a passage 36 between suspension cylinders 7. During this movement a piston 26 draws fluid from one of suspension cylinders 7 and forces the same quantity into the opposite cylinder 7. The action of the valve 34 is so arranged that this transfer tends to correct the lateral canting of the vehicle. Springs 35, 35^1 restore the piston 26 to its rest position when lateral canting has ceased. The suspension spring may be divided into two halves 38, 38^1, Fig. 6, which bear against a flange 39 carried by a bellows 40. Application of the brakes causes shoes 41 to press against the bellows 40 to lock them, thus suppressing interaction between front and rear axles. Body height may be adjusted, the necessary fluid control valve being opened and closed manually or electromagnetically. A pair of pointers may be provided on the instrument panel which register with each other and close the levelling valve when the vehicle body is horizontal or parallel with the ground. The levelling valve is locked closed when the vehicle is in motion.



0) NL2003789C – AN ANIMAL–DRAWN VEHICLE.

8) Family number: 49177165 (NL2003789C) © PatBase

Title: AN ANIMAL–DRAWN VEHICLE.

Priority: NL20092003789 20091111

Family:

Publication number	Publication date	Application number	Application date
BE1020101 AD	20130507	BE20100000658	20101116
NL2003789 C	20110512	NL20092003789	20091111

Probable Assignee: BAGGERMANS HOLDING BV

Assignee(s):(std)**:** BAGGERMANS HOLDING B V ; BAGGERMANS HOLDING BV

Inventor(s):(std)**:** BAGGERMANS GERARDUS PETRUS ANTONIUS

International class (IPC 8–9): B62C1/02 B62C3/00 (Advanced/Invention)

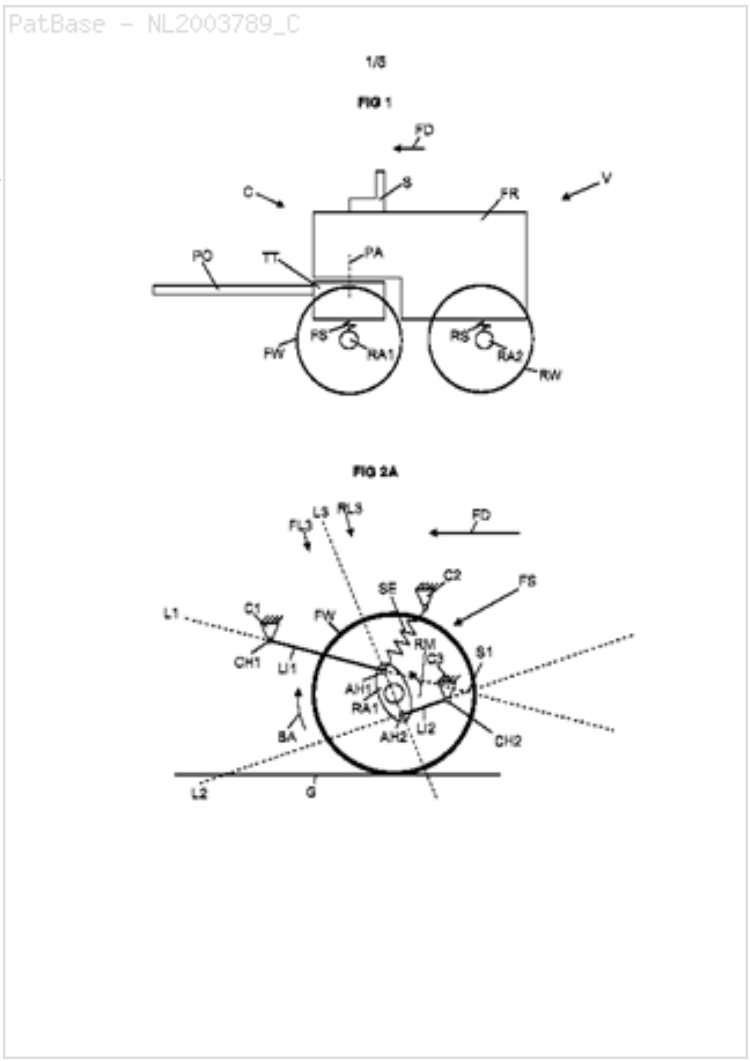
International class (IPC 1–7): B62C1/02 B62C3/00

CPC: B62C3/00 B62C1/02

Classification Explorer

Cited documents: US1467499 A, NL1028614 C2, NL1021655 C2, GB142272 A,

Abstract:
Source: NL2003789C THE INVENTION RELATES TO AN ANIMAL–DRAWN, IN PARTICULAR HORSE–DRAWN, VEHICLE COMPRISING: – TWO FRONT WHEELS ARRANGED ON A RIGID FRONT WHEEL AXLE; – A CHASSIS COMPRISING A FRAME WITH A SEAT FOR A DRIVER, AND A TURNTABLE, WHEREIN THE RIGID FRONT WHEEL AXLE IS MOUNTED TO THE TURNTABLE SO THAT THE RIGID FRONT WHEEL AXLE IS ABLE TO PIVOT ABOUT A SUBSTANTIAL VERTICAL AXIS WITH RESPECT TO THE FRAME; – TWO REAR WHEELS; – AT LEAST ONE DRIVER OPERABLE FRONT BRAKE PROVIDED BETWEEN THE RIGID FRONT WHEEL AXLE AND ONE OF THE FRONT WHEELS; AND – A RIGID FRONT WHEEL AXLE SUSPENSION DEFINING A FRONT SUSPENSION STROKE OF THE RIGID FRONT WHEEL AXLE WITH RESPECT TO THE CHASSIS, CHARACTERIZED IN THAT, IN AT LEAST A PART OF THE FRONT SUSPENSION STROKE THE RIGID FRONT WHEEL AXLE SUSPENSION IS CONFigureD AS A PASSIVE KINEMATIC ANTI–NOSE–DIVE SYSTEM. DIT OCTROOI IS VERLEEND ONGEACHT HET BIJGEVOEGDE RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK EN SCHRIFTELIJKE OPINIE. HET OCTROOISCHRIFT KOMT OVEREEN MET DE OORSPRONKELIJK INGEDIENDE STUKKEN.



0) US2014375015A – MOTORIZED REVERSE TRIKE WITH TILTABLE BODY

9) Family number: 51919259 (US2014375015A) © PatBase

Title: MOTORIZED REVERSE TRIKE WITH TILTABLE BODY

Priority: CN201220033590U 20120114 WO2013CN70385 20130111

Family:

Publication number	Publication date	Application number	Application date
CN202414056 U	20120905	CN201220033590U	20120114
US2014375015 AA	20141225	US20130371315	20130111
US8991542 BB	20150331	US20130371315	20130111
WO13104335 A1	20130718	WO2013CN70385	20130111

Probable Assignee: YU JINJUN

Assignee(s):(std)**:** JINJUN YU ; YU JINJUN

Inventor(s):(std)**:** JINJUN YU ; YU JINJUN

Agent(s): TAROLLI SUNDHEIM COVELL AND TUMMINO LLP; DAN SAMS AND ASSOCIATES

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62D61/06 B62K11/02 B62K11/14 B62K25/08 B62K25/24 B62K5/027 B62K5/05 B62K5/08 B62K5/10 B62L1/02 (Advanced/Invention); B62K5/00 B62L1/02 (Advanced/Non–invention)

CPC: B62K25/24 B62K5/08 B62K2005/001 B62K5/10 B62K5/027 B62K5/05

US class: 180/209 180/210 180/76 280/124.103 280/267

Classification Explorer

Cited documents: US8596660 BB, US8317207 BB, US7562885 BB, US7264251 BB, US6763905 BB, US4887829 A, US4020914 A, US2007029751 AA, US2006151232 AA, US2005167217 AA, US2005167174 AA, US2005012291 AA, TW201117997 A, TW200530057 A, EP1666346 A1, CN202414056 U, CN201670311 U,

Forward Citations: WO13104335, US9545967, US9517807, US9428240, US9428235, US9371106, US9352798, US9340249, US9296420, US9278711, US9238494, US9216790, US8991542, US2016152292, US2016137253, US2016114850, US2015344091, US2015314827, US2015298736, US2015274245, US2015274244, TWI532629, TWI522273, TWI522269, JP5687378, JP2016175439, EP2923931, EP2913256, EP2899105, CN104703870,

Abstract:
Source: US2014375015A A motorized reverse trike with a tiltable body comprises a frame with a header pipe, two front wheels, a tilting mechanism arranged on the header pipe, two suspension mechanisms hinged between the two front wheels and the tilting mechanism respectively, a steering mechanism with handlebars hinged between the header pipe and the two suspension mechanisms, and a locking mechanism for locking the tilting mechanism.

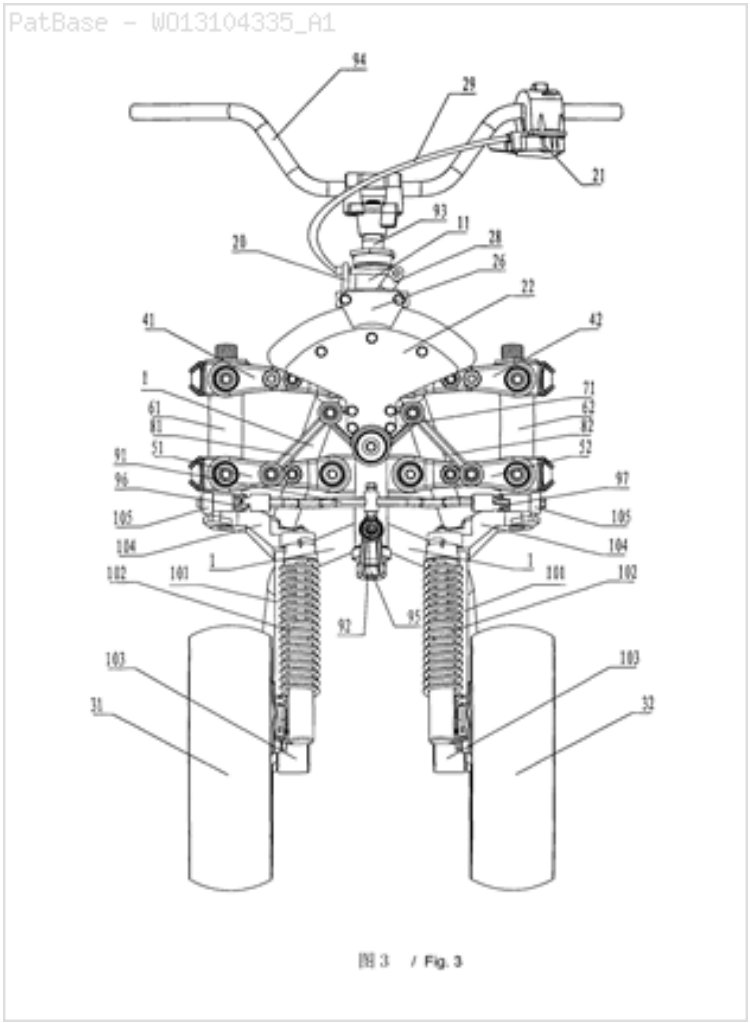


Fig. 3

0) US3254734A – COLLAPSIBLE AUTOMOTIVE VEHICLE

10) Family number: 24901859 (US3254734A) © PatBase

Title: Collapsible automotive vehicle

Priority: CH19630003699 19630322 DE1962Z009423 19620519 FR19630934766 19630514 FR19640983991 19640803 DE1964Z010582 19640111

Family:

Publication number	Publication date	Application number	Application date
AT244160 B	19651227	AT19630004009	19630517
AT247163 B	19660525	AT19640006560	19630517
AT258736 B	19671211	AT19640006559	19630517
BE632309 A	00000000		00000000
CH406866 A	19660131	CH19630003699	19630322
CH451722 A	19680515	CH19640006620	19640521
DE1207804 B	19651223	DE1962Z009423	19620519
DE1480689 A1	19690821	DE19641480689	19640111
DE1480689 C3	19730614	DE1964Z010582	19640111
DK103985 C	19660314	DK19630002365	19630517
FR1362740 A	19640605	FR19630934766	19630514
FR86265 E	19660107	FR19640983991	19640803
GB1003094 A	19650902	GB19630017427	19630502
GB1012379 A	19651208	GB19640035213	19640827
NL135241 C	00000000		00000000
NL292967 A	00000000		00000000
SE309366 B	19690317	SE19630004560	19630425
US3254734 A	19660607	US19630281003	19630516

Probable Assignee: ZWEIRAD UNION AG

Assignee(s):(std)**:** FAUN WERKE ; FAUN WERKE KOMMUNALFAHRZEUGE U LASTKRAFTWAGEN KA ; ZWEIRAD UNION AG ; ZWEIRAD UNION A G

Assignee(s): FAUN WERKE KOMMUNALFAHRZEUGE UND LASTKRAFTWAGEN KARL SCHMIDT ; FAUN–WERKE KOMMUNALFAHRZEUGE UND LASTKRAFTWAGEN KARL SCHMIDT 8500 NUERNBERG ; FAUN WERKE KOMMUNALFAHRZEUGE U LASTKRAFTWAGEN KARL SCHMIDT ; FAUN WERKE KOMMUNALFAHRZEUGE UND LASTKRAFTWAGEN KA

Inventor(s):(std)**:** BEHRMANN G ; GEORG BEHRMANN ; BEHRMANN GEORG

International class(IPC 8–9)**:** B60F5/00 B60G11/08 B60K5/00 B60P3/42 B62D1/18 B62D21/18 B62D31/00 B62D49/06 B62D51/00 (Advanced/Invention) ; B60F5/00 B60G11/02 B60K5/00 B60P3/42 B62D1/18 B62D21/18 B62D31/00 B62D49/00 B62D51/00 (Core/Invention)

International class(IPC 1–7)**:** B60B B60G11/08 B60G3/28 B60G9/02 B60K17/22 B60K17/32 B60K23/00 B62D B62D1/16 B62D1/18 B62D21/12 B62D21/14 B62D3/12 B62D63/02

CPC: B60F5/006 B60F5/003 B60G11/08 B60G2200/422 B60G2202/114 B60G2300/07 B60G2300/26 B60G2300/40 B60K5/00 B60P3/42 B62D1/18 B62D21/186 B62D31/003 B62D31/006 B62D49/0664 B62D51/001

European class: B60F5/00B B60F5/00B2 B60G11/08 B60K5/00 B60P3/42 B62D1/18 B62D21/18C B62D31/00B B62D31/00B2 B62D49/06G B62D51/00B L60G200/160 L60G200/422 L60G202/114 L60G300/07 L60G300/26 L60G300/40

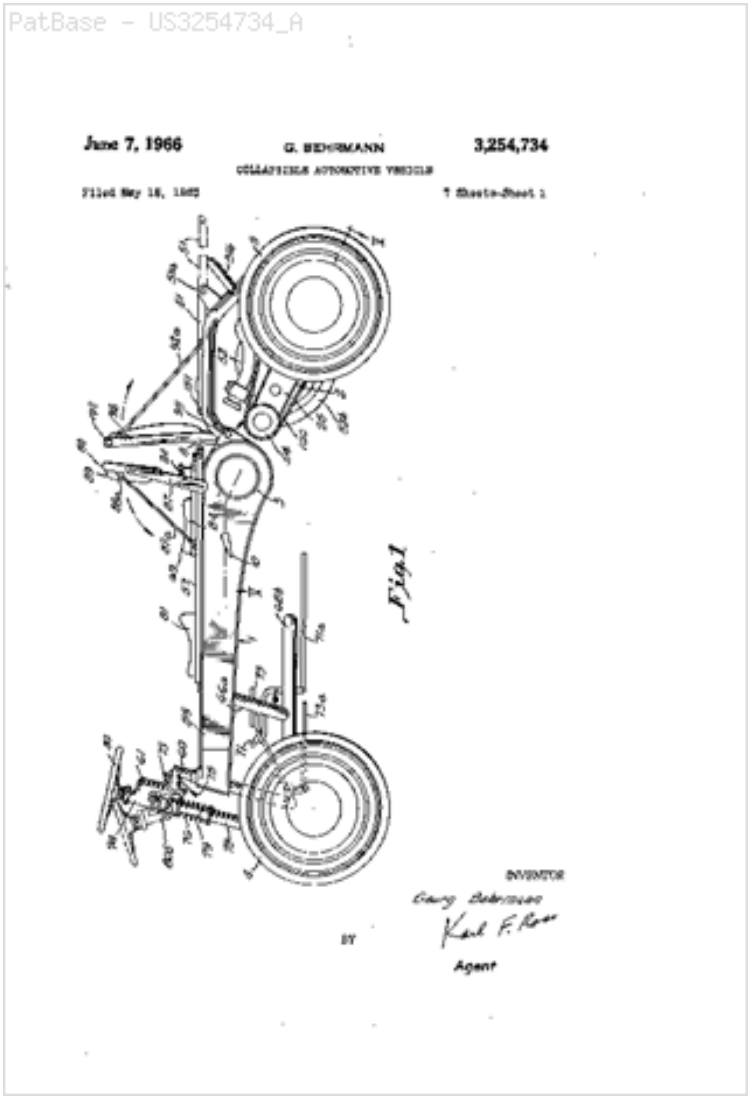
US class: 180/19.1 180/208 180/291 280/639 280/775 296/63

Classification Explorer

Cited documents: US3004619 A, US2974973 A, US2502061 A, US2457400 A, US2260102 A, US1677419 A, US1364280 A, FR528354 A, FR1256269 A, FR1048114 A, DE1094603 B,

Forward Citations: US8899364, US6186252, US6176337, US6129165, US6050593, US5695021, US5020624, US4231144, US3955639, US3850472, US3762490, US3635301, US3329228, GB2468487, GB2468487, GB2304655, GB2304655, GB2242400, FR2694240, FR2495089, EP0464982, DE4027780, DE3130984, DE2941435, DE2421498,

Abstract:
Source: GB1003094A 1,003,094. Seats. ZWEITAD UNION A.G. May 2, 1963 [May 19, 1962], No. 17427/63. Heading A4J. [Also in Division B7] The plates 83, 84 forming part of loading platform 57 of an articulated collapsible vehicle (see Division B7) may be pivoted about their rearward edges to provide cushions 69, 70 for passengers and reveal holes for the legs of persons seated on the cushions. Plate 88 is pivotal on linsk 87 pivoted to the platform between positions forming a backrest (Fig. 10) or an extension of platform 57. A footrest is provided below the platform.



0) US2012258840A – FITNESS DEVICE

11) Family number: 48959514 (US2012258840A) © PatBase

Title: FITNESS DEVICE

Priority: AU20100321056 20101112 AU20170200176 20170111 WO2010EP67410 20101112 DE200910053890 20091120 EP20100779772 20101112

Family:

Publication number	Publication date	Application number	Application date
AU2010321056 AA	20110526	AU20100321056	20101112
AU2017200176 AA	20170202	AU20170200176	20170111
CA2781464 AA	20120518	CA20102781464	20101112
DE502010005924 D1	20140227	DE201050005924T	20101112
EP2501606 A1	20120926	EP20100779772	20101112
EP2501606 B1	20140108	EP20100779772	20101112
ES2464370 T3	20140602	ES20100779772T	20101112
US2012258840 AA	20121011	US20100510332	20101112
WO11061128 A1	20110526	WO2010EP67410	20101112

Probable Assignee: ACTIVECROSS GMBH

Assignee(s):(std)**:** ACTIVECROSS GMBH ; ACTIVECROSS GMBH I G ; EISENBERG WOLFGANG

Assignee(s): ACTIVECROSS GMBH IG

Inventor(s):(std)**:** EISENBERG WOLFGANG

Agent(s): HODGKINSON MCINNES PATENTS; IP SOLVED ANZ PTY LTD; GOWLING LAFLEUR HENDERSON LLP; GOWLING WLG CANADA LLP; PATENTANWAELTE BAUER VORBERG KAYSER PARTNERSCHAFT MBB; BAUER VORBERG KAYSER PATENTANWAELTE; KAYSER MARTIN ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): A63B22/00 A63B22/06 A63B22/20 A63B23/035 A63B69/16 B62K3/00 B62M1/04 B62M1/24 (Advanced/Invention)

CPC: A63B22/001 A63B22/0664 A63B22/20 A63B23/03575 A63B2022/067 A63B2208/0204 B62K5/05 B62K5/08 B62K5/10 B62M1/12 B62M1/26

European class: A63B22/00A6 A63B22/06E A63B22/20 A63B23/035G B62K5/05 B62K5/08 B62K5/10 B62M1/12 B62M1/26 K63B208/02B K63B22/06E2

US class: 482/57

Classification Explorer

Cited documents: WO08132191 A1, US8210555 BB, US7976046 BB, US7967313 BA, US7887070 BB, US7803090 BB, US7762368 BB, US7722071 BA, US7661690 BB, US7543829 BA, US7487985 BA, US7223210 BB, US6708997 BB, US6367824 BA, US6352274 BA, US5762351 A, US5630774 A, US5611757 A, US4903857 A, US4705284 A, US4659106 A, US4351410 A, US2304291 A, US2010194068 AA, US2010007109 AA, US2007262548 AA, US2007182120 AA, US2007075517 AA, US2007040350 AA, US2007001422 AA, US2006255550 AA, US2006022422 AA, US2006009331 AA, US2005248117 AA, US2005085347 AA, US2004251655 AA, US2004018919 AA, US2003214113 AA, US2002047245 AA, EP1982908 A1, DE20319128 U1,

Forward Citations: WO14096470, US9409621, FR2986497, CZ305353,

Abstract:
Source: US2012258840A The invention relates to a fitness device (1) that can be used in a mobile or stationary manner, comprising: a frame (4) on which two front wheels (6) and one rear wheel (5) are disposed, a drive device on each side of the frame (4), each made up of an arm drive rod (2) joined to a leg drive rod (3) by a hinge, wherein the leg drive rod (3) transfers a torque via a ring gear (10) and a chain to the rear wheel (5), a steering device (7) for steering the fitness device (1) in mobile use by means of tilting the frame (4), and a tilting/steering damper formed by damping elements (9) and disposed between the front wheels (6) and the frame (4).

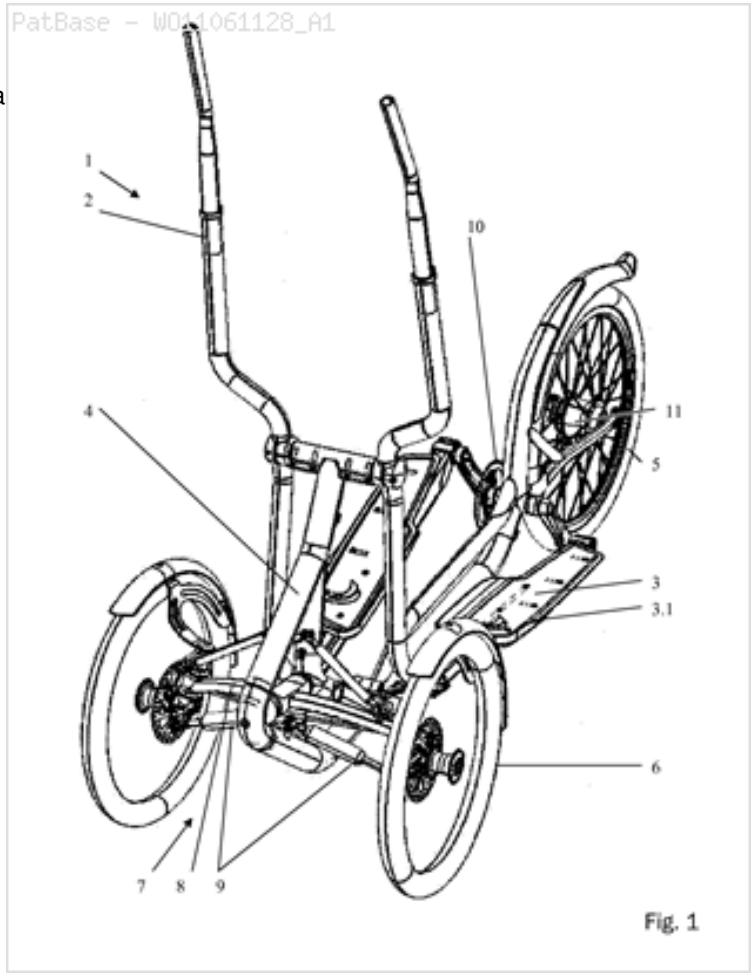


Fig. 1

0) BRPI0704370A – TRICICLO COM DUAS RODAS DIANTEIRAS E UMA TRASEI...

12) Family number: 46859462 (BRPI0704370A)

© PatBase

Title: triciclo com duas rodas dianteiras e uma traseira tricycle with two front wheels and a back (Machine translation)

Priority: BR2007PI04370 20070831

Family:

Publication number	Publication date	Application number	Application date
BRPI0704370 A2	20100908	BR2007PI04370	20070831

Probable Assignee: CEZAR ADEMIR FERREIRA

Assignee(s):(std)**:** CEZAR ADEMIR FERREIRA

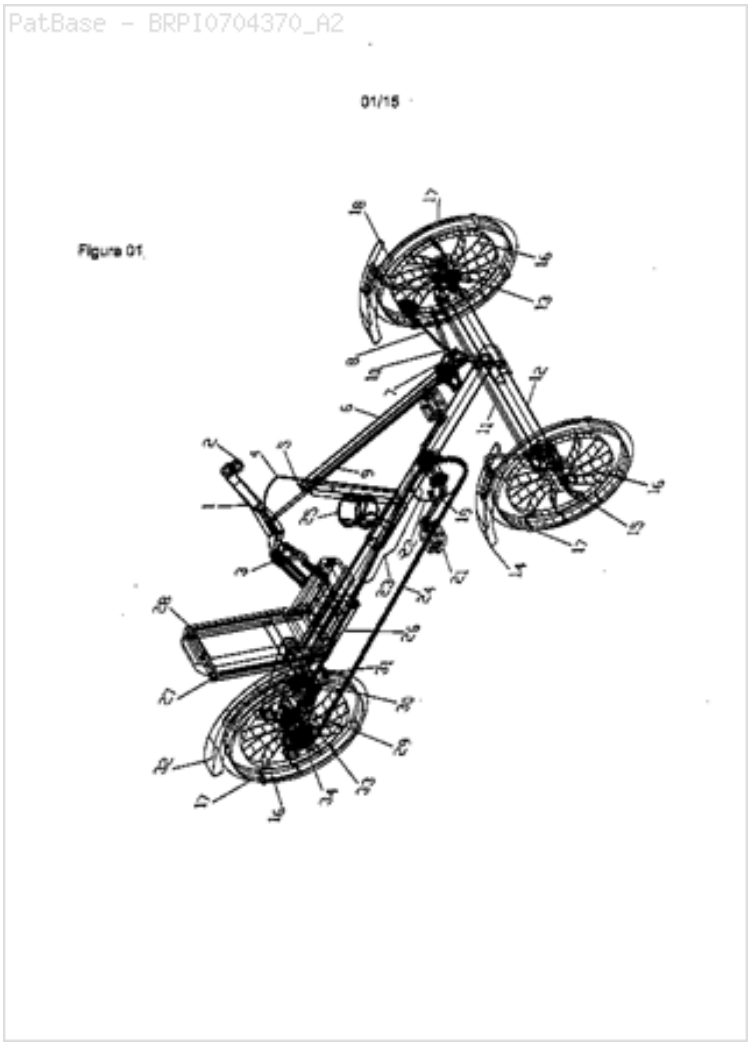
Assignee(s): ADEMIR FERREIRA CEZAR

Inventor(s):(std)**:** CEZAR ADEMIR FERREIRA

Inventor(s): ADEMIR FERREIRA CEZAR

International class (IPC 8–9): B62K5/02 (Advanced/Invention); B62K5/00 (Core/Invention)

Classification Explorer



Abstract:
Source: BRPI0704370A TRICICLO COM DUAS RODAS DIANTEIRAS E UMA TRASEIRA, assegura aos condutores grande seguranca pois desenvolve boa velocidade oferecendo grande estabilidade devido ao sistema de alinhamento das rodas e direcao, com estrutura em aco dividido em quatro modulos ou em peca unico, o sistema de tracao e a pedal e utiliza relacao de bicicleta com marcha ou sem, seu sistema de direcao funciona semelhante ao de um automovel com seu angulo de manobra de aproximadamente 450(graus) com extrema leveza devido ao conjunto de rolamentos utilizado no acoplamento das rodas, o freio adotado e o cantilever que em testes nos demonstrou um melhor resultado na frenagem na roda traseira, seu formato em "T" mantem as tres rodas no chao, o posicionamento do assento na parte de tras do "Triciclo" faz com que o sistema de frenagem trabalhe de forma eficiente, os retrovisores da ao condutor uma boa visibilidade, a facilidade de adaptacao do projeto nos possibilita a sua montagem com motor, freio a disco, sistema de suspensao e banco extra para carona, produzido em quatro modulos conforme segue: Quadro Dianteiro Superior, Quadro Dianteiro Inferior, Quadro Traseiro e Banco conforme identificamos na (figura 3), nesta forma possibilitamos que o transporte do brinquedo seja feito com conforto e seguranca.

Machine translation: TRICYCLE WITH TWO FRONT WHEELS AND a BACK, assures to the conductors great security therefore develops good speed offering great stability due to the system of alignment of the wheels and direction, with structure in steel divided in four modules or in sins only, the system tractive and the pedal and uses relation of bicycle with march or without, its system of direction functions approximately similar to the one of an automobile with its angle of maneuver of 450 (degrees) with the extreme slightness due to the set of rolamentos used in the coupling of the wheels, the adopted brake and cantilever that in tests in it more good demonstrated one result to

them in the lockwire in the back wheel, its format in “T” keeps the three wheels in the soil, the positioning of the seat in the behind part of the “Tricycle” makes with that the lockwire system works of efficient form, the retrovisores of to the conductor a good visibility, the easiness of adaptation of the project in them makes possible its assembly with engine, brake the record, system of suspension and extra bank for hitchhiking, produced in four modules in agreement follows: Superior Front picture, Inferior Front Picture, Back Picture and in agreement Bank we identify in (figure 3), in this form we make possible that the transport of the toy is made with comfort and security.

0) GB825716A – IMPROVEMENTS IN VEHICLE SUSPENSION SYSTEMS

13) Family number: 20717368 (GB825716A) © PatBase

Title:	Improvements in vehicle suspension systems
Priority:	GB19570010942 19570403

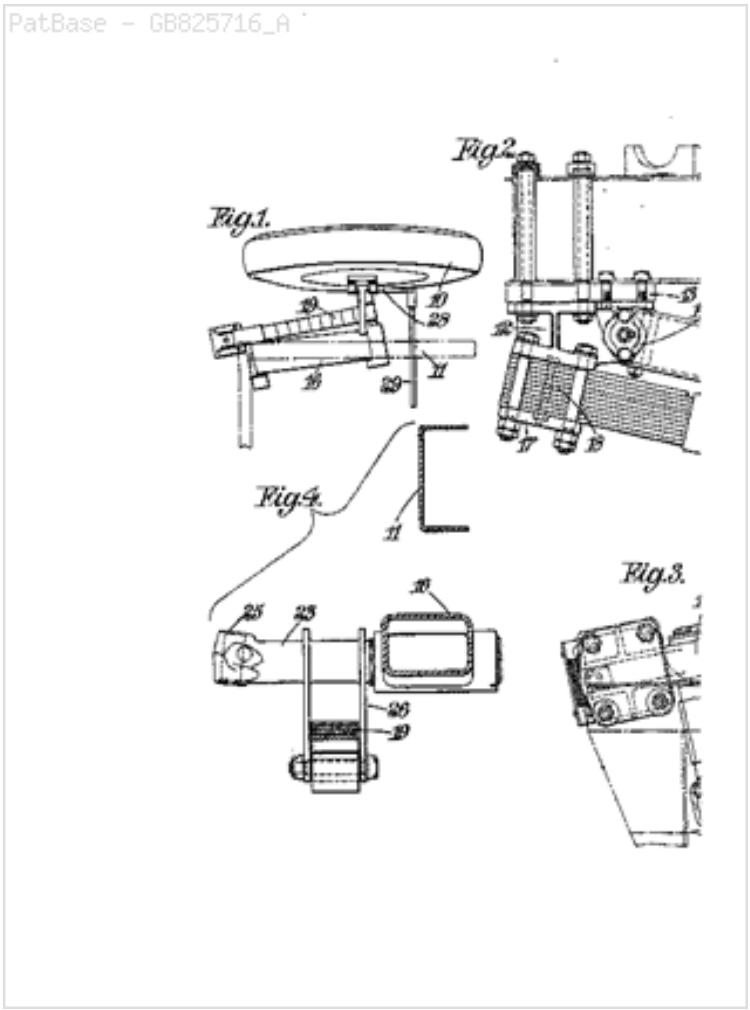
Family:

Publication number	Publication date	Application number	Application date
GB825716 A	19591223	GB19570010942	19570403

Probable Assignee:	TROJAN LTD
Assignee(s):(std):	JOHN BERTRAM PERRETT ; TROJAN LTD
Assignee(s):	TROJAN LIMITED
International class (IPC 8–9):	B60G11/06 (Advanced/Invention); B60G11/02 (Core/Invention)
International class (IPC 1–7):	B60G11/06 B60G3/14
CPC:	B60G11/06 B60G2206/16 B60G2206/162
European class:	B60G11/06 L60G206/16 L60G206/162

Classification Explorer

Abstract:
Source: GB825716A 825,716. Road vehicle spring suspensions. TROJAN Ltd., and PERRETT, J. B. March 25, 1958 [April 3, 1957], No. 10942/57. Class 108(2) A steerable road wheel is carried by a king pin mounted in a bearing 25 carried by a pin 22. The latter is pivotally mounted in the outer end of a trailing suspension link 16 and is downwardly forked at 26 to engage the outer end of a quarter elliptic spring 19. Due to the outward inclination of the parallelogram linkage formed by 16 and 19, the small lateral movement which occurs with up– and–down wheel movements, compensates for change in horizontal distance between the track rod pivots



0) US6685201B – ROAD LUGE

14) Family number: 19180141 (US6685201B)

© PatBase

Title: ROAD LUGE

Priority: US19980046797 19980323 WO1999US04264 19990322

Family:

Publication number	Publication date	Application number	Application date
AU199929754 A1	19991018	AU19990029754	19990322
US6685201 BA	20040203	US19980046797	19980323
WO9948750 A1	19990930	WO1999US04264	19990322

Probable Assignee: SMITH CHARLES T III

Assignee(s):(std)**:** CHARLES T SMITH III ; SMITH CHARLES T III

Assignee(s): SMITH III CHARLES T ; SMITH CHARLES T

Inventor(s):(std)**:** SMITH CHARLES T III ; SMITH III CHARLES T

Inventor(s): CHARLES T SMITH III ; SMITH CHARLES T

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HU ID IE IL IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG UZ VN YU ZW

International class (IPC 8–9): A63C17/01 A63C17/26 B62K3/00 B62K5/05 (Advanced/Invention); A63C17/00 B62K3/00 B62K5/00 (Core/Invention)

International class (IPC 1–7): B62G7/00 B62K1/00 B62M1/00

CPC: A63C17/0026 A63C17/01 A63C17/013 A63C17/014 A63C17/26 A63C2203/42 B62K3/005 B62K5/05

European class: A63C17/00B A63C17/00C A63C17/01 A63C17/01B4 A63C17/01H A63C17/26 B62K3/00C B62K5/05 K63C203/42

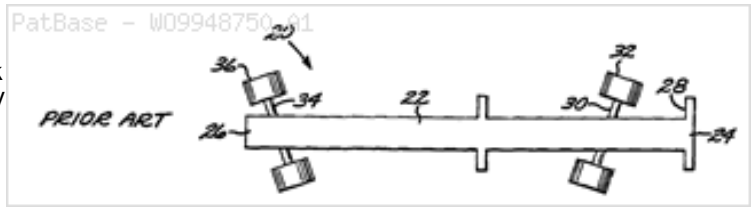
US class: 280/288.1 280/87.01

Classification Explorer

Cited documents: USD332977 S1, US5915707 A, US5785330 A, US5544906 A, US5354084 A, US5354081 A, US5263732 A, US4993733 A, US4796907 A, US4773663 A, US4749207 A, US4592563 A, US4548421 A, US4384731 A, US4336952 A, US4323258 A, US4145064 A, US3913929 A, US3663038 A, US3355184 A,

Forward Citations: WO05075278, WO04056644, WO03000359, USD635212, US9555851, US9211937, US8020881, US7744100, US7635136, US7631884, US7530582, US7374179, US7226067, US7040638, US2015145225, US2012326408, US2010148459, US2010117326, US2010090424, US2010001484, US2008001375, US2007176382, US2007001415, US2006043780, US2005280232, US2004239063, FR2826287, AU2003294515, AU2002329319,

Abstract:



Source: US6685201B A road luge includes an elongated frame having a front end and a back end, a strut extending rearwardly and upwardly from the back end of the frame, a back axle supported on the strut and fixed in orientation relative to the frame, and a single back wheel rotationally mounted on the back axle along the centerline axis of elongation of the frame. The road luge has a front assembly attached to the frame at a location adjacent to the front end of the frame. The front assembly includes two rotationally mounted and steerable front wheels, with one front on either side of the frame. The road luge has a reclining body rest supported on the frame, so that a rider may recline on the body rest with the rider's torso in a substantially horizontal position, and with the rider's feet extending toward the front end of the frame, and the rider's head angled upwardly so as to permit vision toward the front end of the frame.

0) DE2922691A1 – DREIRAD TRICYCLE WITH DRIVEN REAR WHEEL – HAS ...

15) Family number: 1801258 (DE2922691A1) © PatBase

Title: DREIRAD TRICYCLE WITH DRIVEN REAR WHEEL – HAS STEERABLE FRONT WHEELS ON PARALLELOGRAM LINKAGES PERMITTING STEERING AND INCLINATION FROM VERTICAL

Priority: DE19792922691 19790602

Family:

Publication number	Publication date	Application number	Application date
DE2922691 A1	19801211	DE19792922691	19790602

Probable Assignee: MUELLER JOSEF

Assignee(s):(std)**:** MUELLER JOSEF

Inventor(s):(std)**:** MUELLER JOSEF

International class (IPC 8–9)**:** B62K3/00 B62K5/04 B62K5/05 (Advanced/Invention); B62K3/00 B62K5/00 (Core/Invention)

International class (IPC 1–7)**:** B62K5/02

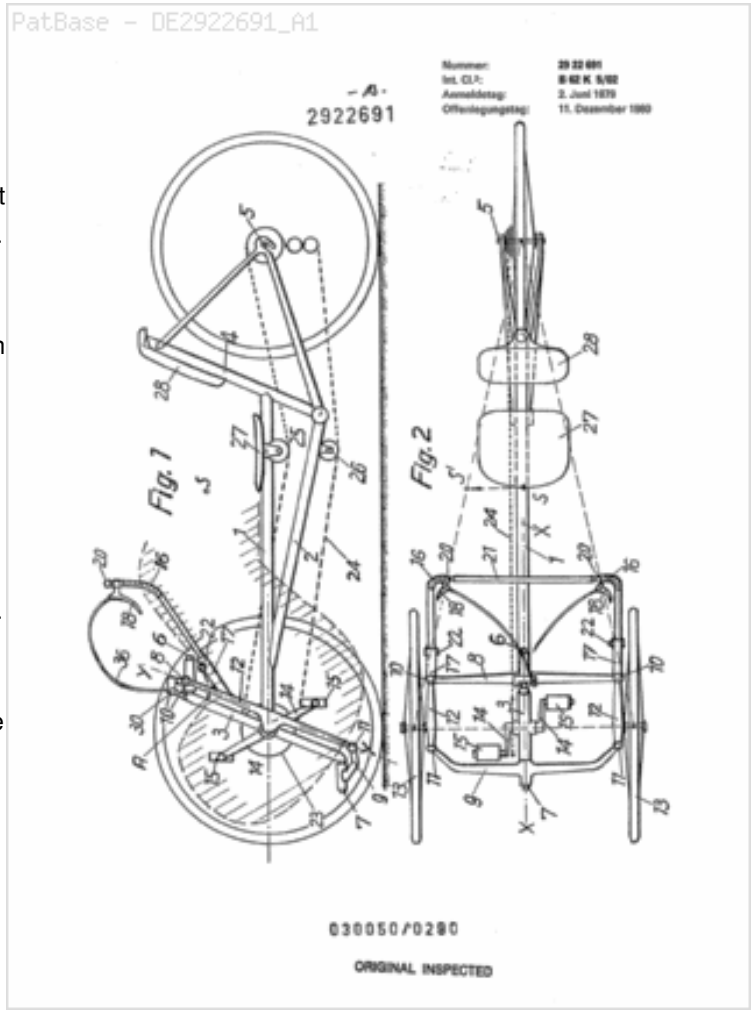
CPC: B62K3/005 B62K5/05 B62K5/10

European class: B62K3/00C B62K5/05 B62K5/10

Classification Explorer

Forward Citations: WO9313470, WO04062994, US5437467, US5415422, US5388847, US4410198, JP5703130, JP5687378, JP2012245861, FR2848152, FR2688465, FR2499015, EP0560670,

Abstract:
Source: DE2922691A1
Patentansprueche,reirad mit zwei an Achsschenkeln gelenkten Vorderraedern, schmaler Spurweite und angetriebenem Hinterrad, dadurch gekennzeichnet, dass die Achsschenkel (12,12) an den oberen und unteren Enden ueber Kugelgelenke (10,11) mit Querschwingen (8,9) so untereinander verbunden sind, dass sie zusammen mit in der Mitte der Schwingen (8,9) an Achszapfen (6,7) aufge haengten Mittelrohrrahmen (3,1,2,4) ein doppeltes Gelenk viereck (10,11,7,6) bilden, wobei die beiden Achszapfen(6,7) am Rahmen (3,1,2,4) nur eine zur Laengsachse // Achse (Achse x–x) Schwingbewegungen zulassen, die vier Kugelgelenke an den Schwingen– und Achsschenkelenden (10,11,zO,1t dagegen sowohl eine Drehung zur Laengsachse // Achse, als auch eine Drehbewegung um die Achsen (y–y) der Achsschenkel (12,1zu zwecks Lenkung des Fahrzeugs ermoeglichen 2. The triangle has two front wheels (13) with narrow track width carried on steering arms (12), as well as a driven rear wheel. The upper and lower ends of the arms are coupled by ball–joints (10, 11) to transverse rods (8, 9) whose centres are pivoted (6, 7) to the main frame (1) and to a central rod (3) parallel to the arms respectively, to form a double parallelogram linkage. The pivots only allow rotation about axes parallel to the longitudinal tricycle axis (x–x), whilst the four ball joints allow rotation about axes parallel to this axis and about the arm centre lines to permit steering motion.



0) DE29819182U1 – TRICYCLE DREIRAD

16) Family number: 16992596 (DE29819182U1) © PatBase

Title:	Tricycle
Priority:	DE19982019182U 19981028

Family:

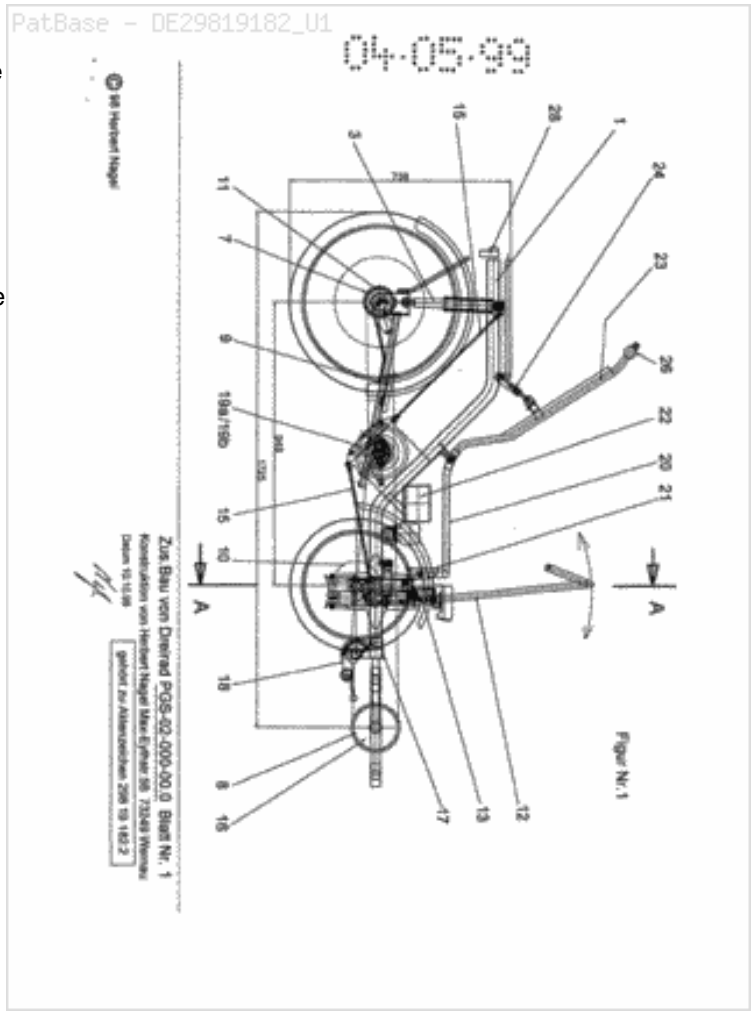
Publication number	Publication date	Application number	Application date
DE29819182 U1	19990610	DE19982019182U	19981028

Probable Assignee:	NAGEL HERBERT DIPL ING
Assignee(s):(std):	NAGEL HERBERT DIPL ING
Assignee(s):	NAGEL HERBERT DIPL ING 73249 WERNAU DE
International class (IPC 8–9):	B62K3/00 B62K5/04 B62K5/05 (Advanced/Invention); B62K3/00 B62K5/00 (Core/Invention)
International class (IPC 1–7):	B62K11/00 B62K5/04
CPC:	B62K3/005 B62K5/05 B62K5/06
European class:	B62K3/00C B62K5/05 B62K5/06

Classification Explorer

Abstract:
Source: DE29819182U1 (Claim 1) Seite Nr. l Aktenzeichen 298 19 182.2 Schutzansprueche f ue r Dreirad (Korrektur vo m 2.5.99)1) Das Dreirad ist dadurch gekennzeichnet, dass der Radrahmen (Pos.l) mit der zweiraedrigenVorderachse (Pos.

Machine translation: (Claim 1) Page No. l file number 298 19 182.2 Schutzansprueche f u r tricycle (Correction 02/05/99 vo m) 1) The tricycle is characterized in that the wheel frame td (Pos.l) with the zweiraedrigenVorderachse (item



- **search:** SS7 ft=vehicle and tilt* and two front wheels (Results 188)
- List: SS7 1–50 (ft=vehicle and tilt* and two front wheels) (Results 188)

0) US2015210338A – VEHICLE

1) Family number: 56089642 (US2015210338A) © PatBase

Title: VEHICLE

Priority:

EP20130838840	20130924	EP20130863895	20131220	JP20120209873	20120924
JP20120209874	20120924	JP20120235605	20121025	EP20130864751	20131220
JP20120279974	20121221	JP20130138479	20130701	JP20130138478	20130701
JP20120276255	20121218	JP20120276257	20121218	JP20120278878	20121221
JP20120278879	20121221	JP20120279996	20121221	JP20130138483	20130701
WO2013JP75619	20130924	JP20130138481	20130701	JP20130138482	20130701
JP20130205459	20130930	JP20140509400	20131024	WO2013JP75691	20130924
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JP20140528741	20131218	JP20140528714	20131218	JP20150500699	20140630
WO2013JP78876	20131024	WO2013JP75720	20130924	WO2013JP83937	20131218
WO2013JP83933	20131218	WO2013JP78867	20131024	WO2013JP84285	20131220
WO2013JP84341	20131220	WO2013JP84284	20131220	WO2013JP84266	20131220
WO2014JP67480	20140630	WO2014JP67478	20140630	WO2014JP67479	20140630

Family:

Publication number	Publication date	Application number	Application date
AP201408950 A0	20151231	AP20140008950	20140630
AP201508374 A0	20150430	AP20150008374	20130924
AP201508375 A0	20150430	AP20150008375	20130924
AP201508376 A0	20150430	AP20150008376	20130924
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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G13/04 B60G17/005 B60G17/016 B60G17/08 B60G21/00 B60G21/05 B60G21/055 B60G3/01 B60G3/20 B60T11/04 B60T11/10 B60T17/04 B60T8/17 B62D35/00 B62D7/00 B62D9/02 B62J15/00 B62J17/00 B62J17/02 B62J23/00 B62K11/02 B62K11/14 B62K19/32 B62K19/38 B62K19/40 B62K21/00 B62K21/02 B62K21/08 B62K21/12 B62K21/16 B62K21/18 B62K21/20 B62K25/00 B62K25/04 B62K25/08 B62K25/24 B62K3/00 B62K5/00 B62K5/01 B62K5/02 B62K5/027 B62K5/05 B62K5/06 B62K5/08 B62K5/10 B62K50/08 B62L1/00 B62L3/02 B62L3/08 B62L5/00 (Advanced/Invention); B60T17/04 B62K5/00 (Advanced/Non–invention); B60G17/005 B62D7/00 B62J15/00 B62J23/00 B62K19/40 B62K21/00 B62K21/02 B62K5/02 B62K5/05 B62K5/08 (Core/Invention)

CPC: B62J17/02 F16D65/0062 F16D65/12 B62K21/20 B62K25/08 B60G3/20 B60G21/0553 B60G2300/12 B60G2800/012 B62K5/06 B62J17/00 B62K5/02 B60G2200/144 B62K5/01 B62J15/00 B62J23/00 B62K5/00 B62K25/04 B60G17/0162 B60G17/08 B60G21/05 B60G2204/82 B60G2204/83 B62K21/00 B62K19/40 B60T17/04 B62L3/08 B62K2005/001 B62L5/006 B62K25/00 B62K21/12 B62K5/027 B62K19/38 B60T7/102 B60T11/16 B60T17/046 B62L3/023 B62K5/10 B62K5/05 B62K5/08 B60G3/01 B60G2200/44 B60G2204/422 B60G2204/8302 B60G2300/122 B60G2300/45 B62D9/02 B62K21/18 B62K2202/00 B62K21/02 B60G17/005

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Classification Explorer

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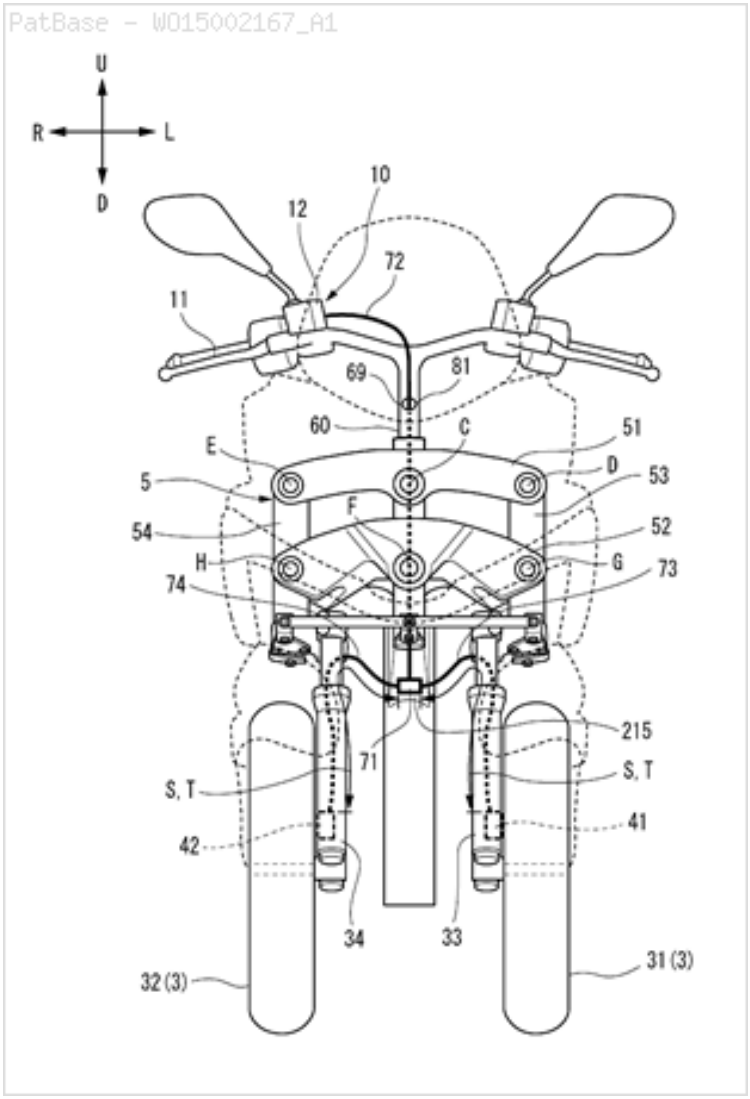
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Forward Citations: WO16052430, WO14181736, WO14181727, US9517807, US9428240, US9428235, US9371106, US9352798, US9340249, US9216790, US2016229480, US2016152292, US2016137253, US2016129964, US2016031520, US2015344091, US2015314827, US2015307149, US2015291241, US2015274244, US2015246704, JP5952516, JP2016175438, EP3144164, EP3069979, EP3069978, EP3069977, EP3069976, EP3002197, EP3002196, CN104743021, CN104554550,

Abstract:
Source: US2015210338A A vehicle includes a center transmission plate, a first center turnable portion configured to turn about a first center turning axis extending in an up−down direction, a second center turnable portion configured to turn about a second center turning axis extending in a front−rear direction, a left transmission plate, a first left turnable portion configured to turn about a first left turning axis extending in the up−down direction, a second left turnable portion configured to turn about a second left turning axis extending in the front−rear direction, a right transmission plate, a first right turnable portion configured to turn about a first right turning axis extending in the up−down direction, and a second right turnable portion configured to turn about a second right turning axis extending in the front−rear direction. A tie rod is supported on the second center turnable portion, the second left turnable portion, and the second right turnable portion.



0) US2001040063A – ENGINE CRADLE FOR A VEHICLE

2) Family number: 31380924 (US2001040063A) © PatBase

Title: Engine cradle for a vehicle

Priority:

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Designated states: AE AG AL AM AT AU AZ BA BB BE BG BR BY BZ CA CH CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GB GD GE GH GM GR HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK MN MW MX MZ NL NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

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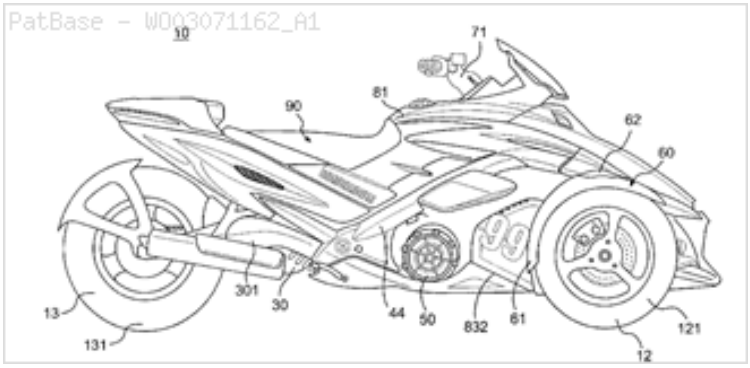
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Abstract:
Source: US2001040063A An engine cradle adapted for receiving an engine includes a left side wall defining a C−shaped opening therein. The engine cradle also includes a right side wall, which is essentially a solid wall that provides a reflective surface for reflecting heat to the engine when contained within the engine cradle. The engine cradle also includes a front wall connected between forward portions of the left and right side walls. The engine cradle also includes a bottom panel and a rear panel connected between bottom portions of the front, left side, and right side walls.



3) Family number: 28329158 (US2002001076A) © PatBase

Title: Method and apparatus for measuring vehicle wheel scrub radius

Priority:

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Family:

Publication number	Publication date	Application number	Application date
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Probable Assignee: SNAP ON INC

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Assignee(s): SNAP ON INC ; SNAP ON TECHNOLOGEIES INC ; SNAP ON INCORP ; GLICKMAN STEPHEN ; GLICKMAN STEPHEN L ; JACKSON DAVID A ; SHROFF HOSHANG ; SNAP ON TECHNOLOGIES INC

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Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CY CZ DE DK DM DZ EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

International class (IPC 8–9): B62D17/00 G01B11/00 G01B11/02 G01B11/22 G01B11/26 G01B11/275 G01B21/02 G01B21/26 G01B5/00 G01B5/255 G01B7/315 G01M17/007 G01M17/06 (Advanced/Invention); G01B11/00 G01B11/275 G01B5/24 (Core/Invention)

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US class: 33/203 33/203.12 33/203.120P 33/203.18 33/203.180P 33/203P 33/264 33/286 33/288 33/293 33/293P 356/139.09 356/139.090P 356/155 356/620 382/151 701/29 701/36 701/36P 702/94

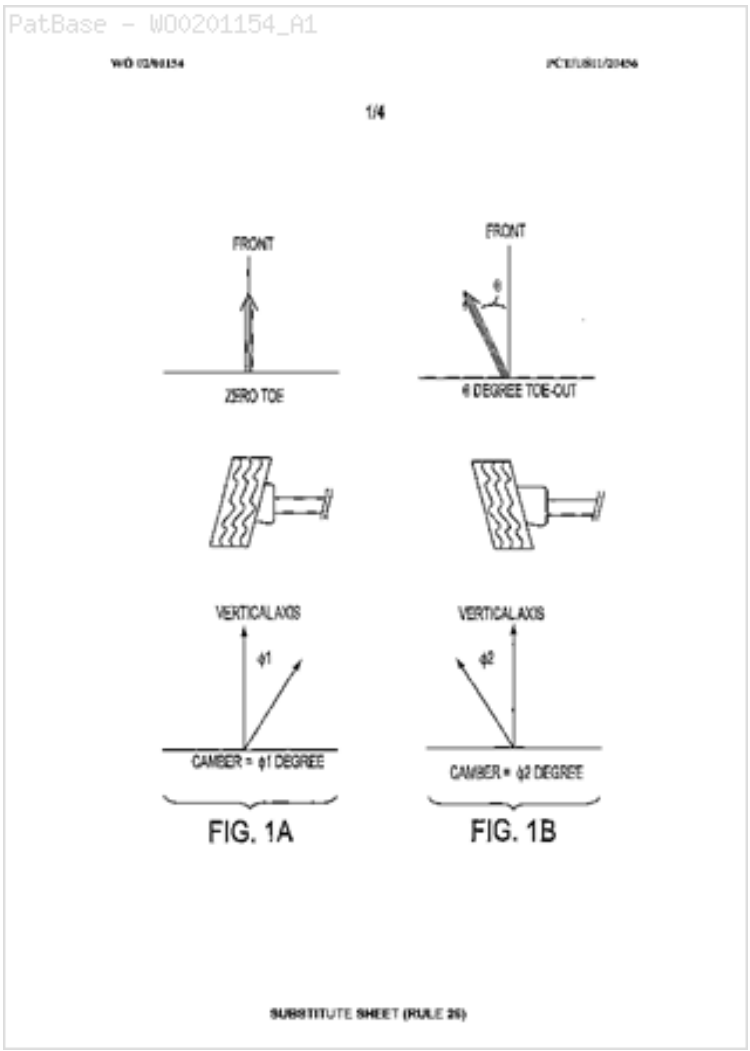
Classification Explorer

Cited documents: WO9903018 A1, WO99023464, WO9848241 A1, WO98012503, WO9714015 A1, WO9307443 A1, WO01023834, US6279246 BA, US6226879 BA, US6115927 A, US6070332 A, US6064750 A, US6043875 A, US5978077 A, US5969246 A, US5943783 A, US5886782 A, US5886781 A, US5875418 A, US5832617 A, US5812256 A, US5809658 A, US5748301 A, US5724743 A, US5724128 A, US5675515 A, US5586062 A, US5553389 A, US5535522 A, US5519488 A, US5515613 A, US5489983 A, US5488472 A, US5440392 A, US5365668 A, US5341575 A, US5291660 A, US5291660, US5220399 A, US5218556 A, US5208646 A, US5207002 A, US5165177 A, US5090235 A, US5029397 A, US5024001 A, US5014227 A, US5001988 A, US4977524 A, US4945645 A, US4782599 A, US4726122 A, US4679327 A, US4643578 A, US4589509 A, US4479382 A, US4466196 A, US4311386 A, US4303338 A, US4249824 A, US4176463 A, US4110913 A, US3953134 A, US3844222 A, US3822430 A, US3643337 A, US3566476 A, US3473374 A, US3330044 A, US3187440 A, US1886588 A, US1850065 A, US05291660, JP9133510 A2, JP8501155, JP8261747, JP60202305 A2, JP56111401 A2, JP11513789, JP10073422, JP08501155, JP08261747, GB2283090 A1, GB2258315 A1, GB22258315, GB2180117 A1, FR971205 A, FR757231 A, FR2735861 A1, EP2258315, EP22258315, EP0971205 A2, EP0757231 A1, EP0533143 A2, DE2650577 A1, DE19852446 A1, DE19730524 C1, DE19634505 C1,

Forward Citations: WO16100604, WO15031834, WO10086219, WO09018523, WO06130694, WO06130694, USD554543, US9587934, US9544545, US9477978, US9476800, US9448138, US9330448, US9300864, US9290184, US9212907, US9188419, US9021872, US8875407, US8830452, US8780189, US8724123, US8561307, US8559753, US8548672, US8539684, US8509878, US8490290, US8448342, US8401236, US8341848, US8230609, US8215023, US8104185, US8033028, US7937844, US7930834, US7913405, US7877883, US7870677, US7855783, US7810244, US7788815, US7780070, US7755402, US7703213, US7703212, US7698826, US7640673, US7637021, US7550710, US7532742, US7458165, US7444752, US7424387, US7415324, US7380344, US7373726, US7328124, US7313869, US7308971, US7307737, US7302093, US7206716, US7165337, US7152333, US7143519, US7069660, US7064818, US7040029, US6912477, US6894771, US6871409, US6748796, US6661505, US2015094911, US2015000390, US2014354818, US2014245623, US2014161583, US2014000516, US2013194446, US2013132027, US2011265337, US2011185584, US2011170089, US2011146089, US2010177304, US2010165332, US2010107429, US2010037473, US2010010660, US2009126208,

US2009073425, US2009056152, US2009031782, US2008296857, US2008271328, US2008209744, US2008208998, US2008192371, US2008192113, US2008119978, US2008086900, US2008040942, US2007101595, US2007068016, US2007032932, US2007021883, US2007009136, US2006282999, US2006282043, US2006156562, US2006143931, US2006139183, US2006112573, US2006080015, US2005231388, US2005133309, US2005060899, US2005041239, US2005027473, US2005022398, US2004172170, US2004130618, US2004128844, US2004051864, US2003187610, US2003154050, JP2008512291, FR2966586, EP2918971, EP2918970, EP2171397, EP1886091, EP1886091, EP1498688, DE202009015720, DE10393821, DE102012011518, DE102009007291, CN105051486, CN104742968, CN104713499, CN104482893, CN103874903, CN103443580, CN103403492, CN103403492, CN103109156, CN102826073, CN102735457, CN102735457, CN102735456, CN102384728, CN102384728, CN102168977, CN102147227, CN101893425,

Abstract:
Source: US2002001076A An apparatus and method for measuring a scrub radius of a wheel including determining at least one of a steering axis, a centerline and a ground plane of the wheel using computer–aided alignment, and determining the other of the steering axis, the centerline and the ground plane of the wheel not determined using computer–aided alignment. The method also includes determining an intersection between the steering axis and the ground plane of the wheel, determining an intersection between the centerline and the ground plane of the wheel, and determining a distance between the intersections, the distance being equal to the scrub radius of the wheel.



0) US2013068550A – TILTING VEHICLE AND A METHOD OF TILTING A VEHIC...

4) Family number: 44603093 (US2013068550A) © PatBase

Title: TILTING VEHICLE AND A METHOD OF TILTING A VEHICLE WITH REAR WHEEL SUPPORTS HAVING HYDRAULIC CYLINDERS COMMUNICATING THROUGH A PUMP

Priority: GB20100000244 20100108 JP20120547548T 20110107 WO2011GB50018 20110107 JP20160000212 20160104

Family:

Publication number	Publication date	Application number	Application date
EP2521659 A2	20121114	EP20110700575	20110107
GB201000244 A0	20100224	GB20100000244	20100108
GB201100226 A0	20110223	GB20110000226	20110107
GB2476807 A1	20110713	GB20100000244	20100108
GB2476807 B2	20121031	GB20100000244	20100108
GB2476877 A1	20110713	GB20110000226	20110107
GB2476877 B2	20170118	GB20110000226	20110107
IN01824KN2012 A	20130308	IN2012KN01824	20120720
JP2013516354 T2	20130513	JP20120547548T	20110107
JP2016074427 A2	20160512	JP20160000212	20160104
US2013068550 AA	20130321	US20110520889	20110107
US9381785 BB	20160705	US20110520889	20110107
WO11083335 A2	20110714	WO2011GB50018	20110107
WO11083335 A3	20111006	WO2011GB50018	20110107

Probable Assignee: GALE DAVID A

Assignee(s):(std)**:** DAVID ANDREW GALE ; GALE DAVID A ; GALE DAVID ANDREW

Inventor(s):(std)**:** DAVID ANDREW GALE ; GALE DAVID ANDREW

Agent(s): MARKHAM JONATHAN; ASAMURA PATENT OFFICE PC; ASAMURA KIYOSHI; ASAMURA HAJIME; CONLEY ROSE PC

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G17/005 B60G17/015 B60G17/016 B60G21/00 B60G21/073 B60G21/10 B60G3/14 B60G7/00 B60K5/10 B60W30/02 B62D5/12 B62D9/02 B62D9/04 B62J17/00 B62K25/04 B62K25/18 B62K25/20 B62K5/01 B62K5/027 B62K5/04 B62K5/08 B62K5/10 F16F9/22 (Advanced/Invention)

CPC: B60G3/14 B60G17/015 B62D5/12 B62K25/18 B60G21/073 B60G17/005 B62K5/027 B60W30/02 B62D9/04 B60G21/106 B62K5/08 B60G3/145 B60G7/006 B60G7/008 B60G17/0152 B60G17/0162 B60G21/007 B60G2200/132 B60G2200/1324 B60G2200/144 B60G2200/445 B60G2200/46 B60G2200/462 B60G2202/32 B60G2202/322 B60G2202/413 B60G2202/414 B60G2202/416 B60G2204/12 B60G2204/13 B60G2204/14 B60G2204/4605 B60G2204/62 B60G2204/82 B60G2204/8304 B60G2206/10 B60G2300/122 B60G2300/13 B60G2300/37 B60G2300/45 B60G2400/052 B60G2400/10 B60G2400/204 B60G2400/30 B60G2500/02 B60G2500/40 B60G2800/012 B60G2800/24 B62D9/02 B62K5/10 F16F9/22

European class: B60G17/005 B60G17/015B B60G17/016F B60G21/00D B60G21/073 B60G3/14B B60G7/00D B60G7/00W B62D9/02 B62K5/027 B62K5/10 F16F9/22 L60G200/132 L60G200/1324 L60G200/144 L60G200/445 L60G200/460 L60G200/462 L60G202/32 L60G202/322 L60G202/413 L60G202/414 L60G202/416 L60G204/12 L60G204/130 L60G204/14 L60G204/4605 L60G204/62 L60G204/82 L60G204/8304 L60G206/10 L60G300/122 L60G300/13 L60G300/37 L60G300/45 L60G400/052 L60G400/10 L60G400/204 L60G400/30 L60G500/02 L60G500/40 L60G800/012 L60G800/24

US class: 1/1 180/215 180/216 180/432 280/5.5 280/5.509 280/62

Classification Explorer

Cited documents: WO9961302 A1, WO9947372 A1, WO9941096 A1, WO9727071 A1, WO8100088 A1, WO13005007 A1, WO11083335 A2, WO11005945 A1, WO09106978 A1, WO09087595 A1, WO08150173 A2, WO08065436 A1, WO08011917 A1, WO05075278 A1, WO04056645 A1, WO0136253 A1, WO0018597 A1, USRE32736 E, US8613340 BB, US8249775 BB, US6435522 BA, US5927424 A, US4351410 A, US2743941 A, US2184202 A, US2014312580 AA, US2011095494 AA, US2010324808 AA, US2010032915 AA, US2010007109 AA, US2009121448 AA, US2009057048 AA, US2008238005 AA, US2008012262 AA, US2007262549 AA, US2007193803 AA, US2007126199 AA, US2005212247 AA, JP61229608 A2, JP61125973 A2, JP5741278, JP57041278 A2, JP56500769 T2, JP5213253 A2, JP4938318, JP49038318 A2, JP4100724 A2, JP2009544509 T2, JP2008505797 T2, JP11197191 A2, GB2492757 A1, GB2476807 A1, GB2450740 A1, GB2444250 A1, GB2155410 A1, GB1561253 A, FR2654990 A1, FR2646379 A1, EP2000336 A1, EP1561612 A1, EP1437324 A1, DE9414724 U, DE4035128 A1, DE20217112 U1, DE1947232 A1, DE10227417 A1,

DE102009056105 A1

CN201023543 Y, AU1467183 A1,

Forward Citations: WO16001722, WO15193705, WO15123993, WO13186572, WO13005007, WO12104295, USD695644, US9573435, US9381940, US9381785, US9327725, US9283989, US9248857, US9193384, US9186951, US9145168, US9090281, US9045015, US2016082802, US2015165860, US2015091261, US2014358369, US2014312580, US2014252734, US2014252733, JP5952459, GB2533477, GB2528608, GB2528608, GB2492757, GB2492757, DE102014218492, DE102014201670, CN104002902,

Abstract:
Source: US2013068550A There is disclosed herein a vehicle configuration comprising a chassis, at least one front wheel, two rear wheels, and a propulsion unit driving the rear wheels. The rear wheels are connected to the chassis by a wheel support assembly configured for allowing movement of each rear wheel relative to the chassis, a hydraulic cylinder connected to the chassis and the rear wheel supports, and a piston connected the rear wheel supports and the chassis. The piston dividing the hydraulic cylinder into fluidly connected first and second chambers such that movement of hydraulic fluid from the first or second chamber of a hydraulic cylinder to the respective first or second chamber of another hydraulic cylinder displaces the pistons of the hydraulic cylinders in opposing directions relative to the respective housings and causes the chassis to articulate with respect to the surface.

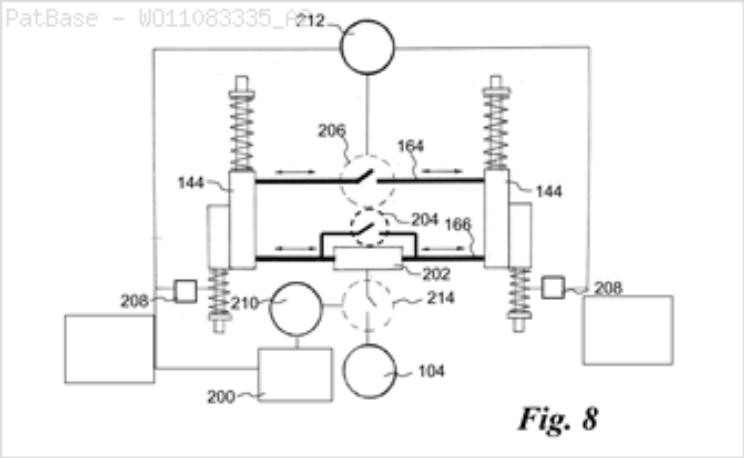


Fig. 8

0) US2013062133A – VEHICLE HAVING VARIABLE TRACK

5) Family number: 49957155 (US2013062133A) © PatBase

Title: VEHICLE HAVING VARIABLE TRACK

Priority: AU20110254665 20110516 AU20120254910 20121120 EP20100461516 20100517 EP20100460056 20101231 WO2011EP57895 20110516

Family:

Publication number	Publication date	Application number	Application date
AU2011254665 AA	20111124	AU20110254665	20110516
AU2012254910 AA	20121213	AU20120254910	20121120
CA2799898 AA	20121116	CA20112799898	20110516
CN103124668 A	20130529	CN201180024611	20110516
CN103124668 B	20151202	CN201180024611	20110516
DE602010002544 D1	20121018	DE201060002544T	20100517
DE602010016965 D1	20140807	DE201060016965T	20101231
EP2388153 A1	20111123	EP20100461516	20100517
EP2388153 B1	20120822	EP20100461516	20100517
EP2388179 A1	20111123	EP20100460056	20101231
EP2388179 B1	20140625	EP20100460056	20101231
ES2393907 T3	20121228	ES20100461516T	20100517
ES2523755 T3	20141201	ES20100460056T	20101231
IN10949DN2012 A	20141010	IN2012DN10949	20121217
JP2013530079 T2	20130725	JP20130510583T	20110516
JP5849363 B2	20160127	JP20130510583T	20110516
KR20130124455 A	20131114	KR20127032819	20110516
RU2012154241 A	20140627	RU20120154241	20110516
RU2570184 C2	20151210	RU20120154241	20110516
US2013062133 AA	20130314	US20110698669	20110516
US8746388 BB	20140610	US20110698669	20110516
WO11144574 A1	20111124	WO2011EP57895	20110516

Probable Assignee: JAXA NETWORKS

Assignee(s):(std)**:** BUDWEIL RAFAL ; JAXA NETWORKS

Inventor(s):(std)**:** BUDWEIL RAFAL

Agent(s): ACACIA LAW; INTEGRAL IP; PAWLOWSKI ADAM; ZEA BERNABE; KUROSE YASUHISA; MIYAZAKI TADAAKI; RYUKA IP LAW FIRM; MARK M

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60B35/10 B60B35/18 B62D49/06 B62D61/06 B62D61/08 B62D61/12 B62D7/00 B62D7/14 B62D9/00 B62D9/02 B62K5/04 B62K5/08 (Advanced/Invention)

CPC: B62D21/14 B62D9/00 B60B35/1063 B60B35/109 B60B2900/531 B60Y2200/221 B62D7/14 B62D9/02

European class: B60B35/10B6 B60B35/10C4 B62D7/14 B62D9/00 B62D9/02 L60B900/531 L60Y200/221

US class: 180/209

Classification Explorer

Cited documents: WO9950128 A1, US7832741 BB, US7780197 BB, US6902022 BB, US5927424 A, US5927424, US5137101 A, US4717164 A, US4717164, US4395191 A, US3820497 A,

US2788858 A, US2008190682 AA, US2006170171 AA, US2006170171, US05927424, US0170171, SU1150141, JP9272481 A2, JP9272481, JP7033060 A2, JP7033060, JP64063484 A2, JP61226301 A2, JP61226301, JP5039073 A2, JP5039073, JP4071380 U, JP4071380 U, JP40019529 B4, JP40019529 B1, JP40019529 B1, JP3147325 U, JP3147325 U, JP1063484, JP09272481, JP07033060, JP05039073, JP04071380 U, JP01063484, GB191106388 A, FR2844245 A1, FR1504753 A, EP1533214 A1, EP1066191 B1, CN1460613 A, CN101148176 A,

Forward Citations: WO15073341, WO15056266, WO14060238, US9387881, US2016227698, US2016129936, US2015273942, RU2503571, FR3017590, EP2872376, DE102015202927, CN104608840, CN104149851, CN103231625,

Abstract:
Source: US2013062133A A vehicle comprising a front axle with a pair of front wheels (111, 112) having a track width adjustable between a wide track and a narrow track, a drive rear axle with a rear wheel (121), steering means configured to control the turn of the rear wheel (121) when the front wheels (111, 112) are set to the narrow track and track width control means configured to change the track width of the front wheels (111, 112) and to change the wheel base between the front axle and the rear axle such that for the wide track of the front wheels (111, 112) the wheel base is longer than for the narrow track of the front wheels (111, 112).

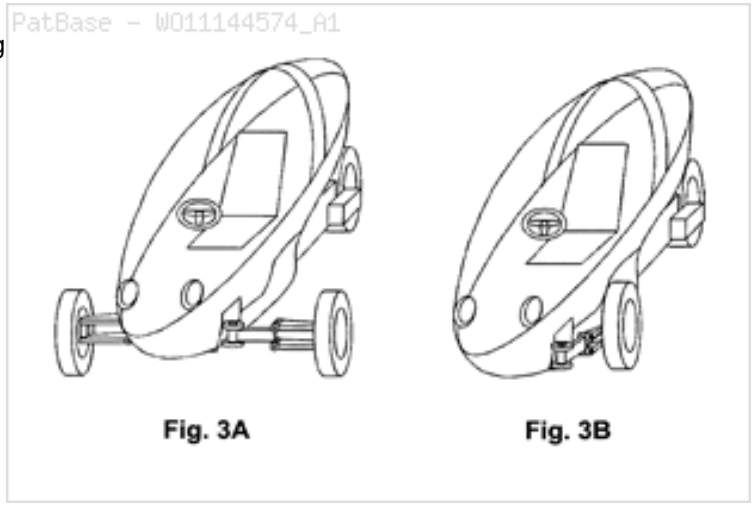


Fig. 3A Fig. 3B

0) US2009312908A – SELF–BALANCING VEHICLE

6) Family number: 33975282 (US2009312908A) © PatBase

Title: SELF–BALANCING VEHICLE

Priority: EP20060747582 20060531 NL20051029153 20050531 WO2006NL50129 20060531

Family:

Publication number	Publication date	Application number	Application date
AU2006253151 AA	20061207	AU20060253151	20060531
CA2610615 AA	20071129	CA20062610615	20060531
CA2610615 C	20140204	CA20062610615	20060531
CN101203414 A	20080618	CN200680020531	20060531
CN101203414 B	20141217	CN200680020531	20060531
DE602006023186 D1	20110908	DE200660023186T	20060531
EP1885593 A2	20080213	EP20060747582	20060531
EP1885593 B1	20110720	EP20060747582	20060531
IN09659DN2007 A	20080620	IN2007DN09659	20071213
JP2008545577 T2	20081218	JP20080514573T	20060531
JP5166251 B2	20130321	JP20080514573T	20060531
US2009312908 AA	20091217	US20060916081	20060531
US8249775 BB	20120821	US20060916081	20060531
WO06130007 A2	20061207	WO2006NL50129	20060531
WO06130007 A3	20070405	WO2006NL50129	20060531

Probable Assignee: BRINKS WESTMAAS BV

Assignee(s):(std)**:** BRINKS WESTMAAS BV ; VAN DEN BRINK CHRISTOPHER RALP ; VAN DEN BRINK CHRISTOPHER RALPH

Assignee(s): BRINKS WESTMAAS B V

Inventor(s):(std)**:** BRINK CHRISTOPHER RALPH VAN DE ; RALP DEN BRINK CHRISTOPHER VAN ; VAN DEN BRINK CHRISTOPHER RALP ; VAN DEN BRINK CHRISTOPHER RALPH

Inventor(s): CHRISTOPHER RALPH VAN DEN BRINK

Agent(s): GRIFFITH HACK; RIDOUT AND MAYBEE LLP; VAN WESTENBRUGGE ANDRIES; YOUNG AND THOMPSON

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): B60G17/015 B60G17/018 B60G17/0185 B60G17/019 B60G21/00 B62D61/08 B62D9/02 B62K5/02 B62K5/027 B62K5/04 B62K5/08 G06F17/00 (Advanced/Invention); B60G17/015 B62D9/00 B62K5/00 G06F17/00 (Core/Invention)

International class (IPC 1–7): B62D9/02

CPC: B60G2300/122 B60G2300/45 B60G2400/104 B62D9/02 B62K5/027 B62K5/10

European class: B62D9/02 B62K5/027 B62K5/10 L60G300/122 L60G300/45 L60G400/104

US class: 180/210 280/5.507 280/5.509 280/5.509S 701/38 701/38P 701/41

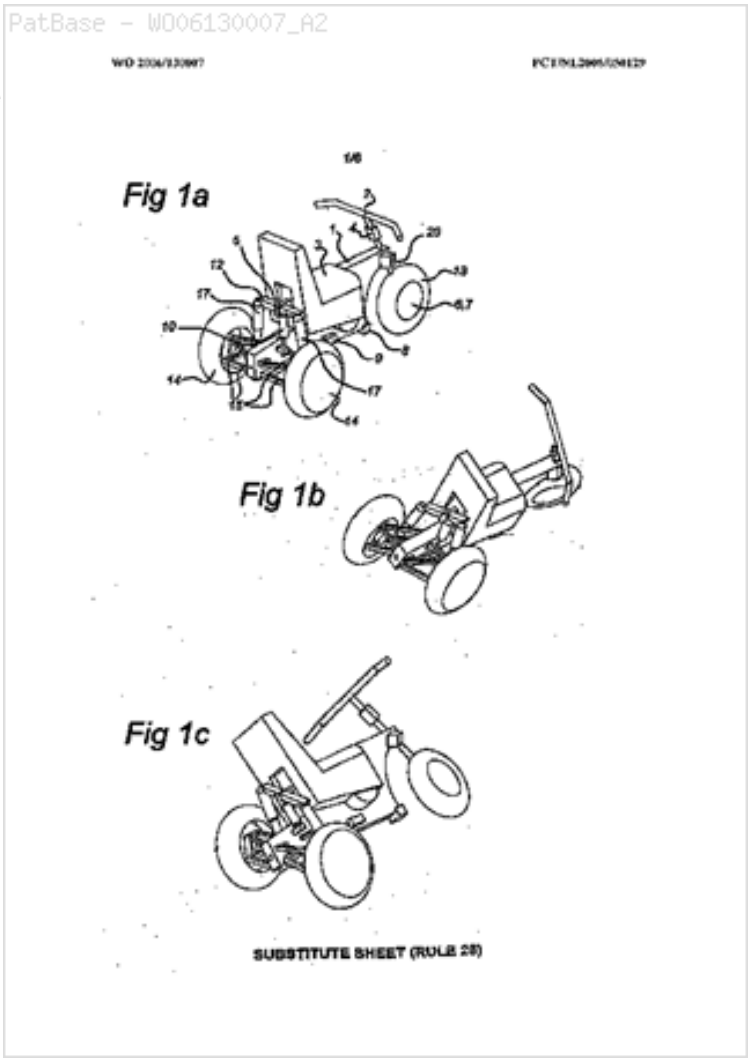
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Cited documents: WO9924308 A1, WO9914099 A1, WO9534459 A1, WO0187689 A1, US6435522 BA, US5483452 A, US5116069 A, US4987542 A, US4660853 A, US4484648 A, US2007276566 AA, US2007193803 AA, US2006097471 AA, US2004100059 AA, US2003160428 AA, NL1000161 C1, JPS56500769, JP8127219 A2, JP56500769 T2, JP56500769, JP4183693 A2, JP2005088742 A2, JP2005088742, JP2003533403 T2,

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Forward Citations: WO15166241, WO12017982, WO11161334, WO11107674, WO11061768, WO11059456, WO11023862, WO10010245, WO09150364, WO09074752, WO09074752, US9381940, US9381785, US9283989, US9248857, US9216763, US9180927, US9145168, US9090281, US9045015, US8857551, US8849556, US8836515, US8820460, US8781684, US8762003, US8688303, US8641064, US8607914, US8607913, US8602421, US8360440, US8317207, US8251375, US8235398, US8123240, US7946596, US2016059661, US2014312580, US2014019006, US2013256048, US2013153311, US2013110389, US2013098703, US2013068550, US2012290162, US2012232758, US2011213522, US2010245092, US2010032915, US2010025944, JP2013534488, JP2012162141, JP2012153349, JP2012153348, JP2012148631, JP2012030745, JP2011201505, JP2011201504, JP2011195006, JP2011178328, JP2011073623, JP2011025843, JP2011025841, JP2010241198, JP2010155486, JP2010143474, JP2009509857, FR2995255, FR2957049, FR2949421, FR2933951, FR2933950, FR2921628, ES2488590, EP2628672, EP2030814, DE102012019010, CN104742679, CN104608840, CN103339025, CN103339025, CN103328315, CN103328315, CN103079946, CN103079946, CN103038126, CN102811901, CN102811901, CN102712232, CN102582684,

Abstract:
Source: US2009312908A A vehicle includes: at least three wheels, of which at least two wheels are situated on either side of the centre of gravity of the vehicle's longitudinal axis and wherein at least one of the wheels has a steering effect on the direction of the vehicle, a frame having a tilting frame section, rotatable in the longitudinal axis relative to the road surface, a steering element mounted so as to rotate relative to the tilting frame section, one or more tilting elements connected to the tilting frame section and the wheels for exerting a tilting movement between the tilting frame section and the road surface, a speed sensor, a steering sensor for determining the force/torque or size of the steering wheel movement for achieving a change in the direction of the steerable wheel or wheels.



0) US2008197597A – MOTOR VEHICLE WITH LIMITED ANGLE OF INCLINATION...

7) Family number: 32557988 (US2008197597A) © PatBase

Title: MOTOR VEHICLE WITH LIMITED ANGLE OF INCLINATION

Priority: FR20040007588 20040707 FR20040013131 20041209 WO2005IB01929 20050707 JP20070519905 20050707 JP20070519905 20120104

Family:

Publication number	Publication date	Application number	Application date
AT416097 E	20081215	AT20050780116T	20050707
CA2572722 AA	20070103	CA20052572722	20050707
CA2572722 C	20121218	CA20052572722	20050707
CN100537283 C	20090909	CN200580023065	20050707
CN1980804 A	20070613	CN200580023065	20050707
DE602005011445 D1	20090115	DE200560011445T	20050707
EP1773609 A1	20070418	EP20050780116	20050707
EP1773609 B1	20081203	EP20050780116	20050707
ES2318524 T3	20090501	ES20050780116T	20050707
FR2872772 A1	20060113	FR20040007588	20040707
FR2872772 B1	20071102	FR20040007588	20040707
FR2872773 A1	20060113	FR20040013131	20041209
FR2872773 B1	20060929	FR20040013131	20041209
IN00006MN2007 A	20070720	IN2007MN00006	20070102
IN260428 B	20140502	IN2007MN00006	20070102
JP2008505797 T2	20080228	JP20070519905T	20050707
JP2012091787 A2	20120517	JP20120000068	20120104
JP5129565 B2	20130130	JP20070519905T	20050707
US2008197597 AA	20080821	US20050631195	20050707
US7607695 BB	20091027	US20050631195	20050707
WO06003489 A1	20060112	WO2005IB01929	20050707

Probable Assignee: MOULENE SARL

Assignee(s):(std)**:** MOULENE ; MOULENE DANIEL ; MOULENE DAVID ; MOULENE SARL ; MOULENE THIERRY

Assignee(s): MOULENE SOCIETE A RESPONSABILITE LIMITEE ; MOULENE SOC A RESPONSABILITE LIMITEE

Inventor(s):(std)**:** DANIEL MOULENE ; MOULENE DAVID ; THIERRY MOULENE ; THIERRY MOULENE DANIEL MOULENE ; MOULENE THIERRY ; MOULENE DANIEL

Inventor(s): MOULENE DANIEL MOULENE THIERRY

Agent(s): GOUDREAU GAGE DUBUC; THIBON LITTAYE ANNICK ET AL; OLIFF AND BERRIDGE PLC

Designated states: BE AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): B60G17/015 B60G17/016 B60G17/017 B60G21/00 B60G21/05 B60G3/20 B60G7/04 B60N2/01 B60N2/30 B60R5/04 B62D1/18 B62D21/18 B62D31/00 B62D37/00 B62D9/02 B62D9/04 B62K5/00 (Advanced/Invention); B60G17/015 B60G21/00 B60G3/18 B60G7/00 B60N2/00 B60N2/005 B60N2/30 B60R5/00 B62D1/18 B62D21/18 B62D31/00 B62D37/00 B62D9/00 B62K5/00 (Core/Invention)

International class (IPC 1–7): B60G21/00 B60N2/01 B60N2/30 B62D21/18 B62D31/00 B62D37/00 B62D9/04

CPC: B60G21/007 B60G2300/13 B60G2300/45 B60N2/3022 B62D21/183 B62D31/003

European class: B60G21/00D B60N2/30B4B B62D21/18B B62D31/00B L60G300/13 L60G300/45

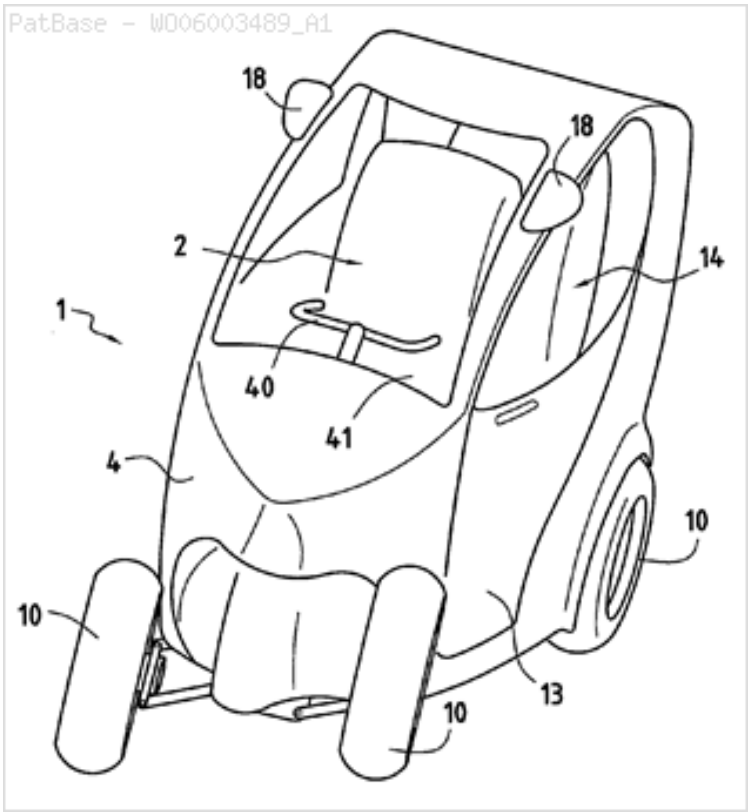
US class: 280/124.103 280/5.507 280/5.508 280/5.509 280/6.154 280/775 296/64

Classification Explorer

Cited documents: WO9954188 A1, WO9849023 A1, WO9709223 A1, US7407173 BB, US6817617 BB, US6511078 BB, US6149226 A, US5437467 A, US4921263 A, US4609221 A, US4546997 A, US2004051260 AA, JP63046982 A2, JP61229608 A2, JP61193913 A2, JP58051609 Y2, JP56093311 U1, JP56093311 U, JP53036230 U1, JP3125106 B2, JP2008505797 T2, JP2004067079 A2, JP2003535742 T2, JP1085845 A2, GB2279047 A1, FR2836447 A1, FR2831866 A1, DE29610254 U1, DE19608578 A1, BE1010650 AD,

Forward Citations: WO16127261, WO15028767, WO13149453, WO13005007, WO11059456, WO09106978, USRE44854, US9586642, US9527543, US9517807, US9499024, US9452803, US9428236, US9283989, US9248857, US9227685, US9216790, US9145168, US9090281, US9045015, US8899600, US8818700, US8762003, US8657301, US8651503, US8641064, US8616568, US8602421, US8480106, US8376372, US8360440, US8317207, US8262111, US8235398, US8162328, US8141890, US8128110, US8123240, US7909340, US7722063, US7708291, US2017043805, US2016251051, US2016229479, US2016229251, US2016229246, US2016137251, US2016059661, US2015321721, US2015137472, US2015123389, US2014252731, US2013193656, US2013161919, US2013147145, US2012232758, US2012098225, US2011254238, US2011215544, US2011148052, US2011079166, US2011006498, US2010324808, US2010320023, US2010194068, US2010133772, US2010072721, US2009256331, US2009256326, US2009194961, TWI522272, JP2016074427, JP2015037437, JP2014524864, JP2013208974, JP2013126874, JP2012148640, JP2012148634, JP2012091787, JP2012081784, JP2011528643, JP2011513119, JP2011168093, JP2010241198, JP2010184508, JP2009509857, GB2450740, GB2438268, GB2438268, FR3031071, FR3010042, FR3007343, FR2986497, FR2928130, FR2899556, ES2579491, EP3040220, EP2946993, EP2345576, EP2259936, EP1967411, EP1813450, DE102013011496, CN104108344, CN104108344, CN103661597, CN102765428, CN102601862,

Abstract:
Source: US2008197597A The invention relates to a motor vehicle (1) of the type with four wheels (10), which consists of: a driver's cab which is only large enough to accommodate one person widthways and which is solidly connected to a chassis comprising a driver protection structure (4); and means for balancing the vehicle when negotiating bends and/or on surfaces that are inclined in relation to the horizontal, by inclining the chassis and the two front wheels simultaneously. The vehicle also comprises inclination−locking means which are actuated automatically when the vehicle is stopped or travelling at a reduced speed. The inventive vehicle further comprises means for limiting the angle of inclination to a maximum value such that, when stopped, the vehicle does not tilt.



8) Family number: 28517505 (US2003075881A) © PatBase

Title: SEAMLESS CONTROL OF SPRING STIFFNESS IN A LIQUID SPRING SYSTEM

Priority: US20010001128 20011023 US20040493557 20040423 US20090610212 20091030 WO2002US31230 20020930

Family:

Publication number	Publication date	Application number	Application date
AT476306 E	20100815	AT20020802112T	20020930
AU2002363060 AA	20030506	AU20020363060	20020930
DE60237226 D1	20100916	DE20026037226	20020930
EP1446592 A2	20040818	EP20020802112	20020930
EP1446592 A4	20050720	EP20020802112	20020930
EP1446592 B1	20100804	EP20020802112	20020930
JP2005507062 T2	20050310	JP20030538598T	20020930
US2003075881 AA	20030424	US20010001128	20011023
US2008048405 AA	20080228	US20040493557	20040423
US2010044978 AA	20100225	US20090610212	20091030
US6679504 BB	20040120	US20010001128	20011023
US7891673 BB	20110222	US20040493557	20040423
WO03036125 A2	20030501	WO2002US31230	20020930
WO03036125 A3	20030918	WO2002US31230	20020930

Probable Assignee: LIQUIDSPRING TECHNOLOGIES INC

Assignee(s):(std)**:** CAJULIS CONRAD ; DELORENZIS DAMON ; LIQUIDSPRING TECHNOLOGIES INC ; MEYER RICHARD J

Inventor(s):(std)**:** CAJULIS CONRAD ; DELORENZIS DAMON ; MEYER RICHARD J ; MEYER RICHARD

Inventor(s): RICHARD J MEYER ; CONRAD CAJULIS ; DAMON DELORENZIS

Agent(s): MANITZ FINSTERWALD AND PARTNER GBR; CHRISTIE PARKER AND HALE LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): B60G17/00 B60G17/015 B60G17/019 B60G17/04 E04H9/02 F16F15/02 F16F5/00 F16F9/10 (Advanced/Invention) ; B60G17/00 B60G17/015 B60G17/04 E04H9/02 F16F15/02 F16F5/00 F16F9/10 (Core/Invention)

International class (IPC 1–7): B60G17/00 B60G17/015 B60G17/04 E04H9/02 F16F1/00 F16F15/02 F16F9/10

CPC: B60G17/0432 F16F5/00

European class: B60G17/04H2 F16F5/00

US class: 280/5.5 280/5.500P 280/5.507 280/5.512 280/5.519 280/5.519P 280/6.159 280/6.159P 280/61.59 701/38

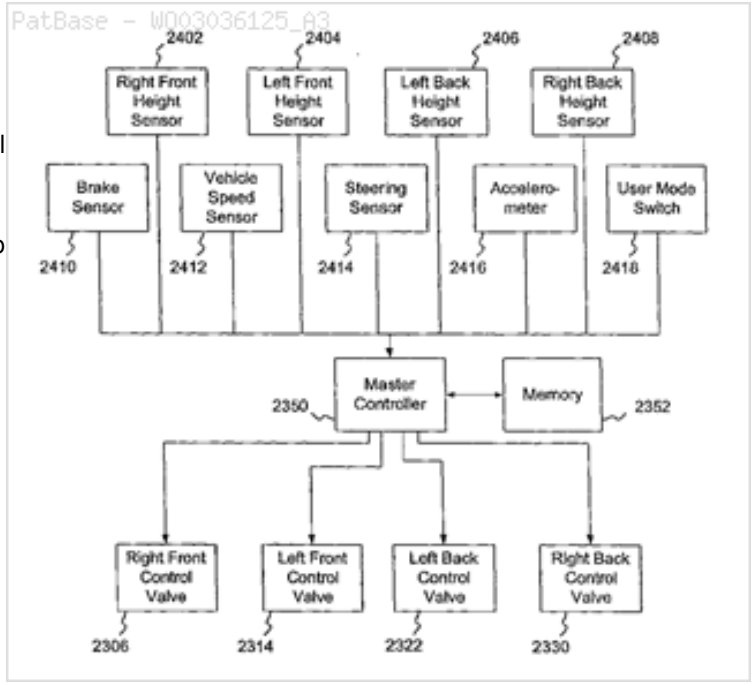
Classification Explorer

Cited documents: WO9423222 A1, US92779592, US6305673 BA, US6295493 BA, US6293530 BA, US5481459 A, US5360230 A, US5347457 A, US5316272 A, US5297653 A, US5269556 A, US5265704 A, US5230529 A, US5152547 A, US5145205 A, US5102161 A, US5099884 A, US5097419 A, US5062659 A, US5020826 A, US5018756 A, US5004264 A, US4975849 A, US4916632 A, US4826205 A, US4793451 A, US4770438 A, US4741516 A, US4733883 A, US4729459 A, US4693493 A, US4686626 A, US4671392 A, US4652008 A, US4638895 A, US4638670 A, US4561641 A, US4546960 A, US4513833 A, US4402527 A, US4333668 A, US4305486 A, US4212087 A, US4182529 A, US4099602 A, US4079923 A, US4031978 A, US3933344 A, US3618928 A,

US3483952 A, US3146862 A, US2225986 A, US2072701 A, US2008048405 AA, JP60226311 A2, JP60179315 A2, JP57160707 A2, GB2227981 A1, GB2192967 A1, FR993524 A, FR933524 A, EP0655356 A1, DK144808 B, DK144808 A, DE3608738 A1,

Forward Citations: WO14176371, WO14176371, US9597940, US9597939, US9574582, US9550404, US9440507, US9428022, US9260011, US9211776, US9174508, US9150076, US9075417, US9035477, US8868294, US8818633, US8774971, US8700191, US8534687, US8517396, US8448962, US8352086, US8075002, US7970516, US7963547, US7770909, US7751959, US7722056, US7679306, US7644943, US7621538, US7509220, US7416189, US7322580, US7287760, US7240906, US6935639, US2016185179, US2014225345, US2014209779, US2014107892, US2013179037, US2010211225, US2010109277, US2010044978, US2009196722, US2009138126, US2009133881, US2009079145, US2008284072, US2008249689, US2008164664, US2008042863, US2007216334, US2006287791, US2006267297, US2006181034, US2005023789, US2004113377, JP2009184663, EP2085299,

Abstract:
Source: US2003075881A A vibration control system for a structure having a first structural member and a second structural member. The vibration control system having a liquid spring operably interposed between the first structural member and the second structural member. The liquid spring uses a compressible liquid to seamlessly generate spring and/or damping forces in the suspension system in response to relative displacement between the first structural member and the second structural member. A second volume of compressible liquid is located in a second chamber. The second volume is removably connected to the liquid spring by a fluid passage. A valve is coupled to the fluid passage, the valve selectively operable to place the second volume in communication with the liquid spring. A controller is electrically coupled to the valve. The controller emitting a control signal to control the valve.



0) US2016280192A – BRAKE SYSTEM AND VEHICLE

9) Family number: 59143000 (US2016280192A) © PatBase

Title: BRAKE SYSTEM AND VEHICLE

Priority: JP20130227455 20131031 JP20140219736 20141028 WO2014JP78809 20141029

Family:

Publication number	Publication date	Application number	Application date
EP2942247 A1	20151111	EP20140858786	20141029
EP2942247 A4	20160525	EP20140858786	20141029
EP2942247 B1	20170301	EP20140858786	20141029
JP2015110408 A2	20150618	JP20140219736	20141028
JP5816354 B2	20151118	JP20140219736	20141028
TW201522132 A	20150616	TW20140137943	20141031
TWI535598 B	20160601	TW20140137943	20141031
US2016280192 AA	20160929	US20140033548	20141029
WO15064658 A1	20150507	WO2014JP78809	20141029

Probable Assignee: YAMAHA HATSUDOKI KK

Assignee(s):(std)**:** ADVICS CO LTD ; ADVICS KK ; YAMAHA MOTOR CO LTD

Assignee(s): YAMAHA HATSUDOKI KK

Inventor(s):(std)**:** HAMAMOTO YUTAKA ; KAJIHARA KUNIO ; OHASHI KUNIHIDE ; SETO HIROAKI ; TAKADA HIDEKI ; TERASAKA MASATO ; TSUJI YOSHINORI ; YAMAMURA TAKESHI ; TERASAKA MASAHITO ; KI YOSHINORI ; KAJIWARA KUNIO

Agent(s): GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; SHIN EI PATENT FIRM PC

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60T8/17 B60T8/1755 B60T8/176 B60T8/1761 B60T8/32 B62K5/05 B62K5/10 B62L3/00 (Advanced/Invention)

CPC: B60T8/17554 B62K5/05 B60T8/1706 B60T8/3225 B60T2230/03

US class: 280/282

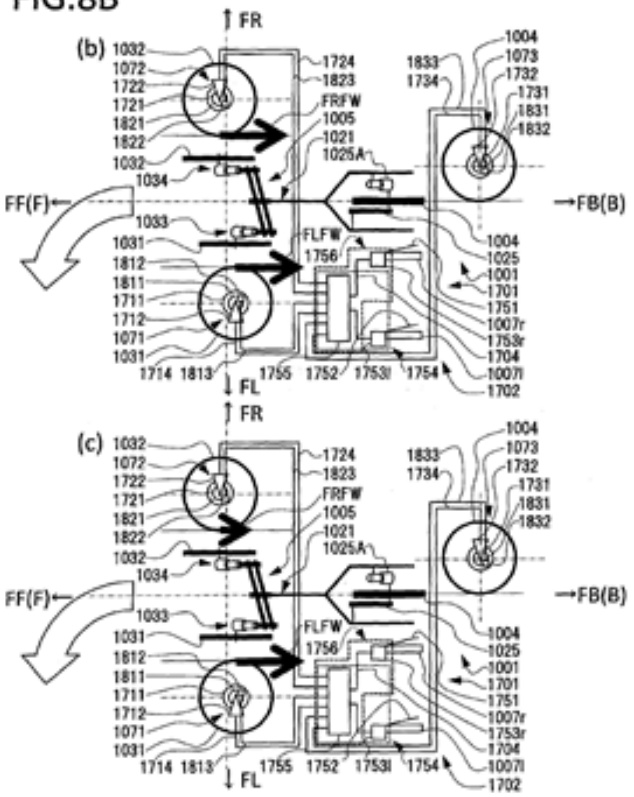
Classification Explorer

Cited documents: WO12007819 A1, WO07130043 A1, US7143853 BA, US5224766, TWI367175, JP60252058 A2, JP60252058, JP60244665 A2, JP60244665, JP4176768 A2, JP4176768, JP2011195099 A2, JP2011126514 A2, JP2011126514, EP1847429 A1,

Abstract:
Source: US2016280192A A brake system does not change immediately an operating condition of a left front brake although a slipping condition is detected at the left front wheel based on a signal detected by a left detector in such a state that a slipping condition is not detected at a right front wheel based on a signal detected by a right detector, and does not change immediately an operating condition of a right front brake although a slipping condition is detected at the right front wheel based on a signal detected by the right detector in such a state a slipping condition is not detected at the left front wheel based on a signal detected by the left detector.

PatBase - WO15064658_A1

FIG.8B



0) US5437531A – VEHICLE FOR REACHING, LIFTING, RETRACTING, STAC...

10) Family number: 8482414 (US5437531A) © PatBase

Title: Vehicle for reaching, lifting, retracting, stacking and carrying loads

Priority: US19930078607 19930616 WO1994US06674 19940614

Family:

Publication number	Publication date	Application number	Application date
AU199470606 A1	19950103	AU19940070606	19940614
AU680922 B2	19970814	AU19940070606	19940614
CA2165430 AA	19951215	CA19942165430	19940614
DE69420407 D1	19991007	DE19946020407	19940614
EP0703871 A1	19960403	EP19940919484	19940614
EP0703871 A4	19960529	EP19940919484	19940614
EP0703871 B1	19990901	EP19940919484	19940614
JP8511488 T2	19961203	JP19950502166T	19940614
US5437531 A	19950801	US19930078607	19930616
WO9429211 A1	19941222	WO1994US06674	19940614

Probable Assignee: KRESS CORP

Assignee(s):(std): KRESS CORP

Assignee(s): KRESS CORP BRIMFIELD ; MERRILL LYNCH BUSINESS FINANCIAL SERVICES INC ; KRESS EDWARD S ; COLE TAYLOR BANK AN ILLINOIS STATE CHARTERED BANK ; HARRIS TRUST AND SAVINGS BANK

Inventor(s):(std): KRESS EDWARD ; KRESS EDWARD S

Inventor(s): EDWARD S KRESS

Agent(s): SHELSTON IP; SHELSTON IP PTY LTD; MARKS AND CLERK

Designated states: AT AU BE BR CA CH CN CZ DE DK ES FI FR GB GR IE IT JP KR LU MC NL PT RU SE

International class (IPC 8–9): B60P3/28 B60S9/02 B66C23/42 B66C23/46 B66C23/80 B66F9/06 (Advanced/Invention); B60P3/28 (Advanced/Non–invention); B60P3/28 B60S9/00 B66C23/00 B66F9/06 (Core/Invention)

International class (IPC 1–7): B60P1/54 B60P3/28 B60P9/00 B60S9/02 B66C23/00 B66C23/42 B66C23/80 B66F9/06 B66F9/065 E02F3/36

CPC: B66C23/54 B66C23/80 B66F9/061

European class: B66C23/54 B66C23/80 B66F9/06B

US class: 212/304 280/766.1 414/546 414/555 414/694 414/734

Classification Explorer

Cited documents: US4969789 A, US4762291 A, US4632630 A, US4482285 A, US4424985 A, US4390314 A, US4373854 A, US4236643 A, US4163625 A, US4084777 A, US3945666 A, US3876093 A, US3863834 A, US3501035 A, US3487964 A, US3342361 A, US3279622 A, US3278058 A, US3263834 A, US3253716 A, US3239080 A, US3232460 A, US2998143 A, US2599991 A,

Forward Citations: WO14149125, US9278834, US8985353, US8578638, US7128518, US7128518, US7001131, US6789995, US6486787, US6158947, US5833429, US5720589, US5641261, US2014367624, US2011150617, US2010303596, US2009107775, US2009060685, US2007027581, US2005196262, US2005042068, US2004179925, EP2338827, DE202009017388,

Abstract:
Source: US5437531A A vehicle for reaching, lifting, retracting, stacking and carrying loads. The vehicle includes a load carrying portion disposed behind the front axle of the vehicle for receiving and transporting loads, so that the vehicle is able to transport loads without tipping yet without carrying excess ballast. The vehicle includes a reach and retract lifting device for reaching to secure or release loads substantially far from the vehicle and retracting to secure or release loads stacked on the load carrying portion of the vehicle. The reach and retract lifting device is interchangeable depending on the desired lifting operation. To prevent tipping while reaching loads, the vehicle incorporates selectively actuable outriggers. Additionally, the vehicle includes selectively actuable hydraulic cylinders or the like for adjusting the lateral position of a lifted load.

PatBase - WO9429211_A1

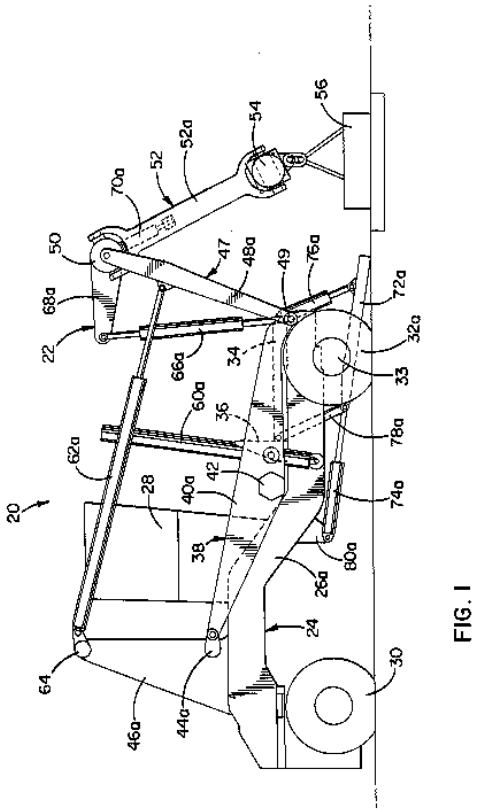


FIG. 1

0) US2008238005A – TILTING VEHICLE

11) Family number: 32172264 (US2008238005A) © PatBase

Title: TILTING VEHICLE

Priority: AU20040900556 20040206 AU20040905617 20040930 WO2005AU00110 20050202

Family:

Publication number	Publication date	Application number	Application date
US2008238005 AA	20081002	US20050586819	20050202
WO05075278 A1	20050818	WO2005AU00110	20050202

Probable Assignee: JAMES PHILLIP RONALD

Assignee(s):(std)**:** JAMES PHILLIP RONALD

Inventor(s):(std)**:** JAMES PHILLIP RONALD

Agent(s): PHILLIP R JAMES

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): B62D9/02 B62K5/08 (Advanced/Invention); B62D9/00 B62K5/00 (Core/Invention)

International class (IPC 1–7): B62D9/02 B62K5/06

CPC: B62D9/02 B62K5/027 B62K5/05 B62K5/08 B62K5/10

European class: B62D9/02 B62K5/027 B62K5/05 B62K5/08 B62K5/10

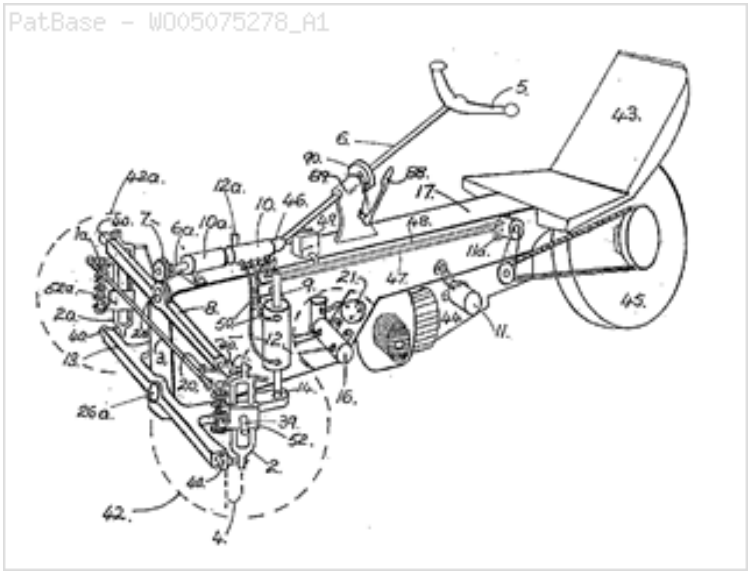
US class: 280/5.509 280/5.509P

Classification Explorer

Cited documents: WO9534459 A1, US7343997 BA, US6685201 BA, US6435522 BA, US6328125 BA, US4660853 A, US4546997 A, US3572456 A, US2007176384 AA, US2007151780 AA, US2007075517 AA, EP0592377 A1,

Forward Citations: WO17017639, WO14123402, WO14022315, WO14022315, WO13005007, WO11083335, WO11083335, WO11059456, WO11005945, WO10010245, US9604687, US9545963, US9529365, US9527543, US9459627, US9442492, US9442491, US9442486, US9429955, US9428236, US9411340, US9411339, US9411336, US9400502, US9381940, US9381785, US9327725, US9283989, US9248857, US9193407, US9145168, US9090281, US9045015, US8781684, US8762003, US8739914, US8657301, US8613340, US8602421, US8596660, US8515620, US8480106, US8360440, US8317207, US8235398, US8162328, US8141890, US8128110, US8123240, US8020878, US7946596, US7722063, US2017043805, US2016229246, US2016137251, US2016121958, US2015160657, US2015151806, US2015123389, US2014358369, US2014252734, US2014252733, US2014252730, US2014058624, US2014019006, US2013193656, US2013181420, US2013001001, US2012232758, US2011006498, US2010094504, US2010072721, US2010044977, US2010032915, US2010032914, US2009256331, US2009256326, US2009194961, US2008012262, JP6084968, JP2014524864, GB2476877, GB2476877, FR2937000, FR2933951, FR2933950, EP2729351, EP2729351, CN103124671, CN102180211,

Abstract:
Source: US2008238005A A tilting vehicle comprising at least one section (17) tiltable about the longitudinal axis of the vehicle, tilt registration means (20) recording variations in the tilt position of the tiltable section (17), a control element (5), tilt control means (12) connecting the control element (5) to the tilt section (17), at least three wheels (42, 42 a, 45) including wheels (42, 42 a) laterally spaced, a castoring element including at least one front wheel (42, 42 a) able to tilt with the tiltable section (17) and dynamically directionally controllable due to the tilt and speed of the vehicle, a speed sensitive control signal transmitter (21), a variable force steer transmitter (16) connected to the castoring element, the tilt registration means (20) and to the speed sensitive control signal transmitter (21), the variable force steer transmitter (16) being able to exert a directing moment and/or positioning moment on the castoring element, that directs and/or positions the castoring element according to the tilt registration means (20) and the force exerted by the variable force steer transmitter (16), which is varied by control signals from the speed sensitive control signal transmitter (21).



0) US2007176384A – THREE WHEELED VEHICLE

12) Family number: 31457878 (US2007176384A) © PatBase

Title: THREE WHEELED VEHICLE

Priority: EP20040748773 20040629 NO20030003026 20030701 WO2004NO00197 20040629 NO20030003026 20030701

Family:

Publication number	Publication date	Application number	Application date
DE602004043419 D1	20131128	DE200460043419T	20040629
EP1651507 A1	20060503	EP20040748773	20040629
EP1651507 B1	20130925	EP20040748773	20040629
NO20033026 A	20050103	NO20030003026	20030701
NO20033026 A0	20030701	NO20030003026	20030701
US2007176384 AA	20070802	US20040563127	20040629
US7530419 BB	20090512	US20040563127	20040629
WO05002957 A1	20050113	WO2004NO00197	20040629

Probable Assignee: YAMAHA MOTOR CO LTD

Assignee(s):(std)**:** BRUDELI GEIR ; BRUDELI TECH AS ; BRUDELI TECH HOLDING AS ; FRIEND INT AS ; FRIEND INTERNAT AS

Assignee(s): FRIEND INTERNATIONAL AS ; YAMAHA MOTOR CO LTD

Inventor(s):(std)**:** BRUDELI GEIR

Agent(s): ONSAGERS AS; FINNEGAN HENDERSON FARABOW GARRETT AND DUNNER, LLP; FINNEGAN HENDERSON FARABOW GARRETT AND DUNNER LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): B60G21/00 B60G21/05 B62D61/06 B62D9/02 B62J25/00 B62K11/00 B62K5/06 B62K5/08 (Advanced/Invention); B60G21/00 B62D61/00 B62D9/00 B62K5/00 (Core/Invention)

International class (IPC 1–7): B62D61/06 B62D9/02 B62J25/00 B62K11/00 B62K5/06

CPC: B60G21/007 B60G21/05 B60G2300/122 B62D9/02 B62K5/027 B62K5/05 B62K5/08 B62K5/10

European class: B60G21/00D B60G21/05 B62D9/02 B62K5/027 B62K5/05 B62K5/08 B62K5/10 L60G300/122

US class: 180/210 280/124.103 280/124.103P 280/124.109

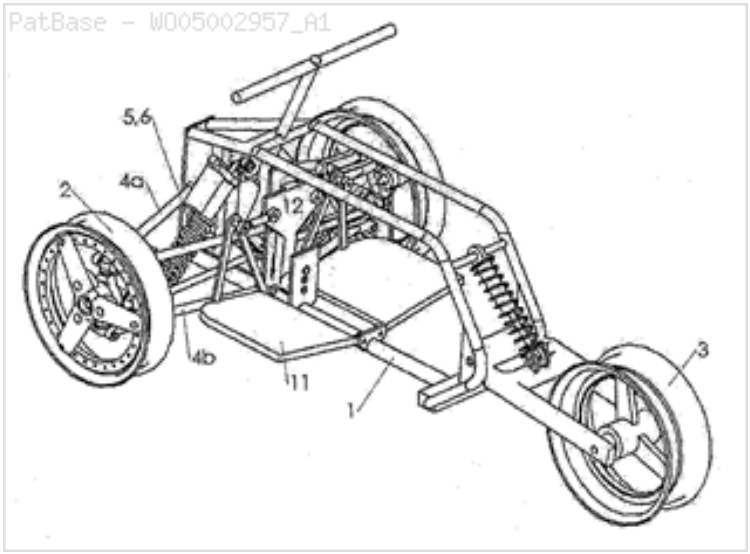
Classification Explorer

Cited documents: WO0192084 A1, US6763905 BB, US6547027 BA, US5765846 A, US5762351 A, US4685690 A, US4360224 A, US4088199 A, US4020914 A, US2006255550 AA, DE3546073 A1,

Forward Citations: WO14053713, WO12059902, WO10015986, US9527543, US9505450, US9475535, US9428236, US9387902, US9327789, US9238482, US9216763, US9114844, US9061732, US9051027, US8925940, US8899600, US8777242, US8651503, US8602421, US8360440, US8262111, US8235398, US8141890, US8128110, US8123240, US8070172, US8016302, US7967306, US7887070, US7850180, US7722063, US7591337, US7571787, US2017043805, US2016137251, US2015210338, US2015203154, US2015123389, US2015021865, US2014346753, US2013161919, US2013153311, US2011278088, US2011215544, US2011006498, US2010320023, US2010230192, US2010072721, US2010044977, US2010007109, US2009315282, US2009256326, US2009194961, US2009108555, US2008238005, US2008164085, US2007228675, US2007075517, RU2532002, KR101251054, ITMI20081453, EP2015944, EP2015944, EP1829719, EP1813450,

Abstract:

Source: US2007176384A The present invention relates to a three−wheeled vehicle comprising a frame with engane, drive gear and at least one driven wheel at the rear, and two front wheels which are used in part to steer the vehicle. The vehicle can also be steered in that the frame with engine, drive gear and the driven rear wheel can be banked over to the side like a motorcycle. The present invention relates in particular to a design which helps to move the centre of gravity when such a vehicle is tilted to the side so that, inter alia, it is easier to right the vehicle. Furthermore, the present invention makes it possible to affect and determine the driving characteristics of the vehicle by varying different design parameters within the scope of the present invention. The invention also relates to a special design for the mounting of footboards on which the driver of the vehicle can place his/her feet when driving the vehicle. The special design according to the invention contributes actively to changing the geometry between the footboards and the frame of the vehicle when the vehicle is used and especially wheir it is "tilted" to the side to steer the vehicle.



0) US2007151780A – SUSPENSION TILTING MODULE FOR A WHEELED VEHICLE...

13) Family number: 34573675 (US2007151780A) © PatBase

Title: SUSPENSION TILTING MODULE FOR A WHEELED VEHICLE AND A WHEELED VEHICLE EQUIPPED WITH SUCH A SUSPENSION TILTING MODULE

Priority: CA20062570639 20061208 EP20050027656 20051216 EP20060026082 20061215

Family:

Publication number	Publication date	Application number	Application date
AT443622 E	20091015	AT20060026082T	20061215
CA2570639 AA	20070616	CA20062570639	20061208
CN1982105 A	20070620	CN200610168328	20061218
CN1982105 B	20100616	CN200610168328	20061218
DE602006009363 D1	20091105	DE200660009363T	20061215
EP1798080 A1	20070620	EP20050027656	20051216
EP1798081 A1	20070620	EP20060026082	20061215
EP1798081 B1	20090923	EP20060026082	20061215
US2007151780 AA	20070705	US20060640021	20061215

Probable Assignee: FONDAZIONE TORINO WIRELESS

Assignee(s):(std)**:** CARABELLI STEFANO ; CAVALLI FABIO ; FESTINI ANDREA ; TONOLI ANDREA ; FONDAZIONE TORINO WIRELESS ; TORINO POLITECNICO

Assignee(s): POLITECNICO DI TORINO ; FOND TORINO WIRELESS

Inventor(s):(std)**:** TONOLI ANDREA ; STEFANO TONOLI ANDREA FESTINI ; STEFANO CARABELLI ; FESTINI ANDREA ; FARIELLO MASSIMO ; FABIO CAVALLI ; CAVALLI FABIO ; CARABELLI STEFANO ; ANDREA TONOLI ; ANDREA FESTINI

Inventor(s): TONOLI ANDREA FESTINI ANDREA CAVALLI FABIO... ; TONOLI ANDREA FESTINI ANDREA CAVALLI FABIO CARABEL

Agent(s): GOWLING LAFLEUR HENDERSON LLP; GRUENECKER KINKELDEY STOCKMAIR AND SCHWANHAEUSSER ANWALTSSOZIETAET; PAUL A FATTIBENE FATTIBENE AND FATTIBENE

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

International class (IPC 8–9): B60G17/015 B60G21/00 B60G21/10 B60K1/00 B60K25/10 B62D9/04 B62K5/02 (Advanced/Invention); B60G21/00 B60K1/00 B62D9/00 B62K5/00 (Core/Invention)

CPC: B60G17/015 B60G21/007 B60G2204/421 B60G2300/45

European class: B60G17/015 B60G21/00D L60G204/421 L60G300/45

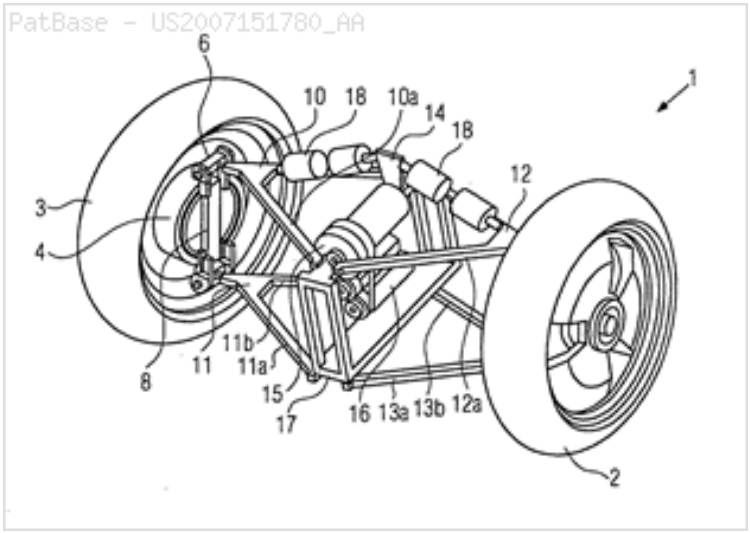
US class: 180/210 180/65.1 280/124.103 280/124.134

Classification Explorer

Cited documents: WO06000841 A1, US6942050 BA, US6467787 BA, US5765846 A, US2260102 A, US2004051262 AA, FR2745757 A1,

Forward Citations: WO11061768, WO11059456, US9283989, US9248857, US9145168, US9090281, US9045015, US8925940, US8899372, US8777242, US8762003, US8746717, US8602421, US8485541, US8474842, US8360440, US8342548, US8317207, US8262111, US8235398, US8123240, US8070172, US8020878, US7967306, US7722063, US7665749, US7487985, US2017043805, US2016229246, US2015028559, US2013214503, US2012248717, US2012126565, US2012098225, US2011298191, US2011218723, US2011101637, US2010320023, US2010032914, US2010007109, US2009194961, US2008258416, US2008238005, US2007228675, RU167792, GB2533477, GB2480639, GB2480639, CN104779730, CN104779730, CN102923236, CN102303521, CN102303521,

Abstract:
Source: US2007151780A A tilting suspension system is provided for two wheels of a vehicle disposed on a common axle with a module comprising a rigid frame adapted to be firmly fixed to the chassis of the vehicle so as to be tilted together with the whole vehicle. The tilting of the rigid frame is obtained as a result of the counter torque arising when activating actuating means firmly fixed to the rigid frame, with the tilting means being pivotable connected to shock absorbers. The tilting module further comprises suspension arms usually connected to the rigid frame, with said suspension arms supporting, in cooperation with supporting uprights, the two wheels thus allowing both tilting and steering of the two wheels. Moreover, electric motors may be received in the hubs of the wheels, thus allowing the realization of driving, steering and tilting module adapted to be used either in hybrid vehicles or electrically driven vehicles.



0) US2012181773A – INFANT SCOOTER

14) Family number: 48844429 (US2012181773A) © PatBase

Title: INFANT SCOOTER

Priority: DE201120001596U 20110117 EP20110009298 20111123 US20120346591 20120109 US20140291847 20140530 US20150692141 20150421

Family:

Publication number	Publication date	Application number	Application date
AU2012200089 AA	20120802	AU20120200089	20120106
AU2012200089 BB	20160211	AU20120200089	20120106
DE202011001596 U1	20110414	DE201120001596U	20110117
DE202011110819 U1	20160908	DE201120110819U	20111123
DE502011000838 D1	20130801	DE201150000838T	20111123
EP2476607 A1	20120718	EP20110009298	20111123
EP2476607 B1	20130605	EP20110009298	20111123
US2012181773 AA	20120719	US20120346591	20120109
US2014265223 AA	20140918	US20140291847	20140530
US2015225034 AA	20150813	US20150692141	20150421
US8740236 BB	20140603	US20120346591	20120109
US9022406 BB	20150505	US20140291847	20140530
US9365256 BB	20160614	US20150692141	20150421

Probable Assignee: MICRO MOBILITY SYSTEMS AG

Assignee(s):(std)**:** MICRO MOBILITY SYSTEMS AG ; OUBOTER JAN WILLEM ANTON

Inventor(s):(std)**:** OUBOTER JAN WILLEM ANTON

Agent(s): FREEHILLS PATENT ATTORNEYS; HERBERT SMITH FREEHILLS; FREEHILLS PATENT ATTORNEY S; FPA PATENT ATTORNEYS PTY LTD; GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; GRUENECKER KINKELDEY STOCKMAIR AND SCHWANHAEUSSER; COWAN LIEBOWITZ AND LATMAN PC; MARK

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

International class (IPC 8–9)**:** B62J1/00 B62K17/00 B62K19/00 B62K21/00 B62K3/00 B62K5/02 B62K5/08 B62K9/00 B62K9/02 B62M1/00 (Advanced/Invention)

CPC: B62K3/002 B62K9/02 B62K19/00 B62K21/005

European class: B62J1/00 B62K3/00B B62K9/02

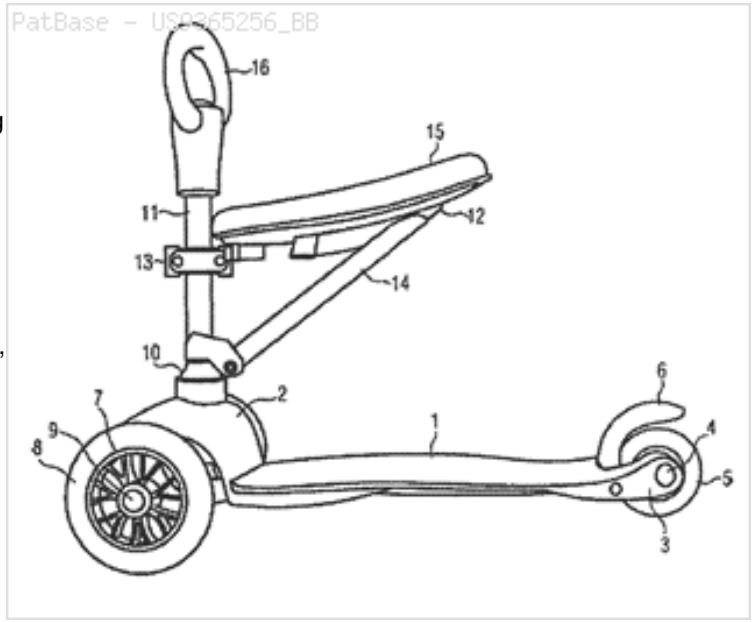
US class: 1/1 280/200 280/263 280/263P 280/266 280/87.01 280/87.021

Classification Explorer

Cited documents: WO0003773 A1, US8262114 BB, US7540517 BB, US7416197 BB, US7226062 BA, US7222871 BB, US7055841 BB, US6910743 BB, US6511083 BA, US6494470 BB, US6382646 BA, US6299186 BA, US6286843 BA, US6279930 BA, US5992864 A, US5924710 A, US4941670 A, US4054297 A, US2481837 A, US2010283220 AA, US2010148460 AA, US2002096846 AA, US2002017768 AA, US2001008332 AA, US1838877 A, US1535167 A, US1478739 A, US1399833 A, US1128810 A, FR2818608 A1, FR2467003 A1,

Forward Citations: WO17045002, WO16034975, WO15092023, USD749174, USD693885, US9545969, US9381968, US9375097, US9283848, US9005089, US8985602, US2017008592, US2015197303, US2015158386, US2014135188, US2014042717, FR3035065, FR3018260, EP3100938, EP3081466, EP2965980, DE202016105139, DE202015102917, DE102013106634, CN103085918, CN103085918,

Abstract:
Source: US2012181773A A vehicle for infants includes a footboard, a front and rear chassis support fixed to it, wherein each chassis support supports at least one wheel, a steering bar which is connected to the front chassis support, and gripping at the upper portion of the steering bar. The vehicle furthermore includes a seat which is preferably fixed to the steering bar. The invention furthermore relates to a vehicle for infants with two front wheels and at least one, preferably two, rear wheels, wherein the vehicle includes a seat which is preferably fixed to a steering bar of the vehicle, and wherein the vehicle includes gripping at the steering bar which, however, does not function as handle bar, and wherein at least the front chassis support of the vehicle includes a steering mechanism which permits to steer the vehicle by ways of shifting of weight.



0) WO11029795A1 – TILT CONTROL FOR TILTING VEHICLES COMMANDE D'I...

15) Family number: 48462139 (WO11029795A1) © PatBase

Title: TILT CONTROL FOR TILTING VEHICLES

Priority: AU20090904277 20090908 EP20100754711 20100906 WO2010EP63040 20100906

Family:

Publication number	Publication date	Application number	Application date
CN102596697 A	20120718	CN201080040011	20100906
CN102596697 B	20141210	CN201080040011	20100906
DE602010008282 D1	20130829	DE201060008282T	20100906
EP2475570 A1	20120718	EP20100754711	20100906
EP2475570 B1	20130703	EP20100754711	20100906
EP2628672 A2	20130821	EP20130168191	20100906
EP2628672 A3	20151111	EP20130168191	20100906
IN00409KN2012 A	20121012	IN2012KN00409	20120223
WO11029795 A1	20110317	WO2010EP63040	20100906

Probable Assignee: INO8 PTY LTD

Assignee(s):(std)**:** INO8 PTY LTD ; WILL FRANK

Inventor(s):(std)**:** FRANK WILL ; WILL FRANK

Agent(s): STUMPF PATENTANWAELTE PARTGMBB; KAUFMANN URSULA JOSEFINE; SPACHMANN HOLGER

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K5/027 B62K5/04 B62K5/05 B62K5/08 B62K5/10 (Advanced/Invention)

CPC: B62K5/10 B62K5/027 B62K5/05 B62K5/08

European class: B62K5/027 B62K5/05 B62K5/08 B62K5/10

Classification Explorer

Cited documents: WO09059099 A2, WO06130007 A2, WO06050809 A1, WO0244008 A2, WO02068228 A1, US4351410 A, JP2006341690 A2, EP1988009 A1, EP1362779 A2, CN1269758 A,

Forward Citations: WO15193705, US9428236, US2015123389, JP6063861, JP2015123959, JP2015123951, EP2889210, DE202014104070, DE202014102328, DE102014217247, DE102014217246, DE102014209329, DE102014209328, CN105492299,

Abstract:
The invention relates to a tilting vehicle (10) including a frame (12) freely tiltable transversely between at least two spaced wheels (14, 114), at least one variable damper (28, 30, 148) with adjustable damping force operatively connected between the frame (12) and the two wheels (14, 114), at least one sensor to generate signals indicative of transverse tilting of the frame (12) relative to a central vertical plane of the vehicle, and a controller in communication with the at least one variable damper (28, 30, 148) and the at least one sensor. The controller is configured to vary transverse damping by the at least one variable damper (28, 30, 148) in accordance with the signals generated by the at least one sensor to passively provide transverse tilt stability to the frame (12) through the force generated in the damper in the opposite direction of the damper movement. The invention suggests to transversly damp a freely tiltable frame in accordance to a damping state for enhancing driving security and comfort of the vehicle.

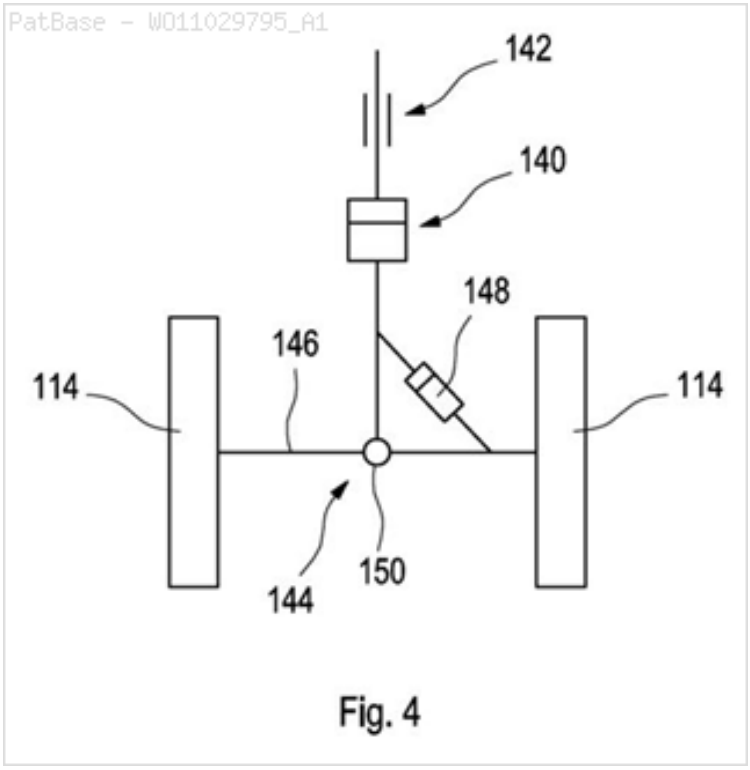


Fig. 4

0) US2014214249A – THIN SAFE VEHICLE WHOSE SOLAR ARRAY CAN SUPPLY ...

16) Family number: 57085737 (US2014214249A) © PatBase

Title: THIN SAFE VEHICLE WHOSE SOLAR ARRAY CAN SUPPLY ITS POWER NEEDS

Priority: US20130815107 20130131

Family:

Publication number	Publication date	Application number	Application date
EP2762348 A2	20140806	EP20130186195	20130926
IN02037CH2013 A	20140808	IN2013CH02037	20130507
US2014214249 AA	20140731	US20130815107	20130131
US8886379 BB	20141111	US20130815107	20130131

Probable Assignee: FREEMAN BENJAMIN DAVID

Assignee(s):(std)**:** FREEMAN BENJAMIN ; FREEMAN BENJAMIN DAVID

Assignee(s): BEN FREEMAN

Inventor(s):(std)**:** FREEMAN BENJAMIN ; FREEMAN BENJAMIN DAVID

Inventor(s): BEN FREEMAN

Agent(s): MEYER DULHEUER KARL HERMANN

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

International class(IPC 8–9)**:** B60L8/00 F24J2/00 G01C21/34 G06F17/00 (Advanced/Invention)

CPC: G01C21/3469 B60L8/003 Y02T10/7083

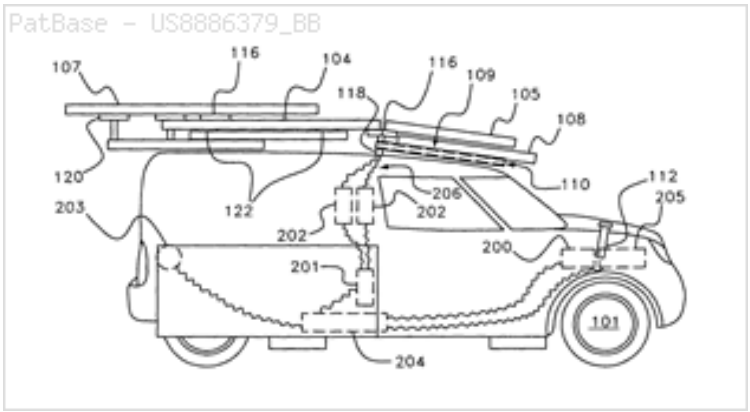
US class: 180/165 180/2.2 180/302 180/308 180/422 296/204 701/22 701/533

Classification Explorer

Cited documents: US8342283 BB, US8317257 BB, US8120308 BB, US7888590 BB, US5379596 A, US4452234 A, US4090577 A, US2014097030 AA, US2012073885 AA, US2011146751 AA, US2011049992 AA, US2010193261 AA, US2010078254 AA, US2010078253 AA, US2010078245 AA, US2009288890 AA, US2008100258 AA, US2008053510 AA, US2004094193 AA,

Forward Citations: US2014297072,

Abstract:
Source: US2014214249A This device is an ultra–thin vehicle where no more than twenty five percent of its solar array extends beyond the vehicle when it is being driven and the solar array is undeployed. However, this same solar array will cover an area at least twice as large as the vehicle when it is parked and the array is fully deployed. This solar array is also designed to make it possible to easily orient it towards the sun during the majority of time when it is parked. Hence, solar power can be the primary source of power for a typical driver due to the lowered power needs of this tapered ultrathin vehicle.



0) US2008012262A – SUSPENSION TILTING MODULE FOR A WHEELED VEHICLE...

17) Family number: 40994353 (US2008012262A) © PatBase

Title: SUSPENSION TILTING MODULE FOR A WHEELED VEHICLE AND A WHEELED VEHICLE EQUIPPED WITH SAID SUSPENSION TILTING MODULE

Priority: CA20072586755 20070501 EP20060012974 20060623

Family:

Publication number	Publication date	Application number	Application date
AT408532 E	20081015	AT20060012974T	20060623
CA2586755 AA	20071223	CA20072586755	20070501
CN101092105 A	20071226	CN200710126614	20070612
DE602006002816 D1	20081030	DE200660002816T	20060623
EP1870269 A1	20071226	EP20060012974	20060623
EP1870269 B1	20080917	EP20060012974	20060623
ES2315965 T3	20090401	ES20060012974T	20060623
US2008012262 AA	20080117	US20070820126	20070618

Probable Assignee: FONDAZINOE TORINO WIRELESS

Assignee(s):(std)**:** CARABELLI STEFANO ; CAVALLI FABIO ; FESTINI ANDREA ; TONOLI ANDREA ; TORINO POLITECNICO ; FONDAZIONE TORINO WIRELESS

Assignee(s): FONDAZINOE TORINO WIRELESS ; POLITECNICO DI TORINO ; FOND TORINO WIRELESS

Inventor(s):(std)**:** ANDREA FESTINI ; ANDREA TONOLI ; CARABELLI STEFANO ; CAVALLI FABIO ; FABIO CAVALLI ; FESTINI ANDREA ; STEFANO CARABELLI ; TONOLI ANDREA

Agent(s): GOWLING LAFLEUR HENDERSON LLP; GRUENECKER KINKELDEY STOCKMAIR AND SCHWANHAEUSSER ANWALTSSOZIETAET; PAUL A FATTIBENE FATTIBENE AND FATTIBENE

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

International class (IPC 8–9)**:** B60G21/00 B60G21/05 B60G21/10 B60G3/20 B60G7/00 B62D7/16 B62D9/02 B62D9/04 (Advanced/Invention); B60G21/00 (Core/Invention)

CPC: B60G7/006 B60G21/007 B60G2200/144 B60G2200/46 B60G2202/413 B60G2204/421 B60G2300/122 B60G2300/45 B60G2800/012 B62D9/02 B62K5/10

European class: B60G21/00D B60G7/00D B62D9/02 B62K5/10 L60G200/144 L60G200/460 L60G202/413 L60G204/421 L60G300/122 L60G300/45 L60G800/012

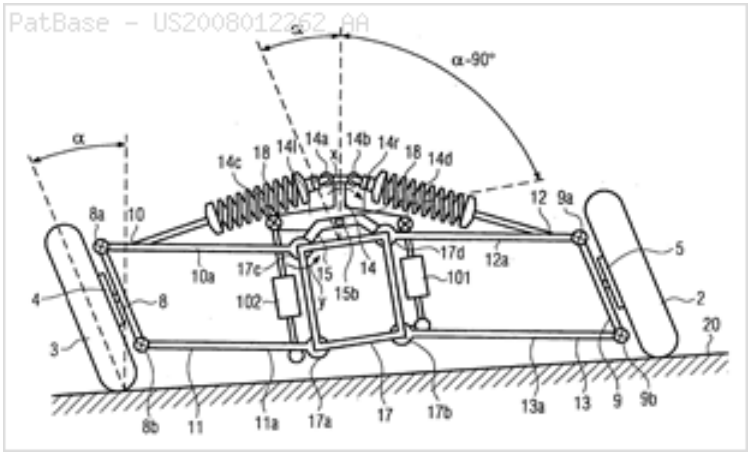
US class: 280/124.106 280/124.106P

Classification Explorer

Cited documents: WO8100088 A1, US6942230 BA, US6416061 BA, US6250649 BA, US5765846 A, US4546997 A, US4487429 A, US4484648 A, US2260102 A, US2008238005 AA, US2006255550 AA, GB2310838 A1, GB231083, EP0528783 A1, DE1971748, DE19717418 C1, DE19619644 C1,

Forward Citations: WO16001722, WO10015986, US9597940, US9597939, US9550404, US9440507, US9381940, US9381785, US9283989, US9260011, US9248857, US9216763, US9174508, US9145168, US9090281, US9045015, US9035477, US8841786, US8840118, US8839920, US8814186, US8777242, US8641064, US8485541, US8392030, US8376100, US8262111, US8251375, US8128110, US8020878, US7959164, US7722063, US2017043805, US2016251051, US2016229246, US2014312580, US2013153311, US2012098225, US2011298191, US2011148052, US2010320023, US2010262308, US2010072760, US2009260935, US2009256326, US2009194961, US2008309032, US2007228675, ITMI20081453, EP2420398, EP2199122, EP2154050, EP2151367,

Abstract:
Source: US2008012262A A tilting suspension system is provided for two wheels (2, 3) of a vehicle (200) disposed on a common axle with the module comprising a rigid frame (17) adapted to be firmly fixed to the chassis of the vehicle so as to be tilted together with the whole vehicle and a tilting arm (14) pivotally linked to the rigid frame. The tilting of the rigid frame is obtained as a result of the counter torque arising when activating hydraulic actuating means (101, 102) pivotally interposed between the tilting arm (14) and the rigid frame (17), with the tilting arm being pivotally connected to shock absorbers (18). The tilting module further comprises suspension arms (10, 11, 12, 13) pivotally connected to the rigid frame, with the suspension arms supporting, in cooperation with supporting uprights, the two wheels thus allowing both tilting and steering of the two wheels. The hydraulic actuating means (101, 102) are actuated by a hydraulic pump (112) driven by an electric motor (108).



0) US2012046835A – VEHICLE AND FEEDBACK CONTROL METHOD

18) Family number: 47305989 (US2012046835A) © PatBase

Title: VEHICLE AND FEEDBACK CONTROL METHOD

Priority: JP20090101441 20090417 JP20090112944 20090507 JP20090207165 20090908 WO2010JP54093 20100311 JP20130185772 20130906

Family:

Publication number	Publication date	Application number	Application date
EP2420431 A1	20120222	EP20100764326	20100311
EP2420431 A4	20140521	EP20100764326	20100311
JP2010247760 A2	20101104	JP20090101441	20090417
JP2010260447 A2	20101118	JP20090112944	20090507
JP2011059870 A2	20110324	JP20090207165	20090908
JP2014000959 A2	20140109	JP20130185772	20130906
JP5271853 B2	20130821	JP20090207165	20090908
JP5422251 B2	20140219	JP20090101441	20090417
JP5422257 B2	20140219	JP20090112944	20090507
US2012046835 AA	20120223	US20100264805	20100311
US8630770 BB	20140114	US20100264805	20100311
WO10119740 A1	20101021	WO2010JP54093	20100311

Probable Assignee: YANMAR CO LTD

Assignee(s):(std)**:** MATSUMOTO KEIJI ; TERASHIMA JUN ; YANMAR CO LTD

Assignee(s): YANMAR CO

Inventor(s):(std)**:** MATSUMOTO KEIJI ; TERAJIMA ATSUSHI ; TERASHIMA JUN

Agent(s): JOSTARNDT HANS DIETER; YANO JUICHIRO; STERNE KESSLER GOLDSTEIN AND FOX PLLC

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60K7/00 B60L15/20 B62D1/22 B62D101/00 B62D11/04 B62D113/00 B62D5/04 B62D6/00 B62D7/08 B62D7/14 B62D7/15 B62D9/00 G05B13/04 G06F7/00 (Advanced/Invention); B62D101/00 B62D113/00 (Advanced/Non–invention)

CPC: B62D7/1509 B60L15/2036 B60L2200/22 B62D6/002 Y02T10/7275 Y02T10/645 Y02T10/72

European class: B60K7/00E B60L15/20D B62D7/15B L60L200/22

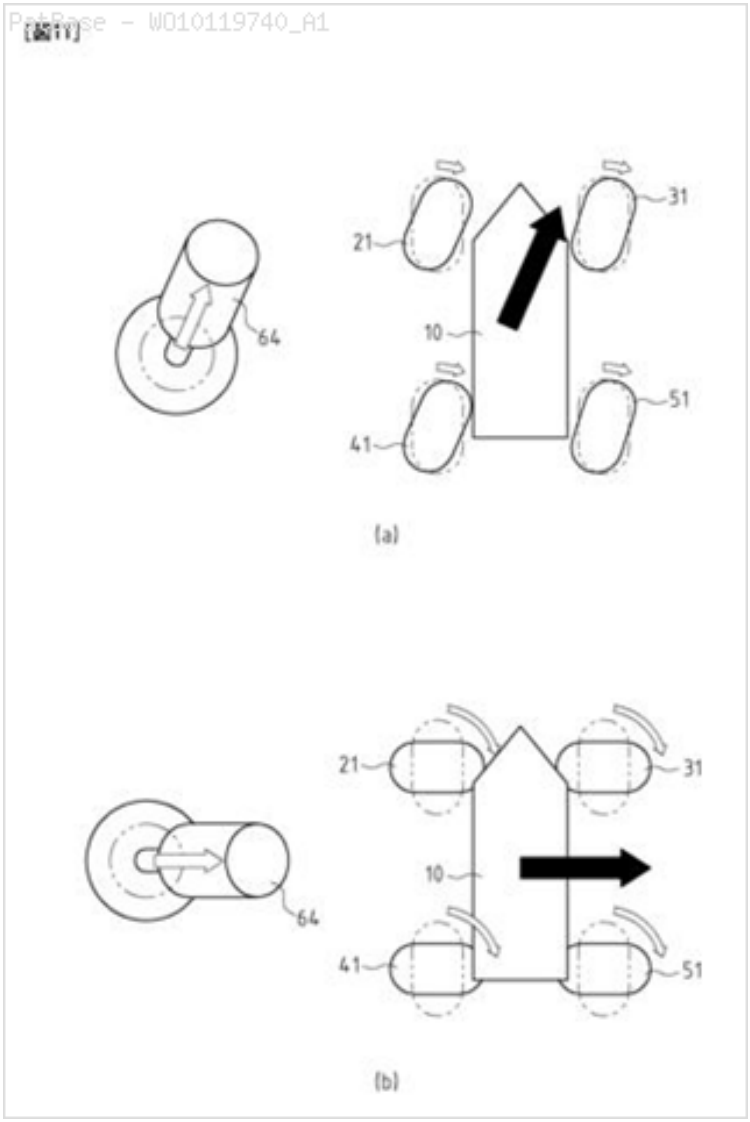
US class: 701/41 701/41P

Classification Explorer

Cited documents: US4263979 A, US2004129491 AA, JP9315334 A2, JP9294779 A2, JP7277217 A2, JP64074121 A2, JP6242836 A2, JP5297943 A2, JP5297935 A2, JP5080810 A2, JP5058330 A2, JP4287776 A2, JP3132801 A2, JP3026672 U1, JP3026672 A2, JP2262806 A2, JP2220972 A2, JP2008013045 A2, JP2005112300 A2, JP2003047109 A2, JP2000267714 A2, JP10244951 A2,

Forward Citations: WO13080905, WO13080886, WO12153596, US2015375782, RU2517396, JP2014006872, JP2013203114, JP2013112103, CN105246765, CN103974874,

Abstract:
Source: US2012046835A A vehicle capable of easily translating in an arbitrary direction. A vehicle comprising: wheels composed of two front wheels and two rear wheels; four steering actuators connected to the wheels, respectively, and steering the wheels; four drive actuators connected to the wheels, respectively, and driving the wheels; a joystick (64) tiltable in an arbitrary direction to perform operation and instructing the operation of the steering actuators; an accelerator pedal (63) for instructing the operation of the drive actuators; and a controller (100) which, when the joystick (64) is tilted, steers the wheels in the direction in which the joystick (64) is tilted, and when the accelerator pedal (63) is operated, drives the wheels on the basis of the amount of the operation of the accelerator pedal (63).



0) US2002033287A – CARGO CARRYING COMPARTMENTS OF AN ALL TERRAIN V...

19) Family number: 30116023 (US2002033287A) © PatBase

Title: Cargo carrying compartments of an all terrain vehicle

Priority:

US20000232572P	20000913	US20010331252P	20011113	US20010950926	20010913
US20020211573	20020805	US20020393114P	20020703	US20020384822P	20020604
US20020292813	20021113	US20030475511P	20030604	US20030647777	20030826
US20050181751	20050715	US20030647781	20030826	US20030647786	20030826
US20030647780	20030826	US20030647782	20030826	US20030647785	20030826
US20030647779	20030826	WO2002CA01754	20021113	US20030647788	20030826
US20030647787	20030826	US20030647778	20030826		

Family:

Publication number	Publication date	Application number	Application date
AU2002342460 AA	20030526	AU20020342460	20021113
CA2467537 AA	20040507	CA20022467537	20021113
EP1490257 A1	20041229	EP20020779060	20021113
US2002033287 AA	20020321	US20010950926	20010913
US2002179358 AA	20021205	US20020211573	20020805
US2003102694 AA	20030605	US20020292813	20021113
US2004108158 AA	20040610	US20030647785	20030826
US2004108159 AA	20040610	US20030647788	20030826
US2004112658 AA	20040617	US20030647779	20030826
US2004112668 AA	20040617	US20030647777	20030826
US2004112669 AA	20040617	US20030647778	20030826
US2004113389 AA	20040617	US20030647781	20030826
US2004129484 AA	20040708	US20030647780	20030826
US2004129485 AA	20040708	US20030647787	20030826
US2004134707 AA	20040715	US20030647786	20030826
US2004135342 AA	20040715	US20030647782	20030826
US2005247506 AA	20051110	US20050181751	20050715
US6659566 BB	20031209	US20010950926	20010913
US6705680 BB	20040316	US20020211573	20020805
US6968917 BB	20051129	US20020292813	20021113
US7121371 BB	20061017	US20030647780	20030826
WO03042026 A1	20030522	WO2002CA01754	20021113

Probable Assignee: BOMBARDIER RECREATIONAL PRODUCTS INC

Assignee(s):(std)**:** RONDEAU PIERRE ; GAGNON CLAUDE ; PORTELANCE MARTIN ; DUBE ERIC ; GAGNE MARTIN ; BOMBARDIER INC ; BOMBARDIER RECREATIONAL PROD ; BOMBARDIER RECREATIONAL PRODUC ; BOMBARDIER

Assignee(s): BOMBARDIER CHARLES ; BOMBARDIER RECREATIONAL PRODUCTS INC ; BRP INC ; BOMBARDLER RECREATIONAL PRODUCTS INC ; NADEAU DANIEL ; BANK OF MONTREAL

Inventor(s):(std)**:** BOMBARDIER CHARLES ; DUBE ERIC ; GAGNE MARTIN ; GAGNON CLAUDE ; NADEAU DANIEL ; PORTELANCE MARTIN ; RONDEAU PIERRE

Agent(s): SHELSTON IP; SHELSTON IP PTY LTD; OSLER HOSKIN AND HARCOURT LLP; BOMBARDIER RECREATIONAL PRODUCTS INC, INTELLECTUAL PROPERTY DEPT; BOMBARDIER RECREATIONAL PRODUCTS INC INTELLECTUAL PROPERTY DEPT; BRP LEGAL SERVICES

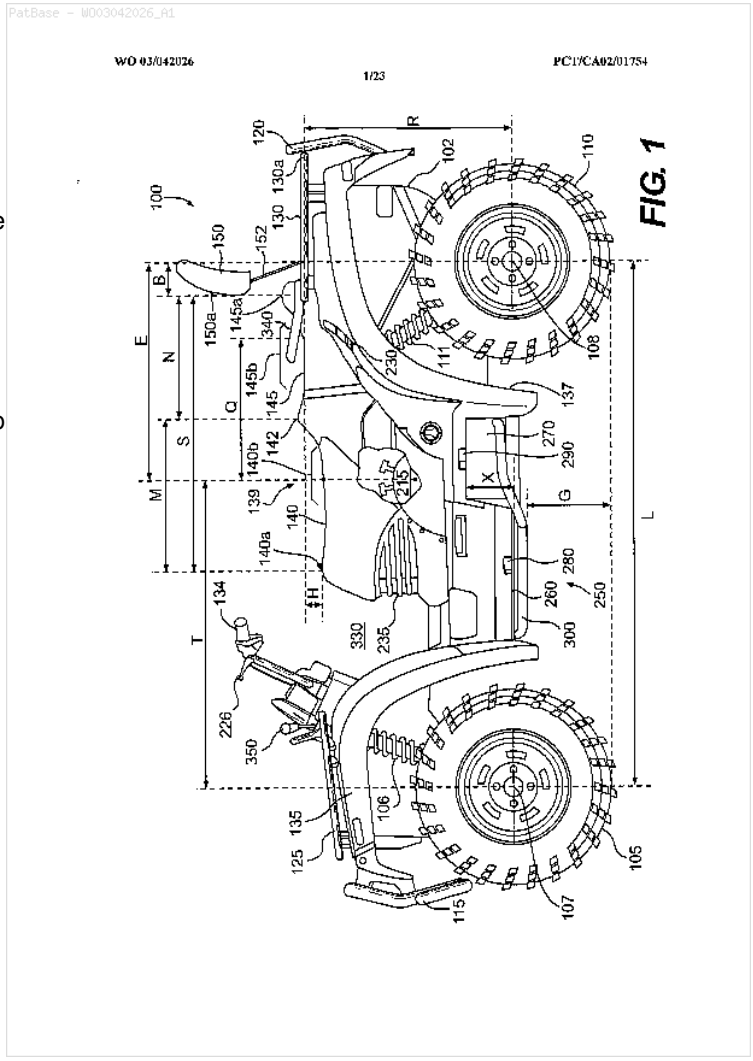
Designated states: AT AU BE BG CA CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

International class (IPC 8–9): B62D23/00 B62D33/02 B62J1/12 B62J1/28 B62J25/00 B62K5/00 B62K5/003 B62K5/01 B62K5/027 (Advanced/Invention); B62D33/02 B62J1/00 B62J25/00 B62K5/00 (Core/Invention)

International class (IPC 1–7):	B60K17/34 B60N2/00 B60P1/16 B60P1/28 B60R11/06 B60R9/02 B60R9/06 B62D21/00 B62D23/00 B62D33/03 B62D39/00 B62J1/00 B62J25/00 B62K5/00
CPC:	B62J25/00 Y10S180/908 B62J1/12 B62K5/01 B62K5/027 B62D33/02 B62J1/28 B62J7/04 B62J7/06
European class:	B62D33/02 B62J1/12 B62J1/28 B62J25/00 B62J7/04 B62J7/06 B62K5/01 B62K5/027
US class:	180/233 180/311 180/312 180/89.1 180/89.100P 180/89.12 180/89.120S 180/908 224/401 224/433 224/495 280/304.4 280/304.400P 296/183.2 296/184 296/195 296/203.04 296/203.040P 296/37.1 296/371 296/57.1 296/571 298/17R 298/22R
Classification Explorer	
Cited documents:	WO03053769 A1, WO03042026 A1, WO0076794 A1, USD445066 S1, USD439549 S1, USD439548 S1, USD436557 S1, USD427109 S1, USD422938 S1, USD405029 S1, USD364590 S1, USD325360 S1, USD324666 S1, USD305999 S1, USD298811 S1, USD264590 S1, US6822806 BB, US6755269 BA, US6698782 BB, US6698782 BA, US6672916 BA, US6622806 BA, US6533339 BA, US6508511 BA, US6461095 BA, US6378748 BA, US6343669 BB, US6343669 BA, US6314239 BA, US6296163 BA, US6270106 BA, US6237990 BA, US6237211 BA, US6209941 BA, US6182784 BA, US6179180 BA, US6142549 A, US6129401 A, US6116630 A, US6105721 A, US6079741 A, US6030018 A, US6029750 A, US6016943 A, US6012770 A, US6003923 A, US5997088 A, US5997067 A, US5878929 A, US5876005 A, US5846918 A, US5845918 A, US5819390 A, US5816462 A, US5765917 A, US5615922 A, US5597211 A, US5597067 A, US5558260 A, US5513868 A, US5480214 A, US5476146 A, US5458390 A, US5433357 A, US5421645 A, US5360259 A, US532989 A, US5327989 A, US5314239 A, US5267780 A, US5237989 A, US5224636 A, US5174622 A, US5109942 A, US5083632 A, US5076387 A, US5064016 A, US5060748 A, US5036939 A, US5026119 A, US4860850 A, US4826057 A, US4821825 A, US4802682 A, US4800986 A, US4800985 A, US4789195 A, US4765917 A, US4726439 A, US4721178 A, US4706770 A, US4691963 A, US4660880 A, US4648617 A, US4619476 A, US4527831 A, US4522442 A, US4451057 A, US445066 A, US439549 A, US439548 A, US436557 A, US4349138 A, US4300706 A, US4277008 A, US427109 A, US4270786 A, US4247030 A, US422938 A, US4135761 A, US4126357 A, US405029 A, US402029 A, US3647097 A, US364590 A, US325360 A, US324666 A, US305999 A, US298811 A, US2004206568 AA, US2004031640 AA, US2003150669 AA, US2003150659 AA, US2003150657 AA, US2002179358 AA, US2002027038 AA, JP2000313318 A2, EP1205379 A1, EP1157918 A2, EP0953499 A2, DE64590 A, DE27109 A, DE24666 A, DE22938 A,
Forward Citations:	WO14210580, WO10148014, WO09099588, WO09096973, WO08100398, WO08100398, WO07130043, WO03053769, WO02094644, USD777607, USD595188, USD592557, USD592556, USD555921, USD553870, USD546246, USD531088, USD519439, USD492916, USD488746, US9592782, US9434244, US9266580, US9199582, US9180801, US9080514, US9004510, US8998253, US8991844, US8905435, US8844999, US8789633, US8783720, US8701820, US8678464, US8668246, US8640814, US8622428, US8596398, US8561960, US8500189, US8474561, US8465077, US8439240, US8430442, US8419104, US8403104, US8328271, US8328235, US8322964, US8313133, US8297394, US8246057, US8226120, US8215694, US8205910, US8196692, US8191930, US8191929, US8191677, US8172310, US8167072, US8162091, US8146524, US8132827, US8109556, US8091657, US8075007, US8047324, US8029021, US8025326, US7954853, US7942447, US7871106, US7845452, US7802806, US7795602, US7789424, US7753293, US7753161, US7743864, US7717495, US7708105, US7708096, US7686365, US7686121, US7658411, US7644791, US7607595, US7594671, US7543836, US7537499, US7516998, US7513545, US7506714, US7490694, US7404568, US7390046, US7377570, US7334713, US7331418, US7325848, US7293951, US7258192, US7216912, US7134702, US7128341, US7121623, US7121371, US7097207, US7097207, US7086657, US6968917, US6916142, US6880658, US6719346, US6533339, US2016362041, US2016144922, US2016144761, US2014345964, US2014084643, US2014077112, US2013319784, US2013153325, US2012179334, US2012090908, US2011229293, US2011198831, US2011198830, US2011198142, US2011133438, US2010194088, US2010163329, US2010108428, US2010096200, US2010084212, US2010019524, US2009256395, US2009250282, US2009195035, US2009192013, US2009152940, US2009121518, US2009115222, US2009114746, US2009091101, US2009071739, US2009071738, US2009071737, US2008308334, US2008284124, US2008283327, US2008283326, US2008246834, US2008246300, US2008217088, US2008196958, US2008174139, US2008067825, US2008030040, US2008029990, US2007278026, US2007273135, US2007267885, US2007261906, US2007257516, US2007257479, US2007228803, US2007080548, US2007045017, US2007013203, US2006292966, US2006254842, US2006229058, US2006197331, US2006192375, US2006186699, US2006186283, US2006186156, US2006120841, US2006043131, US2006011754, US2006001234, US2005117359, US2004252926, US2004239088, US2004206568, US2004195855, US2004173653,

US2004169388, US2004135397, US2004135342, US2004134707, US2004129485, US2004113389, US2004112669, US2004112658, US2004108158, US2004031640, US2004013489, US2003150659, US2003102694, TWI402188, EP2698274, EP1847429, EP1609711, EP1600326, EP1520748, EP1520748, EP1475797, EP1395484, EP1361975, CN102803010, AU2010260149, AU2009210781, AU2006268268, AU2006202649,

Abstract:
Source: US2002033287A An all−terrain vehicle (ATV) includes various storage compartments so that the weight loaded onto the vehicle may be evenly distributed between the front and rear suspension of the ATV. The ATV is capable of hauling a variety of loads over various terrains. The ATV contains a rear storage compartment, at least two side storage compartments, a front storage compartment, and a front rack to enable the rider to carry or attach a wide variety of loads onto the ATV without causing the vehicle to overturn or flip up due to the additional weight. Additionally, the ATV may also include a tree guard positioned on each side of the ATV to protect the rear storage and side compartments and to prevent cargo on the rear storage compartment from being dislodged by trees that might protrude into the rider's path.



0) WO15115107A1 – VEHICLE VEHICULE

20) Family number: 60020707 (WO15115107A1) © PatBase

Title: VEHICLE

Priority: JP20140017255 20140131 WO2015JP00410 20150130

Family:

Publication number	Publication date	Application number	Application date
CN105377678 A	20160302	CN201580001279	20150130
EP2982582 A1	20160210	EP20150744056	20150130
EP2982582 A4	20160511	EP20150744056	20150130
IN03549MN2015 A	20160722	IN2015MN03549	20151214
JP2015115107 A1	20170323	JP20150559828T	20150130
TW201532889 A	20150901	TW20150103333	20150130
TWI570013 B	20170211	TW20150103333	20150130
WO15115107 A1	20150806	WO2015JP00410	20150130

Probable Assignee: YAMAHA MOTOR CO LTD

Assignee(s):(std)**:** YAMAHA MOTOR CO LTD

Assignee(s): YAMAHA HATSUDOKI KK ; YAMAHA HATSUKOKI KK

Inventor(s):(std)**:** TAKANO KAZUHISA ; TOMIMATSU MASAHIRO

Agent(s): GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; WASHIDA KIMIHITO

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

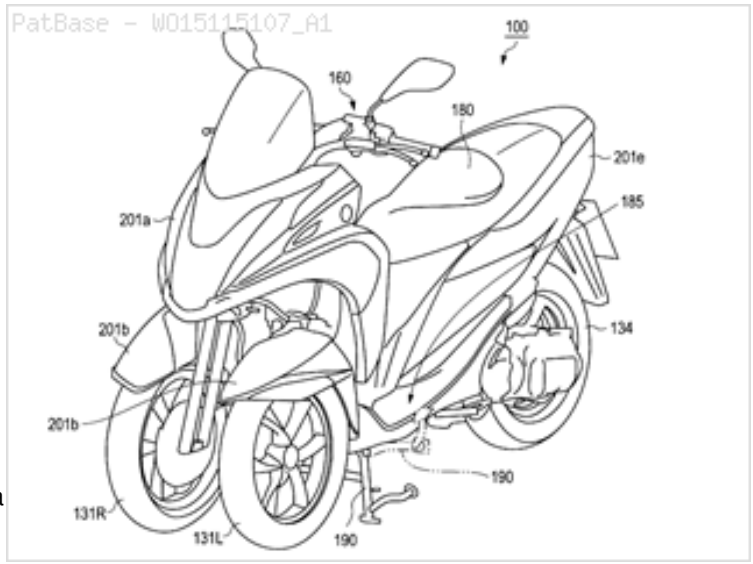
International class (IPC 8–9)**:** B60G21/00 B62H1/02 B62H1/04 B62K11/04 B62K11/10 B62K21/20 B62K5/02 B62K5/027 B62K5/05 B62K5/08 B62K5/10 (Advanced/Invention)

CPC: B62K5/05 B62K5/08 B62K5/10 B62H1/04 B62K5/027

Classification Explorer

Cited documents: WO12007819 A1, USD547242 S1, US4697663 A, US4671374 A, US4145069 A, US2010013186 AA, US2007040351 AA, TW201210882, JP2012056503 A2, JP2009202719 A2, JP2007223538 A2, JP2005313876 A2, CN101024407,

Abstract:
A vehicle which is provided with a tiltable body frame and two front wheels, wherein the degree of freedom in designing the horizontal width of a center stand is increased. This vehicle is provided with: the body frame; the left and right front wheels, which are arranged in the horizontal direction of the body frame; a linkage mechanism that includes a right side rod, a left side rod, an upper cross member, and a lower cross member; a rear wheel; and the center stand, which has a left ground contact portion and a right ground contact portion disposed on the left and right sides, respectively, of the center in the horizontal direction of the body frame, and can turn with respect to the body frame and switch to a use position in which the left and right ground contact portions come into contact with the ground. The center stand is disposed in such a manner that, when the center stand is in the use position, at least the right ground contact



portion, the left ground contact portion, and the rear wheel come into contact with the ground.

0) US2012193159A – FOLDABLE SEAT MOUNTING RACK AND FOLDABLE MOTORI...

21) Family number: 49645223 (US2012193159A) © PatBase

Title: FOLDABLE SEAT MOUNTING RACK AND FOLDABLE MOTORIZED VEHICLE HAVING SAME

Priority: CN201110321596 20111020 CN201120029827U 20110128 CN201120029860U 20110128 CN201120029836U 20110128 CN201120029857U 20110128 CN201120029840U 20110128 US20110233999 20110915 US20120357247 20120124 US20120357102 20120124 US20120357310 20120124 US20120357194 20120124 CN201120074817U 20110321 CN201120074814U 20110321 EP20120152670 20120126

Family:

Publication number	Publication date	Application number	Application date
CN102616326 A	20120801	CN201110321596	20111020
CN201989907 U	20110928	CN201120029836U	20110128
CN202029936 U	20111109	CN201120029857U	20110128
DE602012005760 D1	20150423	DE201260005760T	20120126
EP2481655 A2	20120801	EP20110181965	20110920
EP2481655 A3	20131023	EP20110181965	20110920
EP2481659 A2	20120801	EP20120152670	20120126
EP2481659 A3	20131009	EP20120152670	20120126
EP2481659 B1	20150311	EP20120152670	20120126
EP2481661 A2	20120801	EP20120152663	20120126
EP2481661 A3	20130925	EP20120152663	20120126
EP2481662 A2	20120801	EP20120152680	20120126
EP2481662 A3	20131016	EP20120152680	20120126
EP2481663 A2	20120801	EP20120152685	20120126
EP2481663 A3	20130529	EP20120152685	20120126
ES2532930 T3	20150406	ES20120152670T	20120126
US2012193159 AA	20120802	US20120357102	20120124
US2012193160 AA	20120802	US20120357310	20120124
US2012193886 AA	20120802	US20120357247	20120124
US2012193891 AA	20120802	US20110233999	20110915
US2012193943 AA	20120802	US20120357194	20120124
US8381858 BB	20130226	US20120357310	20120124
US8388014 BB	20130305	US20110233999	20110915
US8413753 BB	20130409	US20120357102	20120124
US8511705 BB	20130820	US20120357247	20120124
US8684378 BB	20140401	US20120357194	20120124

Probable Assignee: DONGGUAN PRESTIGE SPORTING PRODUCTS CO

Assignee(s):(std)**:** WU CHICHUN ; WU JIQUN ; ZHANG ZHAO ; DONGGUAN PRESTIGE SPORTING PRODUCTS CO LTD

Assignee(s): DUNGGUAN PRESTIGE SPORTING PRODUCTS CO LTD DONGGUAN ; DONGGUAN PRESTIGE SPORTING PRODUCTS CO

Inventor(s):(std)**:** WU CHICHUN ; ZHANG ZHAO ; ZHAO ZHANG

Agent(s): WEICKMANN AND WEICKMANN PATENTANWAELTE RECHTSANWALT PARTMBB; JORDAN VOLKER OTTO WILHELM; LEHMANN MARIA ISABEL; MORRIS MANNING AND MARTIN LLP; TIM TINGKANG

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

International class (IPC 8–9)**:** B60G11/14 B60G9/02 B60N2/30 B62B1/12 B62B7/06 B62D21/00 B62D25/00 B62D31/00 B62D61/00 B62J1/08 B62K15/00 B62K21/12 B62K21/16 B62K25/16 B62K5/00 B62K5/007

B62K5/08 B62M27/02 E05B55/14 F16M13/02 (Advanced/Invention); B62K5/00 (Advanced/Non–invention)

CPC: B60G9/02 B60G11/14 B60G2200/322 B60G2204/124 B60G2300/22 B62K3/002 B62K5/007 B62K2204/00 B62D21/14 B62K5/00 B62K15/00 B62K2005/001 B62D31/006 B62K15/008 B62K21/12 B62K15/006 B62K19/36 Y10T74/20792 Y10T74/20798 Y10T292/552

European class: B62D21/14 B62K15/00 B62K15/00F B62K19/36 B62K21/12 B62K5/00 B62K5/007 L62K204/00 L62K5/00B

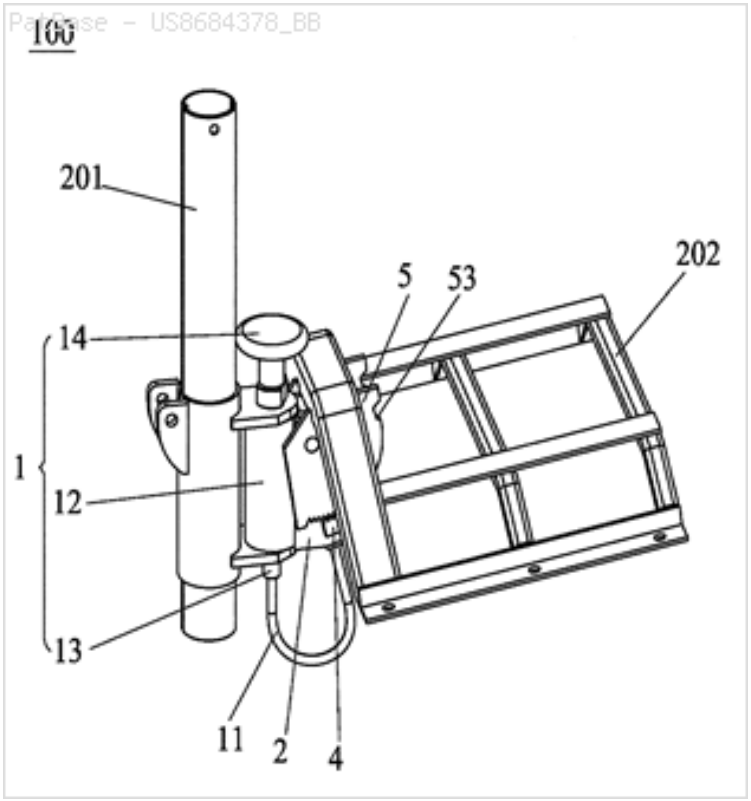
US class: 180/208 180/214 211/27 211/27S 280/124.111 280/124.111P 280/263 280/267 280/278 280/287 280/415.1 280/47.34 280/47.38 280/491.1 280/638 280/638P 280/639 280/648 280/657 280/87.05 292/334 292/334S 296/203.02 296/203.020P 297/311 297/311S 74/551.3 74/551.4 74/551.400S

Classification Explorer

Cited documents: WO02055372 A1, US8474840 BB, US8388014 BB, US8328209 BB, US8328206 BB, US8230758 BA, US8172243 BB, US8162090 BB, US8113525 BB, US7950686 BB, US7926606 BB, US7862055 BB, US7793949 BB, US7703567 BB, US7654356 BB, US7559561 BB, US7451848 BB, US7438303 BB, US7419171 BA, US7407172 BB, US7364174 BB, US7219907 BB, US7156405 BA, US7124849 BB, US7011319 BB, US6913272 BB, US6880840 BB, US6866275 BA, US6851498 BA, US6848697 BB, US6827358 BB, US6793224 BB, US679086 A, US6557873 BB, US6481913 BB, US647366 A, US645884 A, US6428021 BA, US6390483 BA, US6378880 BA, US6371235 BA, US6343798 BA, US6332621 BA, US6301749 BA, US6299186 BA, US6286845 BA, US6276701 BA, US6270095 BA, US6234501 BA, US6234042 BA, US6206387 BA, US6182988 BA, US6173976 BA, US6173976 B1, US6120044 A, US5630774 A, US5312126 A, US5154251 A, US4682509 A, US4417745 A, US4176850 A, US4054300 A, US4026573 A, US3770289 A, US3572757 A, US3354976 A, US2771145 A, US2013113172 AA, US2012193886 AA, US2012193160 AA, US2011247889 AA, US2011109058 AA, US2010327547 AA, US2010181124 AA, US2010126789 AA, US2010084831 AA, US2010013183 AA, US2009308676 AA, US2009278327 AA, US2009241723 AA, US2009206643 AA, US2009160163 AA, US2009115167 AA, US2009020350 AA, US2007278767 AA, US2007235971 AA, US2006237934 AA, US2006192358 AA, US2006145443 AA, US2006131091 AA, US2006103096 AA, US2005248111 AA, US2005173878 AA, US2005151334 AA, US2005082778 AA, US2005077097 AA, US2005073121 AA, US2005057032 AA, US2004135334 AA, US2004129472 AA, US2003214108 AA, US2003178877 AA, US2003141121 AA, US2003067151 AA, US2002149166 AA, US2002148324 AA, US2002145264 AA, US2002125670 AA, US2002096855 AA, US2002063411 AA, US2002063406 AA, US2002063405 AA, US2002053775 AA, US2002050696 AA, TWM270112 Y, TWM268267 Y, JP55102714 A2, JP2249781 A2, GB963042 A, GB859577 A, GB2450348 A1, GB2416742 A1, GB2367541 A1, FR928424 A, EP1407961 A1, EP1249215 A1, EP0458101 A1, DE885964 A, DE20015773 U1, CN2570163 Y, CN2464615 Y, CN2421232 Y, CN2419158 Y, CN201907618 U, CN201895746 U, CN201647030 U, CN201553257 U, CN201099342 Y, CN201099328 Y, CN101293552 A,

Forward Citations: WO16043556, WO16029787, US9567034, US9533729, US9346514, US9302691, US9289639, US9284015, US9265675, US9119986, US9016702, US8978806, US8894088, US8511705, US8413753, US8388014, US2016009332, US2015209205, US2014203538, US2013324376, US2012193891, US2012193886, US2012193159, RU2559189, GB2529304, GB2510334, FR3013026, EP2772421, CN104890780, CN103818504, CN103818504, CN103770875, CN103723173, CN103359236, CN103101597, CN102980011,

Abstract:
Source: US2012193159A A foldable seat mounting rack of a foldable motorized vehicle includes a pair of symmetric foldable seat mounting support. Each symmetric foldable seat mounting supports comprises: an upper mounting base, a lower mounting base, a pinion, a locking lever, a main connecting plate, a first and a second auxiliary connecting plates. The main connecting plate is pivoted on both upper and lower mounting bases. The pinion is pivoted at a middle portion on an inner side of the main connecting plate. Side surfaces at one end of the both auxiliary connecting plates are formed with racks engaging with the pinion. The first auxiliary connecting plate is pivoted on the lower mounting base and the second auxiliary connecting plate is pivoted on the upper mounting base. One end of the locking lever is pivoted on the upper end of the main connecting plate, and the other end presses against the pinion.



0) US2007182120A – SUSPENSION TILTING MODULE FOR A WHEELED VEHICLE...

22) Family number: 34940358 (US2007182120A) © PatBase

Title: SUSPENSION TILTING MODULE FOR A WHEELED VEHICLE AND A WHEELED VEHICLE EQUIPPED WITH SUCH A SUSPENSION TILTING MODULE

Priority: CA20072574855 20070123 EP20060001707 20060127

Family:

Publication number	Publication date	Application number	Application date
AT463370 E	20100415	AT20060001707T	20060127
CA2574855 AA	20070727	CA20072574855	20070123
CN101100162 A	20080109	CN200710003208	20070129
DE602006013400 D1	20100520	DE200660013400T	20060127
EP1813450 A1	20070801	EP20060001707	20060127
EP1813450 B1	20100407	EP20060001707	20060127
US2007182120 AA	20070809	US20070657764	20070125

Probable Assignee: FONDAZIONE TORINO WIRELESS

Assignee(s):(std)**:** CAVALLI FABIO ; FESTINI ANDREA ; FONDAZIONE TORINO WIRELESS ; TONOLI ANDREA ; TORINO POLITECNICO

Assignee(s): POLITECNICO DI TORINO ; FOND TORINO WIRELESS

Inventor(s):(std)**:** ANDREA FESTINI ; ANDREA TONOLI ; CAVALLI FABIO ; FABIO CAVALLI ; FESTINI ANDREA ; TONOLI ANDREA

Agent(s): GOWLING LAFLEUR HENDERSON LLP; GRUENECKER KINKELDEY STOCKMAIR AND SCHWANHAEUSSER ANWALTSSOZIETAET; PAUL A FATTIBENE FATTIBENE AND FATTIBENE

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

International class (IPC 8–9): B60G17/01 B60G17/015 B60G21/00 B60G21/10 B60G3/18 B60G3/20 B60G3/28 B62D9/04 (Advanced/Invention); B60G17/01 B60G3/18 B62D9/00 (Core/Invention)

CPC: B60G17/015 B60G21/007 B60G2204/421 B60G2300/45

European class: B60G17/015 B60G21/00D L60G204/421 L60G300/45

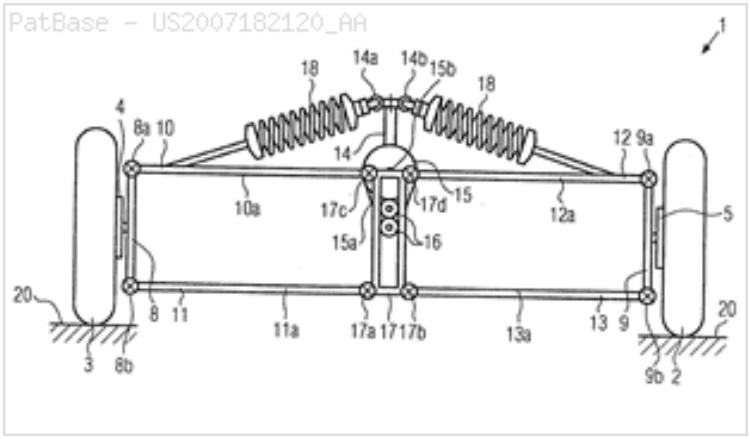
US class: 280/124.104 280/124.135 280/124.142

Classification Explorer

Cited documents: WO05002957 A1, US5765846 A, US5004061 A, US2260102 A, FR2872772 A1, FR2745757 A1,

Forward Citations: WO14009637, US9346492, US9283989, US9248857, US9199686, US9145168, US9090281, US9045015, US8925940, US8764040, US8690168, US8616568, US8485541, US8128110, US8075007, US8070172, US7722063, US7401794, US2017043805, US2015183484, US2015061274, US2015028559, US2014252732, US2013147145, US2012258840, US2012098220, US2011298191, US2010320023, US2009256326, US2009194961, US2008284124, US2007228675, US2006017240, FR2993207, DE102008028352, CN104520178, CN103171389,

Abstract:



Source: US2007182120A A tilting suspension system is provided for a vehicle comprising at least a first and a second wheel (2,3) disposed on a common axle, the module comprising a suspension system adapted to support the at least first and second wheels allowing both tilting and vertical displacement of the at least first and second wheels, said module comprising tilting means (14) pivotally connected to the suspension system, so that tilting of the tilting means results in the suspension system being tilted together with the at least first and second wheels, the tilting means being connected to the suspension system through first and second shock absorbing means, so that a vertical displacement of one or both of the first or second wheels (2, 3) results in a force being exerted on one or both of the first and second wheels, respectively, varying in a non–linear manner as a function of the vertical displacement of the at least first and second wheels.

0) US2006086008A – MOUNTING OF AN ACCESSORY ON AN ATV

23) Family number: 32865262 (US2006086008A) © PatBase

Title: MOUNTING OF AN ACCESSORY ON AN ATV

Priority: US20040969237 20041021

Family:

Publication number	Publication date	Application number	Application date
US2006086008 AA	20060427	US20040969237	20041021
US7093380 BB	20060822	US20040969237	20041021

Probable Assignee: QUADIVATOR INC

Assignee(s):(std)**:** CLOSE JON ; HUBSCHER DARIN ; QUADIVATOR INC

Inventor(s):(std)**:** CLOSE JON ; HUBSCHER DARIN

Agent(s): ADE AND CO INC; ADRIAN D; MICHAEL R; RYAN W

International class (IPC 8–9)**:** A01B59/00 E01H5/04 (Advanced/Invention); A01B59/00 E01H5/04 (Core/Invention)

CPC: E01H5/06 E01H5/098

European class: E01H5/06 E01H5/09E

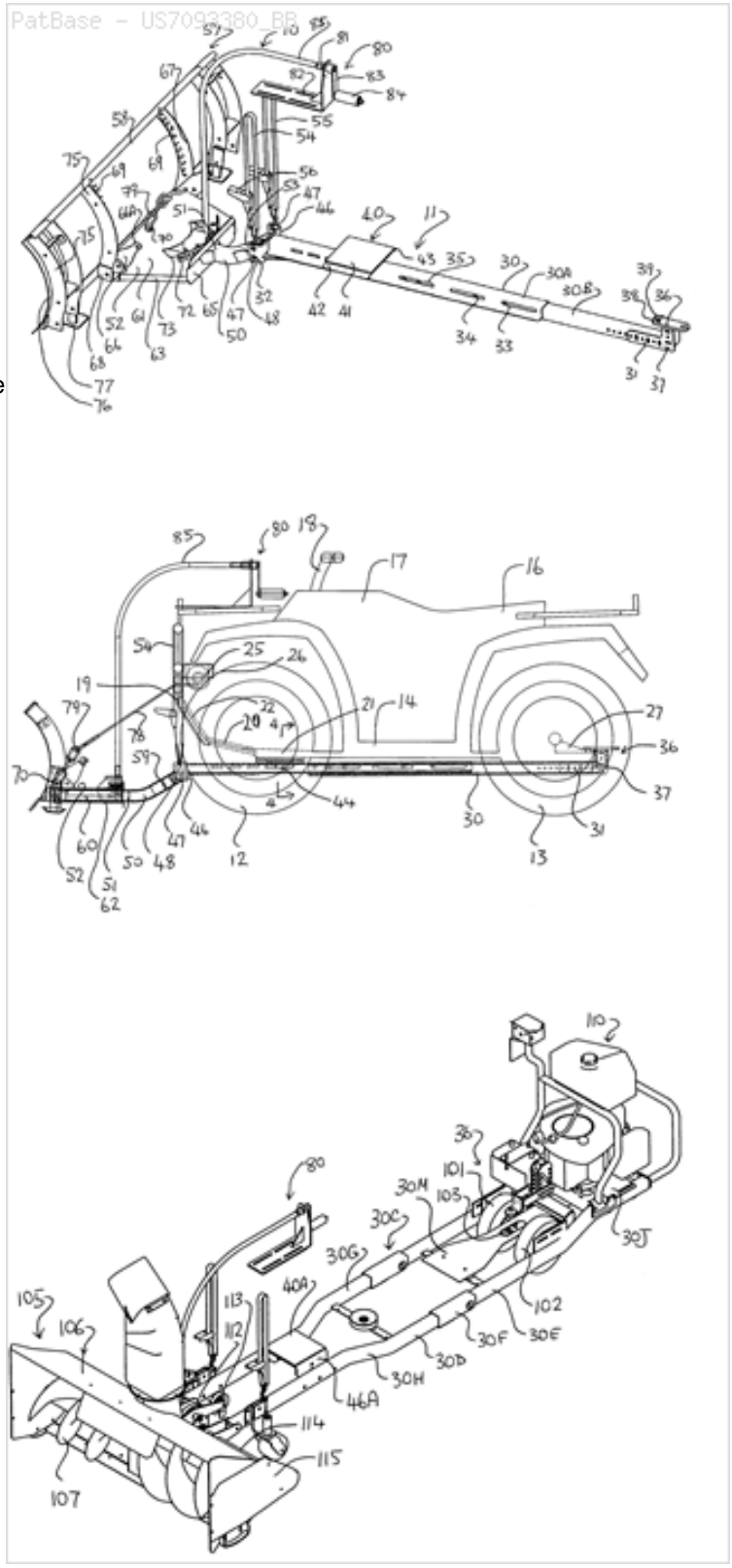
US class: 172/679 37/231 372/310

Classification Explorer

Cited documents: US6557330 BB, US6557330 BA, US6502334 BA, US6178668 BA, US6178668 B1, US5381647 A, US4615130 A, US4577712 A, US3688847 A,

Forward Citations: WO13155194, US9347199, US9340938, US9332687, US9290897, US9131637, US8505973, US8381422, US8046938, US7997015, US7849614, US7766094, US7493711, US7302765, US2015083984, US2014345241, US2014157633, US2013026745, US2012205893, US2012198732, US2012117833, US2011047835, US2009241382, US2008222925, US2007084089, US2006236565,

Abstract:
Source: US2006086008A An ATV has an accessory mounted at a front end providing a working tool, such as a blade, brush or snow blower, by a frame which extends underneath the ATV from a hitch coupling at the rear to a mounting plate which is clamped up under the belly pan of the ATV by a pair of straps at the front. The plate can be adjusted in height and position along the frame and can tilt front to rear to accommodate different makes of machine. The tilting can accommodate tilting of the frame if it is carried at the rear on wheels and floating relative to the hitch. The working tool is mounted on a stub frame portion pivotal upwardly and downwardly at the front of the frame. The working accessory can be adjusted side to side to change angle by a manually operable screw which drives a gear on the tool.



24) Family number: 7850569 (US4217970A) © PatBase

Title: Configuration and construction of four wheeled motor vehicles

Priority: US19740437482 19740128 US19750597311 19750808 US19770857567 19771205 US19770857568 19771205 US19770857566 19771205

Family:

Publication number	Publication date	Application number	Application date
US4217970 A	19800819	US19770857568	19771205
US4227589 A	19801014	US19770857567	19771205
US4229018 A	19801021	US19770857566	19771205
US4290620 A	19810922	US19750597311	19750808

Probable Assignee: CHIKA JOHN J

Assignee(s):(std)**:** CHIKA JOHN J

Inventor(s):(std)**:** CHIKA JOHN J

International class (IPC 8–9)**:** B60G21/055 B62D23/00 B62D31/00 B62K13/06 B62K27/02 B62M6/10 B62M6/25 B62M6/35 (Advanced/Invention)

International class (IPC 1–7)**:** B60K17/00 B62D21/12 B62D61/00 B62K13/06 B62K27/12

CPC: B60G21/055 B62D23/005 B62K5/08 B62K13/06 B62K27/00 B62D31/003 B62K27/02 B62M6/10 B62M6/25

European class: B60G21/055 B62D23/00B B62D31/00B B62K13/06 B62K27/00 B62K27/02 B62K5/08 B62M6/10 B62M6/25

US class: 180/205.7 180/206 180/221 180/298 180/342 180/366 180/89.1 280/203 280/209 280/282 280/283 280/93.514 296/193.05 296/205

Classification Explorer

Cited documents: US784042, US739633 A, US646791 A, US636155 A, US4093258 A, US4028957, US3961807, US3951427, US3941075, US3902738 A, US3894615, US3887210, US3794352 A, US3768834 A, US3517764, US3435701, US3429584, US3013814 A, US2891804, US2691421, US2625230, US2578886 A, US2409887 A, US2248223 A, US1848451 A, US1478316 A, SU553132 T, SU231326 T, IT443900 A, GB728346, GB506208 A, GB189818531 A, GB189622529 A, GB1078535 A, FR971572, FR605567 A, FR601057 A, DE812643 A, DE121044 A, AT182323 B,

Forward Citations: WO9627518, WO16022493, WO15155697, WO15119506, WO14039761, WO13030225, WO11004093, WO07103188, WO07103188, WO07068000, WO04067367, WO04067367, WO03037679, WO0249889, WO0063065, USD766137, USD638333, USD586696, USD586695, USD586261, USD586260, USD585790, USD585789, USD585788, USD575675, USD564410, USD563274, USD507993, USD505364, USD503661, US9394027, US9365251, US9340250, US9321494, US9284007, US9217501, US9211924, US9205730, US9174693, US9114851, US9085335, US9016774, US9004535, US8998216, US8955632, US8944492, US8944301, US8899615, US8894081, US8851558, US8827028, US8827020, US8827019, US8752743, US8746719, US8640796, US8613336, US8613335, US8596405, US8486846, US8397844, US8382125, US8146937, US8141668, US7967312, US7874566, US7819220, US7775538, US7770682, US7721836, US7695393, US7658258, US7530411, US7473204, US7461864, US7213866, US7066530, US7017702, US7004502, US6994179, US6905138, US6860512, US6755265, US6634701, US6631925, US6623067, US6578904, US6561532, US6554308, US6527290, US6435601, US6428086, US6419304, US6311997, US6250711, US6250410, US6170844, US6145922, US6065557, US6059058, US6022036, US6010155, US5934745, US5845937, US5806620, US5741045, US5613918, US5511809, US5292142, US5251721, US4924959, US4834410, US4787647, US4740004, US4425976, US2017021893, US2015210319, US2015069732, US2015042063, US2015014957, US2014224564, US2014224557, US2013263696, US2013187407, US2013092466, US2013056293, US2012318595, US2012242110, US2012098300, US2012037672, US2011308872, US2011285170, US2011272925, US2011048828, US2011018225, US2010314852, US2009178871, US2009114465, US2009001764, US2008314668, US2008246301, US2008023249, US2008023240, US2007261900, US2007207889, US2007144799, US2007000715, US2006151224, US2006033361,

US2005285415, US2005280254, US2005280217, US2005034904, US2004245745, US2004154854, US2004129489, US2004124033, US2004104065, US2004084889, US2004066025, US2004026144, RU2507086, GB2492786, FR2947797, FR2727377, FR2720048, FR2640575, FR2559119, FR2530212, ES2412031, EP2060477, EP1977922, EP1717138, EP0534831, DE4125832, DE19804104, DE19613446,

Abstract:
Source: US4217970A A four−wheeled motor vehicle constructed by operatively coupling two exclusively configured left and right longitudinal side structures by plural, transversely positioned connecting and bracing members. Each side structure operatively supported by its own front wheel adapted for steering and rear wheel adapted for propelling the vehicle. Each of the connecting members comprising a longer mid−portion positioned transversely between the two longitudinal sides, and two shorter end−portions which are secured to correspondingly positioned structurally rigid sections of them. Steering system operatively couples the two front wheels of the two sides for steering thus coupled vehicle. A propulsion plant propels at least one of the wheels. All operating controls are configured for safe and legal operation of the vehicle by its driver. The longer mid−portions of said connecting members support body panels positioned intermediate the two side structures, vehicle floor and seats. The basic configuration is adaptable to be combined into variously configured, open, closed and convertible vehicle bodies. Various facets of the basic concept are adaptable for partial application in construction of new and conversion of existing conventionally constructed motor vehicles of all types.



0) US4365921A – FORKLIFT VEHICLE

25) Family number: 16798317 (US4365921A) © PatBase

Title: Forklift vehicle

Priority: CA19790330327 19790621 CA19810380471 19810623 US19800154567 19800529

Family:

Publication number	Publication date	Application number	Application date
AU198059461 A1	19810108	AU19800059461	19800620
AU533657 B2	19831201	AU19800059461	19800620
CA1113891 A1	19811208	CA19790330327	19790621
CA1148123 A1	19830614	CA19810380471	19810623
CA1148123 A2	19830614	CA19810380471	19810623
DE3071284 D1	19860123	DE19803071284	19800620
EP0021805 A1	19810107	EP19800302085	19800620
EP0021805 B1	19851211	EP19800302085	19800620
EP0120149 A1	19841003	EP19830200739	19800620
JP56043197 A2	19810421	JP19800083861	19800620
US4365921 A	19821228	US19800154567	19800529
US4520903 A	19850604	US19820441055	19821112

Probable Assignee: STEINER TURF EQUIPMENT INC

Assignee(s):(std): BROUWER TURF EQUIP

Assignee(s): BROUWER TURF EQUIPMENT LIMITED ; BROUWER TURF EQUIPMENT LTD ; CUSHMAN INC ; STEINER TURF EQUIPMENT INC ; CUSHMAN INC A CORP OF DE ; ARNOLD WILLIAM T ; BROUWER GERARDUS J

Inventor(s):(std): ARNOLD W ; ARNOLD WILLIAM ; BROUWER G ; BROUWER GERARDUS ; WILLIAM ARNOLD ; W ARNOLD ; UIRIAMU AANORUDO ; JIERARUDASU BUROUWAA ; GERARDUS BROUWER ; G BROUWER ; ARNOLD WILLIAM T ; BROUWER GERARDUS J

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; BERESKIN AND PARR

Designated states: BE DE FR GB NL SE

International class (IPC 8–9): B60K7/00 B66F9/06 B66F9/075 B66F9/10 B66F9/12 (Advanced/Invention); B66F9/12 (Advanced/Non–invention); B66F9/06 B66F9/075 B66F9/08 B66F9/12 (Core/Invention)

International class (IPC 1–7): B60K7/00 B65G67/04 B66B9/20 B66F9/06 B66F9/08 B66F9/10 B66F9/12 B66F9/19 B66F9/20 B66F9/22

CPC: B66F9/06 B66F9/07559 B66F9/07563 B66F9/07572 B66F9/10

European class: B66F9/06 B66F9/075 B66F9/075J B66F9/075L B66F9/075P B66F9/10

US class: 180/211 180/266 180/291 187/222 187/234 187/237 187/9R 414/347 414/416.11 414/497 414/622 414/629 414/631 414/785

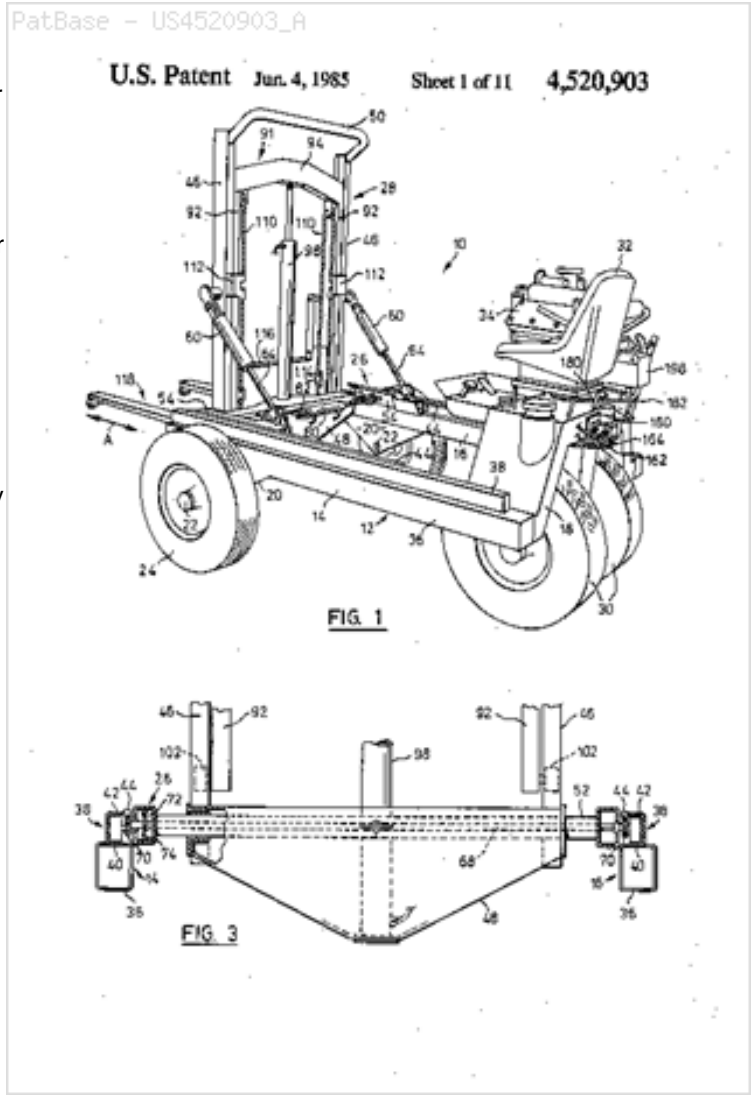
Classification Explorer

Cited documents: US4268210 A, US3908849 A, US3904055 A, US3893580 A, US3861535 A, US3799379 A, US3710967 A, US3710965 A, US3696949 A, US3684114 A, US3587883 A, US3563341 A, US3521780 A, US3432054 A, US3390797 A, US3381834 A, US3375947 A, US3302810 A, US3240008 A, US3157301 A, US2927653 A, US1148531 A, GB868033 A, GB803066 A, GB308636 A, DE1927981 A1, DE1043945 A,

Forward Citations: WO9954249, WO9532917, WO9009335, WO9008088, WO08129447, US9371217, US9090441, US8974169, US8794386, US8777545, US8747048, US8651795, US8381860, US8322968, US7927063, US7927061, US6945745, US6851885, US6641355, US6572322, US6309420, US6120232, US6062800, US6024535, US6021869, US5938710, US5879124, US5813820, US5713716, US5662450, US5641261, US5590998, US5575604, US5480275, US5326212, US5297645, US5190435, US5036952, US5036607, US5007794, US4998858, US4919233,

US4887686, US4880347, US4778327, US4515025, US2015158707, US2014010622, US2013056287, US2013006444, US2012080063, US2011091306, US2009097954, US2008292448, US2008292437, US2007292250, US2007251746, US2007071586, US2007059135, US2006263182, US2005254929, US2005220588, US2003206793, GR97100203, GR970100203, GB2259292, GB2259292, GB2250267, GB2246552, GB2153339, FR2915741, FR2749003, FR2735763, ES2137809, EP2361804, EP2030940, EP1988054, EP1457456, EP0953540, EP0574616, DE10013079, CN104016269, CN104016147, CN104016147, CN102441540, CN102441540,

Abstract:
Source: US4365921A A self propelled forklift vehicle having a frame formed by two spaced parallel longitudinal frame members and a rear transverse frame member. The fork carriage is movable forwardly and rearwardly on the longitudinal frame members, along the path of the machine, and carries a fork tower and forks. The forks can be forced below the vehicle to raise the vehicle up beneath the rear of a trailer for transport. The vehicle's rear wheels, which steer and drive the vehicle, are closely spaced and tiltable from side to side to allow for rough terrain, with the operator seat and motor on opposite sides thereof to balance each other. A manually operated split pulley drive allows creeping of the vehicle at a closely controlled low speed. The fork tines include erectable rollers to support part of the vehicle weight when the forks carry a forwardly extended load, to prevent tipping. A front gate causes discharge of the contents of a pallet onto the ground when the fork carriage is retracted. An automatic centering mechanism returns the rear driving wheels to either front driving or rear driving position as selected by the operator.



0) US2016272264A – TILTING MECHANISM FOR A WHEELED VEHICLE

26) Family number: 59232109 (US2016272264A) © PatBase

Title: TILTING MECHANISM FOR A WHEELED VEHICLE

Priority: DK20130000640 20131108 EP20140799704 20141107 WO2014EP74050 20141107

Family:

Publication number	Publication date	Application number	Application date
AU2014345540 AA	20150514	AU20140345540	20141107
CA2929109 AA	20160428	CA20142929109	20141107
CN105829201 A	20160803	CN201480061149	20141107
DE202014010970 U1	20170323	DE201420010970U	20141107
EP3066001 A1	20160914	EP20140799704	20141107
US2016272264 AA	20160922	US20140033914	20141107
WO15067760 A1	20150514	WO2014EP74050	20141107

Probable Assignee: BUTCHERS AND BICYCLES APS

Assignee(s):(std)**:** BUTCHERS AND BICYCLES APS ; MICRO MOBILITY SYSTEMS AG

Assignee(s): MOGENSEN MORTEN ; WAGENER MORTEN

Inventor(s):(std)**:** MOGENSEN MORTEN ; WAGENER MORTEN

Agent(s): WRAYS PTY LTD; SMART AND BIGGAR; AWAPATENT A S; ROHDE VIBEKE ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G21/00 B60K5/10 B62D9/02 B62K5/05 B62K5/08 B62K5/10 B62K7/04 B62M6/40 (Advanced/Invention)

CPC: B60G21/007 B60G3/20 B60G2200/144 B60G2300/45 B62K5/05 B62M6/40 B62K5/10 B62K5/08 B62K7/04

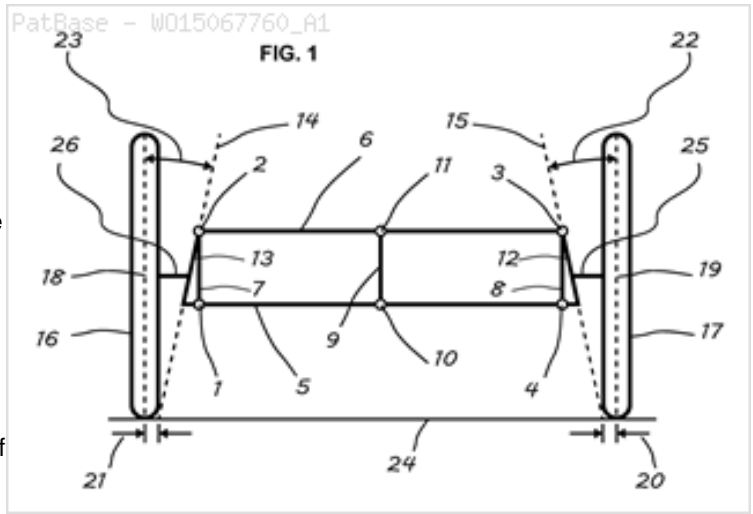
US class: 180/206.1

Classification Explorer

Cited documents: US7487985 BA, US2008258416 AA,

Forward Citations: WO17021905, US2016229480,

Abstract:
Source: US2016272264A This invention relates to a tilting mechanism for wheeled vehicles such as bicycles both electrical and manually powered, motorcycles, mopeds, scooters and the like. The wheeled vehicle, preferably with three wheels or more, driving like a 2–in–line vehicle and handles the same way in the turns and when driving straight. The tilting mechanism for a multiple wheeled vehicle, comprising a tilting mechanism that allows for leaning body and wheels into a turn and independent adjustment of the turning radius, while inducing an effect to the two front wheels similar to Ackerman steering compensation. The principle of the tilting mechanism is a parallelogram structure, which comprises a top rod, a bottom rod and a pair of connecting rods, pivotally connected to each other. To each of the connecting rods a pair of steering elements is pivotally connected and



on two steering elements a pair of wheels is connected.

0) US2006170171A – VEHICLE WITH A TILTABLE CHASSIS

27) Family number: 30716913 (US2006170171A) © PatBase

Title: VEHICLE WITH A TILTABLE CHASSIS

Priority: WO2002IB05833 20021220

Family:

Publication number	Publication date	Application number	Application date
AT465077 E	20100515	AT20020803252T	20021220
AU2002365106 AA	20040714	AU20020365106	20021220
DE60236112 D1	20100602	DE20026036112	20021220
EP1572526 A1	20050914	EP20020803252	20021220
EP1572526 B1	20100421	EP20020803252	20021220
US2006170171 AA	20060803	US20020539230	20021220
US7731210 BB	20100608	US20020539230	20021220
WO04056645 A1	20040708	WO2002IB05833	20021220

Probable Assignee: PEDERSEN ROALD H

Assignee(s):(std)**:** PEDERSEN ROALD H

Inventor(s):(std)**:** PEDERSEN ROALD H ; ROALD H PEDERSEN

Inventor(s): PEDERSEN ROALD

Agent(s): LEINWEBER AND ZIMMERMANN; HARTMAN AND HARTMAN PC; GARY M; DOMENICA N S

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW

International class (IPC 8–9): B60G21/00 B62D61/06 B62D9/02 B62K25/24 B62K5/04 B62K5/05 B62K5/08 (Advanced/Invention); B60G21/00 B62D61/00 B62D9/00 B62K25/04 B62K5/00 (Core/Invention)

International class (IPC 1–7): B62D9/02 B62K5/04 B62K5/08

CPC: B60G21/007 B60G2300/122 B60G2300/40 B60G2300/45 B62D9/02 B62D61/06 B62K5/05 B62K5/08 B62K5/10

European class: L60G300/122 L60G300/40 L60G300/45

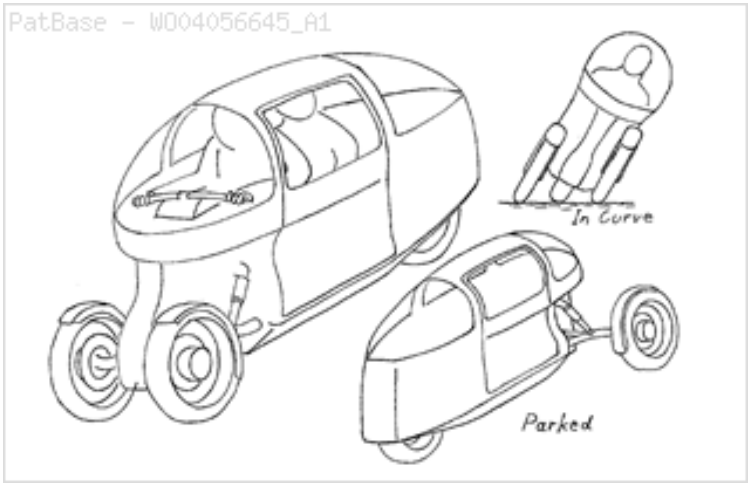
US class: 180/209 280/124.103 280/62 280/62P 280/93.51

Classification Explorer

Cited documents: WO03018390 A1, WO0244008 A2, US6817617 BB, US6367824 BA, US5611555 A, US5580089 A, US4974863 A, US4887829 A, US4740004 A, US4717164 A, US4632413 A, US4624469 A, US4546997 A, US4375293 A, US4351410 A, US4088199 A, US4079807 A, US4020914 A, US4003443 A, FR2616617 A1, FR2559103 A1, EP1155950 A2,

Forward Citations: WO14060238, WO11144574, WO10015986, WO09106978, WO08012251, WO06008564, WO06000841, US9381940, US9381785, US9360311, US9327725, US9283989, US9248857, US9216763, US9145168, US9114844, US9090281, US9045015, US8840131, US8419027, US8376372, US8050820, US2015153170, US2014358369, US2013153311, US2012161410, US2011254238, US2011233885, US2010133772, US2009206573, US2008290618, JP5849363, JP2013530079, ITMI20081453, GB2528608, GB2528608, GB2492757, GB2450740, FR3017590, FR2928130, EP2889210, EP2388179, EP2388153, EP2199195, EP1918187, EP1884457,

Abstract:
Source: US2006170171A A vehicle having a chassis, front wheels each having an axis of rotation, and a suspension assembly for connecting the front wheels to the chassis. The suspension assembly is adapted to allow the front wheels to move transverse to their axes of rotation, but in opposite directions, in order to tilt the chassis. The suspension assembly includes a wheel orientation defining rod coupled to at least one of the front wheels, and a unit for pivotably coupling the wheel orientation defining rod to the chassis. The coupling unit ensures that a wheel orientation of the front wheel defined by the wheel orientation defining rod is essentially independent of movement of the front wheel transverse to the axis of rotation thereof.



0) US4573546A – THREE–WHEELED MOTOR VEHICLE

28) Family number: 30152448 (US4573546A) © PatBase

Title: Three–wheeled motor vehicle

Priority: CA19840453151 19840430 JP19830063056 19830428 JP19830063056U 19830428 JP19830063057U 19830428 JP19830063060 19830428 JP19830063057 19830428 JP19830074743 19830428 JP19830063060U 19830428 JP19830073742 19830428 JP19830073743 19830428 JP19830073744 19830428 JP19830073741 19830428

Family:

Publication number	Publication date	Application number	Application date
AU198427449 A1	19841101	AU19840027449	19840427
AU561293 B2	19870507	AU19840027449	19840427
CA1210704 A1	19860902	CA19840453151	19840430
DE3474797 D1	19881201	DE19843474797	19840427
EP0124372 A2	19841107	EP19840302871	19840427
EP0124372 A3	19841219	EP19840302871	19840427
EP0124372 B1	19881026	EP19840302871	19840427
JP1672951 C3	19920612	JP19830073743	19830428
JP1771239 Y	19891027	JP19830063056U	19830428
JP3033554 B4	19910517	JP19830073743	19830428
JP59169205 U1	19841113	JP19830063056U	19830428
JP59169241 U1	19841113	JP19830063060U	19830428
JP59169259 U1	19841113	JP19830063057U	19830428
JP59199325 A2	19841112	JP19830073744	19830428
JP59199374 A2	19841112	JP19830073741	19830428
JP59199375 A2	19841112	JP19830073742	19830428
JP59199376 A2	19841112	JP19830073743	19830428
JP63034962 Y2	19880916	JP19830063056U	19830428
US4573546 A	19860304	US19840605403	19840430

Probable Assignee: HONDA MOTOR CO LTD

Assignee(s):(std)**:** HONDA MOTOR CO LTD

Assignee(s): IRIMAJIRI SHOICHIRO ; KOMURO KATSUSUKE ; AIKAWA KUNIHIKO ; HONDA GIKEN KOGYO A CORP OF JAPAN KK ; HONDA GIKEN KOGYO ALSO TRADING HONDA MOTOR CO LTD AS KK ; HONDA GIKEN KOGYO K K ; HONDA GIKEN KOGYO KABUSHIKI KAISHA ; HONDA GIKEN KOGYO KK

Inventor(s):(std)**:** AIKAWA KUNIHIKO ; IRIKO SHOICHIRO ; IRIKOU SHIYOUICHIROU ; IRIMAJIRI SHOICHIRO ; KOMURO KATSUSUKE

Inventor(s): KUNIHIKO AIKAWA ; SHOICHIRO IRIMAJIRI ; KATSUSUKE KOMURO

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; JOHNSON DOUGLAS S QC

Designated states: DE FR GB IT

International class (IPC 8–9)**:** B60G3/28 B60K15/063 B60Q1/30 B60Q1/32 B62D1/16 B62D23/00 B62D25/00 B62D25/08 B62D25/16 B62D31/00 B62D35/00 B62D61/06 B62D61/08 B62K25/20 B62K5/04 F24D17/00 (Advanced/Invention); B60G3/18 B60K15/03 B62D23/00 B62D25/00 B62D25/16 B62D31/00 B62D35/00 B62D61/00 B62K25/04 B62K5/00 F24D17/00 (Core/Invention)

International class (IPC 1–7)**:** B60G3/28 B60K15/02 B60Q1/30 B60Q1/32 B62D1/16 B62D21/00 B62D23/00 B62D25/00 B62D25/16 B62D31/00 B62D35/00 B62D61/06 B62K25/20

CPC: B62D61/065 B62D31/003

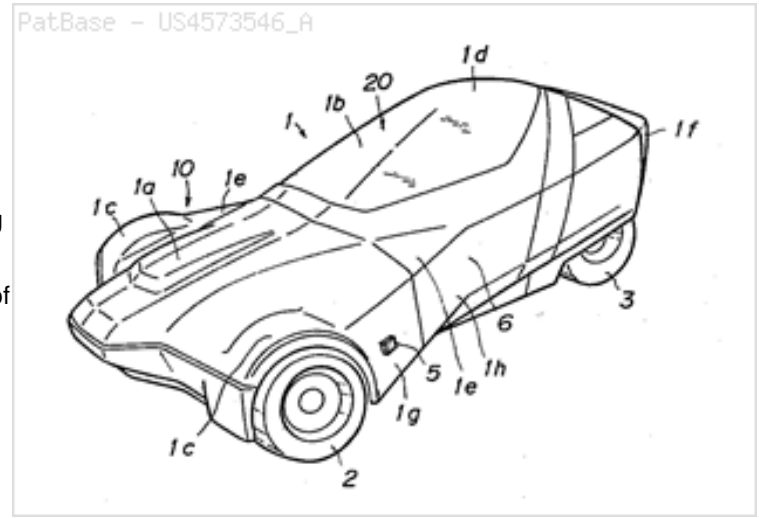
US class: 180/211 180/89.1 280/62 280/834 296/146.11 296/151 296/181.5 D12/085 D12/090 D12/85 D12/90

Classification Explorer

Cited documents: US3672718 A, US2888296 A, US2785921 A, US2761523 A, US2725944 A, US2699355 A, US2054951 A, JP55020886 U1, JP53140235 B4, JP52001250 U1, GB2111442 A1, FR885010 A, FR1089028 A, DE915186 A, DE825353 A, AU200516 A1,

Forward Citations: WO9100209, WO9003298, WO06101537, USD777060, USD774945, USD723978, USD689794, USD591645, USD575675, USD424979, USD422940, US9604683, US9227507, US9004214, US8695746, US8544587, US8317257, US8313121, US8061465, US7588110, US6883629, US6655729, US6464030, US6260913, US6149226, US5960901, US5954389, US5806622, US5538309, US4944360, US4919225, US4662468, US2010078254, US2010078245, US2009277708, US2007045020, US2005116503, US2003062742, US2003057006, FR2921625, FR2569647, EP0217522, EP0217522, DE19804104, CH679027,

Abstract:
Source: US4573546A A three−wheeled motor vehicle has a vehicle body on which two front wheels and a single rear wheel are rotatably mounted. The vehicle body includes a front portion covering the two front wheels and having a wide and flat shape, and a rear portion having a driver's compartment and covering the rear wheel, the rear portion being narrower than the front portion and progressively higher in a rearward direction of the vehicle body. The front and rear portions of the vehicle body include slanted continuous side surfaces tapered toward a longitudinal axis of the vehicle body in the rearward direction thereof.



0) US2010194068A – VEHICLE WITH IMPROVED INTEGRATED STEERING AND S...

29) Family number: 44940808 (US2010194068A) © PatBase

Title: VEHICLE WITH IMPROVED INTEGRATED STEERING AND SUSPENSION SYSTEM

Priority: US20090322533 20090203 US20090576192 20091008 US20120532989 20120626

Family:

Publication number	Publication date	Application number	Application date
CN101792002 A	20100804	CN201010104265	20100202
CN101792002 B	20120704	CN201010104265	20100202
US2010194068 AA	20100805	US20090576192	20091008
US7708291 BA	20100504	US20090322533	20090203
US7909340 BB	20110322	US20090576192	20091008
USRE44854 E	20140422	US20120532989	20120626

Probable Assignee: HENDERSON LADDIE GENE

Assignee(s):(std)**:** GENE HENDERSON LADDIE ; HENDERSON LADDIE GENE

Inventor(s):(std)**:** GENE HENDERSON LADDIE ; HENDERSON LADDIE GENE

Agent(s): MARK S HUBERT PC; MARK S

International class (IPC 8–9): B60G21/04 B62D9/04 B62K21/00 B62K25/04 (Advanced/Invention); B60G21/00 (Core/Invention)

CPC: B62D9/02 B62K5/05 B62K5/08 B62K5/10 B60G2300/45

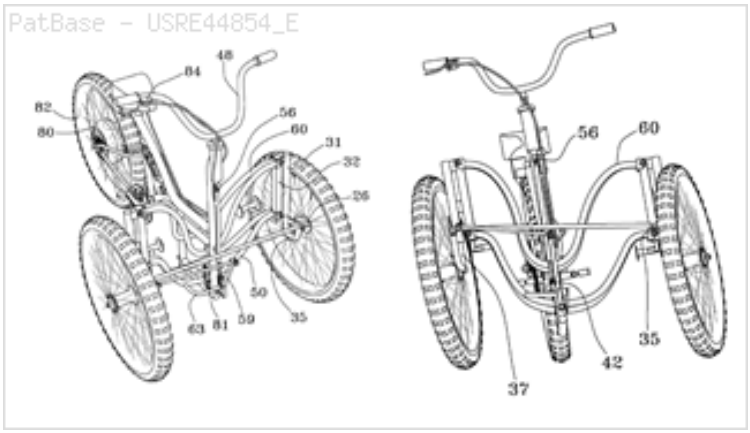
European class: B62D9/02 B62K5/05 B62K5/08 B62K5/10 L60G300/45

US class: 280/124.103 280/124.103P 280/62 280/771 280/778 280/87.1

Classification Explorer

Cited documents: US8070172 BA, US8016302 BA, US7967306 BB, US7722063 BB, US7708291 BA, US7568541 BB, US7487985 BA, US7097187 BB, US6953203 BB, US6817617 BB, US5501478 A, US4740004 A, US4088199 A, US3746118 A, US2011248463 AA, US2009194961 AA, US2008258416 AA, US2008258415 AA, US2008209880 AA, US2008197597 AA, US2008115994 AA, US2007262549 AA, US2007262548 AA, US2007246903 AA, US2007075517 AA, US2005206101 AA, US2005012291 AA, US2004051269 AA, US2003102176 AA,

Forward Citations: USRE44854, USD753553, USD668186, US9517807, US9475535, US9394027, US9359034, US9278711, US9238494, US9174693, US9114844, US8762003, US8641064, US8632088, US7921955, US7909340, US2016137253, US2016129964, US2016031518, US2015329165, US2015307149, US2015291241, US2015210338, US2015076797, US2015042063, US2014346752, US2012258840, US2012232758, US2010194068, US2010096822, US2009160141, JP2014061870, JP2013256237, FR3027583, EP2923930, EP2913256, EP2899109, EP2899107,



Abstract:
Source: US2010194068A A three wheeled vehicle that has an improved dual front wheel integrated steering and suspension system that allows the vehicle to be maneuvered by a combination of arm and leg steering movements coupled with front end leaning that shifts the center of mass of the vehicle down and toward the inside wheel. This transfer of mass counteracts a conventional cornering vehicle's tendency to fling its mass to the outside wheel and lift the inner wheel off the ground as well as changing the angle of the line of force exerted through the tires, and enhancing the vehicles's grip on the ground. The vehicle has a reduced amount of sliding and potential of flipping when turning sharply. The steering system is compatible with traditional ACKERMAN steering geometry wherein the inner wheel turns in a smaller diameter circle than the outer wheel.

0) US2009315282A – VEHICLE WHICH CAN TILT IN TURNS, IN PARTICULAR ...

30) Family number: 34952290 (US2009315282A) © PatBase

Title: VEHICLE WHICH CAN TILT IN TURNS, IN PARTICULAR TRICYCLE

Priority: DE200610007613 20060213 DE200610062678 20061228 WO2007EP51350 20070212 DE200620019783U 20061228

Family:

Publication number	Publication date	Application number	Application date
AT444225 E	20091015	AT20070704527T	20070212
CN101384471 A	20090311	CN200780005266	20070212
DE102006062678 A1	20070816	DE200610062678	20061228
DE102006062678 B4	20090416	DE200610062678	20061228
DE202006019783 U1	20070705	DE200620019783U	20061228
DE502007001633 D1	20091112	DE200750001633T	20070212
EP1993899 A1	20081126	EP20070704527	20070212
EP1993899 B1	20090930	EP20070704527	20070212
ES2334585 T3	20100312	ES20070704527T	20070212
IN04868CN2008 A	20090313	IN2008CN04868	20080912
JP2009526681 T2	20090723	JP20080553785T	20070212
US2009315282 AA	20091224	US20070279065	20070212
US7887070 BB	20110215	US20070279065	20070212
WO07093579 A1	20070823	WO2007EP51350	20070212

Probable Assignee: MULTI DISPLAY WERBEAGENTUR AND WERBEWERKSTATT GUENTHER WAGNER

Assignee(s):(std)**:** KIRCHNER HUBERT ; MULTI DISPLAY WERBEAGENTUR AND W ; MULTI DISPLAY WERBEAGENTUR AND WERBEWERSTATT GUENTHER WAGNER

Assignee(s): MULTI DISPLAY WERBEAGENTUR AND WERBEWERKSTATT G NTHER WAGNER ; MULTI DISPLAY WERBEAGENTUR AND WERBEWERKSTATT GUEN ; MULTI DISPLAY WERBEAGENTUR AND WERBEWERKSTATT GUENTHER WAGNER ; MULTI DISPLAY WERBEAGENTUR AND WERBEWERKSTATT GUENTHER ; MULTI DISPLAY WERBEAGENTUR AND WERBEWERKSTATT GUNTHER WAGNER

Inventor(s):(std)**:** HUBERT KIRCHNER ; KIRCHNER HUBERT

Agent(s): SCHNEIDER HENRY; NORRIS MCLAUGHLIN AND MARCUS PA

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G21/00 B60G3/26 B62K25/00 B62K5/02 B62K5/027 B62K5/04 B62K5/05 B62K5/08 (Advanced/Invention); B60G3/18 B62K25/00 B62K5/00 (Core/Invention)

International class (IPC 1–7): C07D265/30

CPC: B62K5/05 B62K5/10 B62K5/027 B62K2204/00 B62K5/08

European class: B62K5/027 B62K5/05 B62K5/08 B62K5/10 L62K204/00

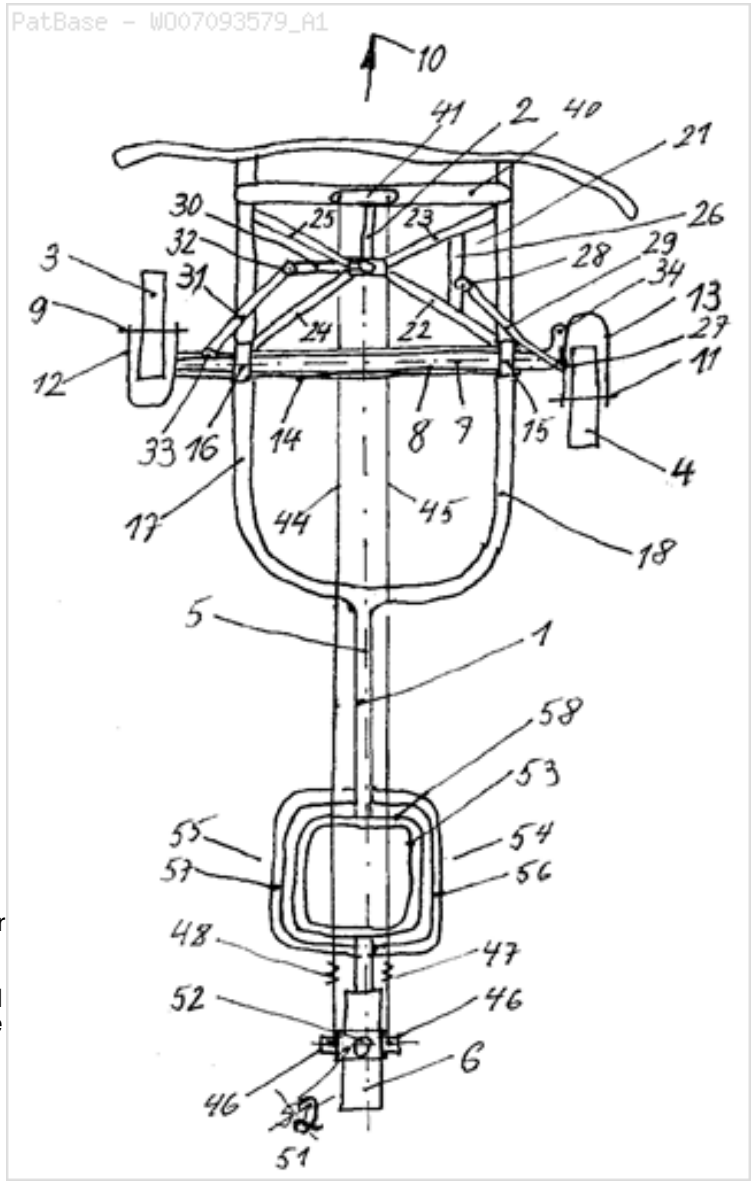
US class: 280/124.103 280/282 280/5.521 280/5.521P

Classification Explorer

Cited documents: US7665749 BB, US7641207 BB, US7591337 BB, US7543829 BA, US7530419 BB, US7487985 BA, US7467802 BB, US6817617 BB, US6763905 BB, US6581947 BB, US6402174 BA, US6352274 BA, US5762351 A, US5536029 A, US5209506 A, US4993733 A, US4903857 A, US4740004 A, US4624469 A, US4469344 A, US2003102176 AA, RU2140372 C1, JP2002337779 A2, EP1391374 A1, DE10249616 A1,

Forward Citations: US9283989, US9248857, US9145168, US9090281, US9045015, US8777242, US2016059923, US2015197311, US2012258840,

Abstract:
Source: US2009315282A The invention relates to a vehicle which can tilt in bends, in particular a three−wheeled vehicle, which has a rear wheel (6) which is arranged in the longitudinal axis of the three−wheeled vehicle as well as two front wheels (3, 4) which are arranged at a distance from one another and can be steered indirectly by means of a steering element with intermediate connection of a steering column (2), wherein the two front wheels (3, 4) which are arranged at a distance from one another and thus also the frame (1) of the three−wheeled vehicle can be inclined proportionally as a function of the direction of rotation of the steering column (2) and in the process continuously to the rotational angle which results from the rotation of the steering column (2) as the vehicle travels through a bend by virtue of the fact that on the one hand the steering column (2) is connected to the axle element (8) by means of a track rod lever (31), to which axle element (8) a multifunction axle (14) which is preferably arranged above the axle element (8) is assigned by means of the pivot bearing (15, 16), said multifunction axle (14) being operatively connected jointly to the axle element (8) and the wheel carrier (12) of the wheel (3) which is positioned in front of the axle (7) of the axle element (8) in the direction (10) of travel, and on the other hand a fixed point on the frame (1) of the three−wheeled vehicle, which fixed point is preferably formed in the vicinity of the bottom bracket ball bearing receptacle (21), is connected to the wheel carrier (13) of the wheel (4) by means of a second track rod lever (29) which wheel (4) is positioned behind the axle (7) of the axle element (8) in the direction of travel (10), wherein one or both of the wheel carriers (12, 13) are pivotably connected to the axle element (8).



0) US2006054370A – TILTABLE THREE–WHEELED VEHICLE

31) Family number: 32651629 (US2006054370A) © PatBase

Title: TILTABLE THREE–WHEELED VEHICLE

Priority: JP20040249102 20040827

Family:

Publication number	Publication date	Application number	Application date
CN1740039 A	20060301	CN200510070077	20050509
DE602005010346 D1	20081127	DE200560010346T	20050502
EP1630081 A1	20060301	EP20050009619	20050502
EP1630081 B1	20081015	EP20050009619	20050502
JP2006062573 A2	20060309	JP20040249102	20040827
US2006054370 AA	20060316	US20050211716	20050826

Probable Assignee: HONDA MOTOR CO LTD

Assignee(s):(std)**:** HONDA MOTOR CO LTD

Assignee(s): HONDA MOTOR CO

Inventor(s):(std)**:** HAYASHI AKIRA ; HAYASHI TORU ; KATSUICHI SUGIOKA KOICHI TAKAH ; SUGIOKA KOICHI ; SUGIOKA KOICHI TAKAHASHI HIROSHIA HAYASHI AKIRA YA ; TAKAHASHI HIROHISA ; TAKAHASHI HIROSHIA ; YAGISAWA KATSUICHI

Inventor(s): SUGIOKA KOICHI TAKAHASHI HIROSHIA HAYASHI...

Agent(s): TROSSIN HANS JUERGEN ET AL; WESTERMAN HATTORI DANIELS AND ADRIAN LLP

Designated states: DE FR IT

International class (IPC 8–9)**:** B62D61/06 B62D61/08 B62K11/10 B62K17/00 B62K5/04 (Advanced/Invention); B62D61/00 B62K11/00 B62K5/00 (Core/Invention)

CPC: B62D61/065 B62K3/002 B62K5/027 B62K5/05 B62K5/10

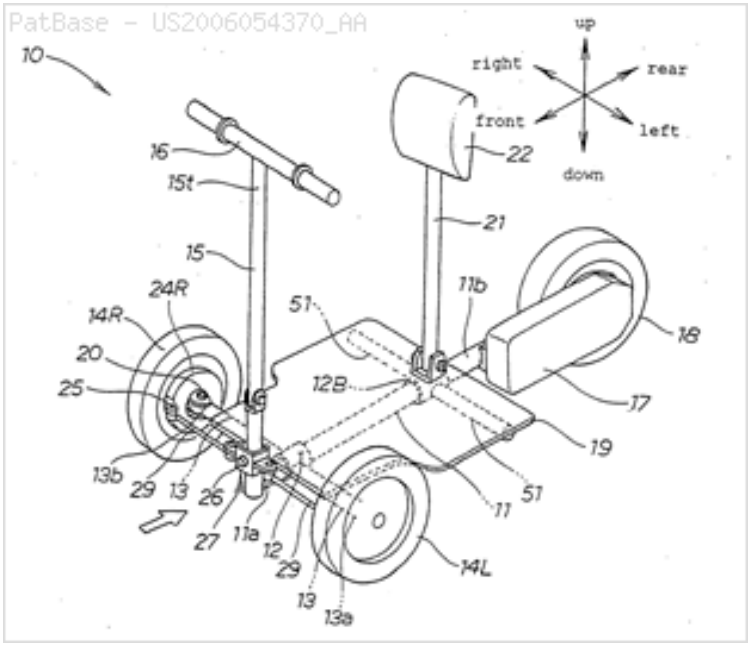
US class: 180/211

Classification Explorer

Cited documents: US5630774 A, US4351410 A, US4088199 A, US3746118 A, US3447623 A, US2493817 A, US2006097471 AA, US2004100059 AA, US2003102176 AA, US2002063405 AA, US1505224, JP51072034 A2, EP1180476 A1,

Forward Citations: WO14016174, WO12004477, WO12004477, WO10103665, US9283989, US9283848, US9248857, US9145168, US9090281, US9061725, US9051019, US9045015, US8985609, US8857551, US8607914, US7921955, US7591337, US7571787, US7192040, US2015158386, US2014311815, US2011278088, US2009160141, US2005134014, RU2591117, KR101251054, JP5829749, JP5330500, JP2014520701, JP2014061870, JP2013133099, JP2013103706, GB2456003, FR2962403, CN103796910, CN103796910, CN103101413, CN103101413, CN102582749, CN102582749, CN101962055,

Abstract:
Source: US2006054370A A tiltable three−wheeled vehicle is provided having left and right front wheels, a rear wheel, and a tilting mechanism. The vehicle includes a center frame extending in the lengthwise direction of the vehicle, a rotary member provided on the frame, a floor plate and a cross shaft attached to the rotary member, a power unit, and a manipulating member that is provided on a front portion of the frame. The cross shaft crosses the frame at a right angle and the left and right front wheels are provided on the ends of the cross shaft, The rear wheel is provided on a rear portion of the frame by way of the power unit. The front wheels maintain a zero camber. The frame and the rear wheel constitute a tiltable portion by means of the rotary member with respect to said left and front wheels and the floor plate.



32) Family number: 60469744 (WO15143523A1) © PatBase

Title: STEERING SYSTEM WITH STEERING MOVEMENT COUPLED TO THE MOVEMENT OF INCLINATION OF THE CENTRE OF MASS OF THE VEHICLE OR APPARATUS, AND VEHICLE

Priority: BR20141007157 20140325

Family:

Publication number	Publication date	Application number	Application date
BR102014007157 A2	20151215	BR20141007157	20140325
WO15143523 A1	20151001	WO2015BR50031	20150325

Probable Assignee: MIRANDA RAPHAEL FJAELLGREN

Assignee(s):(std)**:** FJAELLGREN MIRANDA RAPHAEL ; MIRANDA RAPHAEL FJAELLGREN

Assignee(s): RAPHAEL FJAELLGREN MIRANDA

Inventor(s):(std)**:** FJAELLGREN MIRANDA RAPHAEL ; MIRANDA RAPHAEL FJAELLGREN

Inventor(s): RAPHAEL FJAELLGREN MIRANDA

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

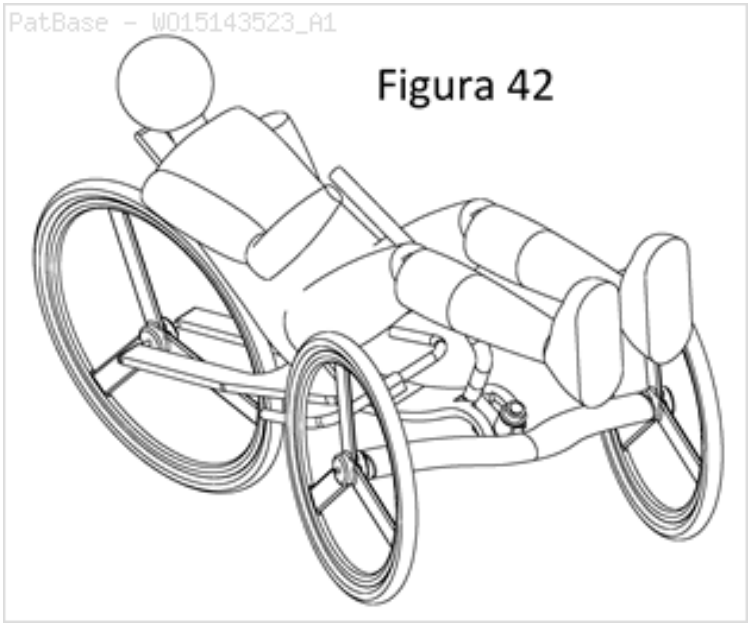
International class (IPC 8–9): B62K5/02 B62K5/10 (Advanced/Invention)

CPC: B62K5/10 B62K3/005 B62K5/01 B62K5/05 B62K5/08

Classification Explorer

Cited documents: US7976046 BB, US6402174 BA, US5544906 A, US5484152 A, US4132435 A,

Abstract:
The present invention describes a novel vehicle steering system designed to allow the gauge of small and medium vehicles to be reduced, the vehicle steering degree being generated by the lateral inclination of the structure of the vehicle provided with the present steering system. The introduction of an intermediate element to regulate the relationship between steering and lateral inclination allows steering to be adapted to various driving conditions, the option of a purely mechanical operation and control rendering the system simple and robust and making it potentially very competitive in comparison with the systems presently available on the market. This invention further describes auxiliary control and maneuvering systems which provide a globally more versatile driving performance.



0) US2017008591A – MOTORCYCLE HAVING INTERACTIVE LEAN CONTROL

33) Family number: 64626787 (US2017008591A) © PatBase

Title: MOTORCYCLE HAVING INTERACTIVE LEAN CONTROL

Priority: US20150797139 20150712

Family:

Publication number	Publication date	Application number	Application date
US2017008591 AA	20170112	US20150797139	20150712
US9555849 BA	20170131	US20150797139	20150712

Probable Assignee: TERRACRAFT MOTORS INC

Assignee(s):(std)**:** ABBOTT JAMES WESLEY ; JONES BAILEY H ; TERRACRAFT MOTORS INC

Inventor(s):(std)**:** ABBOTT JAMES WESLEY ; JONES BAILEY H

Agent(s): MICHAEL G

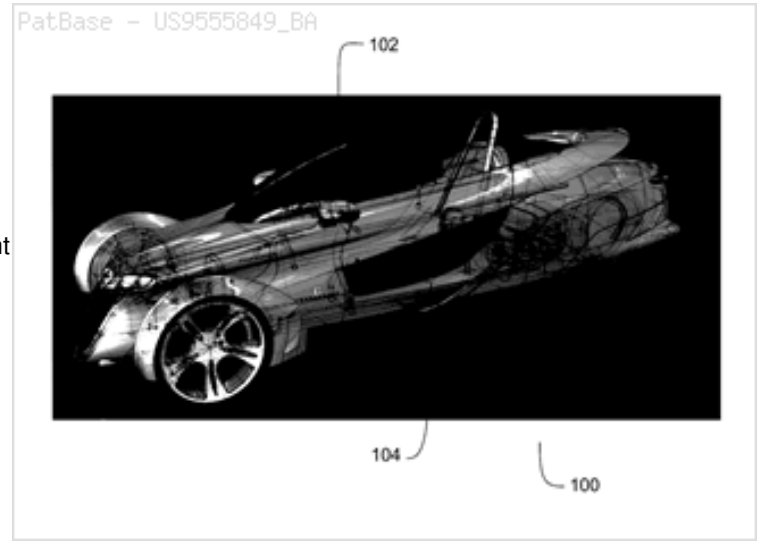
International class (IPC 8–9): B62K5/027 B62K5/10 G05D1/08 G06F17/10 G06G7/48 (Advanced/Invention)

CPC: B62K5/10 B62K5/027 G05D1/0891

Classification Explorer

Cited documents: US8504248 BB,

Abstract:
Source: US2017008591A Systems, methods and apparatus are provided through which in some implementations a motorized tricycle includes a lean mechanism and an active system that is operably coupled to the lean mechanism that receives an signal indicative of an interaction with human, that is operable to detect a lean of the body of the human and that is operable to receive a sensed movement on the seat via multisensory devices, and to generate and send a signal to the lean mechanism from the signal, the lean and the sensed movement.



0) US2017007900A – STAND–ON LAND VEHICLE FOR SIMULATING SKIING

34) Family number: 64626485 (US2017007900A) © PatBase

Title: STAND–ON LAND VEHICLE FOR SIMULATING SKIING

Priority: US20150683702 20150410

Family:

Publication number	Publication date	Application number	Application date
US2017007900 AA	20170112	US20150683702	20150410
US9592434 BB	20170314	US20150683702	20150410

Probable Assignee: SLAGTER MARK A

Assignee(s):(std)**:** SLAGTER MARK A

Inventor(s):(std)**:** SLAGTER MARK A

Agent(s): J E

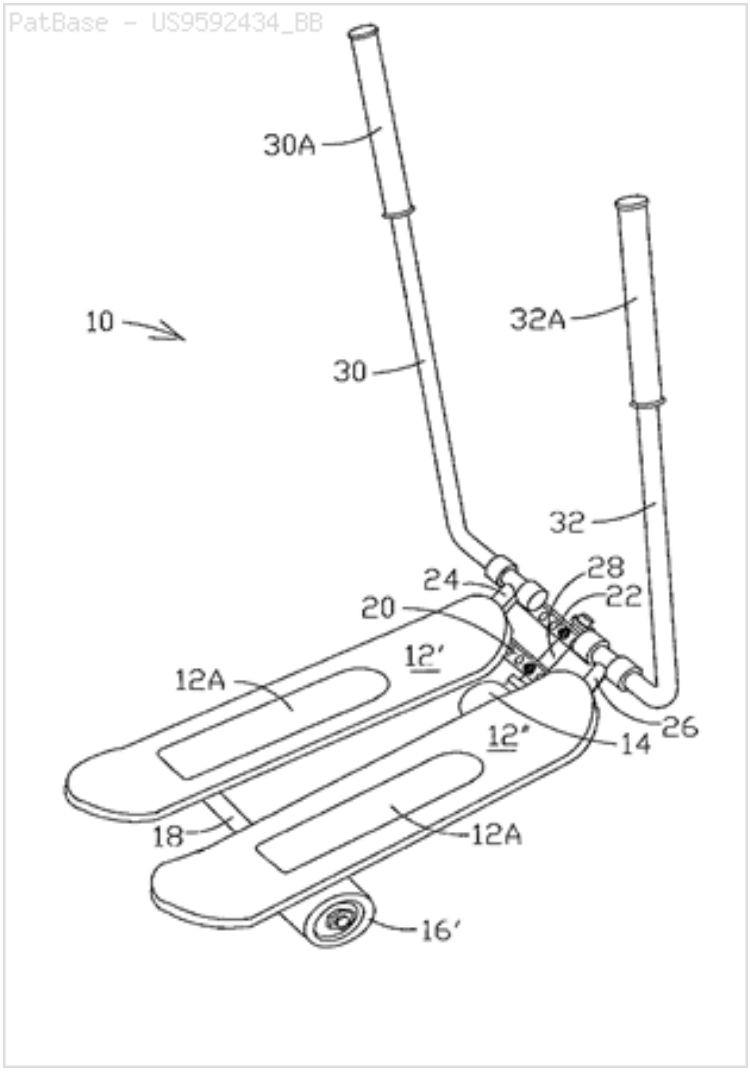
International class (IPC 8–9)**:** A63B69/18 (Advanced/Invention)

CPC: A63B69/18

Classification Explorer

Cited documents: WO12038554 A1, US8888108 BA, US8870193 BB, US8636288 BB, US8585562 BB, US8360475 BB, US8181975 BB, US7784833 BB, US7762564 BB, US5372384 A, US4886298 A, US4805936 A, US4738456 A, US4460187 A, US4353566 A, US4134600 A, US4133546 A, US3907320 A, US3862764 A, US3856321 A, US3827706 A, US3684305 A, US3545779 A, US3436088 A, US3171667 A, US2819907 A, US2545543 A, US2248214 A, US2016175692 AA, US2016144257 AA, US2015061252 AA, US2015042083 AA, US2012126523 AA, US2011298194 AA, US2009045598 AA,

Abstract:
Source: US2017007900A A stand−on land vehicle, for simulating snow skiing, features a side−by−side pair of platforms, coupled and supported (a) at the rear by an angled tilt−turn mount under each, integrated with a shared axle assembly fitted at its ends with a pair of rear wheels, located at opposite sides of the vehicle, and (b) at the front by a tilt−turn mount system including a strut/spacer framework attached to a pair of user handling bars, and to at least one front wheel, typically a roller, via an associated inclined swivel−caster type mount assembly. This novel combination accomplishes dual−platform tilt−turning in response to the user's body movements that simulates the superior snow−skiing technique of skewing the skis longitudinally for banked turns as in zig−zagging downhill. The invention actually enables sustained self−propulsion, zig−zagging on level concrete and paved surfaces, powered only by user body movements during turns and enhanced by low−friction roller−wheels for free−wheeling coasting on straight runs, and is thus capable of providing, on dry land, both recreational pleasure and highly effective training and practice for snow−skiing for snow skiers of all ages and skill levels.



0) CA2485392A – MOUNTING OF AN ACCESSORY OF AN ATV INSTALLATIO...

35) Family number: 33002325 (CA2485392A) © PatBase

Title: MOUNTING OF AN ACCESSORY OF AN ATV

Priority: CA20042485392 20041020

Family:

Publication number	Publication date	Application number	Application date
CA2485392 AA	20060420	CA20042485392	20041020
CA2485392 C	20090217	CA20042485392	20041020

Probable Assignee: QUADIVATOR INC

Assignee(s):(std)**:** QUADIVATOR INC

Assignee(s): CLOSE JON ; HUBSCHER DARIN

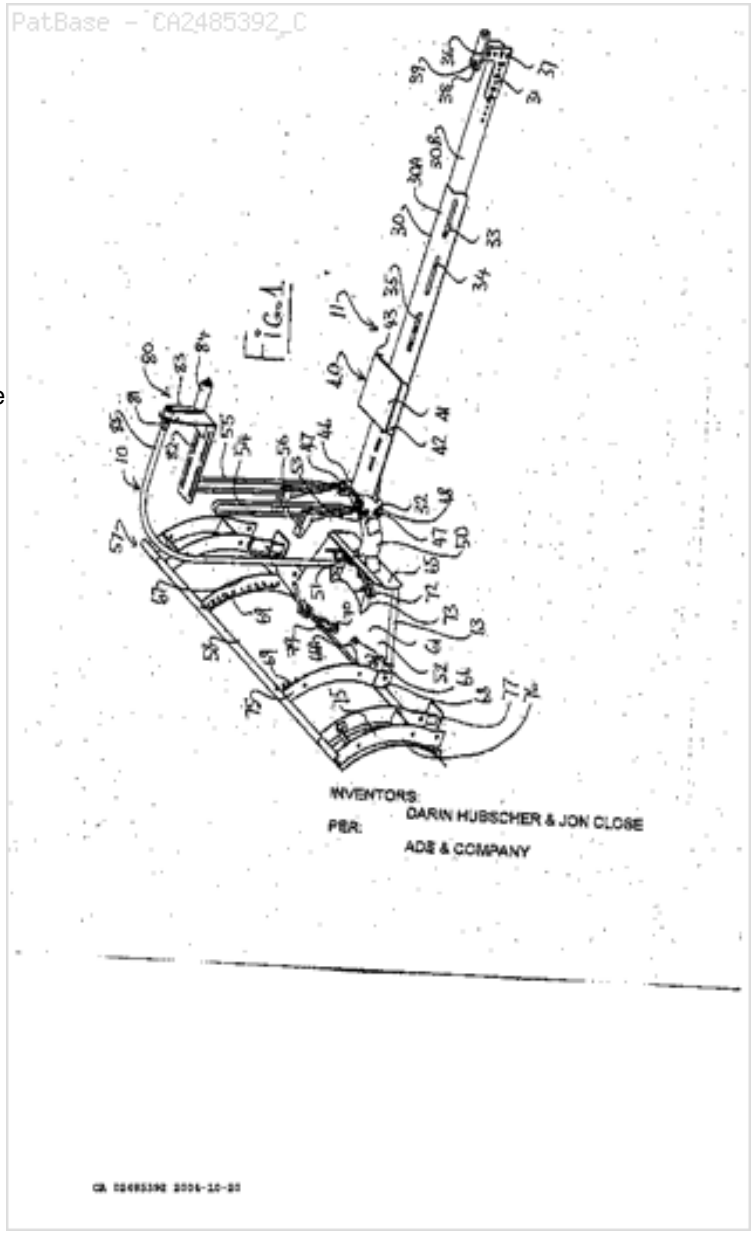
Inventor(s):(std)**:** CLOSE JON ; HUBSCHER DARIN

International class (IPC 8–9)**:** B60D1/14 B60R99/00 B62D63/04 E01H5/04 (Advanced/Invention)

CPC: E01H5/04

Classification Explorer

Abstract:
Source: CA2485392A An ATV has an accessory mounted at a front end providing a working tool, such as a blade, brush or snow blower, by a frame which extends underneath the ATV from a hitch coupling at the rear to a mounting plate which is clamped up under the belly pan of the ATV by a pair of straps at the front. The plate can be adjusted in height and position along the frame and can tilt front to rear to accommodate different makes of machine, The tilting can accommodate tilting of the frame if it is carried at the rear on wheels and floating relative to the hitch. The working tool is mounted on a stub frame portion pivotal upwardly and downwardly at the front of the frame. The working accessory can be adjusted side to side to change angle by a manually operable screw which drives a gear on the tool.



0) US2006185912A – STABILIZED VEHICLE USING ARTICULATING JOINT

36) Family number: 33254008 (US2006185912A) © PatBase

Title: STABILIZED VEHICLE USING ARTICULATING JOINT

Priority: US20050064301 20050223

Family:

Publication number	Publication date	Application number	Application date
US2006185912 AA	20060824	US20050064301	20050223
US7338061 BB	20080304	US20050064301	20050223

Probable Assignee: BULLIS JAMES K

Assignee(s):(std)**:** BULLIS JAMES K

Inventor(s):(std)**:** BULLIS JAMES K

Inventor(s): BULLIS JAMES

Agent(s): JAMES K BULLIS

International class (IPC 8–9)**:** A61H3/04 B60K6/00 B62D12/00 B62D61/10 (Advanced/Invention); A61H3/00 B60K6/00 B62D12/00 B62D61/00 (Core/Invention)

CPC: B62D37/00 B62D53/005 B62D61/10

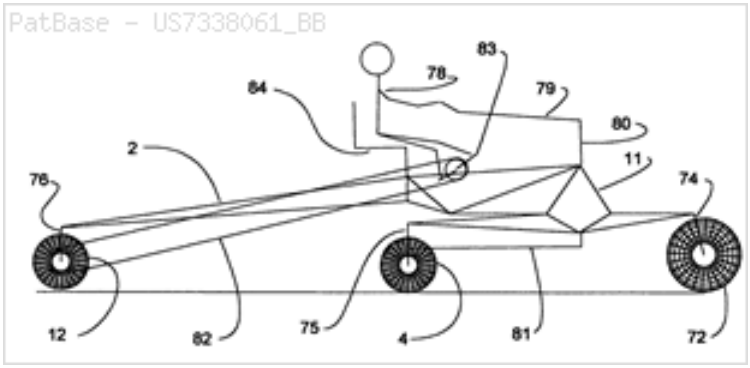
European class: B62D37/00 B62D53/00B B62D61/10

US class: 180/12 180/19.1 180/19.2 180/19.3 180/22 180/253 180/6.48 180/64.8 180/65.2 280/124.116 280/200 280/411.1 280/418 280/419 280/426 280/442

Classification Explorer

Cited documents: US6827164 BB, US5579863 A, US4313517 A, US4042053 A, US3887095 A,

Forward Citations: US8292326, US8042641, US7823673, US7497283, US2010244421, US2010200322, US2008073138, US2007187157,



Abstract:
Source: US2006185912A The present invention provides a critical breakthrough in wheeled vehicle concepts, by enabling stable vehicle operations, where wheelbase configuration varies in relation to the need for roll preventing force. This enables a new form of automobile that is especially suited for electric adaptation. The invention is an articulated vehicle that includes a stabilizer part and a carriage part where the two parts are linked by a two axis joint that locks the parts together in regard to relative roll motion, but allows pitch attitude and yaw attitude of each part to be mutually independent. Such a joint allows wheels to maintain firm contact with road surfaces while liking to cause the carriage to follow the stabilizer, and enables roll stabiliztion effects. In a turn condition, the stabilizer extends a wheel toward the outside of the turn such that upward force on that wheel counters roll torque that occurs due to radial acceleration due to the turning radius and speed of the vehicle.

0) EP1362779A2 – MOTORCYCLE–TYPE VEHICLES MOTORRADARTIGES FAHRZ...

37) Family number: 23477445 (EP1362779A2) © PatBase

Title: MOTORCYCLE–TYPE VEHICLES

Priority: GB20020011399 20020517 GB20020022385 20020927 GB20030006023 20030317

Family:

Publication number	Publication date	Application number	Application date
AT506245 E	20110515	AT20030253106T	20030519
DE60336784 D1	20110601	DE20036036784	20030519
EP1362779 A2	20031119	EP20030253106	20030519
EP1362779 A3	20060412	EP20030253106	20030519
EP1362779 B1	20110420	EP20030253106	20030519
ES2364927 T3	20110916	ES20030253106T	20030519
GB200211399 A0	20020626	GB20020011399	20020517
GB200222385 A0	20021106	GB20020022385	20020927
GB200306023 A0	20030423	GB20030006023	20030317

Probable Assignee: THE FOUR WHEELED MOTORCYCLE COMPANY LIMITED

Assignee(s):(std)**:** FOUR WHEELED MOTORCYCLE CO LTD ; FOUR WHEELED MOTORCYCLE COMPANY LTD ; SHOTTER NICHOLAS R ; SHOTTER NICHOLAS RICHARD

Assignee(s): THE FOUR WHEELED MOTORCYCLE CO LTD ; THE FOUR WHEELED MOTORCYCLE COMPANY LIMITED

Inventor(s):(std)**:** NICK SHOTTER ; SHOTTER NICHOLAS ; SHOTTER NICHOLAS RICHARD

Agent(s): VLECK JAN MONTAGU

Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

International class(IPC 8–9)**:** B60G17/015 B60G17/016 B60G21/00 B60G21/05 B60G7/00 B62D17/00 B62D7/06 B62D7/16 B62D9/02 B62K5/00 (Advanced/Invention); B62K5/00 (Advanced/Non–invention)

International class(IPC 1–7)**:** B60G17/015 B60G21/00 B62D17/00 B62D7/06 B62D7/16 B62K5/00

CPC: B60G7/001 B60G17/0162 B60G21/007 B60G21/05 B60G2200/13 B60G2204/128 B60G2204/422 B60G2206/11 B62D9/02 B62K5/10 B62K2005/001

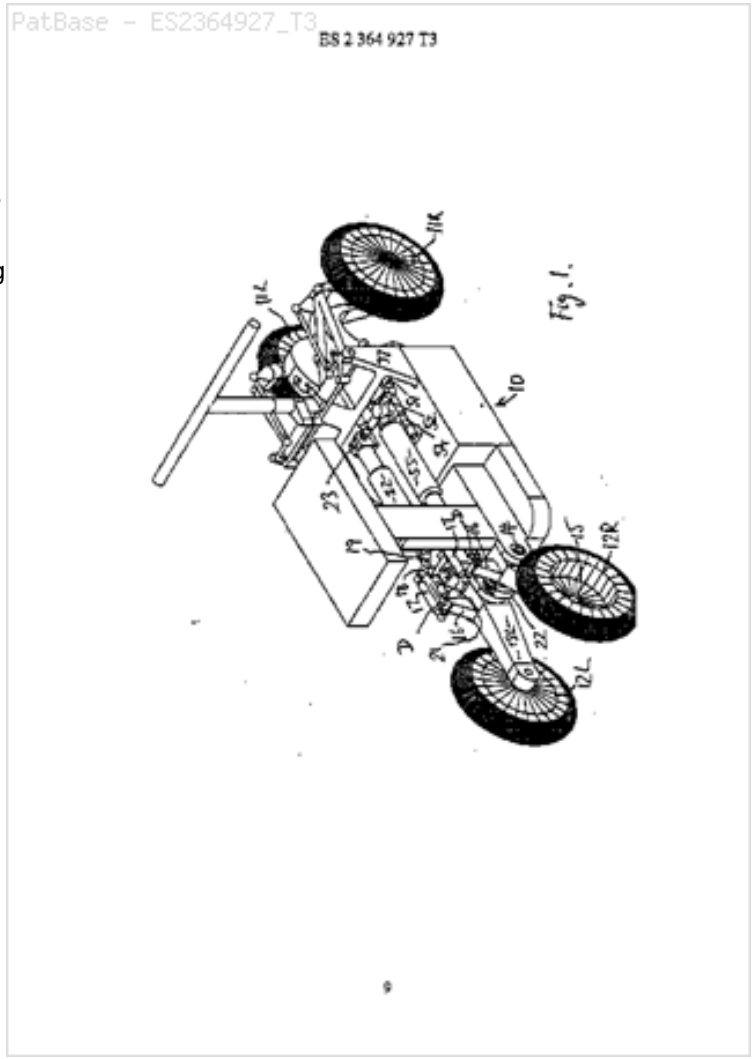
European class: B60G17/016F B60G21/00D B60G21/05 B60G7/00A B62D9/02 B62K5/10 L60G200/13 L60G204/128 L60G204/422 L60G206/11 L62K5/00B

Classification Explorer

Cited documents: WO9941136 A1, WO03018390 A1, WO0244008 A2, US4887829 A, US4756379 A, FR2550507 A1, FR2522590 A1, EP1142779 A2, EP0606191 A1,

Forward Citations: WO16001722, WO15193705, WO11029795, WO08065436, WO08012251, WO08011917, US8286978, GB2444250, EP2628672, EP1884457, DE202014102328, DE102014209329, DE102014209328, CN103935435, CN102774460, CN102616318, CN102596697, CN102596697, AT413524,

Abstract:
Source: EP1362779A2 A motorcycle−type vehicle has two front wheels and two rear wheels. The vehicle chassis (10) is supported on the front wheels by J−shaped swing arms (31) each forming one side of a quadrilateral linkage which includes struts (35) and upper wishbone members (38). The front swing arms are linked to opposite ends of a balance beam (52) pivoted on a carriage (53) movable on linear guides (54) against the action of a spring unit (55). Individual dampers (D) act on the swing arms and can be locked electrically or hydraulically in an emergency. A similar arrangement is used for rear swing arms (13).



0) US5249636A – PERSONAL MOBILITY VEHICLE

38) Family number: 20244932 (US5249636A) © PatBase

Title: PERSONAL MOBILITY VEHICLE

Priority: CA19932087508 19930118 US19920830647 19920204 WO1993US00583 19930129 WO1993US03740 19930427 US19920830647 19920204 US19920875737 19920428 WO1993US03740 19930427 WO1993US03740 19930427

Family:

Publication number	Publication date	Application number	Application date
AU199335897 A1	19930901	AU19930035897	19930129
AU199340333 A1	19931129	AU19930040333	19930427
CA2087508 AA	19930805	CA19932087508	19930118
CA2087508 C	19970107	CA19932087508	19930118
DE69316503 D1	19980226	DE19936016503	19930427
DE69316503 T2	19980709	DE19936016503T	19930427
EP0591506 A1	19940413	EP19930909608	19930427
EP0591506 A4	19940914	EP19930909608	19930427
EP0591506 B1	19980121	EP19930909608	19930427
US5249636 A	19931005	US19920875737	19920428
WO9314968 A1	19930805	WO1993US00583	19930129
WO9322185 A1	19931111	WO1993US03740	19930427

Probable Assignee: HOVEROUND CORP

Assignee(s):(std): SUNSTATE MOBILITY CORP

Assignee(s): LEHMAN COMMERCIAL PAPER INC ; KRUSE THOMAS E ; KRUSE GEORGE W ; JEFFERIES BABSON FINANCE LLC ; LEHMAN COMMERCIAL PAPER INC AGENT AS ; SUNSTATE MOBILITY CORP SARASOTA FLA US ; HOVEROUND HOLDINGS INC DELAWARE CORP ; KRUSE ROBERT J ; HOVEROUND HOLDINGS INC (DELAWARE CORP) ; WOODSIDE CAPITAL PARTNERS II LLC AGENT AS ; TRAXLER JOHN C ; WOODSIDE CAPITAL PARTNERS II LLC AS AGENT ; BANKBOSTON NA ; BANKBOSTON NA AGENT AS ; HOVEROU ; HOVEROUND CORP ; HOVEROUND HOLDINGS INC

Inventor(s):(std): KRUSE THOMAS ; KRUSE THOMAS E ; TRAXLER JOHN ; TRAXLER JOHN C

Inventor(s): JOHN C TRAXLER ; SUNSTATE MOBILITY CORP ; THOMAS E KRUSE

Agent(s): R WILLIAM WRAY AND ASSOCIATES

Designated states: AT AU BB BE BF BG BJ BR CA CF CG CH CI CM CZ DE DK ES FI FR GA GB GN GR HU IE IT JP KP KR LK LU MC MG ML MN MR MW NE NL NO NZ PL PT RO RU SD SE SK SN TD TG UA

International class (IPC 8–9): A61G5/04 A61G5/10 B62D61/00 B62D61/08 B62K5/025 (Advanced/Invention); A61G5/10 (Advanced/Non–invention); A61G5/00 (Core/Invention)

International class (IPC 1–7): A61G5/04 B60R19/42 B62D61/00 B62D61/08

CPC: Y10S180/907 A61G5/045 A61G2203/14 B62D61/00 A61G2203/723 A61G5/042 B62D61/08 A61G5/1051 A61G5/1089

European class: A61G5/04A2 A61G5/04A6 B62D61/00 B62D61/08 K61G203/14 K61G5/10G K61G5/10Z5

US class: 180/21 180/214 180/907 293/127

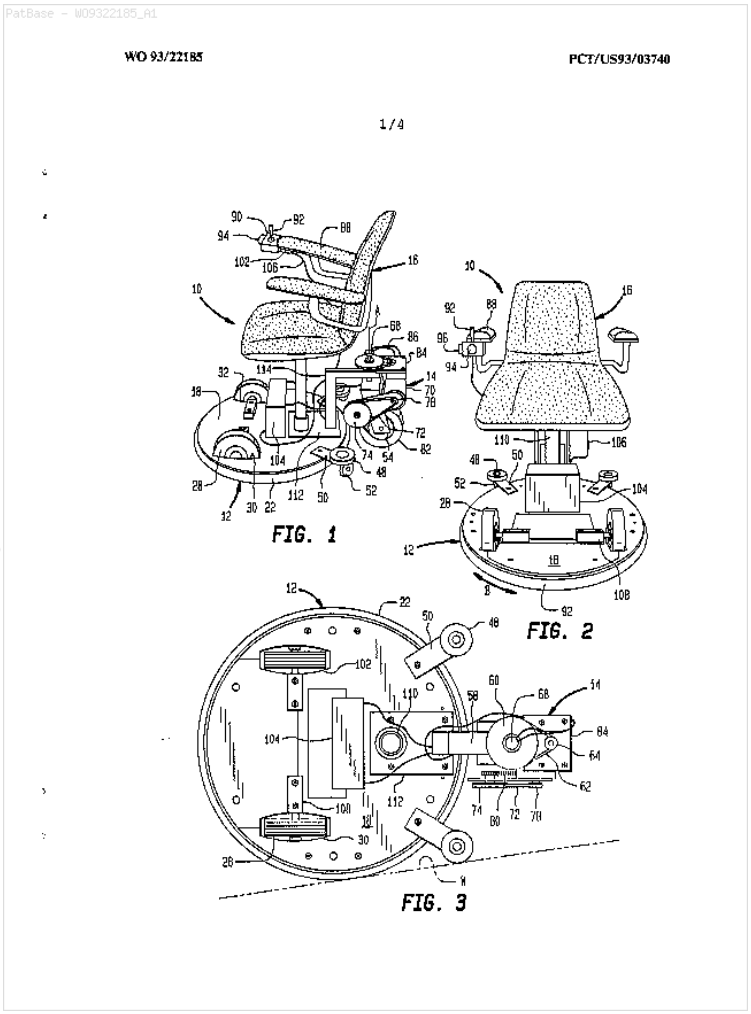
Classification Explorer

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Forward Citations:

WO9737626, USD485788, US9033073, US8186461, US8167074, US7979179, US7913781, US7857088, US7740099, US7311329, US6991060, US6971471, US6948581, US6491122, US6478104, US6288505, US6217044, US6209670, US6145612, US6044924, US5950749, US5937959, US5927423, US5697465, US5690185, US5524720, US5479998, US5445233, US2014367190, US2013306386, US2011094805, US2010222994, US2009038862, US2008161990, US2004129483, US2004129473, US2004050605, US2004035626, US2004035625, US2004035623, US2004032120, US2003221891, US2003221890, US2003141736, US2003127272, NL1028058, EP1074237, BE1015829,

Abstract:
Source: US5249636A A personal mobility vehicle having a very low center of gravity and compact overall size which facilitates travel in narrow hallways and in negotiating sharp turns as into a doorway along a narrow hall. The vehicle includes a generally horizontally disposed preferably circular, disc−shaped frame supported in close proximity above the ground by a steerable, motor−driven rear wheel and two spaced front wheels. A battery arrangement is connected to and supported by the frame and operably connected between a control lever in electrical communication with an electronic circuit and the motors for propelling and steering the rear wheel. A seat is provided whereby a user's feet may be comfortably supported on the frame. A circular cushioning ring, either fixed or preferably rotatably mounted and extending radially from the perimeter of the frame, contacts fixed objects such as walls, doorways and the like to facilitate tight maneuvers not heretofore possible with other such vehicles. Outrigger type anti−scuff and anti−tip wheels may also be provided.



0) EP2201920A1 – TRANSPORTATION VEHICLE PROVIDED WITH ACCESS MEA...

39) Family number: 45844462 (EP2201920A1) © PatBase

Title: TRANSPORTATION VEHICLE PROVIDED WITH ACCESS MEANS FOR PERSONS WITH REDUCED MOBILITY

Priority: EP20080172899 20081224

Family:

Publication number	Publication date	Application number	Application date
AT516003 E	20110715	AT20080172899T	20081224
DE602008008220 D1	20110908	DE200860008220T	20081224
EP2201920 A1	20100630	EP20080172899	20081224
EP2201920 B1	20110713	EP20080172899	20081224
ES2369210 T3	20111128	ES20080172899T	20081224

Probable Assignee: IVECO FRANCE SA

Assignee(s):(std)**:** IVECO FRANCE S A ; IVECO FRANCE SA

Inventor(s):(std)**:** CORCORAL YVES ; FAURITE CYRIL

Inventor(s): FAURITE CYRIL 07790 ; CORCORAL YVES 07100

Agent(s): MANITZ FINSTERWALD AND PARTNER GBR; BORSANO CORRADO

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK TR

International class (IPC 8–9)**:** A61G3/08 B60N2/01 B60N2/24 B62D47/02 (Advanced/Invention); A61G3/00 B60N2/005 B60N2/24 B62D47/00 (Core/Invention)

CPC: A61G3/0808 B60N2/01 B60N2/242 B60N2/245

European class: A61G3/08 B60N2/01 B60N2/24B B60N2/24C

Classification Explorer

Cited documents: US5678883 A, US4103934 A, US2004005203 AA, EP1859996 A1,

Abstract:
Source: EP2201920A1 This transportation vehicle (1), such as a bus or a coach, provided with access means for a person with reduced mobility, comprises: – a plurality of benches arranged on both sides of an interior central aisle (17) extending at least in part over the length of the vehicle, – at least one first access door arranged at the front of the vehicle and adjacent to the access stairs of the vehicle, and – at least one second access door (4), arranged at the rear of the vehicle and adapted to allow accession to the vehicle for at least one person with reduced mobility. Furthermore, the second access door (4) is arranged adjacent to a first placement zone (40), adapted to receive a first person with reduced mobility.

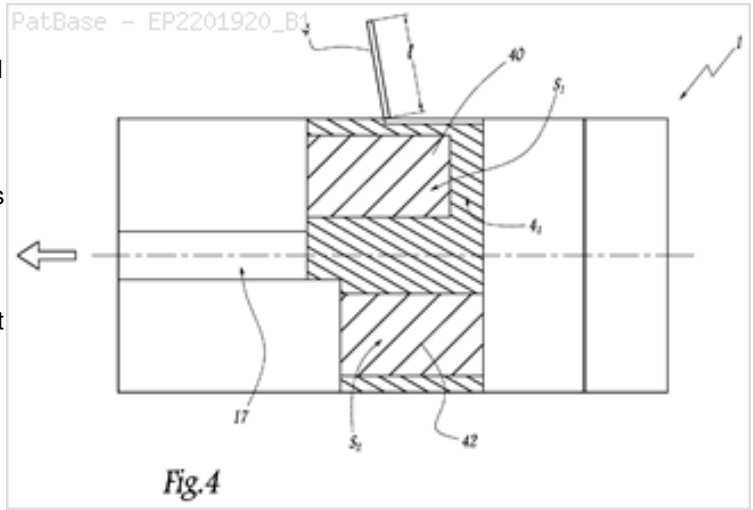


Fig.4

0) US4714140A – MULTI–AXIS ARTICULATED ALL TERRAIN VEHICLE

40) Family number: 10088979 (US4714140A)

© PatBase

Title: MULTI–AXIS ARTICULATED ALL TERRAIN VEHICLE

Priority: US19860840591 19860317

Family:

Publication number	Publication date	Application number	Application date
US4714140 A	19871222	US19860840591	19860317

Probable Assignee: BATT GREGORY L

Assignee(s):(std)**:** BATT GREGORY L ; HATTON JOHN H

Inventor(s):(std)**:** BATT GREGORY L ; HATTON JOHN H

International class (IPC 8–9): B62D61/08 E02D3/026 (Advanced/Invention); B62D61/00 E02D3/00 (Core/Invention)

International class (IPC 1–7): B62D57/02

CPC: Y10S414/122 E02D3/026 B62D61/08

European class: B62D61/08 E02D3/026

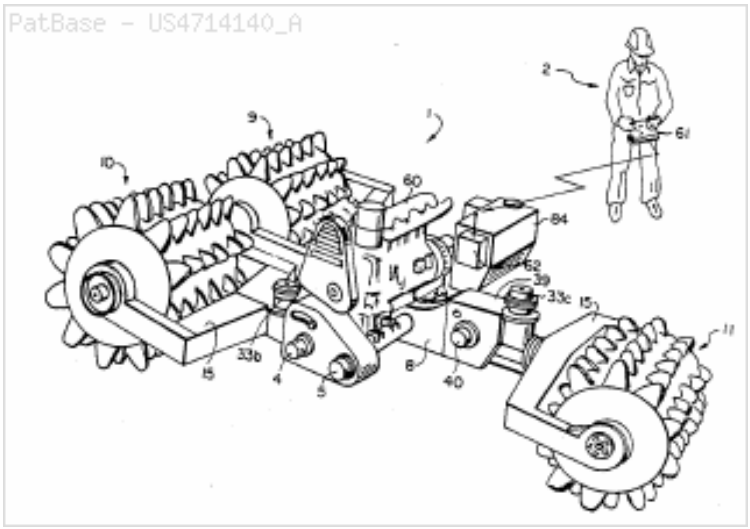
US class: 180/167 180/20 180/9.32 280/442 280/6.156 280/6H 414/909

Classification Explorer

Cited documents: US4109742 A, US3842926 A, US3680878 A, US3606957 A, US2510817 A,

Forward Citations: WO10090823, WO10090823, WO04016493, USD678426, USD607473, USD592682, USD553649, US9522817, US9493184, US9488450, US9267245, US9221602, US9207673, US9145163, US9122276, US9082293, US9061626, US9002581, US8970363, US8731777, US8725363, US8725362, US8725317, US8577551, US8515595, US8474161, US8452464, US8193903, US8186931, US8072309, US7565941, US7204341, US7017689, US6983583, US6712173, US5711139, US5552983, US5435408, US5346233, US5087071, US2012230803, US2011166721, US2011118903, US2011046813, US2010275472, US2010183412, US2010145551, US2010114405, US2008129445, US2008071429, US2006266574, US2005247508, US2005217230, US2005108999, US2002096381, EP1534575,

Abstract:
Source: US4714140A A remote controlled multi–axis all terrain vehicle includes front and rear lugged driving wheels, with front and rear wheels steerable about a vertical axis, and pivotal about a longitudinal axis of the vehicle. The vcehicle is remotely controlled and includes hydrostatic drive for the wheels of the vehicle. A level control system includes level sensing instruments and controls for automatically leveling the frame of the vehicle for up to thirty–five degree slopes.



0) US5749695A – FORKLIFT TRUCK MOUNTING FRAME

41) Family number: 14837014 (US5749695A) © PatBase

Title: Forklift truck mounting frame

Priority: IE19960000398 19960531

Family:

Publication number	Publication date	Application number	Application date
GB2313588 A1	19971203	GB19960021281	19961011
GB2313588 B2	20000301	GB19960021281	19961011
GB9621281 A0	19961127	GB19960021281	19961011
IE70923 B3	19970115	IE19960000706	19961003
IE81118 B	20000322	IE19960000398	19960531
IE960398 A1	19971203	IE19960000398	19960531
US5749695 A	19980512	US19970865931	19970530

Probable Assignee: MOFFETT RESEARCH AND DEVELOPMENT LTD

Assignee(s):(std)**:** MOFFETT RES AND DEV LTD

Assignee(s): MOFFETT RESEARCH AND DEVELOPMENT LIMITED ; MOFFETT RESEARCH AND DEVELOPMENT LTD

Inventor(s):(std)**:** CADDEN THOMAS ; CADDEN TOMMY ; MCADAM JAMES ; MCHUGH GERARD ; MCHUGH GERRY ; MCVICAR MARTIN ; MOFFETT CAROL ; MOFFETT ROBERT ; HARTE GERARD ; HARTE GERRY ; QUINN PAUL ; WYLIE ANDREW ; WYLIE ANDY

Inventor(s): ANDY WYLIE ; ROBERT MOFFETT ; TOMMY CADDEN ; JAMES MCADAM ; MARTIN MCVICAR ; PAUL QUINN ; CAROL MOFFETT ; GERRY HARTE ; GERRY MCHUGH

International class (IPC 8–9): B66F9/075 (Advanced/Invention) ; B66F9/075 (Core/Invention)

International class (IPC 1–7): B60P3/00 B60P3/06 B60R9/06 B66F9/06 B66F9/075 B66F9/75

CPC: B66F9/07563

European class: B66F9/075L

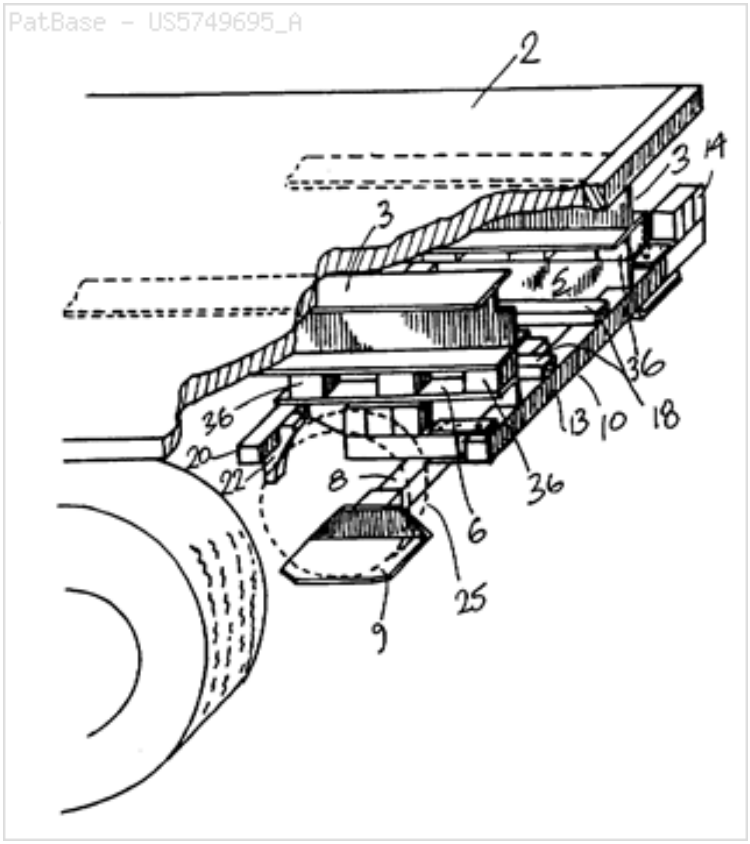
US class: 414/462 414/467

Classification Explorer

Cited documents: US5575604 A, US4396341 A, GB2287237 A1, GB2259292 A1, GB1491422 A, EP0571240 A1,

Forward Citations: WO09092766, WO08142556, WO08142556, US7927063, US7927061, US7631523, US6572322, US6530739, US6062800, US6059330, US6024535, US2011058921, US2008292448, US2008292437, FR2935649, EP2829501,

Abstract:
Source: US5749695A A universal forklift truck mounting frame (1) for fitting at a rear end of a carrier vehicle chassis has a composite base support framework. The base support framework has a rear support beam (8) and a front support beam (20) interconnected by a pair of spaced–apart hanger plates (5). Each hanger plate (5) has a flanged upper end (6) to provide a laterally extending chassis engaging surface. A wheel rest plate (9) is mounted at each end of the rear support beam (8). A pair of fork support sleeves (18), each for engagement with a fork of a forklift truck are mounted on the support framework between and substantially parallel to the hanger plates (5). A crash bar (10) is mounted at a rear end of the hanger plates (5).



0) US5029437A – MOWER DECK OUTRIGGER SUSPENSION

42) Family number: 3144825 (US5029437A) © PatBase

Title: MOWER DECK OUTRIGGER SUSPENSION

Priority: CA19912045378 19910625 US19900555971 19900719

Family:

Publication number	Publication date	Application number	Application date
CA2045378 AA	19920120	CA19912045378	19910625
CA2045378 C	19930511	CA19912045378	19910625
DE59100748 D1	19940203	DE19915000748	19910710
EP0469351 A1	19920205	EP19910111464	19910710
EP0469351 B1	19931222	EP19910111464	19910710
US5029437 A	19910709	US19900555971	19900719

Probable Assignee: DEERE AND CO

Assignee(s):(std)**:** DEERE AND CO

Assignee(s): DEERE AND CO MOLINE ILL US ; DEERE AND COMPANY ; DOBBERPUHL DALE RUDOLPH

Inventor(s):(std)**:** DOBBERPUHL DALE R ; DOBBERPUHL DALE RUDOLPH

Inventor(s): DOBBERPUHL DALE RUDOLPH HORICON WISCONSIN 53032 US

Agent(s): BORDEN LADNER GERVAIS LLP

Designated states: DE FR GB IT

International class (IPC 8–9)**:** A01B59/041 A01B59/048 A01D34/64 A01D34/66 (Advanced/Invention); A01B59/00 A01D34/63 (Core/Invention)

International class (IPC 1–7)**:** A01B59/041 A01B59/048 A01D34/64 A01D34/66

CPC: A01D34/662 Y10S56/22 A01B59/048 A01D2034/645 A01D2101/00

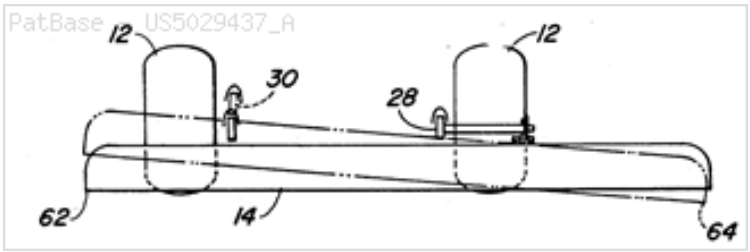
European class: A01B59/048 A01D34/64 K01D101/00 K01D34/64M

US class: 172/450 56/15.8 56/15.9 56/DIG.22

Classification Explorer

Cited documents: US4919215 A, US4869057 A, US4760686 A, US4325211 A, US4320616 A, US4313295 A, US3702051 A, US3402536 A, FR2608006 A1, EP0245824 A1,

Forward Citations: US6276119, US5813203, US5425224, EP3106014,



Abstract:
Source: US5029437A A mechanism for coupling a mower deck to a powered vehicle and having push arms pivotally connected to the vehicle between the front wheels of the vehicle and coupled to the front portion of the deck for pushing the deck in front of the vehicle. A member or outrigger extends outwardly from the rear of one of the push arms and supports a rear side portion of the deck and thereby establishes a pivot point for the deck outwardly from the rear of the push arm such that as the opposite side of the deck rides over a bump in the ground the side of the deck carried by the member or outrigger will not dip an undesirable amount.

0) NL2003789C – AN ANIMAL–DRAWN VEHICLE.

43) Family number: 49177165 (NL2003789C) © PatBase

Title: AN ANIMAL–DRAWN VEHICLE.

Priority: NL20092003789 20091111

Family:

Publication number	Publication date	Application number	Application date
BE1020101 AD	20130507	BE20100000658	20101116
NL2003789 C	20110512	NL20092003789	20091111

Probable Assignee: BAGGERMANS HOLDING BV

Assignee(s):(std)**:** BAGGERMANS HOLDING B V ; BAGGERMANS HOLDING BV

Inventor(s):(std)**:** BAGGERMANS GERARDUS PETRUS ANTONIUS

International class (IPC 8–9): B62C1/02 B62C3/00 (Advanced/Invention)

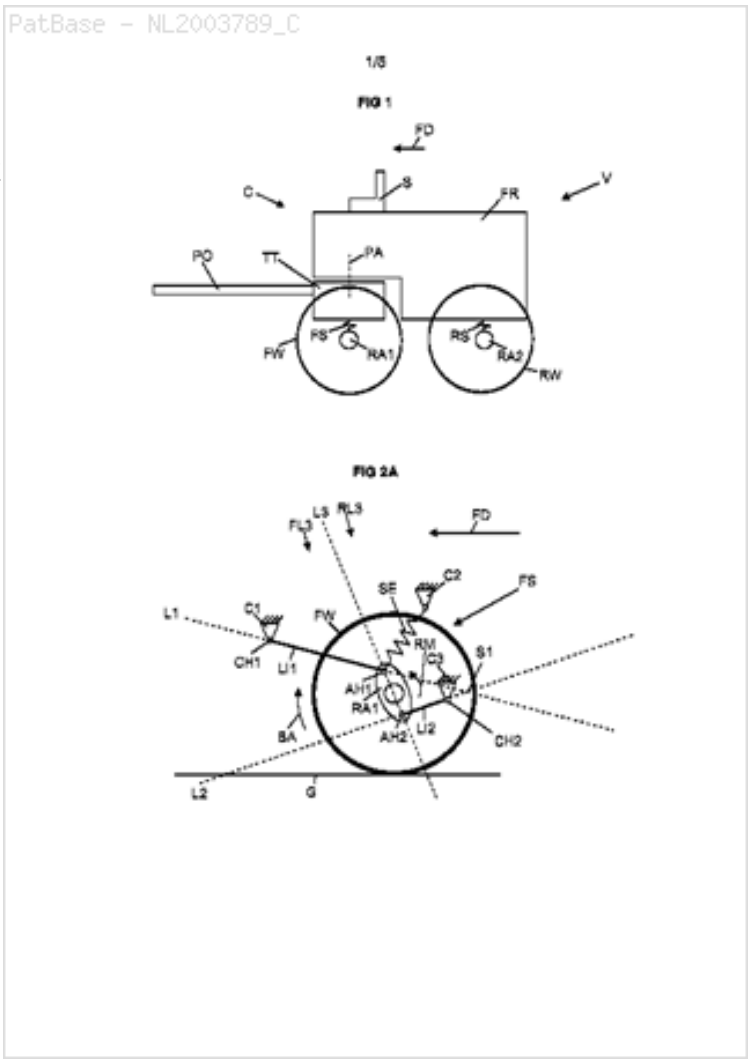
International class (IPC 1–7): B62C1/02 B62C3/00

CPC: B62C3/00 B62C1/02

Classification Explorer

Cited documents: US1467499 A, NL1028614 C2, NL1021655 C2, GB142272 A,

Abstract:
Source: NL2003789C THE INVENTION RELATES TO AN ANIMAL–DRAWN, IN PARTICULAR HORSE–DRAWN, VEHICLE COMPRISING: – TWO FRONT WHEELS ARRANGED ON A RIGID FRONT WHEEL AXLE; – A CHASSIS COMPRISING A FRAME WITH A SEAT FOR A DRIVER, AND A TURNTABLE, WHEREIN THE RIGID FRONT WHEEL AXLE IS MOUNTED TO THE TURNTABLE SO THAT THE RIGID FRONT WHEEL AXLE IS ABLE TO PIVOT ABOUT A SUBSTANTIAL VERTICAL AXIS WITH RESPECT TO THE FRAME; – TWO REAR WHEELS; – AT LEAST ONE DRIVER OPERABLE FRONT BRAKE PROVIDED BETWEEN THE RIGID FRONT WHEEL AXLE AND ONE OF THE FRONT WHEELS; AND – A RIGID FRONT WHEEL AXLE SUSPENSION DEFINING A FRONT SUSPENSION STROKE OF THE RIGID FRONT WHEEL AXLE WITH RESPECT TO THE CHASSIS, CHARACTERIZED IN THAT, IN AT LEAST A PART OF THE FRONT SUSPENSION STROKE THE RIGID FRONT WHEEL AXLE SUSPENSION IS CONFigureD AS A PASSIVE KINEMATIC ANTI–NOSE–DIVE SYSTEM. DIT OCTROOI IS VERLEEND ONGEACHT HET BIJGEVOEGDE RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK EN SCHRIFTELIJKE OPINIE. HET OCTROOISCHRIFT KOMT OVEREEN MET DE OORSPRONKELIJK INGEDIENDE STUKKEN.



0) IN00310DE2005A – ADVANCED STEERING MECHANISM FOR VEHICLES

44) Family number: 42123109 (IN00310DE2005A)

© PatBase

Title: ADVANCED STEERING MECHANISM FOR VEHICLES

Family:

Publication number	Publication date	Application number	Application date
IN00310DE2005 A	20061229	IN2005DE00310	20050214
IN235898 B	20090911	IN2005DE00310	20050214

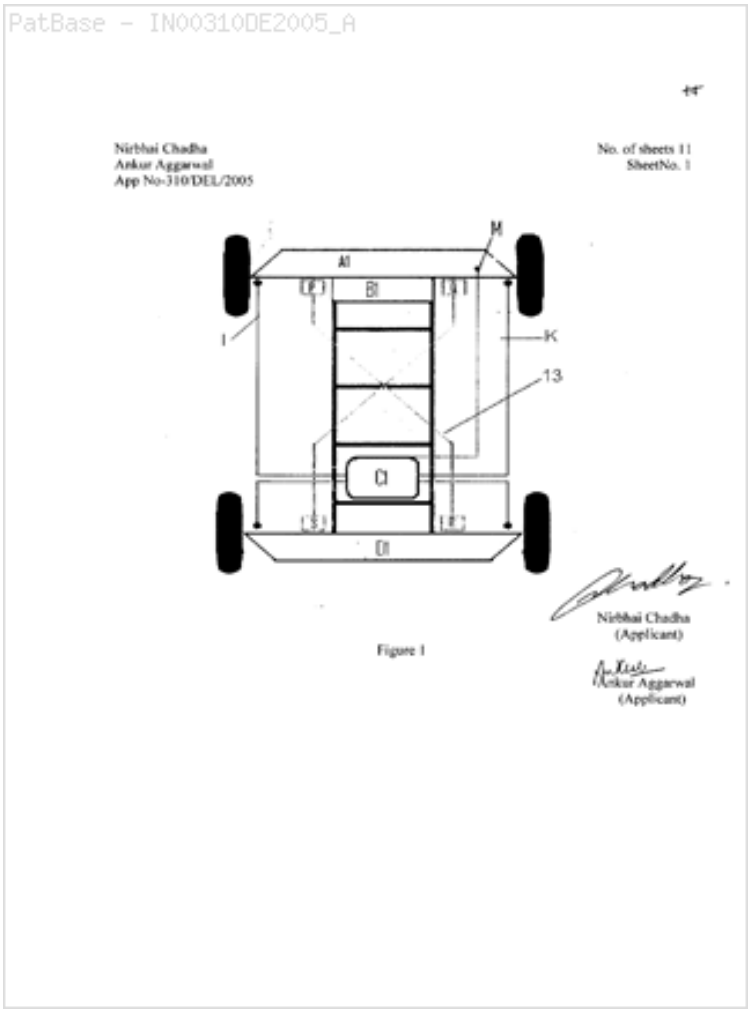
Probable Assignee: CHADHA NIRBHAI

Assignee(s): AGGRAWAL ANKUR ; CHADHA NIRBHAI

Inventor(s): AGGARWAL ANKUR ; AGGRAWAL ANKUR ; CHADHA NIRBHAI ; CHADHA NIRBHAY

International class (IPC 1–7): B62D5/04

Abstract:
Source: IN00310DE2005A The present invention to a mechanism which hybridizes the turning in the wheels of cars with the tilting of wheels in two wheelers. It has the unique ability to turn and tilt front tires with tilting/ (turning and tilting) back tires. This has been achieved by changing the orientation of front assembly. The mechanism comprises of unified front suspension assembly, bearings, hydraulic cylinders, sensors and controlling unit. Front assembly can be rotated about bearings to change orientation. Hydraulic cylinders operate to transfer and synochronize front tilt with the tilt at rear wheels. Sensors and controlling unit estimate the required amount of centrifugal force. By doing this, the centre of gravity of the vehicle is lowered as well as shifted towards center of turn to be executed. By this method the vehicle's tendency to topple or skid reduces. Also the vehicle becomes safer and more efficient.



0) US4437537A – VEHICLE FOR SUPPORTING HANDICAPPED OCCUPANTS

45) Family number: 4272266 (US4437537A) © PatBase

Title: VEHICLE FOR SUPPORTING HANDICAPPED OCCUPANTS

Priority: US19820342353 19820125

Family:

Publication number	Publication date	Application number	Application date
US4437537 A	19840320	US19820342353	19820125

Probable Assignee: ADVANCED TECHNOLOGY CORP

Assignee(s):(std)**:** AUSMUS DONALD L

Assignee(s): ADVANCED TECHNOLOGY CORP

Inventor(s):(std)**:** AUSMUS DONALD L

International class (IPC 8–9)**:** A61G5/14 B62D51/02 (Advanced/Invention); A61G5/00 B62D51/00 (Core/Invention)

International class (IPC 1–7)**:** A61G5/04 B62D61/06

CPC: Y10S180/907 Y10S297/10 B62D51/02 A61G5/14 A61G2200/36

European class: A61G5/14 B62D51/02 K61G200/36

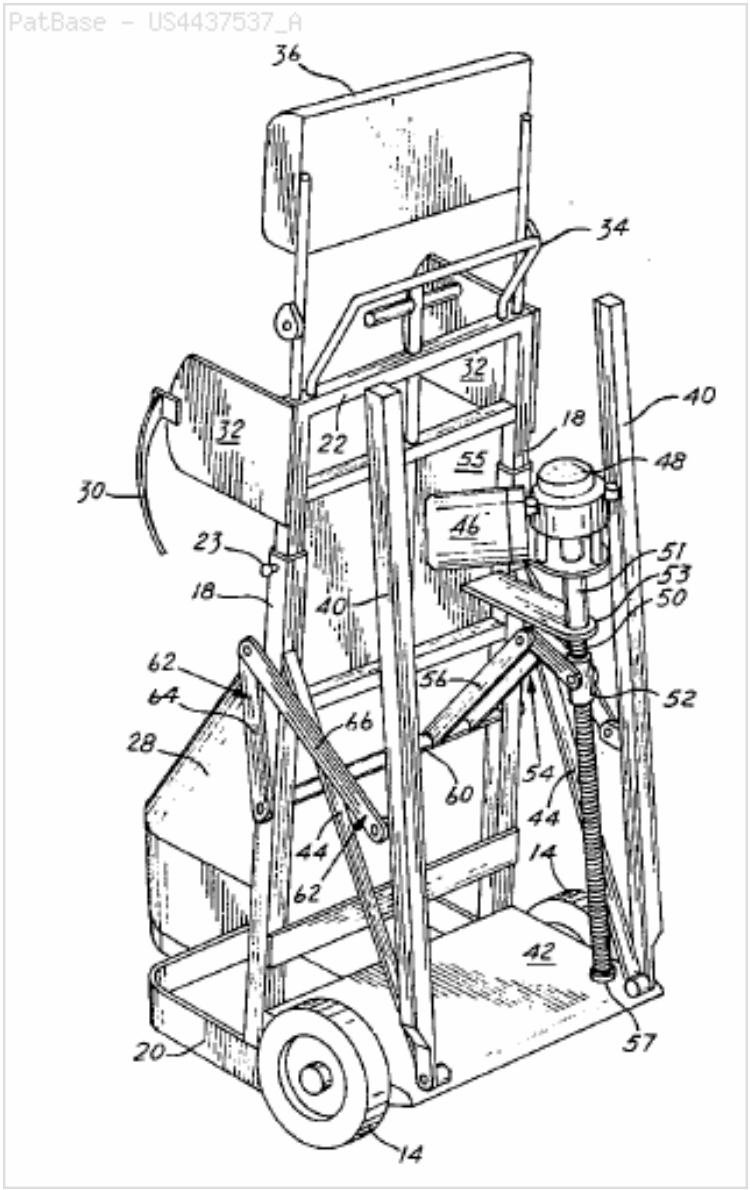
US class: 128/70 180/214 180/313 180/6.5 180/907 180/DIG.3 297/DIG.1 297/DIG.10

Classification Explorer

Cited documents: US4314552, US4155416, US4054319, US3997926, US3894601, US3629880, US3137869, US2572149, US2482203,

Forward Citations: WO9416914, US9173792, US8567804, US7523993, US7273255, US7063294, US6659211, US6053519, US5401080, US5366036, US2015060162, US2006220429, US2005139737, US2004256899,

Abstract:
Source: US4437537A An occupant operated motor driven vehicle for supporting handicapped occupants adapted to be tilted forwardly by the occupant for retrieving articles lying on the vehicle support surface, and to be restored to vertical operating position. The apparatus by which the vehicle may be tilted and restored comprises a pair of hinged parallel support feet adapted to contact the vehicle support surface for supporting the vehicle in a forward tilt, and to be returned to nested position, and power driven extensible and retractable vehicle support means for moving said feet connected between the feet and the vehicle frame for forwardly tilting said vehicle and restoring it to its upright position.



0) US3254734A – COLLAPSIBLE AUTOMOTIVE VEHICLE

46) Family number: 24901859 (US3254734A) © PatBase

Title: Collapsible automotive vehicle

Priority: CH19630003699 19630322 DE1962Z009423 19620519 FR19630934766 19630514 FR19640983991 19640803 DE1964Z010582 19640111

Family:

Publication number	Publication date	Application number	Application date
AT244160 B	19651227	AT19630004009	19630517
AT247163 B	19660525	AT19640006560	19630517
AT258736 B	19671211	AT19640006559	19630517
BE632309 A	00000000		00000000
CH406866 A	19660131	CH19630003699	19630322
CH451722 A	19680515	CH19640006620	19640521
DE1207804 B	19651223	DE1962Z009423	19620519
DE1480689 A1	19690821	DE19641480689	19640111
DE1480689 C3	19730614	DE1964Z010582	19640111
DK103985 C	19660314	DK19630002365	19630517
FR1362740 A	19640605	FR19630934766	19630514
FR86265 E	19660107	FR19640983991	19640803
GB1003094 A	19650902	GB19630017427	19630502
GB1012379 A	19651208	GB19640035213	19640827
NL135241 C	00000000		00000000
NL292967 A	00000000		00000000
SE309366 B	19690317	SE19630004560	19630425
US3254734 A	19660607	US19630281003	19630516

Probable Assignee: ZWEIRAD UNION AG

Assignee(s):(std)**:** FAUN WERKE ; FAUN WERKE KOMMUNALFAHRZEUGE U LASTKRAFTWAGEN KA ; ZWEIRAD UNION AG ; ZWEIRAD UNION A G

Assignee(s): FAUN WERKE KOMMUNALFAHRZEUGE UND LASTKRAFTWAGEN KARL SCHMIDT ; FAUN–WERKE KOMMUNALFAHRZEUGE UND LASTKRAFTWAGEN KARL SCHMIDT 8500 NUERNBERG ; FAUN WERKE KOMMUNALFAHRZEUGE U LASTKRAFTWAGEN KARL SCHMIDT ; FAUN WERKE KOMMUNALFAHRZEUGE UND LASTKRAFTWAGEN KA

Inventor(s):(std)**:** BEHRMANN G ; GEORG BEHRMANN ; BEHRMANN GEORG

International class(IPC 8–9)**:** B60F5/00 B60G11/08 B60K5/00 B60P3/42 B62D1/18 B62D21/18 B62D31/00 B62D49/06 B62D51/00 (Advanced/Invention) ; B60F5/00 B60G11/02 B60K5/00 B60P3/42 B62D1/18 B62D21/18 B62D31/00 B62D49/00 B62D51/00 (Core/Invention)

International class(IPC 1–7)**:** B60B B60G11/08 B60G3/28 B60G9/02 B60K17/22 B60K17/32 B60K23/00 B62D B62D1/16 B62D1/18 B62D21/12 B62D21/14 B62D3/12 B62D63/02

CPC: B60F5/006 B60F5/003 B60G11/08 B60G2200/422 B60G2202/114 B60G2300/07 B60G2300/26 B60G2300/40 B60K5/00 B60P3/42 B62D1/18 B62D21/186 B62D31/003 B62D31/006 B62D49/0664 B62D51/001

European class: B60F5/00B B60F5/00B2 B60G11/08 B60K5/00 B60P3/42 B62D1/18 B62D21/18C B62D31/00B B62D31/00B2 B62D49/06G B62D51/00B L60G200/160 L60G200/422 L60G202/114 L60G300/07 L60G300/26 L60G300/40

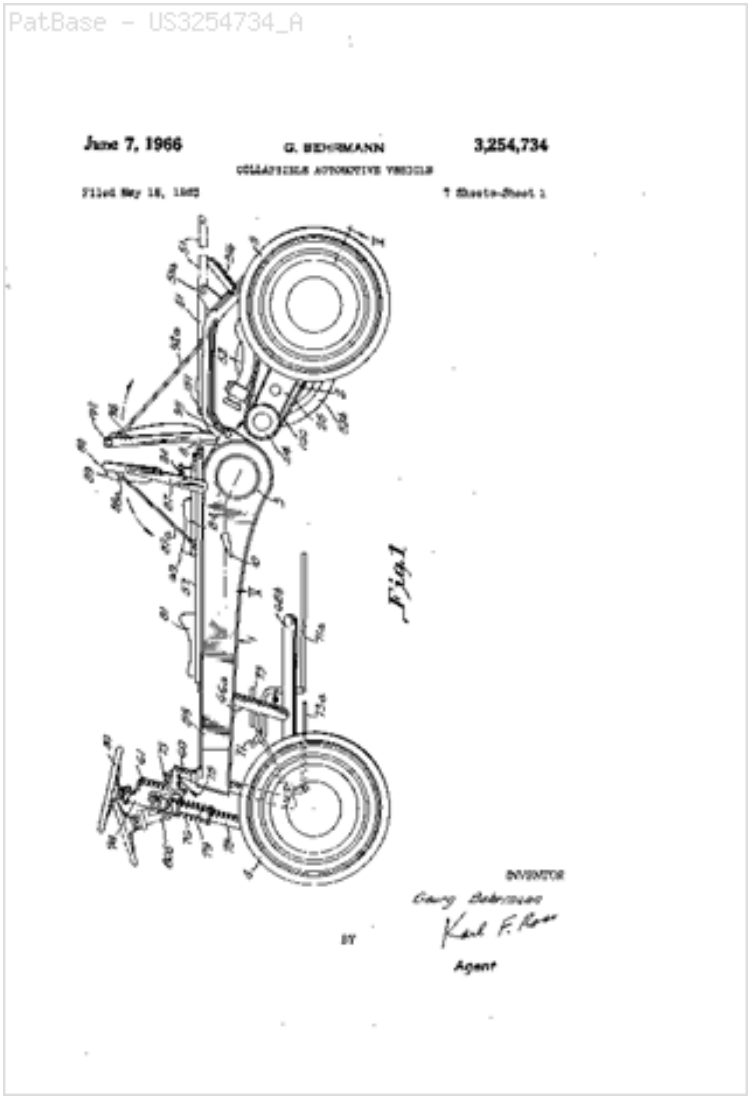
US class: 180/19.1 180/208 180/291 280/639 280/775 296/63

Classification Explorer

Cited documents: US3004619 A, US2974973 A, US2502061 A, US2457400 A, US2260102 A, US1677419 A, US1364280 A, FR528354 A, FR1256269 A, FR1048114 A, DE1094603 B,

Forward Citations: US8899364, US6186252, US6176337, US6129165, US6050593, US5695021, US5020624, US4231144, US3955639, US3850472, US3762490, US3635301, US3329228, GB2468487, GB2468487, GB2304655, GB2304655, GB2242400, FR2694240, FR2495089, EP0464982, DE4027780, DE3130984, DE2941435, DE2421498,

Abstract:
Source: GB1003094A 1,003,094. Seats. ZWEITAD UNION A.G. May 2, 1963 [May 19, 1962], No. 17427/63. Heading A4J. [Also in Division B7] The plates 83, 84 forming part of loading platform 57 of an articulated collapsible vehicle (see Division B7) may be pivoted about their rearward edges to provide cushions 69, 70 for passengers and reveal holes for the legs of persons seated on the cushions. Plate 88 is pivotal on linsk 87 pivoted to the platform between positions forming a backrest (Fig. 10) or an extension of platform 57. A footrest is provided below the platform.



0) WO14016174A1 – SELF–PROPELLED VEHICLE THAT CAN BE DRIVEN WHILE...

47) Family number: 55706445 (WO14016174A1) © PatBase

Title: SELF–PROPELLED VEHICLE THAT CAN BE DRIVEN WHILE SEATED OR STANDING

Priority: FR20120057266 20120726

Family:

Publication number	Publication date	Application number	Application date
FR2993854 A1	20140131	FR20120057266	20120726
FR2993854 B1	20150206	FR20120057266	20120726
WO14016174 A1	20140130	WO2013EP65052	20130717

Probable Assignee: SARL PLANETE CHAUFFAGE

Assignee(s):(std)**:** COBRANE DESIGN ; SARL PLANETE CHAUFFAGE

Inventor(s):(std)**:** COLOMBIE RAPHAEL

Inventor(s): RAPHAEL COLOMBIE

Agent(s): CABINET SCHMIT CHRETIEN; MAUPILIER DIDIER

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K17/00 B62K5/00 B62K5/05 B62K5/08 B62K5/10 (Advanced/Invention)

CPC: B62K5/05 B62K5/08 B62K5/10 B62K3/002

Classification Explorer

Cited documents: WO9925602 A1, US6581714 BA, US2007001422 AA, EP2266830 A1, EP1630081 A1,

Forward Citations: WO17032951,

Abstract:
The invention relates to a self–propelled vehicle (100) to be driven by a person, comprising a rigid chassis (10) on which a front end axle (22) is mounted such as to pivot about a single, substantially horizontal pivot shaft (24) in a vertical plane of symmetry (XZ) of the vehicle (100). Each front wheel (21) of the front end is mechanically linked to the chassis (10) so as to be oriented individually such as to curve the path of the vehicle on the side on which the chassis is inclined. The vehicle preferably comprises a saddle (14), a handlebar (151) and a footrest (27) in order to form a seated/standing driver area. In one embodiment of the invention, the vehicle takes the form of a tricycle including a rear wheel (30)

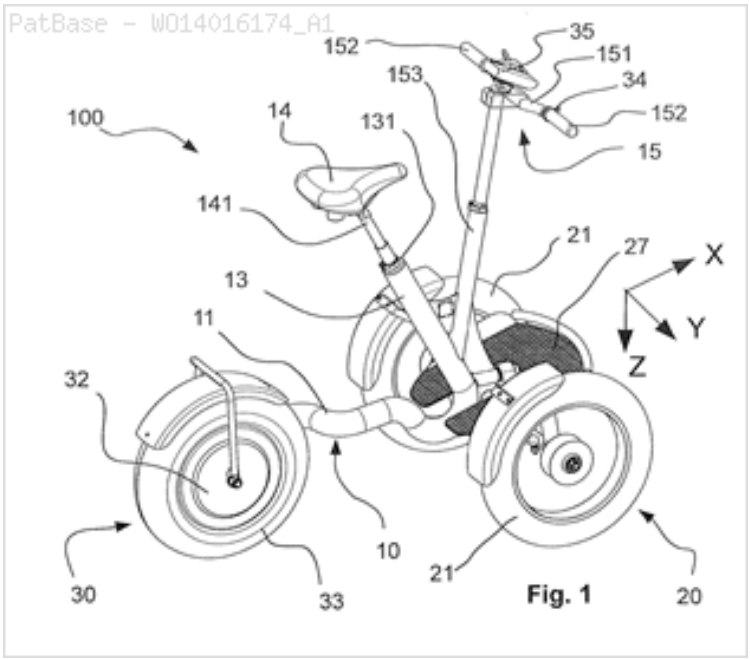


Fig. 1

0) GB2508709A – PASSENGER CARRYING VEHICLE

48) Family number: 52584734 (GB2508709A) © PatBase

Title: PASSENGER CARRYING VEHICLE

Priority: GB20120017962 20121008

Family:

Publication number	Publication date	Application number	Application date
GB201217962 A0	20121121	GB20120017962	20121008
GB201317807 A0	20131120	GB20130017807	20131008
GB2508709 A1	20140611	GB20130017807	20131008

Probable Assignee: HENTY CAPITAL LTD

Assignee(s):(std)**:** HENTY CAPITAL LTD

Assignee(s): HENTY CAPITAL LIMITED

Inventor(s):(std)**:** HENTY PAUL

Inventor(s): PAUL HENTY

International class (IPC 8–9)**:** B62J1/14 B62K5/05 B62K7/00 (Advanced/Invention)

CPC: B62J1/14 B62K5/05 B62K7/00 B62K5/02

Classification Explorer

Cited documents: KR200432629 Y1, JP5064854 A2, JP2010285101 A2, JP2009234577 A2, GB1061624 A,

Forward Citations: WO17012869,

Abstract:
Source: GB2508709A A passenger−carrying vehicle 700 comprising a motor−powered scooter and a passenger−carrying section 712, the motor scooter comprising a rider or driver seat 703 and the passenger−carrying section 712 comprising a passenger seat. The passenger−carrying section 712 comprises a module mounted on or integral with a rear portion of the scooter, said module712 and said passenger seat being aligned with a longitudinal vehicular axis and wherein the passenger seat is arranged to be rearward−facing in the module and the scooter comprises a step−through frame. Also claimed is a passenger−carrying module for use with a motor powered bike or motor scooter, wherein the passenger−carrying module comprises a passenger seat, the passenger−carrying module being adapted for mounting on a rear portion of said scooter such that said module and said passenger seat therein are aligned with a longitudinal vehicular axis and wherein the passenger seat is arranged to be rearward−facing in the module. The scooter may be three−wheeled with two front wheels 704 and a single rear wheel 705, the scooter being adapted to lean when steering around bends.

PatBase - GB2508709_A1

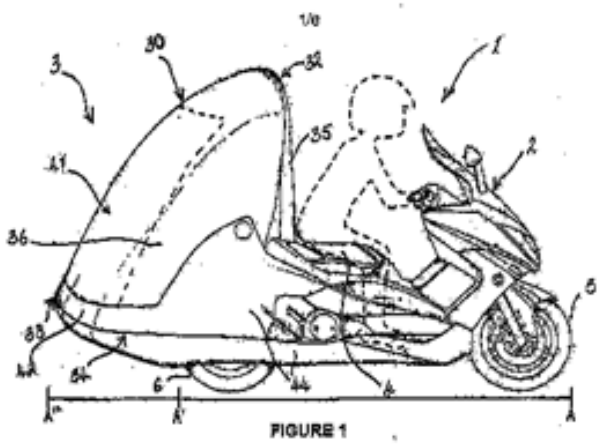


FIGURE 1

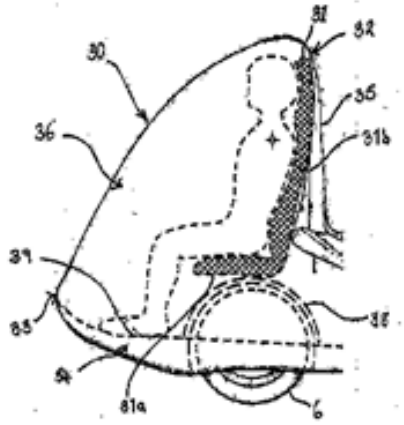


FIGURE 2

0) US4951573A – TIE REMOVER AND INSERTER

49) Family number: 3197900 (US4951573A) © PatBase

Title: TIE REMOVER AND INSERTER

Priority: CA19890606277 19890720 US19880240516 19880906

Family:

Publication number	Publication date	Application number	Application date
AU198939016 A1	19900315	AU19890039016	19890727
AU626899 B2	19920813	AU19890039016	19890727
CA1334734 A1	19950314	CA19890606277	19890720
US4951573 A	19900828	US19880240516	19880906

Probable Assignee: HARSCO TECHNOLOGIES CORP

Assignee(s):(std)**:** HARSCO CORP

Assignee(s): HARSCO TECHNOLOGIES CORP ; MADISON HARRY ; HARSCO 350 POPLAR CHURCH ROAD WORMLEYSBURG PA 17011 A CORP OF DE CORP

Inventor(s):(std)**:** MADISON HARRY

Inventor(s): HARRY MADISON

Agent(s): LORD AND CO; PROULX EUGENE E

International class (IPC 8–9): E01B29/06 E01B29/10 (Advanced/Invention); E01B29/00 (Core/Invention)

International class (IPC 1–7): E01B29/06 E01B29/24 E02F5/22

CPC: E01B27/025 E01B29/10

European class: E01B29/10

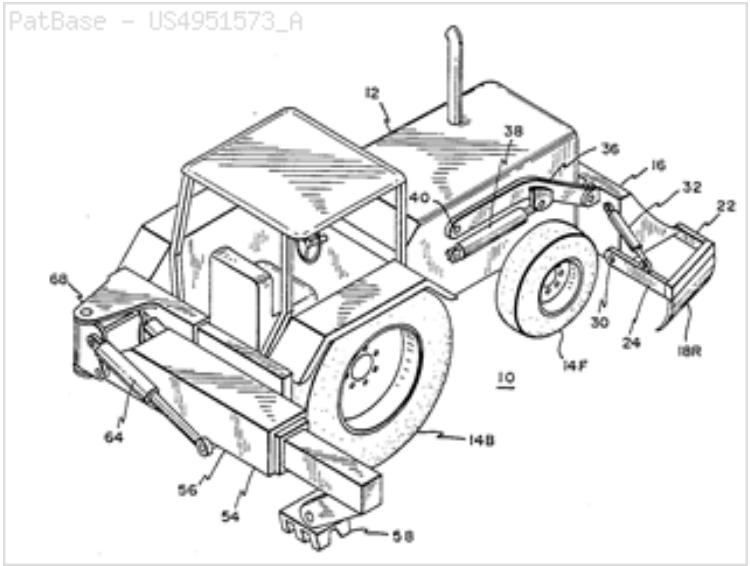
US class: 104/9 37/105 37/117.5 37/410 37/DIG.3

Classification Explorer

Cited documents: US4809614 A, US4392433 A, US4360980 A, US4282663 A, US3964397 A, US3780664 A, US3430700 A, US3047968 A, US2756520 A,

Forward Citations: US9303386, US9038541, US8863667, US7895950, US7350467, US6755135, US6598325, US6463858, US5722325, US5701693, US5651317, US5617795, US5435081, US5305692, US5241763, US5197389, US2011247518, US2011016756, US2010319225, US2009293323, US2007095242, US2006225310,

Abstract:
Source: US4951573A A tie remover/inserter machine uses the vehicle and bucket of a conventional backhoe with various modifications. Grader blades are added to the loader bucket such that the machine may be used for grading ballast along a railroad track. Rail engagement wheels which may be raised and lowered are mounted to the chassis of the vehicle. A three section telescopic boom is equipped with a tie clamping device that also has the ability to tilt a tie in relation to the boom. The boom may be pivoted about horizontal and vertical axes. The boom is mounted to the vehicle by way of a side shift carriage which allows the proximal end (i.e., end closest to the vehicle) of the boom to be moved towards the center line of the vehicle so as to allow the vehicle to meet road clearance limitations.



0) DE202006001065U1 – WHEEL LOADER E.G. YARD LOADER, FOR USE IN E.G. ...

50) Family number: 32879490 (DE202006001065U1) © PatBase

Title: WHEEL LOADER E.G. YARD LOADER, FOR USE IN E.G. CONSTRUCTION SITE, HAS THREE WHEELS PROVIDED AT CARRYING WHEEL, IN WHICH TWO OF WHEELS ARE FRONT WHEELS THAT ARE ARRANGED PARALLEL TO EACH OTHER AND THIRD WHEEL IS REAR WHEEL

Priority: DE200620001065U 20060123

Family:

Publication number	Publication date	Application number	Application date
DE202006001065 U1	20060330	DE200620001065U	20060123

Probable Assignee: FRANK FOECKERSPERGER GMBH

Assignee(s):(std)**:** FRANK FOECKERSPERGER GMBH

International class (IPC 8–9)**:** B65G65/04 B66F9/06 E02F3/34 (Advanced/Invention); B65G65/00 B66F9/06 E02F3/28 (Core/Invention)

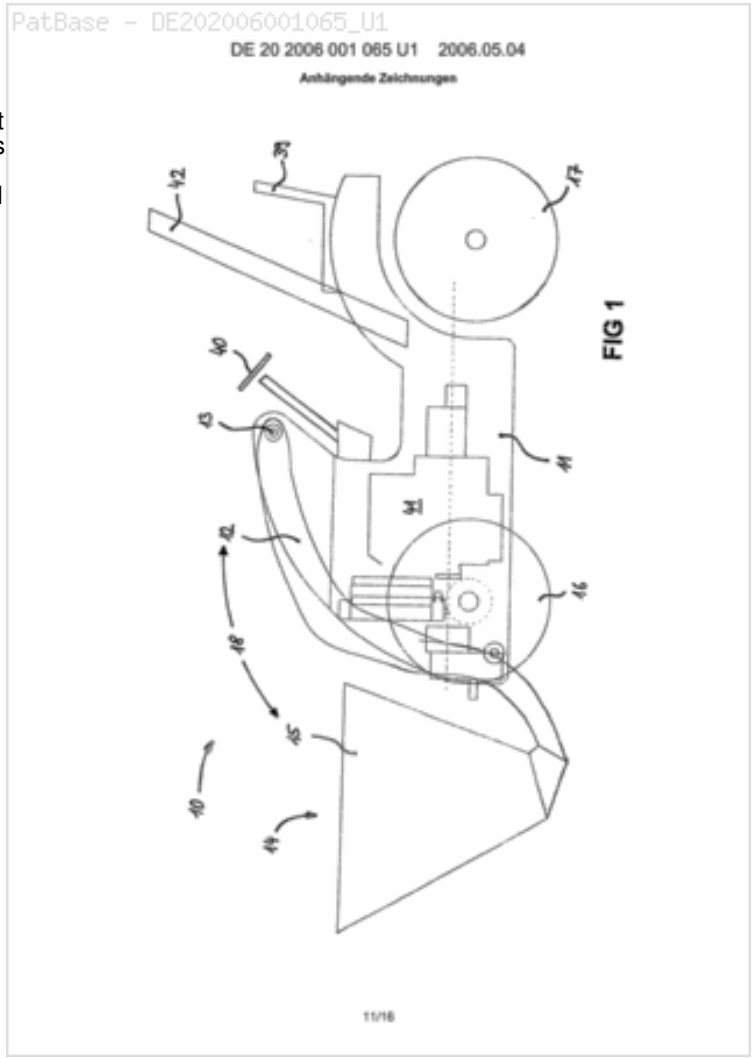
CPC: B66F9/06 E02F3/34

European class: B66F9/06 E02F3/34

Classification Explorer

Forward Citations: DE102010012418, DE102010012418,

Abstract:
The loader has a carrying vehicle and a carrying arm movably attached at the carrying vehicle. An implement e.g. shovel, is fitted at the carrying arm. Three wheels are provided at the carrying vehicle, in which two of the wheels are front wheels (16) and the third wheel is a rear wheel (17). The front wheels are arranged parallel to each other and the rear wheel is arranged concentric to the longitudinal side of the vehicle.



0) US2911230A – RECIPROCAL SUSPENSION SYSTEM WITH HYDRAULIC TRA...

51) Family number: 20552722 (US2911230A) © PatBase

Title: RECIPROCAL SUSPENSION SYSTEM WITH HYDRAULIC TRANSMISSION

Priority: 19560605 US19570662198 19570528 DE1957R021267 19570601

Family:

Publication number	Publication date	Application number	Application date
DE1121484 B	19620104	DE1957R021267	19570601
FR1151204 A	19580127		19560605
GB857670 A	19610104	GB19570016258	19570522
US2911230 A	19591103	US19570662198	19570528

Probable Assignee: RENAULT

Assignee(s):(std)**:** RENAULT

Assignee(s): REGIE NATIONALE DES USINES RENAULT

Inventor(s):(std)**:** LUCIEN PERAS

Inventor(s): PERAS LUCIEN

International class(IPC 8–9)**:** B60G21/06 (Advanced/Invention); B60G21/00 (Core/Invention)

International class(IPC 1–7)**:** B60G11/32 B60G19/02 B60G19/06 B60G19/10

CPC: B60G21/06

European class: B60G21/06

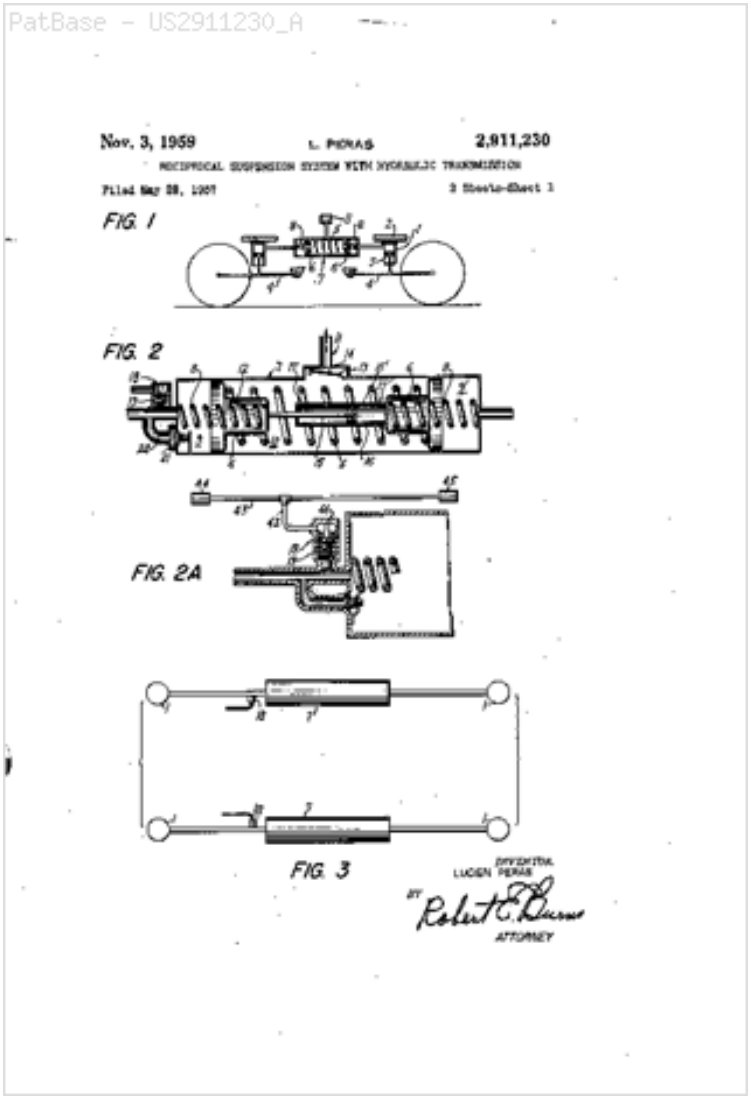
US class: 280/104 280/5.504

Classification Explorer

Cited documents: US1071547 A, FR511468 A, DE905096 A, DE881054 A, DE662850 A, DE32287 A,

Forward Citations: US8777543, US3363913, US3153425, US2012121368, US2010012646, FR2708529, DE1285899, DE10349655,

Abstract:
Source: GB857670A 857,670. Road vehicle spring suspensions. REGIE NATIONALE DES USINES RENAULT. May 22, 1957 [June 5, 1956], No. 16258/57. Class 108(2) In a vehicle suspension system the front and rear wheels on the same side of a vehicle are hydraulically interconnected, through pistons 3, Fig. 1, cylinders 1, or a central cylinder 7. The cylinder 7, Fig. 2, houses a compression spring 5 between pistons 6 which transmit pressure from the road wheels, and a rebounddamping cylinder and piston 16, 15 which allows relatively free compression and damped expansion of the spring 5. Return springs 8 assist in maintaining the system in balanced condition. Spring compression may be retarded if necessary by an orifice 14 in a non−return valve 13. In the embodiment shown in Fig. 3, partial choking of the pipe lines to the front axles is provided during braking by brake actuated pistons 18, Figs. 2, 3, thus stiffening the front suspension and, preventing longitudinal tilting of the vehicle body. A branch pipe 20 and a gaged valve 21 limit the stiffness in case the brakes are applied whilst traversing rough ground. The lateral assemblies may be connected by pipe line 22, Fig. 4. A valve 23, controlled either mechanically or by an inertial weight, closes the pipe 22 when the vehicle body is laterally inclined beyond a predetermined limit. The two lateral assemblies may be connected at both front and rear, by pipes 24, Fig. 5, each having a rolling movement corrector. When a valve 34 is actuated, in the same way as the valve 23, fluid is supplied under pressure through a pipe 37 to either end compartment 29 or 29^1. This pressure acting on either piston 28 or 28^1 moves a three piston assembly 28, 26, 28^1, connected by a rod 30, either right or left, to close a passage 36 between suspension cylinders 7. During this movement a piston 26 draws fluid from one of suspension cylinders 7 and forces the same quantity into the opposite cylinder 7. The action of the valve 34 is so arranged that this transfer tends to correct the lateral canting of the vehicle. Springs 35, 35^1 restore the piston 26 to its rest position when lateral canting has ceased. The suspension spring may be divided into two halves 38, 38^1, Fig. 6, which bear against a flange 39 carried by a bellows 40. Application of the brakes causes shoes 41 to press against the bellows 40 to lock them, thus suppressing interaction between front and rear axles. Body height may be adjusted, the necessary fluid control valve being opened and closed manually or electromagnetically. A pair of pointers may be provided on the instrument panel which register with each other and close the levelling valve when the vehicle body is horizontal or parallel with the ground. The levelling valve is locked closed when the vehicle is in motion.



0) WO06032791A2 – AMPHIBIOUS VEHICLE WHICH IS PROPELLED BY WIND O...

52) Family number: 32759086 (WO06032791A2) © PatBase

Title: AMPHIBIOUS VEHICLE WHICH IS PROPELLED BY WIND OR ANOTHER FORCE AND WHICH IS EQUIPPED WITH WHEELS AND A FLOATATION MEANS

Priority: FR20040010056 20040923 WO2005FR02350 20050922

Family:

Publication number	Publication date	Application number	Application date
AT475575 E	20100815	AT20050802665T	20050922
DE602005022606 D1	20100909	DE200560022606T	20050922
EP1809525 A2	20070725	EP20050802665	20050922
EP1809525 B1	20100728	EP20050802665	20050922
FR2875438 A1	20060324	FR20040010056	20040923
FR2875438 B1	20080222	FR20040010056	20040923
WO06032791 A2	20060330	WO2005FR02350	20050922
WO06032791 A3	20070802	WO2005FR02350	20050922

Probable Assignee: LOD

Assignee(s):(std)**:** LANGINIEUX MARTIN ; LOD

Assignee(s): MARTIN LANGINIEUX

Inventor(s):(std)**:** LANGINIEUX MARTIN

Inventor(s): MARTIN LANGINIEUX

Agent(s): CORRET HELENE; CABINET ORES

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KR KZ LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): B60F3/00 B62B15/00 B63B35/79 B63H1/00 (Advanced/Invention); B60F3/00 B62B15/00 B63B35/73 B63H1/00 (Core/Invention)

CPC: B60F3/0069 B62B15/001 B62B15/003 B62B15/004

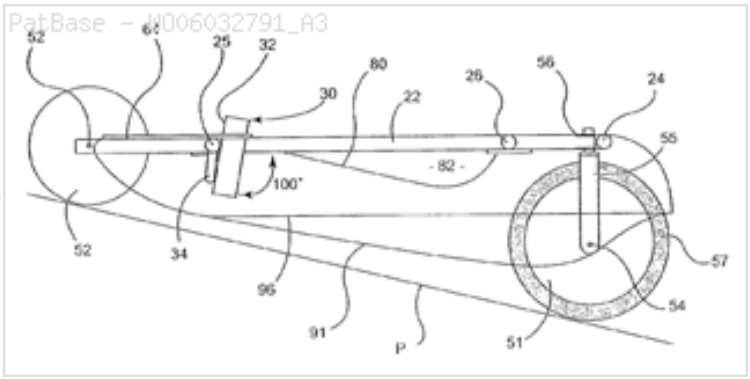
European class: B60F3/00D2 B62B15/00B B62B15/00B4 B62B15/00B6

Classification Explorer

Cited documents: US5832862 A, US4838194 A, US4387661 A, US3895597 A, US3395664 A, GB2293581 A1, GB1288779 A, FR911806 A, FR2537508 A1, EP0176458 A1, CH97187 A,

Forward Citations: WO09092297,

Abstract:
The invention relates to a wheeled vehicle (10) which is propelled by the force of the wind or another force and which comprises at least: a rigid chassis, at least two wheels (51, 52), a steering system, and a floatation means (91) ensuring the insubmersibility of the vehicle (10) once it has been submerged in water. The invention is characterised in that, once the contact surfaces of the wheels (51, 52) are resting on a firm surface defining a reference plane (P), the waterline (96) of the floatation means (91) is inclined in relation to said plane (P), such that, once the vehicle (10) is submerged, at least one wheel (52) rises above the water under the effect of the pressure exerted by the water on the floatation means. More specifically, the invention relates to a land yacht or an amphibious scooter that can operate on both land and water.



0) DE102015118777A1 – DREIRAD–FAHRZEUG TRICYCLE VEHICLE (MACHINE T...

53) Family number: 62330815 (DE102015118777A1) © PatBase

Title:	DREIRAD–FAHRZEUG TRICYCLE VEHICLE (Machine translation)
Priority:	DE201420105334U 20141106

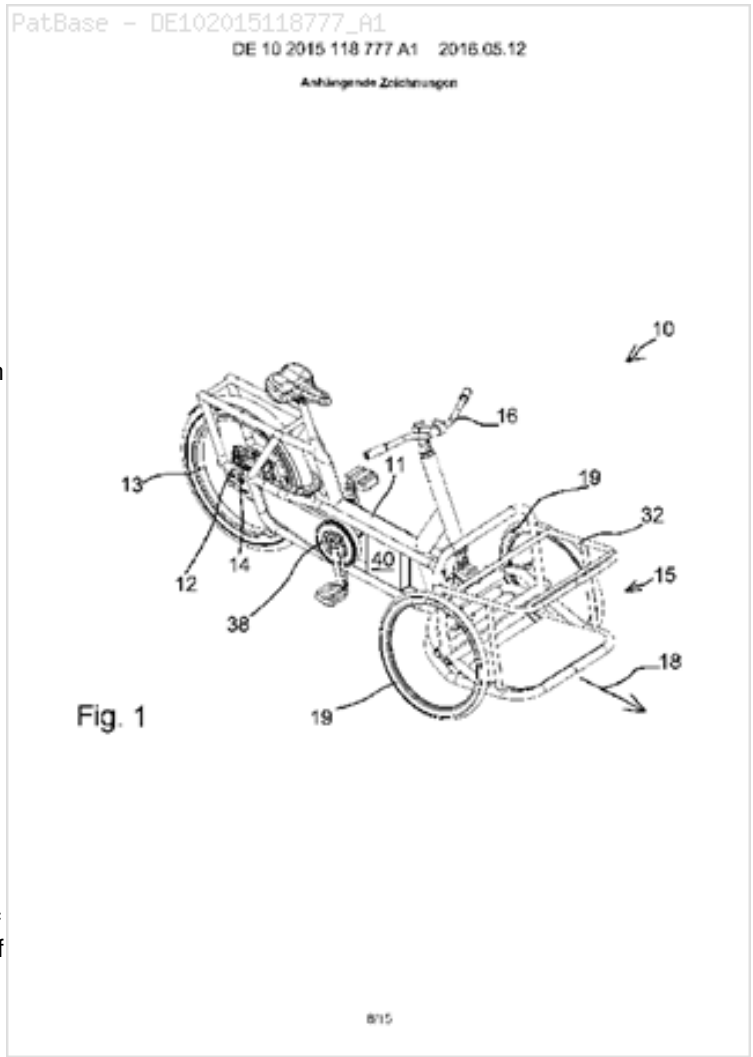
Family:

Publication number	Publication date	Application number	Application date
DE102015118777 A1	20160512	DE201510118777	20151103

Probable Assignee:	ZEG ZWEIRAD EINKAUFS GENOSSENSCHAFT EG
Assignee(s):(std):	ZEG ZWEIRAD EINKAUFS GENOSSENSCHAFT EG
Inventor(s):(std):	DANTZENBERG STEFFEN ; PAPENFUSS ANDREAS
International class (IPC 8–9):	B62K5/05 B62K5/08 (Advanced/Invention)
CPC:	B62K5/05 B62K5/08 B62J7/02 B62K7/04 B62K21/00

Classification Explorer

Abstract:
Source: DE102015118777A1 Die Erfindung hat ein Dreirad–Fahrzeug (10), insbesondere ein dreiraedriges Lastenfahrrad zum Gegenstand, mit einem Fahrzeugrahmen (11) mit einer Hinterradaufnahme (12) fuer ein einzelnes Hinterrad (13) und mit einem zwei Vorderraeder (19) tragenden Lenkschemel (15), der mit dem Fahrzeugrahmen (11) um eine Lenkachse (17) schwenkbeweglich verbunden und mittels eines Fahrzeuglenkers (16) betaetigbar ist. Um das Fahrverhalten eines derartigen Fahrzeugs zu verbessern, schlaegt die Erfindung vor, dass der zwischen der Lenkachse (17) und einer Fahrbahn (20) in Fahrtrichtung (18) hinter einem Schnittpunkt (21) der Lenkachse (17) mit der Fahrbahn (20) eingeschlossene Lenkachsenwinkel (beta) groesser als 90 degrees ist, so dass die Lenkachse (17) in Fahrtrichtung (18) nach vorne geneigt ist. Hierdurch kommt es bei einer Kurvenfahrt zu einem Kippen des Fahrzeugrahmens zum Kurveninneren hin, wodurch der Fahrer des Fahrzeugs die bei Kurvenfahrt auftretenden Fliehkraefte leicht ausgleichen kann. The invention has a three–wheeled vehicle (10), in particular a three–wheeled tricycle to the object, comprising a vehicle frame (11) supporting a rear receiving means (12) for a single rear wheel (13) and having a two front wheels (19) bolster (15) which is pivotally connected to the vehicle frame (11) about a steering axis (17) and operated by a vehicle driver (16). In order to improve the drivability of such a vehicle, the invention proposes that between the steering axis (17) and a roadway (20) in the direction of travel (18) behind a point of intersection (21) of the steering axle (17) with the track (20) enclosed steering axis angle (beta) greater than 90 degrees, so that the steering axis (17) in the direction of travel (18) inclined forward. This results in a turn to a tilting of the vehicle frame to curve toward the interior, whereby the driver of the vehicle can easily compensate for the centrifugal forces when cornering.



0) US2016251051A – THREE–WHEELED TILTING VEHICLE

54) Family number: 58641971 (US2016251051A) © PatBase

Title: THREE–WHEELED TILTING VEHICLE

Priority: FR20130058375 20130902 WO2014FR52165 20140902

Family:

Publication number	Publication date	Application number	Application date
CN105593044 A	20160518	CN201480054350	20140902
EP3041699 A1	20160713	EP20140777687	20140902
FR3010042 A1	20150306	FR20130058375	20130902
FR3010042 B1	20150814	FR20130058375	20130902
IN201617006697 A	20160805	IN201617006697	20160226
US2016251051 AA	20160901	US20140914059	20140902
WO15028767 A1	20150305	WO2014FR52165	20140902

Probable Assignee: MALPHETTES BRUNO

Assignee(s):(std)**:** MALPHETTES BRUNO

Assignee(s): BRUNO MALPHETTES

Inventor(s):(std)**:** MALPHETTES BRUNO

Inventor(s): BRUNO MALPHETTES

Agent(s): IP TRUST; FIDAL INNOVATION; BREESE PIERRE

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60K5/10 B62K5/02 B62K5/08 B62K5/10 (Advanced/Invention)

CPC: B60G3/20 B60G2200/144 B60G2204/46 B60G2300/122 B60G2300/45 B62K5/027 B62K5/02 B62K2005/001 B62K5/10 B62K5/05 B62K5/08

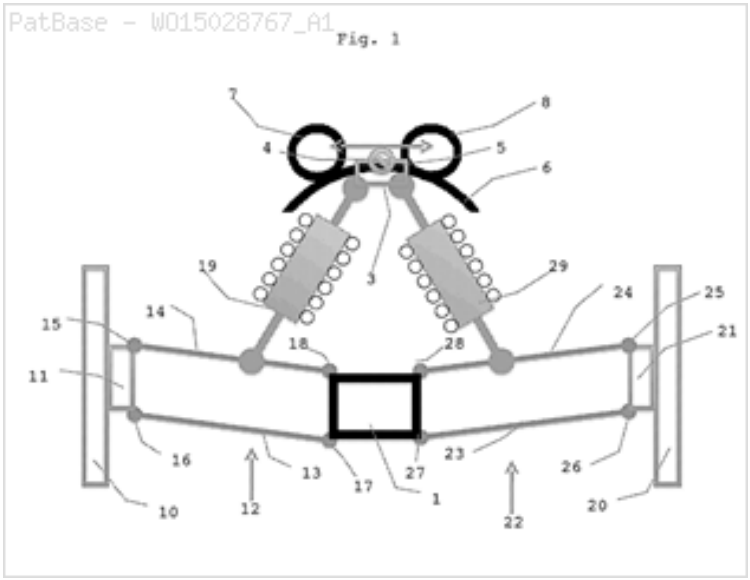
US class: 280/788

Classification Explorer

Cited documents: WO11005945 A1, US9061732 BA, US8641064 BB, US8596660 BB, US8141890 BB, US7665742 BB, US7648148 BA, US7607695 BB, US5765846 A, US4647053 A, US4632413 A, US2819093 A, US2016144680 AA, US2012098220 AA, US2008197597 AA, US2008012262 AA, US2005206101 AA, JP61229608 A2,

Forward Citations: US2016229480,

Abstract:
Source: US2016251051A An inclinable vehicle having a tilting front wheel set, comprising a double deformable parallelogram connecting the two front wheels to the chassis, and two dampers associated with suspension springs, each connecting one of the suspension arms, to a common connection plate, characterised in that said connection plate is guided by an arch secured to the chassis.



0) FR2934838A – TRICAR E.G. MOTOR TRICAR, HAS CONNECTION UNITS ...

55) Family number: 44376881 (FR2934838A) © PatBase

Title: TRICAR E.G. MOTOR TRICAR, HAS CONNECTION UNITS COMPRISING VERTICAL TRIANGLE SHAPED ASSEMBLY AND TOP AND BOTTOM SUPPORTING ASSEMBLIES FOR CONNECTING FRONT PART WITH REAR PART THAT HAS FRONT FRAME OF MOTORCYCLE

Priority: FR20080055494 20080808

Family:

Publication number	Publication date	Application number	Application date
FR2934838 A1	20100212	FR20080055494	20080808

Probable Assignee: LAFAYE TONY

Assignee(s):(std)**:** LAFAYE TONY

Assignee(s): TONY LAFAYE

Inventor(s):(std)**:** LAFAYE TONY

Inventor(s): TONY LAFAYE

Agent(s): CABINET PONTET ALLANO AND ASSOCIES

International class (IPC 8–9): B62D61/06 (Advanced/Invention); B62D61/00 (Core/Invention)

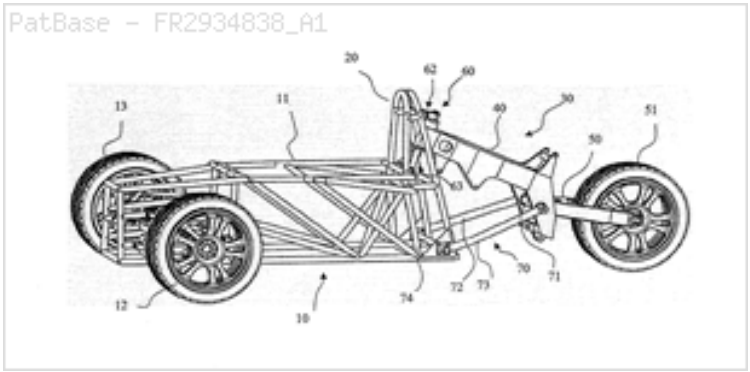
CPC: B62K5/027 B62K5/05 B62K13/04

European class: B62K13/04 B62K5/027 B62K5/05

Classification Explorer

Cited documents: US4506753 A, US4158397 A, US3610358 A, GB2141392 A1, GB194682 A, GB191312842 A, AU443552 B2,

Abstract:
The tricar has a front part (10) comprising a rear chassis portion of a single–seat competition vehicle i.e. Renault(RTM: French automaker producing cars, vans, buses, tractors, and trucks) campus formula type vehicle. A rear part (30) has a front frame (40) e.g. gran sport experimental racer 600 Suzuki(RTM: two wheelers manufacturing company in India) frame, of a motorcycle. Connection units comprise a vertical triangle shaped assembly (20), a top supporting assembly (60) and a bottom supporting assembly (70) for connecting the front part with the rear part.



0) US2014314536A – HANDLING DEVICE AND METHODS

56) Family number: 52403861 (US2014314536A) © PatBase

Title: HANDLING DEVICE AND METHODS

Priority: AU20110901901 20110517 US20110487188P 20110517 WO2012AU00547 20120517 US20120118122 20120517

Family:

Publication number	Publication date	Application number	Application date
AU2012255619 AA	20121122	AU20120255619	20120517
AU2012255619 BB	20170202	AU20120255619	20120517
BR112013029674 A2	20170124	BR20131129674	20120517
CA2836301 AA	20131115	CA20122836301	20120517
CL2013003299 A1	20140822	CL20130003299	20131115
US2014314536 AA	20141023	US20120118122	20120517
US9573420 BB	20170221	US20120118122	20120517
WO12155207 A1	20121122	WO2012AU00547	20120517
ZA201308661 A	20140827	ZA20130008661	20131118

Probable Assignee: JUSTOY PTY LTD

Assignee(s):(std)**:** HEDLEY ROBERT IAN ; JUSTOY PTY LTD ; WHYBIN CHRISTOPHER NASH

Assignee(s): JUSTOY PTY LIMITED

Inventor(s):(std)**:** HEDLEY ROBERT IAN ; NHYBIN CHRISTOPHER NASH ; WHYBIN CHRISTOPHER NASH

Inventor(s): CHRISTOPHER NASH NHYBIN ; ROBERT IAN HEDLEY

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; OYEN WIGGS GREEN AND MUTALA LLP; ESTUDIO COVARRUBIAS AND SILVA LIMITADA; KILPATRICK TOWNSEND AND STOCKTON LLP; COWLE ANTHONY JOHN ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class(IPC 8–9)**:** B60B29/00 B60B30/02 B60B30/10 B62B3/04 B62B3/10 B62B3/12 B65G7/04 B65G7/08 B66F7/22 B66F7/26 B66F9/065 (Advanced/Invention); B62B5/00 (Advanced/Non–invention); B60B B62B B65G B66F (Subclass/Invention)

CPC: B62B3/04 B66F7/22 B65G7/04 B65G7/08 B60B30/10 B60B30/02 B66F7/26 B66F9/065 B60B29/00 B62B3/104 B62B5/0026 B62B2202/031

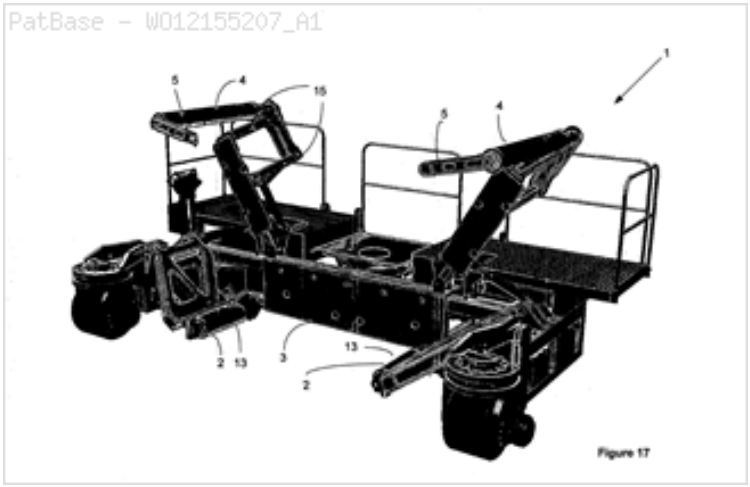
US class: 414/679

Classification Explorer

Cited documents: US7677582 BB, US4460306 A, US4401405 A, US3937343 A, US3830388 A, US3828953 A, US2852151 A, US2583216 A, US2379587 A, US2009155032 AA, US2007290179 AA, US1523486 A,

Forward Citations: ITMO20130128, EP2803499,

Abstract:
Source: US2014314536A An article handling apparatus including a frame adapted to receive the article on a support means; a plurality of wheels attached to said frame for movement of said frame over a substrate surface; and retaining arms operatively coupled to the frame and adapted to releasably secure the article to the frame. The secured article is movable in a controlled manner with respect to the frame by movement of the support means and the retaining arms.



0) US6250649B – MULTI–TRACK CURVE TILTING VEHICLE

57) Family number: 13189854 (US6250649B) © PatBase

Title: Multi–track curve tilting vehicle

Priority: DE19971017418 19970425 DE19985006450 19980409 WO1998EP02103 19980409

Family:

Publication number	Publication date	Application number	Application date
DE19717418 C1	19981022	DE19971017418	19970425
DE59806450 D1	20030109	DE19985006450	19980409
EP0977674 A1	20000209	EP19980921454	19980409
EP0977674 B1	20021127	EP19980921454	19980409
JP2000510415 T2	20000815	JP19980546535T	19980409
US6250649 BA	20010626	US20000403700	20000112
WO9849023 A1	19981105	WO1998EP02103	19980409

Probable Assignee: OL SECURITY LIABILITY CO LTD

Assignee(s):(std): DAIMLER BENZ AG ; DAIMLER CHRYSLER AG ; BRAUN DIETER

Assignee(s): DAIMERCHRYSLER AG ; DAIMLER AG ; DAIMLERCHRYSLER AG ; DAIMLER BENZ AKTIENGESELLSCHAFT ; DAIMLER BENZ AKTIENGESELLSCHAFT 70567 STUTTGART DE ; RAMSLE TECHNOLOGY GROUP GMBH ; RAMSLE TECHNOLOGY GROUP GMBH LLC ; OL SECURITY LIABILITY CO LTD

Inventor(s):(std): BRAUN DIETER

Inventor(s): BRAUN DIETER 70378 STUTTGART DE

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT JP LU MC NL PT SE US

International class (IPC 8–9): B60G17/00 B60G17/015 B60G17/016 B60G17/0185 B60G17/019 B60G21/00 B60G21/10 B62K25/00 B62K5/04 (Advanced/Invention)

International class (IPC 1–7): B60G17/00 B60G17/015 B60G17/15 B60G21/00 B60G21/10 B62K25/00 B62K5/04 C23C14/34 H01J37/34

CPC: B60G17/0162 B60G17/0185 B60G17/01925 B60G21/007 B60G21/106 B60G2200/144 B60G2202/413 B60G2204/421 B60G2300/45 B60G2400/104 B60G2600/08 B60G2600/182 B60G2800/012 B60G2800/24 B60G2800/80

European class: B60G17/015A2 B60G17/015D B60G17/015F1B B60G17/016F B60G17/0185 B60G17/019B5 B60G21/00D B60G21/10C L60G200/144 L60G202/413 L60G204/421 L60G300/45 L60G400/104 L60G600/08 L60G600/182 L60G800/012 L60G800/24 L60G800/80

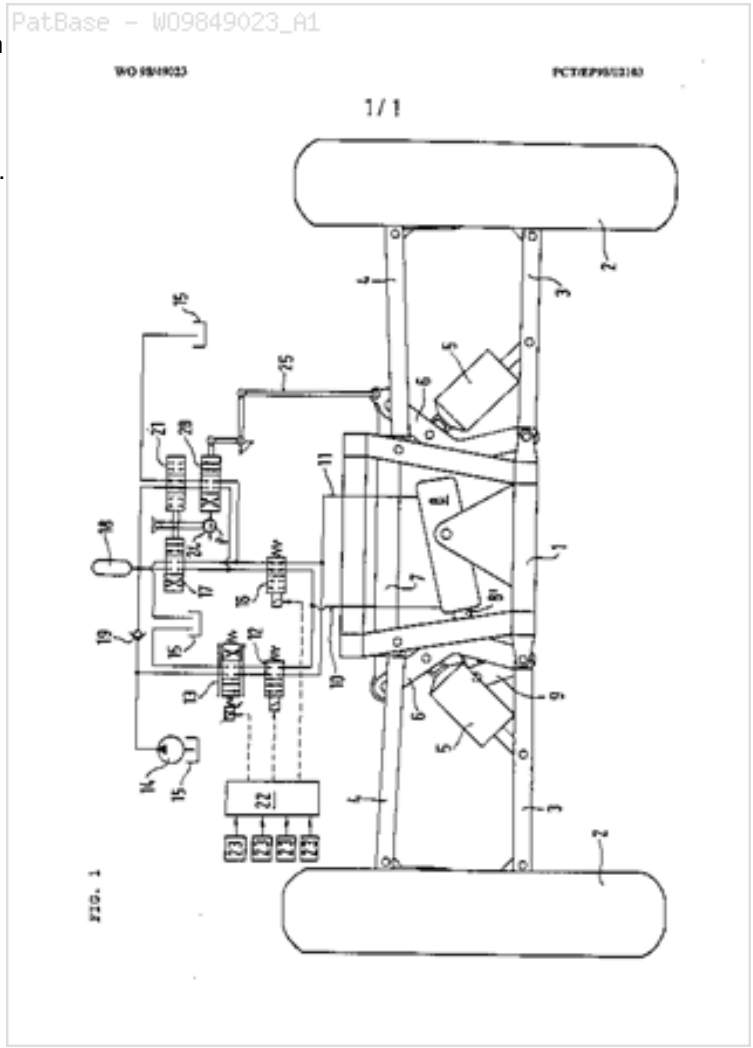
US class: 280/124.106 280/5.506 701/38

Classification Explorer

Cited documents: US5927424 A, US5609352 A, US5580089 A, US5255611 A, US5116069 A, US4573702 A, US4546997 A, US4534575 A, US4484648 A, US4277076 A, US4072325 A, US3938823 A, US3917295 A, US3909022 A, US3008729 A, US2788986 A, US2279120 A, EP0528783 A1, EP0426995 A2, EP0153521 A1, DE19608578 A1, DE1001602 B,

Forward Citations: US9545976, US9493208, US9283989, US9248857, US9145168, US9090281, US9045015, US8899372, US8342548, US7967096, US7931286, US7850180, US7802800, US7665749, US7591337, US7571787, US7568541, US7234708, US7063179, US7029014, US6776426, US6688620, US6467783, US2016129967, US2016059661, US2011148052, US2010320023, US2010072722, US2009108555, US2008258416, US2008012262, US2007246903, US2007228675, US2006255550, US2006175785, US2006163825, US2005184476, US2005184475, US2005051976, US2004040770, US2003102176, JP2011011575, JP2009536894, JP2007522015, JP2006315674, FR2872772, FR2833234, FR2827222, FR2823149, FR2819753, FR2819752, FR2796594, EP1870269, EP1829719, EP1799472, EP1403172, EP1378427, EP1363795, EP1276656, EP1275534, EP1247663, EP1247663, EP1070609, DE202008012772, DE10256682, DE102014217386, CN102896992, CN102896992, CN101954847,

Abstract:
Source: US6250649B A tilting–body vehicle, in which the control system for the body tilt comprises an emergency system. In the event of a failure of a normally effective main system, the emergency system permits an emergency operation at least for a limited time. Three body positions are made possible depending on the transverse acceleration of the vehicle: namely, maximum tilt to the left, upright position and maximum tilt to the right. The emergency system is controlled via an inertia mass.



0) US2015183484A – STEERING AXLE FOR A VEHICLE HAVING TWO LATERALL...

58) Family number: 55627331 (US2015183484A) © PatBase

Title: STEERING AXLE FOR A VEHICLE HAVING TWO LATERALLY TILTABLE FRONT WHEELS

Priority: FR20120056668 20120711 WO2013FR51598 20130704

Family:

Publication number	Publication date	Application number	Application date
CN104520178 A	20150415	CN201380036908	20130704
EP2872384 A1	20150520	EP20130744692	20130704
FR2993207 A1	20140117	FR20120056668	20120711
FR2993207 B1	20140815	FR20120056668	20120711
IN00725CN2015 A	20160701	IN2015CN00725	20150205
US2015183484 AA	20150702	US20130413028	20130704
US9199686 BB	20151201	US20130413028	20130704
WO14009637 A1	20140116	WO2013FR51598	20130704

Probable Assignee: PEUGEOT MOTOCYCLES SA

Assignee(s):(std)**:** PEUGEOT MOTOCYCLES SA ; PEUGEOT MOTORCYCLES SA

Inventor(s):(std)**:** DOVERI MARCO ; MOISAN GWENAEL ; MOISAN GWENDAL ; NAISSE STEPHANE ; AILLET JEAN LAURENT

Inventor(s): DOVE RI MARCO ; STEPHANE NAISSE ; GWENAEL MOISAN ; JEAN LAURENT AILLET ; MARCO DOVERI

Agent(s): MENES CATHERINE; PEUGEOT CITROEN AUTOMOBILES SA; POLSTER LIEDER

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** B60G13/16 B60G13/18 B60G21/00 B62K5/01 B62K5/027 B62K5/04 B62K5/05 B62K5/08 B62K5/10 (Advanced/Invention); B60G21/00 B62K5/00 (Advanced/Non–invention)

CPC: B62K5/10 B62K5/027 B62K5/05 B62K2005/001 B60G13/16 B60G13/18 B60G21/007 B60G2202/25 B60G2300/122 B60G2300/45 B62K5/01 B60G21/00 B62K5/08

US class: 1/1 280/124.103 280/62

Classification Explorer

Cited documents: WO9941136 A1, WO9202382 A1, US5765846 A, US5004061 A, US2010263167 AA, US2007182120 AA, US1824566 A, FR839855 A, FR2921628 A1, EP1813450 A1, EP1180476 A1, CN201694318 U, CN102470909 A, CN101100162 A,

Forward Citations: GB2533477,

Abstract:
Source: US2015183484A The invention concerns an undercarriage (35) for a vehicle comprising a chassis, two front steering wheels (36D, 36G) and at least one rear drive wheel. The undercarriage comprises, combined with each wheel, a suspension system (39) suspending the wheel from said chassis, said system (39) comprising an upper suspension arm (40), a lower suspension arm (41) and a lateral arm (42), said arms being linked together by articulated means (43, 44, 45, 46) such that a lateral tilting of the undercarriage results in an equivalent tilting of the two front wheels, which remain parallel to each other. According to a feature of the invention, the undercarriage comprises a damper (50), integral with each front wheel, to at least partially cancel the oscillation frequencies of said front wheel.

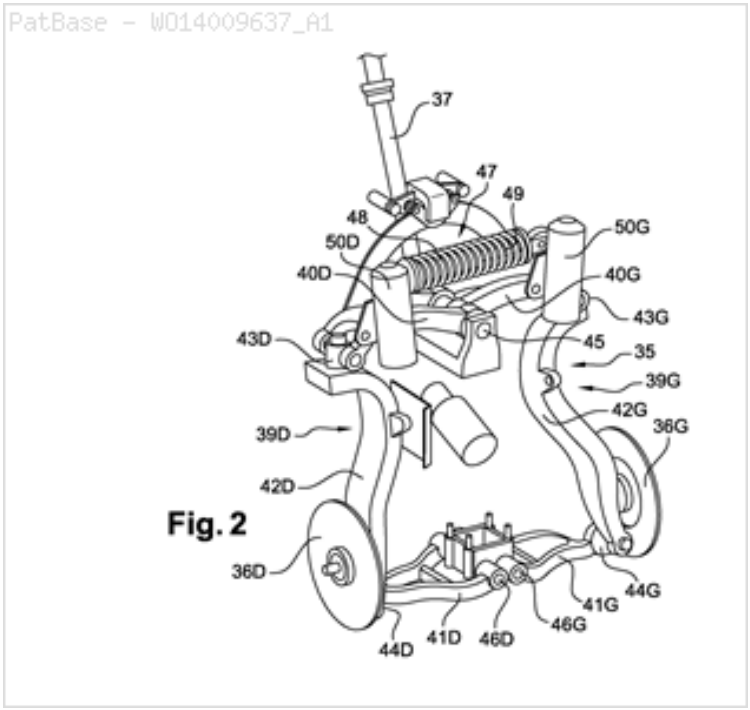


Fig. 2

0) US3292511A – VEHICLE SUPPORTED CONCRETE MOULDING MACHINE

59) Family number: 22573748 (US3292511A) © PatBase

Title: VEHICLE SUPPORTED CONCRETE MOULDING MACHINE

Priority: US19630323339 19631113

Family:

Publication number	Publication date	Application number	Application date
US3292511 A	19661220	US19630323339	19631113

Probable Assignee: CHENEY ALWYN H

Assignee(s):(std)**:** CHENEY ALWYN H

Inventor(s):(std)**:** CHENEY ALWYN H

International class (IPC 8–9)**:** E01C19/48 (Advanced/Invention); E01C19/00 (Core/Invention)

International class (IPC 1–7)**:** E01C19/48

CPC: E01C19/4893

European class: E01C19/48H5

US class: 404/84.2 404/98 425/113 425/64

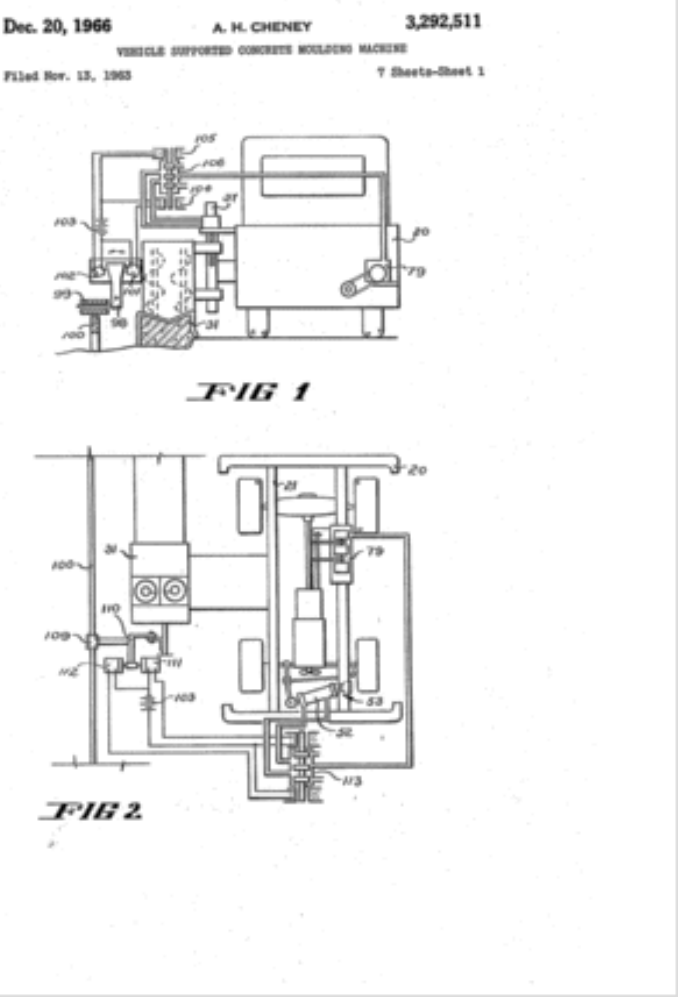
Classification Explorer

Cited documents: US3109351 A, US3053156 A, US2922345 A, US2883594 A, US2864452 A, US2655006 A,

Forward Citations: US8573886, US6715957, US6692185, US6109825, US5062737, US5018955, US4789266, US4145155, US4076474, US3989402, US3954359, US3936211, US3915584, US3856425, US3749505, US3427938, DE2131650,

Abstract:
Source: US3292511A (Claim 1) 1. A vehicle supported concrete moulding machine comprising: a land vehicle supported on two front wheels and two rear wheels, a frame arranged to be carried by the land vehicle, a travelling concrete mould supported by the frame, guide means on the mould guiding the mould for movement relative to the frame, height correction means operatively coupling the concrete mould and the frame to vary the height of the mould relative to the frame, a datum line member, height responsive sensing means fixed relative to but overhanging the concrete mould and enagageable against the upper surface of the datum line member when the datum line member is positioned alongside the path of travel of the vehicle, power steering means on the vehicle operable 'between the chassis of the vehicle and its front wheels, steering sensing means on the concrete niould en−gageable against the side surfaces of the datum line member, and power means on the vehicle connected to the height correction means and power steering means and coupling means between the height correction means and the height responsive sensing means, and between the power steering means and the steering sensing means, the height correction means and power steering means thereby being controlied by the height responsive sensing means and steering sensing means respectively to limit height and direction variation respectively between the mould and the datum line member.

PatBase - US3292511_A



0) US5551717A – SPORTS CONVEYANCE

60) Family number: 30996456 (US5551717A) © PatBase

Title: SPORTS CONVEYANCE

Priority: AU1992PL01807 19920409 AU1992PL06443 19921218 AU19930038801 19930408 WO1993AU00161 19930408

Family:

Publication number	Publication date	Application number	Application date
AT169508 E	19980815	AT19930907666T	19930408
AU199338801 A1	19931118	AU19930038801	19930408
AU674675 B2	19970109	AU19930038801	19930408
BRPI9306217 A	19980623	BR1993PI06217	19930408
CA2117759 AA	19941007	CA19932117759	19930408
DE69320335 D1	19980917	DE19936020335	19930408
DE69320335 T2	19981224	DE19936020335T	19930408
EP0634951 A1	19950125	EP19930907666	19930408
EP0634951 A4	19950802	EP19930907666	19930408
EP0634951 B1	19980812	EP19930907666	19930408
ES2072227 A	00000000		00000000
ES2072227 AB	19950701	ES19930050031	19930408
ES2072227 AC	19951016	ES19930050031	19930408
ES2072227 BA	19960501	ES19930050031	19930408
FI944715 A	19941202	FI19940004715	19941007
FI944715 A0	19941007	FI19940004715	19941007
JP7505323 T2	19950615	JP19930517850T	19930408
NO300529 B1	19970616	NO19940003780	19941007
NO943780 A	19941123	NO19940003780	19941007
NO943780 A0	19941007	NO19940003780	19941007
NZ251260 A	19960925	NZ19930251260	19930408
US5551717 A	19960903	US19940318709	19941011
WO9320911 A1	19931028	WO1993AU00161	19930408

Probable Assignee: MILNE JOHN DE COURCEY

Assignee(s):(std)**:** JOHN DE COURCEY MILNE ; MILNE JOHN DE COURCEY

Assignee(s): MILNE JOHN DE COURCEY BRISBANE QUEENSLAND AU ; DE COURCEY MILNE JOHN

Inventor(s):(std)**:** DE COURCEY MILNE JOHN ; MILNE JOHN DE COURCEY ; JOHN DE COURCEY MILNE

Inventor(s): MILNE JOHN DE COURCEY BRISBANE QUEENSLAND AU

Agent(s): AHEARN FOX; RIDOUT AND MAYBEE LLP

Designated states: AT AU BB BE BF BG BJ BR CA CF CG CH CI CM CZ DE DK ES FI FR GA GB GN GR HU IE IT JP KP KR KZ LI LK LU MC MG ML MN MR MW NE NL NO NZ PL PT RO RU SD SE SK SN TD TG UA US VN

International class (IPC 8–9): A63C17/01 A63C17/04 A63C17/12 B62K17/00 (Advanced/Invention); A63C17/00 A63C17/04 B62K17/00 (Core/Invention)

International class (IPC 1–7): A63C17/00 A63C17/01 A63C17/04 B62K17/00 B62M1/00

CPC: A63C2201/10 A63C17/013 A63C17/01 A63C17/014 A63C17/015 A63C17/12 A63C17/262 A63C2203/16 A63C2203/42

European class: A63C17/00B A63C17/01 A63C17/01B4 A63C17/01H A63C17/01H2 A63C17/12 A63C17/26B K63C17/01H K63C17/01H2 K63C17/26B K63C203/16 K63C203/42

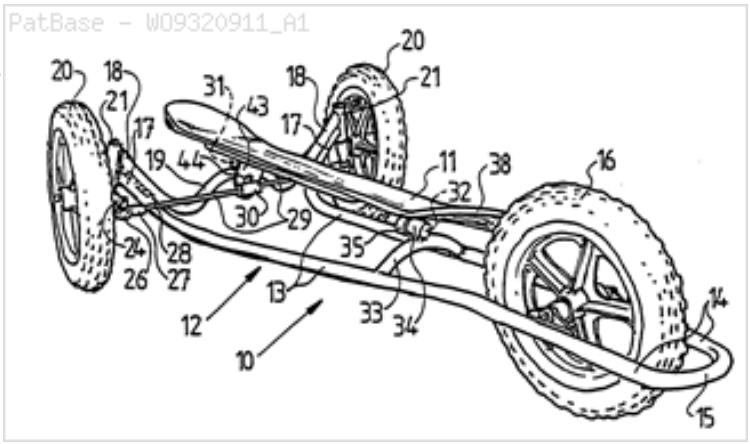
US class: 280/11.27 280/87.041 280/87.042

Classification Explorer

Cited documents: US5330214 A, US4941670 A, US4740000 A, US4681333 A, US4200302 A, US4196916 A, US4159121 A, US4133546 A, US4125268 A, US4054297 A, US3618970 A, US3565454 A, US3252713 A, US1387091 A, US1070468 A, SU1405865 T, GB2225990 A1, FR2349471 A1, EP0064360 A1, EP0043735 A1, DE705040 A, AU8303582 A1, AU3463084 A1, AU2416477 A1,

Forward Citations: WO9947218, WO9947218, WO9613309, WO03076031, WO0151139, WO0013756, USD700937, USD480436, USD473906, USD473905, USD472596, USD425944, US9533728, US9486930, US9475202, US9414710, US9339141, US9296443, US9283685, US8998226, US8827296, US8827284, US8801008, US8801007, US8746716, US8684376, US8602422, US8540284, US8496257, US8469377, US8448954, US8336894, US8231133, US7988159, US7484741, US7150461, US7147235, US6832765, US6669215, US6520516, US6488295, US6467560, US6419248, US6336645, US6158752, US5950754, US5924710, US2014083265, US2014026726, US2010320023, US2010225088, US2010044981, US2007246308, US2006049595, US2004200651, NL1005894, GB2349574, EP3108945, EP0933103, EP0916373, DE19904456, CN103979043, CN103979043, AU708272,

Abstract:
Source: US5551717A PCT No. PCT/AU93/00161 Sec. 371 Date Oct. 11, 1994 Sec. 102(e) Date Oct. 11, 1994 PCT Filed Apr. 8, 1993 PCT Pub. No. WO93/20911 PCT Pub. Date Oct. 28, 1993A sports conveyance is disclosed having a frame mounted on a pair of spaced front wheels and also supported by rear wheel means, the front wheels having interconnecting means whereby they may be turned in unison to either side of the longitudinal center line of the conveyance, a board mounted on the frame to support a rider and adapted to be depressed at a respective side of the longitudinal center line of the conveyance, said board being adapted to be disposed in a substantially horizontal position with the front wheels unturned but so connected to the interconnecting means of the front wheels that depression of the board by body weight of the rider at a respective side of the board causes turning of the wheels in unison in the respective direction upon movement of the board.



0) US2005178181A – METHODS AND APPARATUS FOR CONTROLLING FLARE IN ...

61) Family number: 32170879 (US2005178181A) © PatBase

Title: METHODS AND APPARATUS FOR CONTROLLING FLARE IN ROLL–FORMING PROCESSES

Priority: CA20052497481 20050217 CA20102714126 20100831 EP20050003058 20050214 US20040780413 20040217 EP20100009001 20100830 EP20070020337 20050214 US20090551255 20090831 US20060424444 20060615 US20060424443 20060615 US20130908762 20130603

Family:

Publication number	Publication date	Application number	Application date
AU2005200334 AA	20050901	AU20050200334	20050128
AU2005200334 BB	20100819	AU20050200334	20050128
AU2010214719 AA	20110317	AU20100214719	20100830
AU2010214719 BB	20160317	AU20100214719	20100830
CA2497481 AA	20050817	CA20052497481	20050217
CA2497481 C	20130903	CA20052497481	20050217
CA2714126 AA	20110228	CA20102714126	20100831
DE602005006445 D1	20080619	DE200560006445T	20050214
DE602005034977 D1	20120830	DE200560034977T	20050214
DE602010007458 D1	20130801	DE201060007458T	20100830
EP1563922 A1	20050817	EP20050003058	20050214
EP1563922 B1	20080507	EP20050003058	20050214
EP1889672 A1	20080220	EP20070020337	20050214
EP1889672 B1	20120627	EP20070020337	20050214
EP2289642 A1	20110302	EP20100009001	20100830
EP2289642 B1	20130605	EP20100009001	20100830
ES2305918 T3	20081101	ES20050003058T	20050214
ES2392752 T3	20121213	ES20070020337T	20050214
ES2426469 T3	20131023	ES20100009001T	20100830
US2005178181 AA	20050818	US20040780413	20040217
US2006219836 AA	20061005	US20060424443	20060615
US2006272376 AA	20061207	US20060424444	20060615
US2010139350 AA	20100610	US20090551255	20090831
US2013263636 AA	20131010	US20130908762	20130603
US7111481 BB	20060926	US20040780413	20040217
US7591161 BB	20090922	US20060424444	20060615
US8453485 BB	20130604	US20090551255	20090831
US9370813 BB	20160621	US20130908762	20130603

Probable Assignee: BRADBURY CO INC

Assignee(s):(std)**:** GREEN JASON E ; SMITH GREGORY S ; ILLINOIS TOOL WORKS ; BRADBURY COMPANY ; BRADBURY COMPANY INC ; BRADBURY CO ; BRADBURY CO INC

Assignee(s): BRADBURY CO INC A CORP OF KANSAS ; THE BRADBURY CO INC ; ILLINOIS TOOL WORKS INC ; BRADBURY CO INC MOUNTRIDGE ; THE BRADBURY COMPANY ; THE BRADBURY COMPANY INC

Inventor(s):(std)**:** SMITH GREGORY S ; SHETLER DANIEL R ; JASON E GREEN ; GREGORY S SMITH ; GREEN JASON E

Inventor(s): GREEN JASON ; GREEN JASON E KELLER ; SMITH GREGORY ; SHETLER DANIEL ; SMITH GREGORY S MCPHERSON

Agent(s): CALLINANS; FISHER ADAMS KELLY CALLINANS; PIZZEYS; EKM PATENT AND TRADE MARKS; RIDOUT AND MAYBEE LLP; ROWAND LLP; ROWAND

INTELLECTUAL PROPERTY LAW; SAMSON AND PARTNER PATENTANWAELTE MBB; VON SAMSON HIMMELSTJERNA FRIEDRICH ET AL; SAMSON AND PARTNER; SUGRANES PEDRO; HANLEY FLIGHT AND ZIMMERMAN LLC; LEVENFELD PEARLSTEIN LLC (ILLINOIS TOOL WORKS); LEVENFELD PEARLSTEIN LLC ILLINOIS TOOL WORKS

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

International class (IPC 8–9): B21B37/00 B21B37/16 B21B37/42 B21B38/00 B21D5/08 B21D7/022 B65D85/02 (Advanced/Invention); B21B37/00 B21D5/06 (Core/Invention)

International class (IPC 1–7): B21B37/28 B21B37/42 B21B38/00 B21D5/08

CPC: B21D5/08

European class: B21D5/08

US class: 1/1 242/588 242/588P 72/11.2 72/11.200P 72/176 72/181 72/181P 72/181S 72/220 72/8.3

Classification Explorer

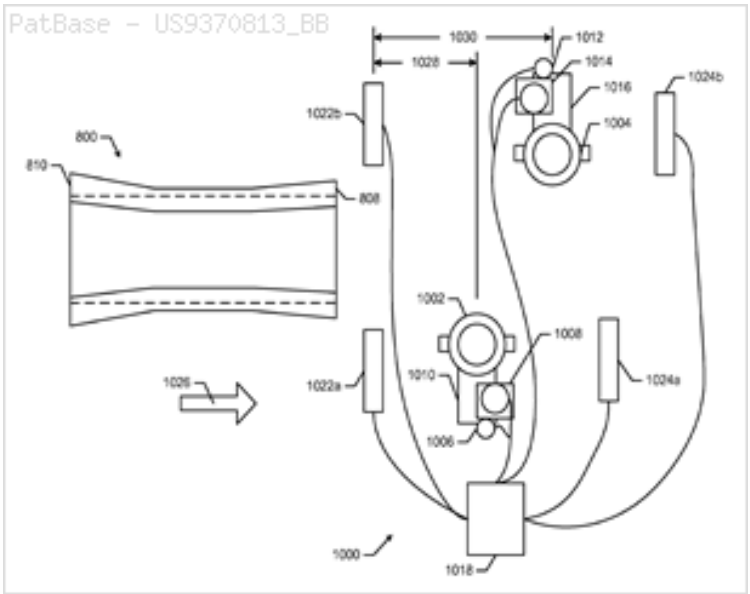
Cited documents: WO9704892 A1, USRE38064 E, US8453485 BB, US78041304, US7591161 BB, US7111481 BB, US6511080 BB, US6477879 BA, US6167740 BA, US6167740 B1, US5970769 A, US5722278 A, US5251922 A, US5112004 A, US5010756 A, US4921385 A, US4878368 A, US487368 A, US4787232 A, US4559577 A, US4558577 A, US42444406, US4117702 A, US3783665 A, US2229787 A, US2006272376 AA, US2005178181 AA, FR2766740 A3, EP2289642 A1, EP1889672 A1, EP1563922 A1, EP1245302 A1,

DE102007005614 A1

CA2714126 AA, CA2497481 AA, AU2010214719 AA, AU2005200334 AA,

Forward Citations: US9573318, US9409744, US9370813, US9234825, US9187289, US8646300, US8601845, US8453485, US8234899, US7984633, US7810092, US7716667, US7603670, US7596654, US7591161, US7533229, US7266637, US7246200, US7213246, US7203944, US2016023258, US2015027641, US2015027192, US2011226030, US2011094278, US2010139350, US2007266753, US2007180881, US2007130566, US2006272376, ITMI20102298, EP3088091, EP2747913, EP2628554, EP2289642, EP2251111, CN101983788, AU2010214719,

Abstract:
Source: US2005178181A Methods and apparatus for controlling flare in roll–forming processes are disclosed. An example flare control system determines a first location of a formed component associated with a roll–forming process and adjusts a roller to a first position in response to determining the first location of the formed component. Adjusting the roller to the first position causes the roller to contact a surface of the formed component. The example flare control system then moves the roller from the first position to a second position. The second position is associated with a second location of the formed component. The first position and the second position are associated with controlling the flare in the formed component.



0) US2008290622A – DRIVING MODE SWITCHING APPARATUS AND CONTROL ME...

62) Family number: 33356154 (US2008290622A) © PatBase

Title: DRIVING MODE SWITCHING APPARATUS AND CONTROL METHOD THEREFOR

Priority: JP20050067171 20050310 WO2005JP23395 20051220

Family:

Publication number	Publication date	Application number	Application date
JP2006095487 A1	20080814	JP20060535126T	20051220
JP4590568 B1	20101201	JP20060535126T	20051220
JP4590568 B2	20101201	JP20060535126T	20051220
US2008290622 AA	20081127	US20050569859	20051220
US7665748 BB	20100223	US20050569859	20051220
WO06095487 A1	20060914	WO2005JP23395	20051220

Probable Assignee: NIIGATA UNIV

Assignee(s):(std)**:** OKADA TOKUJI ; UNIV NIIGATA

Assignee(s): NIIGATA UNIV ; NIIGATA UNIVERSITY

Inventor(s):(std)**:** OKADA TOKUJI

Agent(s): DARBY AND DARBY PC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): B62D1/12 B62D7/14 B62D7/16 B62D9/00 (Advanced/Invention); B62D1/12 (Advanced/Non–invention); B62D7/00 B62D9/00 (Core/Invention)

CPC: B62D1/12 B62D7/026 B62D7/1509 G05G9/04

European class: B62D1/12 B62D7/02C B62D7/15B G05G9/04

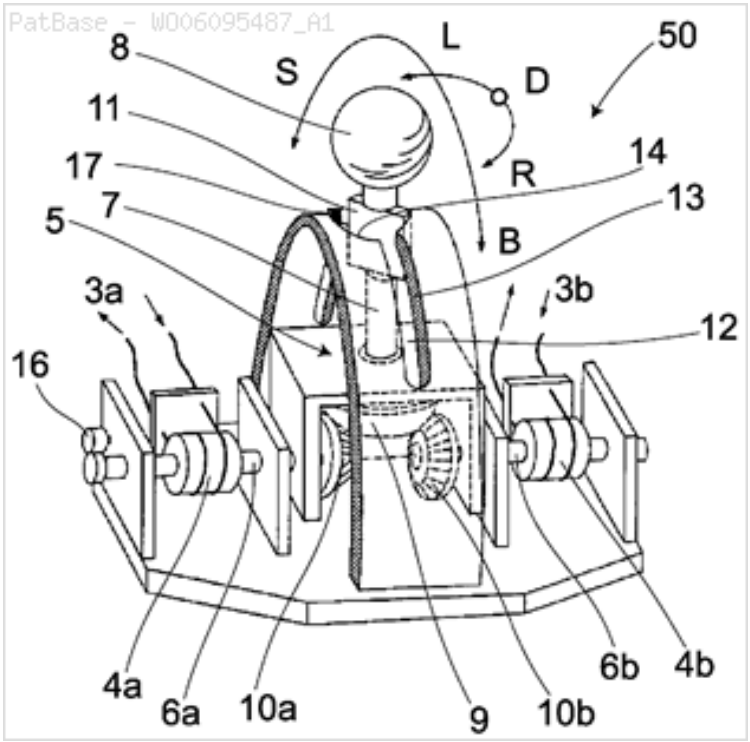
US class: 180/234 280/91.1 280/99

Classification Explorer

Cited documents: US5752578 A, US5112183 A, US4957183 A, US4852679 A, US4257619 A, US3669466 A, US2834605 A, US03669466, JPH0326672 U, JPH0326672 U, JP9109970 A2, JP8272443 A2, JP7291143 A2, JP62125674 U1, JP62125674 U, JP62125674 U, JP62120231 A2, JP62120231, JP5001533 B1, JP50001533 B4, JP50001533 B1, JP50001533 B1, JP49118125 A2, JP49118125, JP3178832 A2, JP3101062 B1, JP31001062 B4, JP31001062 B1, JP31001062 B1, JP3026672 U1, JP3026672 U, JP2003237608 A2, JP2003237608, JP0326672 U, JP03178832,

Forward Citations: WO15068547, WO13054357, WO13054357, US9114827, US9033352, US8950520, US8262109, US8152183, US8011678, US2016129936, US2015375782, US2015008653, US2014305715, US2014291954, US2008277188, JP4841998, JP2013184577, JP2007276516,

Abstract:
Source: US2008290622A A driving form switching apparatus enabling even a user of wheelchair who cannot freely use limb to easily change over a driving form by single hand self−operation. By using a differential gear mechanism or a combination mechanism comprising pinions and racks, the rotating, tilting and shifting motions of a steering lever are transmitted to two rotating shafts. Drums are directly coupled to the two rotating shafts, and the rotations of the two rotating shafts are transmitted to steering shafts through flexible wires as first connecting means. Also, the steering shafts for wheels are parallel− or cross−connected by second connecting means. Thus, the driving forms of a four−wheel drive vehicle such as back and forth traveling, counter−clockwise turning, clockwise turning, turning on the spot, parallel traveling, stopping and braking, etc, can be switched by a single−hand simple operation.



0) WO11082877A1 – VEHICLE FOR TRANSPORTING PLATE–SHAPED GOODS FA...

63) Family number: 48890273 (WO11082877A1) © PatBase

Title: VEHICLE FOR TRANSPORTING PLATE–SHAPED GOODS

Priority: DE200920014866U 20091216 EP20100790740 20101119 WO2010EP67836 20101119

Family:

Publication number	Publication date	Application number	Application date
DE202009014866 U1	20110428	DE200920014866U	20091216
EP2512972 A1	20121024	EP20100790740	20101119
EP2512972 B1	20170301	EP20100790740	20101119
EP3150547 A1	20170405	EP20160192566	20101119
WO11082877 A1	20110714	WO2010EP67836	20101119

Probable Assignee: HUBTEX MASCHB GMBH AND CO KG

Assignee(s):(std)**:** HUBTEX MASCHB GMBH AND CO KG ; KELLER JUERGEN

Assignee(s): HUBTEX MASCHINENBAU GMBH AND CO KG

Inventor(s):(std)**:** KELLER JUERGEN

Agent(s): KLUIN JOERG EDEN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B65G67/04 B65G69/00 B66F9/06 B66F9/075 B66F9/14 (Advanced/Invention)

CPC: B66F9/148 B66F9/07568 B66F9/07572

European class: B66F9/14 B66F9/14U1

Classification Explorer

Cited documents: WO0114239 A1, US6003917 A, US4439102 A, US3948356 A, JP2002061293 A2, JP11268890 A2, GB1183752 A, FR2675493 A1, FR2448503 A2, FR1338707 A, EP1886964 A2, DE69405343 T2, DE4315293 A1, DE3046027 C2, DE3046027 A1, DE20007291 U1, DE1271030 B,

DE102004044455 A1

Forward Citations: NL2010365,

Abstract:
The invention relates to a vehicle (100) for transporting plate−shaped goods in at least a substantially upright position, particularly for transporting flat glass panes or flat glass pane packets (1) between a bearing frame comprising an elongated floor carrier (14) and a transport container (15), having a wheeled chassis (5) comprising a motorized drive, and having a carrier (10) comprising at least two carrying protrusions (43, 43') having a variable horizontal spacing, wherein the carrier can be moved from a travel position approximately symmetrically to the center longitudinal axis L of the vehicle (100) to a lateral receiving/depositing position protruding laterally over the chassis (5) around at least the horizontal extension of the plate−shaped goods, wherein the chassis (5) is suitably configured to travel over the floor carrier (14) in the longitudinal direction thereof and all wheels (6, 6'; 7) are arranged in a steerable manner.

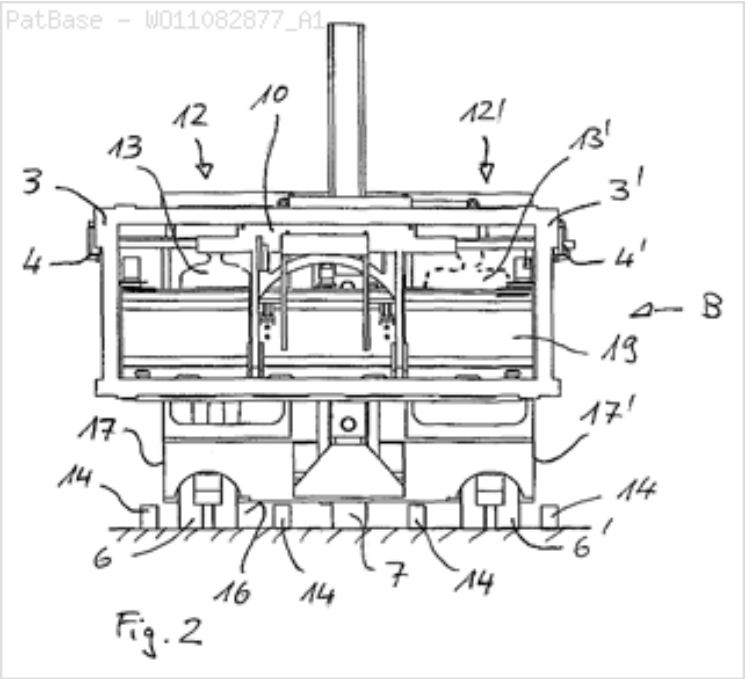


Fig. 2

0) US5752374A – AGRICULTURAL MACHINE, IN PARTICULAR SELF–PROPEL...

64) Family number: 12738772 (US5752374A) © PatBase

Title: Agricultural machine, in particular self–propelled large baler

Priority: DE19934314569 19930505 DE19934329469 19930901 WO1994EP01402 19940503 DE19945002388 19940503 DE19934340639 19931129

Family:

Publication number	Publication date	Application number	Application date
CA2162265 AA	19951106	CA19942162265	19940503
CA2162265 C	19990223	CA19942162265	19940503
DE4314569 A1	19941110	DE19934314569	19930505
DE4329469 A1	19950302	DE19934329469	19930901
DE4340639 A1	19950601	DE19934340639	19931129
DE59402388 D1	19970515	DE19945002388	19940503
EP0702513 A1	19960327	EP19940916924	19940503
EP0702513 B1	19970409	EP19940916924	19940503
EP0702513 B2	20001213	EP19940916924	19940503
US5752374 A	19980519	US19960545630	19960701
WO9424845 A2	19941110	WO1994EP01402	19940503
WO9424845 A3	19950216	WO1994EP01402	19940503

Probable Assignee: SAME DEUTZ FAHR SPA

Assignee(s):(std)**:** KLOECKNER HUMBOLDT DEUTZ AG ; SAME DEUTZ FAHR SPA ; SAME SPA ; VON ALLWOERDEN WILHELM ; VOL ALLWOERDEN WILHELM ; ALLWOERDEN WILHELM VON ; KL CKNER HUMBOLDT DEUTZ AKTIEN ; ZAPS DIETRICH

Assignee(s): VON ALLWORDEN WILHELM ; KL CKNER HUMBOLDT DEUTZ AKTIENGESELLSCHAFT ; KLOCKNER HUMBOLDT DEUTZ AG ; KLOECKNER HUMBOLDT DEUTZ AKTIENGESELLSCHAFT ; SAME S P A ; SAME DEUTZ FAHR S P A ; KLOECKNER HUMBOLDT DEUTZ AG 51149 KOELN DE ; SAME S P A TREVIGLIO BERGAMO IT

Inventor(s):(std)**:** ALLWOERDEN WILHELM VON ; ALLWOERDEN WILHELM VON DIPL IN ; VON ALLWOERDEN WILHELM ; ZAPS DIETRICH

Inventor(s): ZAPS DIETRICH D 82166 GRAEFELFING DE ; ZAPS DIETRICH DIPL WIRTSCH ING ; VON ALLWOERDEN WILHELM D 89168 OBERSTOTZINGEN DE ; VON ALLWORDEN WILHELM ; ALLWOERDEN WILHELM VON DIPL ING ; ALLWOERDEN WILHELM VON DIPL ING 89168 NIEDERSTOTZI ; ALLWOERDEN WILHELM VON DIPL ING 89168 OBERSTOTZING

Agent(s): SWABEY OGILVY RENAULT

Designated states: AT BE CA CH DE DK ES FI FR GB GR IE IT LU MC NL NO PT SE US

International class (IPC 8–9): A01F15/04 A01F15/08 A01F15/10 (Advanced/Invention); A01F15/00 (Core/Invention)

International class (IPC 1–7): A01F15/02 A01F15/04 A01F15/08 A01F15/10 A01F15/18 B30B9/30

CPC: A01F15/04 A01F15/08 A01F15/0841 A01F15/10

European class: A01F15/04 A01F15/08 A01F15/08E A01F15/10

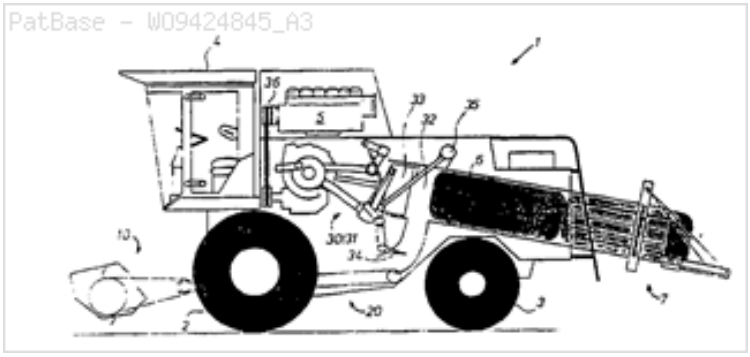
US class: 100/100 100/189 100/88 56/16.4R 56/164R 56/341 56/343 56/432

Classification Explorer

Cited documents: WO9404020 A2, WO8605353 A1, US4612757 A, US4430847 A, US3481122 A, US3006207 A, US2917993 A, US2834177 A, US2800217 A, SU130270 T, FR2375817 A1, FR2224288 A1, EP0384039 A1, EP0381073 A2, DE4227194 A1, DE4214111 A1, DE4138496 A1, DE4119749 A1, DE4102034 A1, DE4033831 A1, DE4025467 A1, DE3941092 C1, DE3729479 A1, DE3308295 A1, DE3213848 A1, DE2748594 C2, DE2634638 A1, DE2364002 A1, DE2200133 A1, DE2062279 A1, DE1950497 A1, DE1704022 A1,

Forward Citations: WO9723125, WO14005882, USD778972, USD729294, US9578807, US9510507, US9475598, US9242752, US9107342, US9095096, US8807023, US8606393, US8490375, US8464508, US8443580, US8423179, US8413414, US8393137, US8313362, US8291687, US8256191, US8099927, US7640713, US7520107, US7350343, US6966512, US6925788, US6915736, US6760654, US6697724, US6681552, US6594978, US6591743, US6546705, US6412260, US6349636, US6152026, US6070403, US5950410, US2014109537, US2013291507, US2013145724, US2013104503, US2012247348, US2011023442, US2011023441, US2011023440, US2011023439, US2011023438, US2011023437, US2010326037, US2010267432, US2010107566, US2009178373, US2007245691, US2004159087, US2002174781, FR2877807, FR2741236, EP2382858, EP2036426, EP1982574, EP1813146, EP1685759, EP1340421, EP1266553, EP1266552, EP1228682, EP1208738, EP1174019, EP1158848, EP1153538, EP1066747, EP0933018, EP0667096, DE19750954, DE19543343, DE19543343, DE19543343, DE10255175, DE102011006823, DE102004064060, DE10129135, CN105474897, CN102696334, CN102696334, BE1020721, AU783907, AU782933, AU2003200756,

Abstract:
Source: US5752374A PCT No. PCT/EP94/01402 Sec. 371 Date Jul. 1, 1996 Sec. 102(e) Date Jul. 1, 1996 PCT Filed May 3, 1994 PCT Pub. No. WO94/24845 PCT Pub. Date Nov. 10, 1994A self propelled baler includes a front pick–up device (10), a forward mounted cab (4), and engine (5) behind the cab and above a drive mechanism for the baler ram reciprocatable in a baling chamber. The crop picked up by the pick–up device is conveyed by a conveying device (20), positioned between the front drive wheels, rearwardly to a feeding device (30) which feeds the crop upwardly into the baling chamber.



0) GB742465A – IMPROVEMENTS IN AND RELATING TO TOY VEHICLES AN...

65) Family number: 25788366 (GB742465A) © PatBase

Title: Improvements in and relating to toy vehicles and guiding means therefor

Priority: 19501102

Family:

Publication number	Publication date	Application number	Application date
CH305748 A	19550315		19510319
GB742465 A	19551230	GB19510008313	19510410

Probable Assignee: HEINRICH MULLER

Assignee(s):(std)**:** HEINRICH MULLER ; MUELLER HEINRICH

Inventor(s):(std)**:** HEINRICH MUELLER

Inventor(s): MUELLER HEINRICH

International class (IPC 8–9): A63H18/02 (Advanced/Invention); A63H18/00 (Core/Invention)

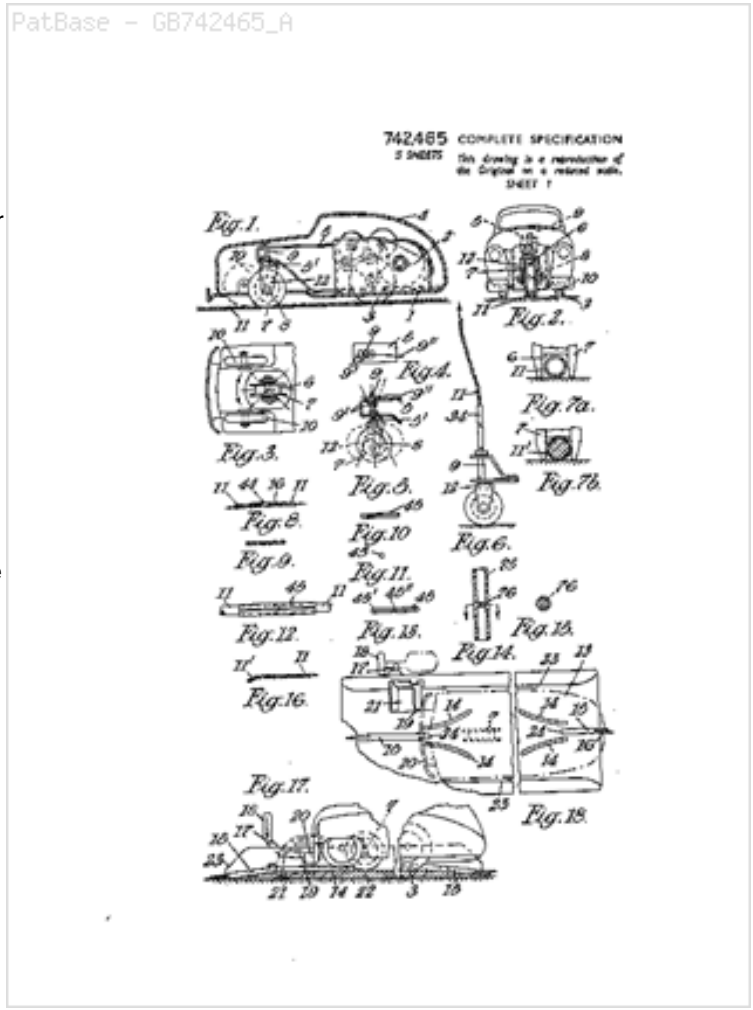
International class (IPC 1–7): A63H18/08 A63H33/10

CPC: A63H18/021 A63H18/023

European class: A63H18/02B A63H18/02C

Classification Explorer

Abstract:
Source: GB742465A 742,465. Toy vehicles and tracks. MULLER, H. April 10, 1951 [Nov. 2, 1950; Feb. 10, 1951], No. 8313/50. Class 132(3) Toy vehicles having one or more guide rollers are adapted to run along a single guide track which consists of flexible and non–flexible parts connected together. In Fig. 1 a clockwork propelled vehicle comprises rear running wheels 3 and a guide roller 7 which is mounted on a pivoted bearing bracket 12, the roller 7 engaging a helical spring guide track 11. Alternatively, the flexible track may consist of cord, string or tubing, stiffened at the ends for joining by sockets 45, 75, Figs. 12 and 14. The non–flexible track parts may consist of accessories including rigid guide track portions. Fig. 18 shows an accessory which facilitates engagement of a vehicle's guide roller 7 with the guide track at 15, leading rails 14 and guide walls 23 aligning the vehicle as it is placed on the device by the operator. A modification, Figs. 43–46 (not shown), is in the form of a garage having double doors at each end. Fig. 24 shows a track device in which a pivoted member 26 having stops 29, 30 prevents a vehicle A from moving until a vehicle B travelling in the opposite direction engages the stop 30. Junctions, crossovers and turntables comprise rigid guide track portions mounted on bases, Figs. 28–30, 34, 40–42, 51 (not shown). A junction having both flexible and non–flexible track portions, Fig. 32, has a turntable 39 for directing vehicles from the track 36" via a flexible track member 56 on to any one of three rigid track portions 57–59. The bases of the track accessories normally have plug members for engagement with the sockets 45, 75, the plugs being reinforced by a metal, e.g. wire, core. Fig. 55



shows a crossing for which no plug and socket is needed, recesses 97 formed on the underside of the crossing lying over the track 11. A device for winding up the vehicle's clockwork mechanisms may be in the form of a filling station and be operated by hand or by an electric motor. Specification 609,293 is referred to.

0) US2007018416A – THREE– OR FOUR–WHEELED, PEDAL–POWERED VEHICLE

66) Family number: 30658900 (US2007018416A) © PatBase

Title: THREE– OR FOUR–WHEELED, PEDAL–POWERED VEHICLE

Priority: FR20020015594 20021210 WO2003FR03092 20031020

Family:

Publication number	Publication date	Application number	Application date
AU2003285409 AA	20040810	AU20030285409	20031020
CA2507228 AA	20050525	CA20032507228	20031020
EP1572525 A1	20050914	EP20030778406	20031020
FR2848152 A1	20040611	FR20020015594	20021210
FR2848152 B1	20050218	FR20020015594	20021210
US2007018416 AA	20070125	US20030582510	20031020
WO04062994 A1	20040729	WO2003FR03092	20031020

Probable Assignee: ESCARGUEL HUGUES

Assignee(s):(std)**:** ESCARGUEL HUGUES

Assignee(s): HUGUES ESCARGUEL

Inventor(s):(std)**:** ESCARGUEL HUGUES ; HUGUES ESCARGUEL

Agent(s): GOWLING LAFLEUR HENDERSON LLP; CABINET JEANNET AND ASSOCIES; YOUNG AND THOMPSON

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): B62D61/06 B62K5/00 B62K5/08 (Advanced/Invention)

International class (IPC 1–7): B60K19/00 B60K5/00 B62K19/00 B62K5/00 B62K5/08

CPC: B62K5/00 B62K5/08

European class: B62K5/00 B62K5/08

US class: 280/62 280/62P

Classification Explorer

Cited documents: US6726438 BB, US6588785 BB, US6247714 BA, US6203043 BA, US6015022 A, US5551719 A, US4993733 A, US4966381 A, US4700962 A, US4674762 A, US4657270 A, US4611818 A, US4534575 A, US4494622 A, US4392536 A, US3913929 A, US3227436 A, FR910287 A, DE2922691 A1,

Forward Citations: US9067632, US2014224556, NL1034356, EP2994374,

Abstract:
Source: US2007018416A The invention relates to a three– or four–wheeled, pedal–powered vehicle. According to the invention, the chassis (3) of the vehicle comprises a central beam (10) and at least one horizontal frame (11, 12) which is fixed to the front of the beam (10). Moreover, the aforementioned beam (10) comprises different elements of the vehicle, in particular the steering column (45) and a cranktset (27) support (18) which is disposed level with, or slightly in front of or behind, the axle for the two front wheels (2) and which is mounted such that each pedal is located on one side of the beam (10). Said beam (10) is also connected to the rear wheel(s) (2). The frame(s) (11, 12) are dimensioned such that the user's feet and part of his/her legs are positioned inside the frame(s) during pedaling, said frame(s) forming on either side two stacked horizontal side members, to which one of the front wheels(s) (2) of the vehicle is mounted.

PatBase - WO04062994_A1

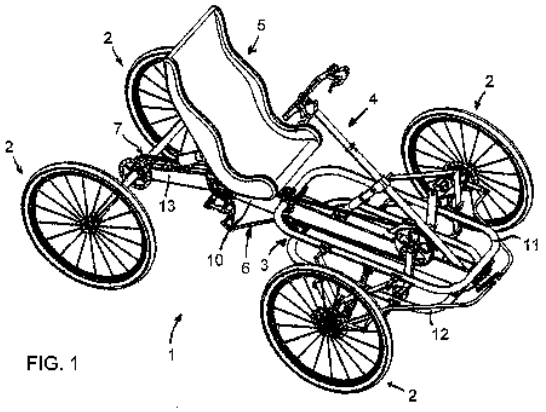


FIG. 1

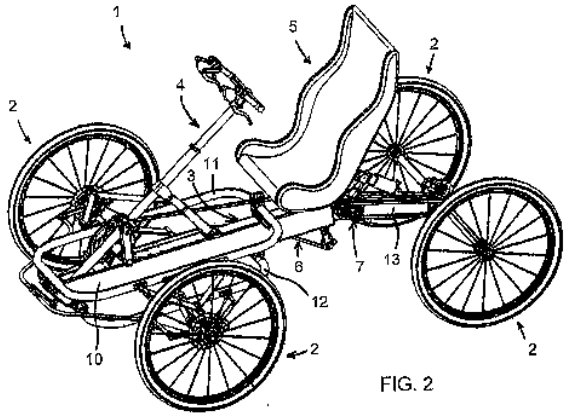


FIG. 2

0) US2014049021A – ROAD HOLDING ABILITY MECHANISM FOR THE TWO FRON...

67) Family number: 55802951 (US2014049021A) © PatBase

Title: ROAD HOLDING ABILITY MECHANISM FOR THE TWO FRONT WHEELS OF A MOTORCYCLE

Priority: US20120584858 20120814 US20140456533 20140811

Family:

Publication number	Publication date	Application number	Application date
US2014049021 AA	20140220	US20120584858	20120814
US2014346753 AA	20141127	US20140456533	20140811
US9238482 BB	20160119	US20140456533	20140811

Probable Assignee: AEON MOTOR CO LTD

Assignee(s):(std)**:** AEON MOTOR CO LTD ; HUANG HUEI HUAY ; LIN CHIN CHI

Assignee(s): AEON MOTOR CO

Inventor(s):(std)**:** HUANG HUEI HUAY ; LIN CHIN CHI

Agent(s): BACON AND THOMAS PLLC

International class (IPC 8–9)**:** B60G3/20 B62D9/04 B62K25/04 B62K5/08 B62K5/10 (Advanced/Invention)

CPC: B62D9/04 B60G3/20 B60G2300/122 B60G2300/45 B62K5/08 B62K5/10

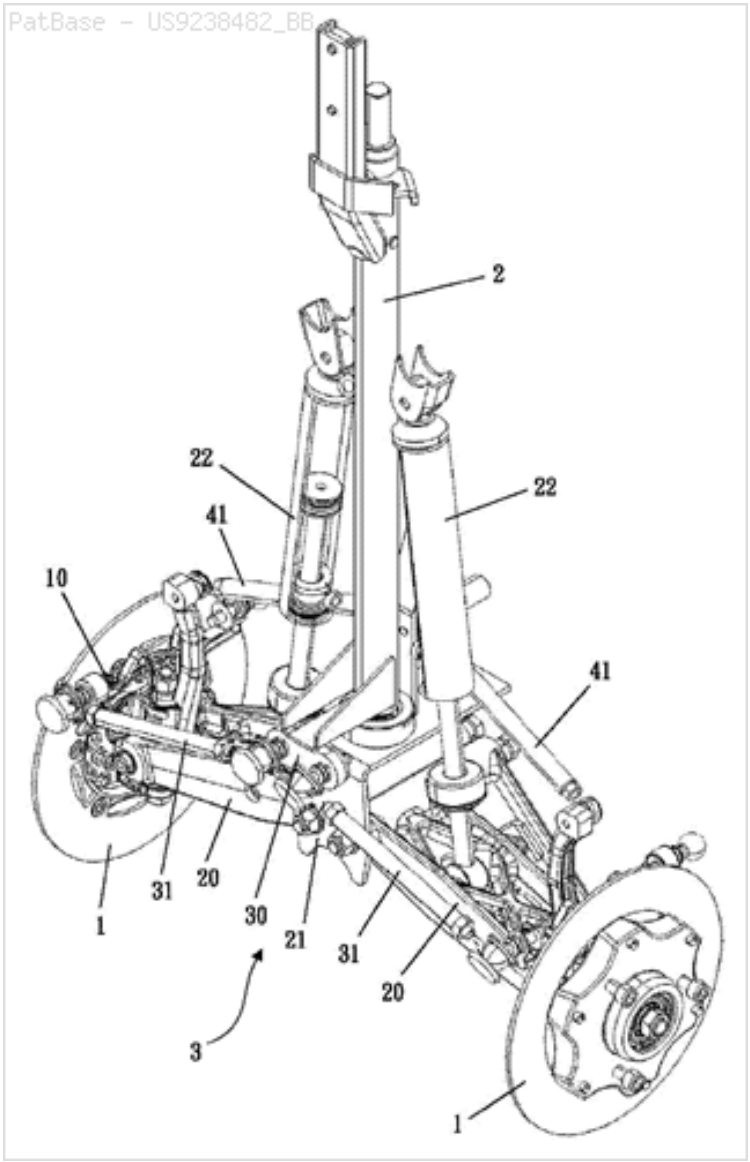
US class: 1/1 280/267 280/269

Classification Explorer

Cited documents: US8070172 BA, US8016302 BA, US7631721 BB, US7591337 BB, US7568541 BB, US7530419 BB, US7487985 BA, US6817617 BB, US6367824 BA, US4685690 A, US2006255550 AA,

Forward Citations: US9586642, US9527543, US9493208, US9238494, US9211773, US2016229479, US2016137251, US2016129967, US2014361502, GB2533477, FR3031071, EP3069977, EP3040220,

Abstract:
Source: US2014049021A The present invention provides a road holding ability mechanism applied to a motorcycle with two wheels in front. The mechanism may be configured on a three−wheeled motorcycle which has two front wheels and a single rear wheel or on a four−wheeled motorcycle with two front wheels as well as two rear wheels. Under any operating condition, the mechanism enables the two front wheels to offer great road holding ability, that is, to remain stable when moving so as to ensure the motorcycle against rollovers. The present invention includes a simple and innovative structure.



0) DE102013011496A1 – MUSKELKRAFTBETRIEBENES MEHRRAEDRIGES FAHRZEUG ...

68) Family number: 58229517 (DE102013011496A1) © PatBase

Title: MUSKELKRAFTBETRIEBENES MEHRRAEDRIGES FAHRZEUG MUSCLE POWER OPERATED VEHICLE MEHRRAEDRIGES (Machine translation)

Priority: DE201310011496 20130702

Family:

Publication number	Publication date	Application number	Application date
DE102013011496 A1	20150108	DE201310011496	20130702

Probable Assignee: STEINHILBER HEKTOR

Assignee(s):(std)**:** STEINHILBER HEKTOR

Assignee(s): STEINHILBER

Inventor(s):(std)**:** STEINHILBER HEKTOR

International class (IPC 8–9)**:** B62J7/02 B62K13/00 B62K15/00 B62K19/30 B62K7/02 (Advanced/Invention)

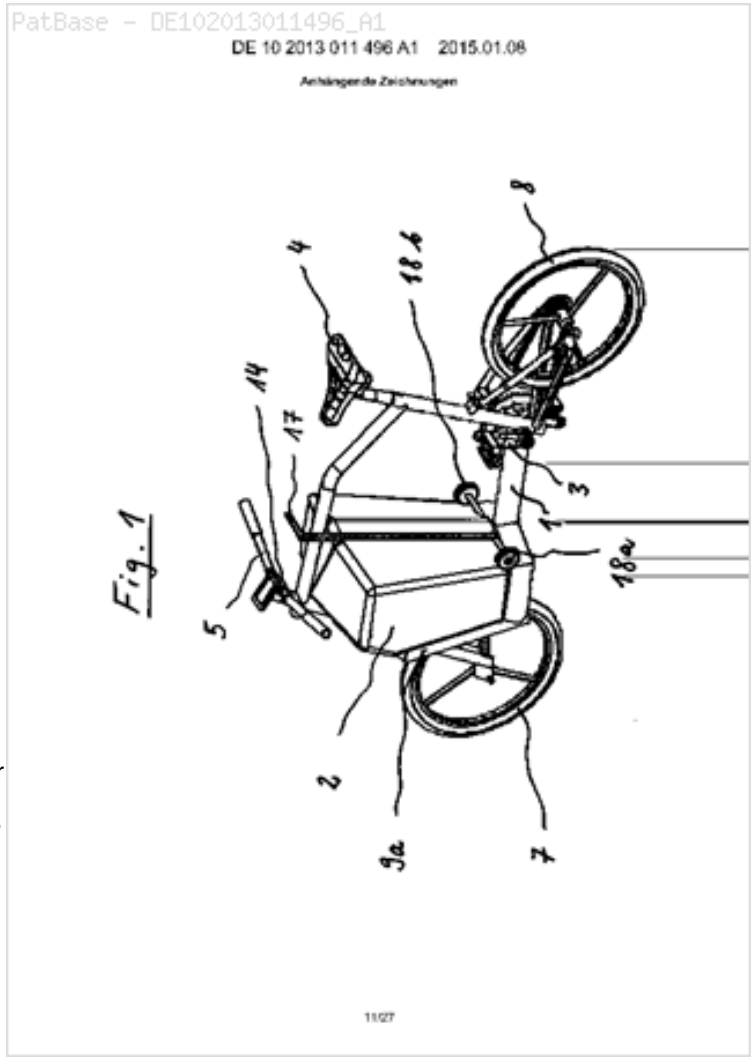
CPC: B62K19/30 B62K5/06 B62K13/04 B62K21/00 B62K5/05

Classification Explorer

Cited documents: US592886 A, US2008197597 AA, DE60012319 T2, DE4323120 A1, DE4215283 A1, DE3611417 A1, DE3138789 A1, DE20101190 U1, CA2657836 AA,

Forward Citations: DE102015004977,

Abstract:
Source: DE102013011496A1 Der Fahrzeugrahmen des neuen modular aufgebauten Fahrzeugs, dessen Lenker ohne ein Radstand verlaengerndes uebersetzungsgestaenge auskommt, ist so gestaltet, dass sich bereits in der einspurigen Grundversion ein Rollkoffer im Bereich zwischen Tretlager und Steuerrohr komfortabel einfuegen und transportieren laesst. In einer Ausbaustufe ist zur Verbesserung der Fahrstabilitaet beim Transport schwerer Lasten statt eines einzelnen Hinterrads ein hinterer Doppelradtraeger am Fahrzeugrahmen angeordnet, der zwei Hinterradschwingen aufweist, die ueber eine Ausgleichswippe gegenlaeufig bewegt werden. Die Ausgleichswippe wird bei Bedarf durch einen manuell betaetigten Hebel ausgerichtet und blockiert. In einer anderen, gegebenenfalls ergaenzenden Ausbaustufe, ist statt eines einzelnen Vorderrads ein vorderer Doppelradtraeger mit Achsschenkellenkung, der ein Neigegelenk aufweist, das bei Fahrzeugschraeglage zusaetzlich mitlenkt im Bereich unterhalb des Steuerrohrs angeordnet. Die Drehachsen der verschiedenen Neigeeinrichtungen bestehen jeweils aus einer Gummidrehfeder und einer Drehlagerung. The chassis of the new modular vehicle the handlebars without a wheelbase gets by elongating uebersetzungsgestaenge is designed so that is possible Plexus comfortable already in the base version is a single−track wheeled suitcases in the area between the bottom bracket and head tube and transport. In an expansion phase, a rear Doppelradtraeger on the vehicle frame is arranged to improve the Fahrstabilitaet when transporting heavy loads instead of a single rear wheel, which has two rear wheel swing arms, which are moved in opposite directions via a compensating rocker. The compensation rocker is aligned and blocked with by a manually operated lever. In another, possibly complementary stage, instead of a single front wheel is a front Doppelradtraeger with steering axle which has a tilting hinge arranged in addition mitlenkt in the area below the head tube at Fahrzeugschraeglage. The axes of rotation of the different tilt facilities consist of a rubber torsion spring and pivot bearing.



0) DE19533669A1 – LIGHT CYCLE–TYPE VEHICLE LEICHTFAHRZEUG

69) Family number: 12584491 (DE19533669A1) © PatBase

Title: LIGHT CYCLE–TYPE VEHICLE

Priority: DE19951033669 19950913

Family:

Publication number	Publication date	Application number	Application date
DE19533669 A1	19970320	DE19951033669	19950913

Probable Assignee: CHRIST WOLFGANG DIPL ING

Assignee(s):(std)**:** CHRIST WOLFGANG DIPL ING

Assignee(s): CHRIST WOLFGANG DIPL ING 37154 NORTHEIM DE

Inventor(s):(std)**:** CHRIST WOLFGANG DIPL ING

International class (IPC 8–9)**:** B62D9/02 B62D9/04 B62K5/04 B62K5/05 (Advanced/Invention); B62D9/00 B62K5/00 (Core/Invention)

International class (IPC 1–7)**:** B62D9/02 B62D9/04 B62K5/02

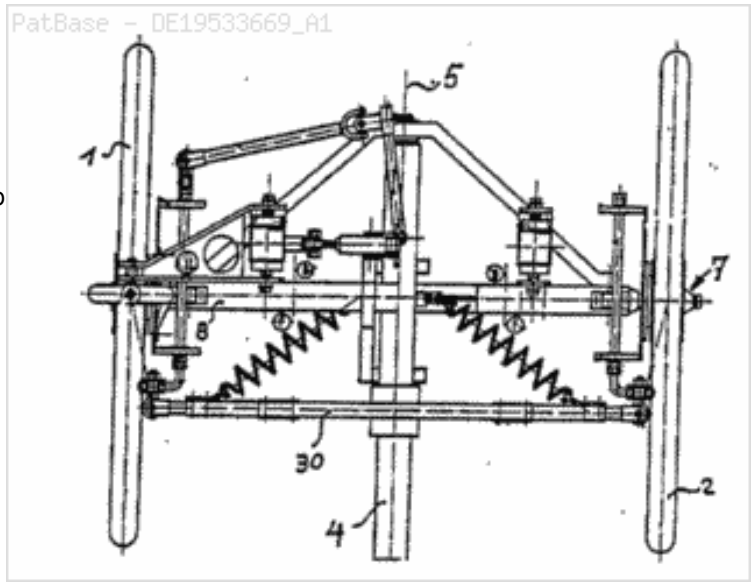
CPC: B62D9/02 B62K5/05 B62K5/10

European class: B62D9/02 B62K5/05 B62K5/10

Classification Explorer

Forward Citations: US7467802, FR2926783, EP1894753, EP1872981,

Abstract:
Source: DE19533669A1 The vehicle has at least three wheels (1–3) including two fitted symmetrically relative to the longitudinal axis (5) of the vehicle and which can tilt to the side. They can be steered by at least one track rod (30). The frame (4) can also turn about the longitudinal axis. The front wheels are linked to an axle body (8) via a ball joint (7) fitted in the middle. The axle body is suspended from the frame so that it can turn about the longitudinal axis. The ball joint has a ball (9) connected to the axle body by a carrier bolt (10).



0) US5385391A – LARGE TRUCK WITH COMPLIANT FRAME MEMBERS

70) Family number: 30273073 (US5385391A) © PatBase

Title: LARGE TRUCK WITH COMPLIANT FRAME MEMBERS

Priority: AU1989PJ03029 19890303 AU1989PJ06255 19890908 AU1989PJ07941 19891221
US19930119530 19930913 US19910752513 19911008 AU1989PJ07941 19891221
WO1990AU00084 19900302 AU19900052680 19900302

Family:

Publication number	Publication date	Application number	Application date
AU199052680 A1	19900926	AU19900052680	19900302
AU650233 B2	19940616	AU19900052680	19900302
CA2048636 AA	19910828	CA19902048636	19900302
CA2048636 C	20010515	CA19902048636	19900302
CN1046501 A	19901031	CN19901001975	19900303
JP2908015 B2	19990621	JP19900504491T	19900302
JP4503786 T2	19920709	JP19900504491T	19900302
US5385391 A	19950131	US19930119530	19930913
WO9009907 A1	19900907	WO1990AU00084	19900302
ZA9001615 A	19901228	ZA19900001615	19900302

Probable Assignee: BHP AUSTRALIA COAL PTY LTD ACN

Assignee(s):(std)**:** BROKEN HILL PROPRIETARY CO LTD ; BROKEN HILL PTY CO LTD ; THE BROKEN HILL PROPRIETARY COMPANY LIMITED

Assignee(s): THE BROKEN HILL PROPRIETARY CO LTD ; DICKERSON ALAN WILLIAM ; BROKEN HILL PROPRIETARY CO OF BHP HOUSE LTD ; BROKEN HILL PROPRIETARY CO THE LTD ; BROKEN HILL PROPRIETARY COMPANY LIMITED OF BHP HOU ; BROKEN HILL PROPRIETARY COMPANY LIMITED OF BHP HOUSE ; BROKEN HILL PROPRIETARY COMPANY LIMITED THE ; BHP AUSTRALIA COAL PTY LTD ; BHP AUSTRALIA COAL PTY LTD ACN

Inventor(s):(std)**:** ALAN WILLIAM DICKERSON ; DICKERSON ALAN W ; DICKERSON ALAN WILLAIM ; DICKERSON ALAN WILLIAM ; ALAN WILLAIM DICKERSON

Agent(s): FREEHILLS PATENT AND TRADE MARK ATTORNEYS; FREEHILLS PATENT ATTORNEYS; FPA PATENT ATTORNEYS PTY LTD; KIRBY EADES GALE BAKER

Designated states: AT AU BE BR CA CH DE DK ES FR GB IT JP LU NL SE SU US

International class (IPC 8–9): B60G21/073 B60P1/04 B60P1/16 B60P1/28 B62D21/02 B62D21/18 B62D24/04 B62D63/02 (Advanced/Invention);
B60G21/00 B60P1/04 B62D21/18 B62D24/00 B62D63/00 (Core/Invention);
B60P (Subclass/Invention)

International class (IPC 1–7): B60G21/073 B60P1/04 B60P1/16 B60P1/28 B62D21/02 B62D21/18 B62D24/04 B62D63/02

CPC: B60L2200/26 B60L11/02 B60G21/073 B60G2200/10 B60G2200/322 B60G2204/148 B60G2206/60 B60G2300/026 B60G2300/07 B60G2300/36 B60L2200/36 B60L2220/44 B60L2260/28 B60P1/16 Y02T10/7077 Y02T10/70

European class: B60G21/073 B60L11/02 B60P1/16 L60G200/100 L60G200/322 L60G204/148 L60G206/60 L60G300/026 L60G300/07 L60G300/36 L60L200/36 L60L220/44 L60L260/28 Y02T10/70J2

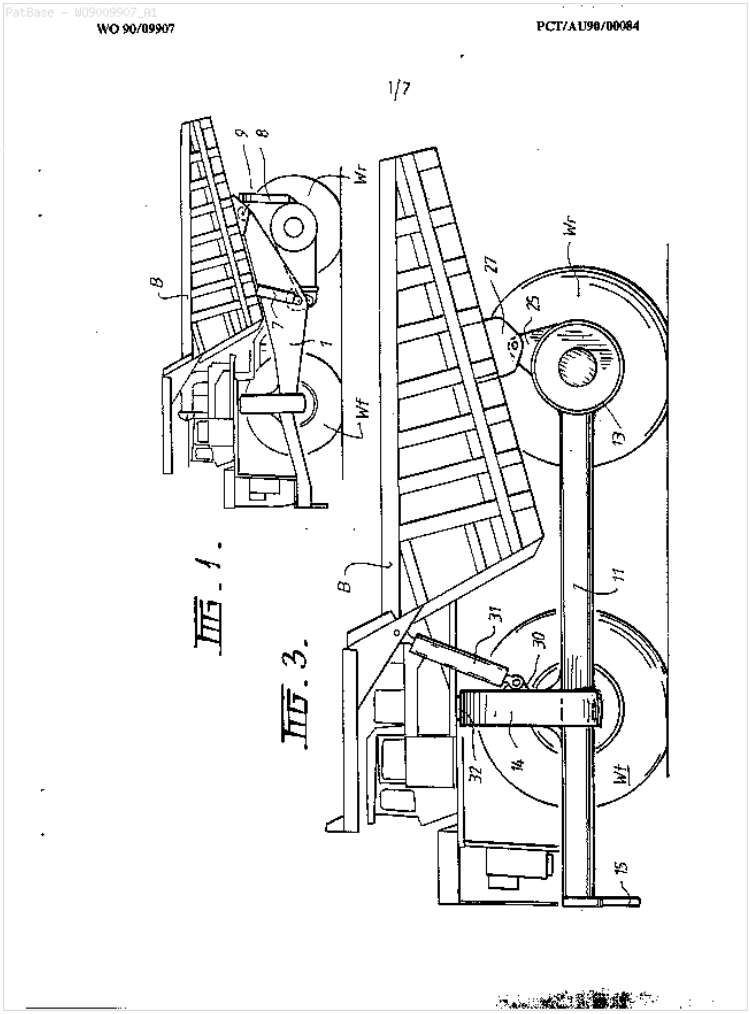
US class: 280/124.167 280/700 280/798 298/17.00R 298/17.00S 298/17R 298/17S

Classification Explorer

Cited documents: US4149751 A, US3704040 A, US2988372 A, US2557082 A, US2459372 A, US2221196 A, US2055767 A, SU1521632 T, SU1283143 T, JP62210145 A2, JP62210145, GB1301191 A, DE502623 A, AU6768987 A1, AU6768981 A1, AU261536 A1,

Forward Citations: WO9630223, WO16022523, WO15129008, WO15129006, WO15129005, USD596077, USD596076, USD594382, USD590745, USD588956, USD587169, US8104842, US7740305, US6086076, US2016039463, US2010001573, US2009236873, US2003218374, EP0814964, CN102815249, CN102815249, CN102815247,

Abstract:
Source: US5385391A A large truck with compliant longitudinal frame members is disclosed. The truck has a pair of rear wheel hubs which are independently mounted on the frame members so that the hubs and their tires will rotate about the longitudinal axis of the frame members to accommodate uneven terrain and minimize the forces applied to the individual tires. This also minimizes bending loads on the main frame, rear axles and rear wheel support systems.



0) CH657585A – VEHICLE WITH THREE WHEELS OR RUNNERS

71) Family number: 2600520 (CH657585A)

© PatBase

Title: VEHICLE WITH THREE WHEELS OR RUNNERS

Priority: CH19820005497 19820917

Family:

Publication number	Publication date	Application number	Application date
CH657585 A	19860915	CH19820005497	19820917

Probable Assignee: ALEX FEHR

Assignee(s):(std)**:** ALEX FEHR

Inventor(s):(std)**:** FEHR ALEX ; FEHR MAX

International class (IPC 8–9)**:** B62B13/12 B62K11/02 B62K5/027 B62K5/04 (Advanced/Invention); B62B13/00 B62K11/00 B62K5/00 (Core/Invention)

International class (IPC 1–7)**:** B62B13/12 B62K11/02 B62K5/04

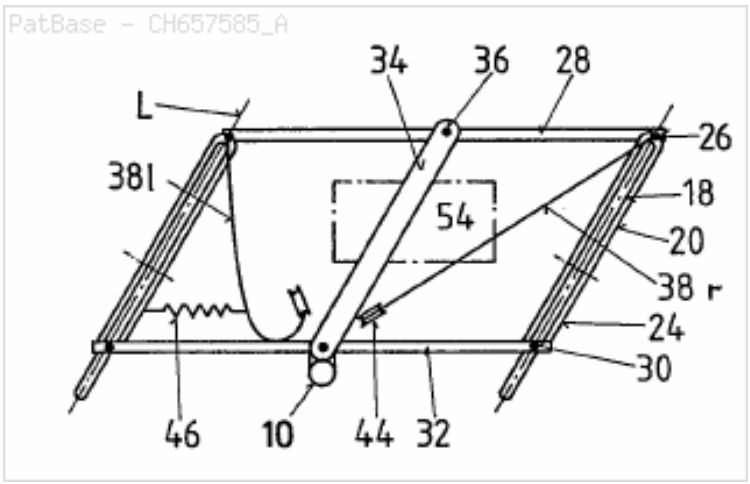
CPC: B62B13/12 B62K3/005 B62K5/027 B62K5/10 B62K11/02

European class: B62B13/12 B62K11/02 B62K3/00C B62K5/027 B62K5/10

Classification Explorer

Forward Citations: EP0626307, DE19824576, DE19824576,

Abstract:
Source: CH657585A In the case of a vehicle or an appropriate sledge capable of tilting sideways, which can be moved manually, by engine or gravity, two wheels (18) or runners are articulated to the sides (20, 24), forming the axles, of a parallelogram. The third wheel or the third runner can be inclined in parallel. Very safe driving is achieved by – hinged upper and lower connections (26, 30) which connect the upper and, respectively, lower cross–members (28, 32) to the sides (20, 24), forming the axles, and lie in the plane of longitudinal symmetry (L) of the wheels (18), and, in the case of runners, in a plane passing through their sliding surface, – mechanical means, in particular flexible tension means (38) which act in the region of the upper, hinged connections (26), stabilise the inclination of the vehicle in every position and can be operated by the driver using muscle–power, and – a locking device.



0) US2009200766A – FRONT SUSPENSION AND STEERING SYSTEM FOR CYCLES...

72) Family number: 43624329 (US2009200766A) © PatBase

Title: FRONT SUSPENSION AND STEERING SYSTEM FOR CYCLES AND MOTORCYCLES WITHOUT TILTING OF THE FRONT WHEELS

Priority: US20080068690 20080211

Family:

Publication number	Publication date	Application number	Application date
US2009200766 AA	20090813	US20080068690	20080211
US7641207 BB	20100105	US20080068690	20080211

Probable Assignee: LI YANG WANG

Assignee(s):(std)**:** LI YANG WANG ; YANG WANG LI

Inventor(s):(std)**:** WANG LI YANG ; YANG WANG LI

Agent(s): BACON AND THOMAS PLLC

International class(IPC 8–9)**:** B60G21/00 B62K25/00 (Advanced/Invention); B60G21/00 B62K25/00 (Core/Invention)

CPC: B62K5/027 B62K5/05 B62K5/06 B62K5/08 B62K5/10

European class: B62K5/027 B62K5/05 B62K5/06 B62K5/08 B62K5/10

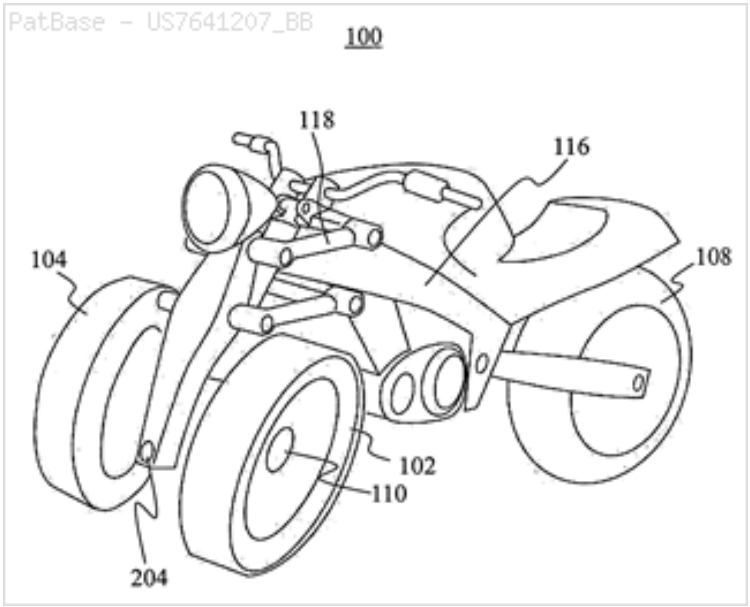
US class: 180/210 280/124.103 280/124.107 280/124.11 280/124.110P 280/267 280/271

Classification Explorer

Cited documents: US7591337 BB, US7568541 BB, US7543829 BA, US7494141 BB, US7311167 BB, US7090234 BB, US7073806 BB, US6763905 BB, US6547027 BA, US6435522 BA, US6352274 BA, US6328125 BA, US5730453 A, US5240267 A, US5232235 A, US5116069 A, US4998596 A, US4903857 A, US4887829 A, US4375293 A, US4003443 A,

Forward Citations: WO16023689, US9283989, US9248857, US9145168, US9090281, US9045015, US8985609, US8857551, US8781684, US8607914, US7887070, US2014019006, US2009315282,

Abstract:
Source: US2009200766A The present invention offers a front suspension and steering system for cycles and motorcycles. A mainframe with two front wheels and one rear wheel, the front wheels have flat surface tires, a 2–axial hub, having a wheel axle to support the two front wheels and a tilting axis below the wheel axle, a steering arm, having a tilting axle, the tilting axle can rotate in the tilting axis when the steering arm is tilting, the steering arm is connected to the mainframe by two wish bones and can rotate in the steeling axis. During turning, the body and the rear wheel are tilting to the side of turning to keep the center of gravity on the side of turning to balance the centrifugal force, but the front wheels and the 2–axial hub do not tilt, such that it is more stable and safe during turning.



0) US2009224524A – LEAN TO STEER RECUMBENT VEHICLE

73) Family number: 43707558 (US2009224524A) © PatBase

Title: LEAN TO STEER RECUMBENT VEHICLE

Priority: US20080074660 20080305

Family:

Publication number	Publication date	Application number	Application date
US2009224524 AA	20090910	US20080074660	20080305
US7976046 BB	20110712	US20080074660	20080305

Probable Assignee: RATHSACK LAWRENCE

Assignee(s):(std)**:** RATHSACK LAWRENCE

Inventor(s):(std)**:** RATHSACK LAWRENCE

Agent(s): ROGER L BELFAY; ROGER

International class (IPC 8–9): B62D7/16 B62K5/04 (Advanced/Invention); B62D7/00 (Core/Invention)

CPC: B60G2300/122 B60G2300/45 B62K3/005 B62K5/05 B62K5/10

European class: B62K3/00C B62K5/05 B62K5/10 L60G300/122 L60G300/45

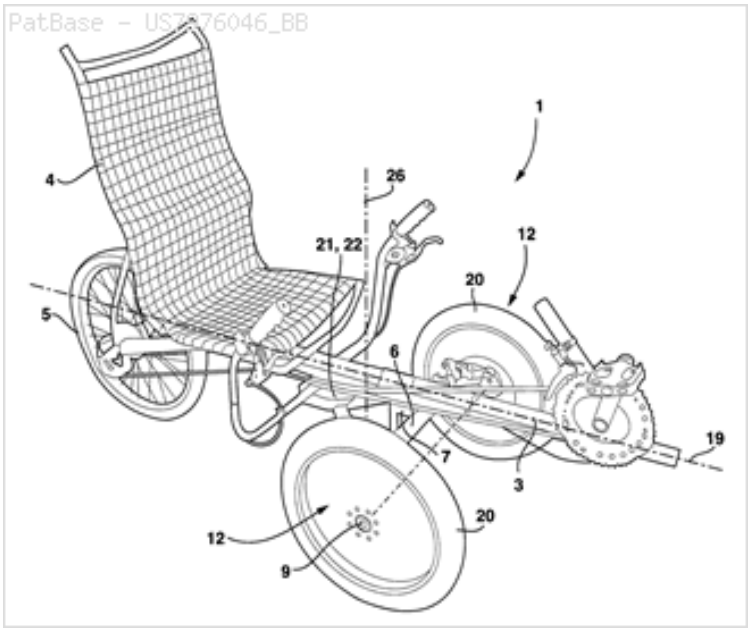
US class: 280/267 280/282 280/288.1 280/778 280/778P 280/93.51 280/93.510S

Classification Explorer

Cited documents: US7487985 BA, US7467802 BB, US7467802 B1, US7234718 BA, US6938907 BB, US6938907 B1, US6572130 BB, US6572130 B1, US6402174 BA, US6367824 BA, US6203043 BA, US6105986 A, US5762351 A, US5730453 A, US5630774 A, US5568935 A, US5544906 A, US5484152 A, US5419574 A, US5263732 A, US5240267 A, US5145196 A, US5069469 A, US4903857 A, US4548421 A, US4360224 A, US2006035760 AA, US2005253355 AA,

Forward Citations: WO16200278, WO15143523, US9545963, US9529365, US9459627, US9442492, US9442491, US9442486, US9429955, US9411340, US9411339, US9411336, US9400502, US9321507, US9268333, US9227685, US9188984, US9067632, US8911332, US8535206, US2017001676, US2015168952, US2015160656, US2015158541, US2015151807, US2015151806, US2015137472, US2014265209, US2014224556, US2013313802, US2012258840, US2010230924,

Abstract:
Source: US2009224524A Two versions of recumbent human powered three wheeled vehicles are disclosed. Both are of the tadpole type with two front wheels and one rear drive wheel. Both versions lean into turns causing weight transfer toward the inside of turns to prevent rollover during turns at speed.



0) US2014375015A – MOTORIZED REVERSE TRIKE WITH TILTABLE BODY

74) Family number: 51919259 (US2014375015A) © PatBase

Title: MOTORIZED REVERSE TRIKE WITH TILTABLE BODY

Priority: CN201220033590U 20120114 WO2013CN70385 20130111

Family:

Publication number	Publication date	Application number	Application date
CN202414056 U	20120905	CN201220033590U	20120114
US2014375015 AA	20141225	US20130371315	20130111
US8991542 BB	20150331	US20130371315	20130111
WO13104335 A1	20130718	WO2013CN70385	20130111

Probable Assignee: YU JINJUN

Assignee(s):(std)**:** JINJUN YU ; YU JINJUN

Inventor(s):(std)**:** JINJUN YU ; YU JINJUN

Agent(s): TAROLLI SUNDHEIM COVELL AND TUMMINO LLP; DAN SAMS AND ASSOCIATES

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** B62D61/06 B62K11/02 B62K11/14 B62K25/08 B62K25/24 B62K5/027 B62K5/05 B62K5/08 B62K5/10 B62L1/02 (Advanced/Invention); B62K5/00 B62L1/02 (Advanced/Non–invention)

CPC: B62K25/24 B62K5/08 B62K2005/001 B62K5/10 B62K5/027 B62K5/05

US class: 180/209 180/210 180/76 280/124.103 280/267

Classification Explorer

Cited documents: US8596660 BB, US8317207 BB, US7562885 BB, US7264251 BB, US6763905 BB, US4887829 A, US4020914 A, US2007029751 AA, US2006151232 AA, US2005167217 AA, US2005167174 AA, US2005012291 AA, TW201117997 A, TW200530057 A, EP1666346 A1, CN202414056 U, CN201670311 U,

Forward Citations: WO13104335, US9545967, US9517807, US9428240, US9428235, US9371106, US9352798, US9340249, US9296420, US9278711, US9238494, US9216790, US8991542, US2016152292, US2016137253, US2016114850, US2015344091, US2015314827, US2015298736, US2015274245, US2015274244, TWI532629, TWI522273, TWI522269, JP5687378, JP2016175439, EP2923931, EP2913256, EP2899105, CN104703870,

Abstract:
Source: US2014375015A A motorized reverse trike with a tiltable body comprises a frame with a header pipe, two front wheels, a tilting mechanism arranged on the header pipe, two suspension mechanisms hinged between the two front wheels and the tilting mechanism respectively, a steering mechanism with handlebars hinged between the header pipe and the two suspension mechanisms, and a locking mechanism for locking the tilting mechanism.

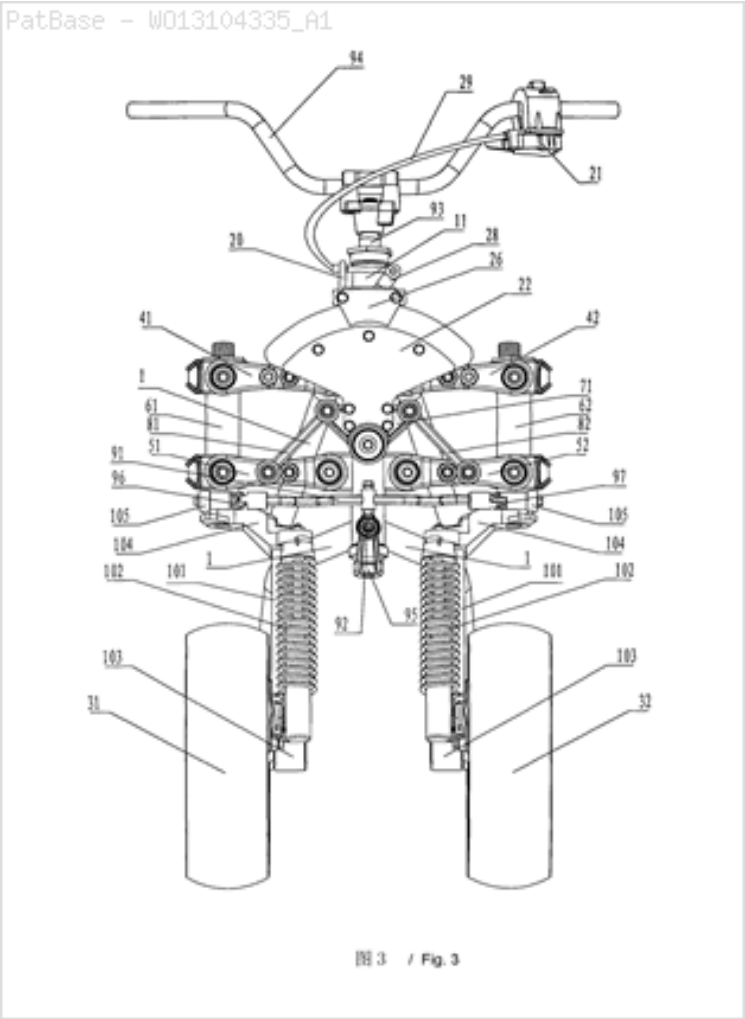


Fig. 3

0) US2013095343A – SHEET METAL PLATE WITH RELIEFS FOR CREATING IND...

75) Family number: 49705033 (US2013095343A) © PatBase

Title: SHEET METAL PLATE WITH RELIEFS FOR CREATING INDUSTRIAL FLOORING OVER WHICH TRUCKS ARE TO RUN, ENGRAVED CYLINDER FOR OBTAINING SUCH SHEET METAL PLATES BY ROLLING

Priority: FR20100001364 20100401 WO2011FR00164 20110323

Family:

Publication number	Publication date	Application number	Application date
AU2011234382 AA	20111006	AU20110234382	20110323
AU2011234382 BB	20160310	AU20110234382	20110323
CN102905807 A	20130130	CN201180025222	20110323
CN102905807 B	20161012	CN201180025222	20110323
EP2552612 A2	20130206	EP20110730338	20110323
FR2958192 A1	20111007	FR20100001364	20100401
FR2958192 B1	20120420	FR20100001364	20100401
GR1007717 B	20121015	GR20110100196	20110329
GR20110100196 A	20111117	GR20110100196	20110329
JP2013523454 T2	20130617	JP20130501885T	20110323
JP5732523 B2	20150610	JP20130501885T	20110323
US2013095343 AA	20130418	US20110638884	20110323
US8833006 BB	20140916	US20110638884	20110323
WO11121191 A2	20111006	WO2011FR00164	20110323
WO11121191 A3	20111208	WO2011FR00164	20110323

Probable Assignee: CONSTELLIUM ISSOIRE

Assignee(s):(std)**:** ALCAN RHENALU ; ARSENE SYLVIE ; CONSTELLIUM FRANCE ; FAVIER PASCALE

Assignee(s): CONSTELLIUM ISSOIRE

Inventor(s):(std)**:** ARSENE SYLVIE ; FAVIER PASCALE ; PASCALE FAVIER

Inventor(s): SYLVIE ARSENE

Agent(s): SPRUSON AND FERGUSON; FENOT DOMINIQUE; ALCAN FRANCE SAS; CONSTELLIUM CRV; LADAS AND PARRY LLP

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B21B1/22 B21B27/00 B21B3/00 B21D53/88 B44B5/00 B60R13/01 B62D25/20 E04F15/06 (Advanced/Invention) ; E04F15/02 (Advanced/Non–invention)

CPC: B44B5/0047 B62D25/2054 B21D53/88 B62D25/20 E04F15/06 B21B1/227 B21B27/005 B60R13/01 E04F15/02188 Y10T428/12389

European class: B21B1/22R P04F15/02T2

US class: 428/600 492/30 52/177 52/316

Classification Explorer

Cited documents: WO06029429 A1, USD623317 S1, USD513809 S1, USD140624 S1, US8439596 BA, US8061927 BA, US7634876 BB, US6074127 A, US5807021 A, US5499888 A, US3627502 A, US2008134593 AA, US2006265975 AA, US2002018908 AA, US1738829 A, US1441327 A, JP8090003 A2, JP7051701 A2, JP62279038 A2, JP62279038, JP6020316 U, JP60020316 U1, JP60020316 U, JP5007968 A2, JP3501111 B1, JP35001111 B1, JP3107472 U1, JP2229601 A2, JP2009136905 A2, JP2009136905, JP2004154814 A2, JP2004154814, JP2001212602 A2, JP2001212602, JP10235424 A2,

JP0890003, JP0751701, JP0507968, JP03107472 U, FR2747948 A1, EP0256803 A2, DE1168377 B, CN101025038 A,

Forward Citations: US9540048, US9280963, US8731444, US2011274471,

Abstract:
Source: US2013095343A Sheet metal plate for creating flooring, particularly of industrial vehicles, over which trucks are to run, having a plurality of patterns, the maximum height of said reliefs ranging between 0.2 and 1.5 mm, said reliefs having a friction surface which has a mean width of at least 1 mm, in which said reliefs are arranged in a plurality of aligned groups of reliefs all of the same shape, the same orientation, and with their centers of gravity substantially aligned in one and the same given direction (D), the minimum distance, measured in said direction (D), between two adjacent reliefs of one and the same aligned group being less than 6 mm. The direction (D) in which the aligned groups are aligned advantageously coincides with the direction (De) in which the trucks run.

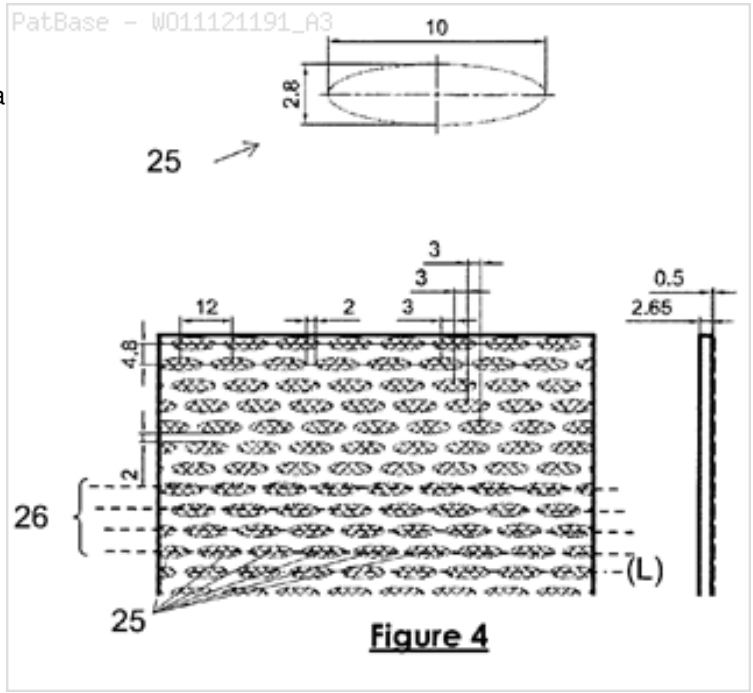


Figure 4

0) US2012258840A – FITNESS DEVICE

76) Family number: 48959514 (US2012258840A) © PatBase

Title: FITNESS DEVICE

Priority: AU20100321056 20101112 AU20170200176 20170111 WO2010EP67410 20101112 DE200910053890 20091120 EP20100779772 20101112

Family:

Publication number	Publication date	Application number	Application date
AU2010321056 AA	20110526	AU20100321056	20101112
AU2017200176 AA	20170202	AU20170200176	20170111
CA2781464 AA	20120518	CA20102781464	20101112
DE502010005924 D1	20140227	DE201050005924T	20101112
EP2501606 A1	20120926	EP20100779772	20101112
EP2501606 B1	20140108	EP20100779772	20101112
ES2464370 T3	20140602	ES20100779772T	20101112
US2012258840 AA	20121011	US20100510332	20101112
WO11061128 A1	20110526	WO2010EP67410	20101112

Probable Assignee: ACTIVECROSS GMBH

Assignee(s):(std)**:** ACTIVECROSS GMBH ; ACTIVECROSS GMBH I G ; EISENBERG WOLFGANG

Assignee(s): ACTIVECROSS GMBH IG

Inventor(s):(std)**:** EISENBERG WOLFGANG

Agent(s): HODGKINSON MCINNES PATENTS; IP SOLVED ANZ PTY LTD; GOWLING LAFLEUR HENDERSON LLP; GOWLING WLG CANADA LLP; PATENTANWAELTE BAUER VORBERG KAYSER PARTNERSCHAFT MBB; BAUER VORBERG KAYSER PATENTANWAELTE; KAYSER MARTIN ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): A63B22/00 A63B22/06 A63B22/20 A63B23/035 A63B69/16 B62K3/00 B62M1/04 B62M1/24 (Advanced/Invention)

CPC: A63B22/001 A63B22/0664 A63B22/20 A63B23/03575 A63B2022/067 A63B2208/0204 B62K5/05 B62K5/08 B62K5/10 B62M1/12 B62M1/26

European class: A63B22/00A6 A63B22/06E A63B22/20 A63B23/035G B62K5/05 B62K5/08 B62K5/10 B62M1/12 B62M1/26 K63B208/02B K63B22/06E2

US class: 482/57

Classification Explorer

Cited documents: WO08132191 A1, US8210555 BB, US7976046 BB, US7967313 BA, US7887070 BB, US7803090 BB, US7762368 BB, US7722071 BA, US7661690 BB, US7543829 BA, US7487985 BA, US7223210 BB, US6708997 BB, US6367824 BA, US6352274 BA, US5762351 A, US5630774 A, US5611757 A, US4903857 A, US4705284 A, US4659106 A, US4351410 A, US2304291 A, US2010194068 AA, US2010007109 AA, US2007262548 AA, US2007182120 AA, US2007075517 AA, US2007040350 AA, US2007001422 AA, US2006255550 AA, US2006022422 AA, US2006009331 AA, US2005248117 AA, US2005085347 AA, US2004251655 AA, US2004018919 AA, US2003214113 AA, US2002047245 AA, EP1982908 A1, DE20319128 U1,

Forward Citations: WO14096470, US9409621, FR2986497, CZ305353,

Abstract:
Source: US2012258840A The invention relates to a fitness device (1) that can be used in a mobile or stationary manner, comprising: a frame (4) on which two front wheels (6) and one rear wheel (5) are disposed, a drive device on each side of the frame (4), each made up of an arm drive rod (2) joined to a leg drive rod (3) by a hinge, wherein the leg drive rod (3) transfers a torque via a ring gear (10) and a chain to the rear wheel (5), a steering device (7) for steering the fitness device (1) in mobile use by means of tilting the frame (4), and a tilting/steering damper formed by damping elements (9) and disposed between the front wheels (6) and the frame (4).

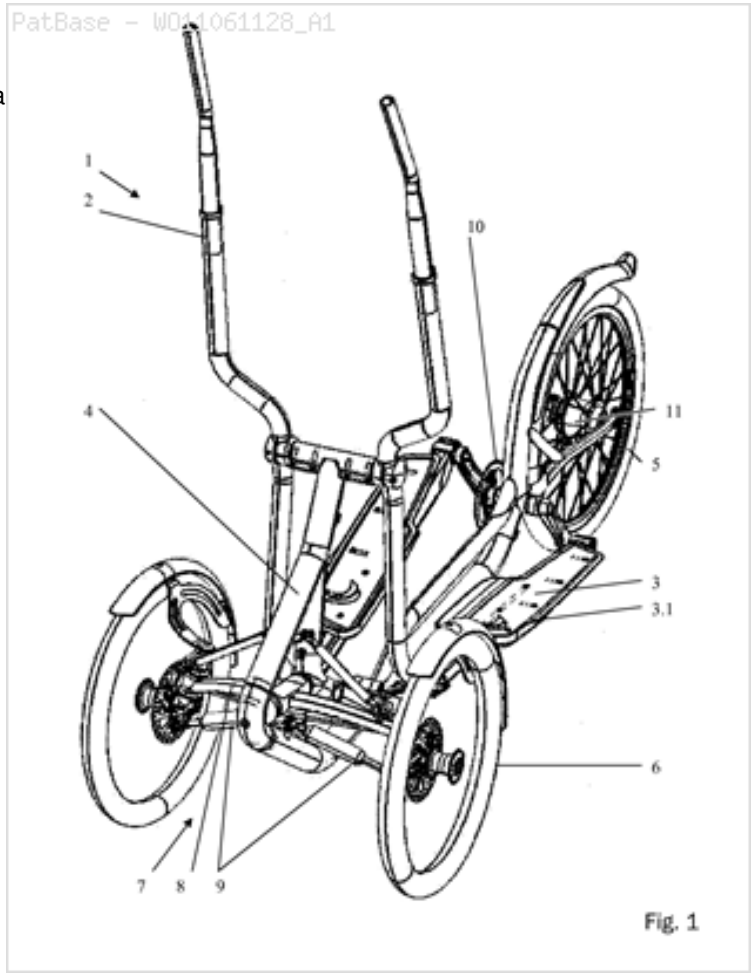


Fig. 1

0) US5390387A – LIGHTWEIGHT SELF–PROPELLED TURF SWEEPER

77) Family number: 9422104 (US5390387A)

© PatBase

Title: Lightweight self–propelled turf sweeper

Priority: US19940257635 19940609 CA19942135980 19941116

Family:

Publication number	Publication date	Application number	Application date
CA2135980 AA	19951210	CA19942135980	19941116
CA2135980 C	19960611	CA19942135980	19941116
US5390387 A	19950221	US19940257635	19940609

Probable Assignee: DUBE GERALD

Assignee(s):(std)**:** DUBE GERALD ; DUBE MICHEL

Inventor(s):(std)**:** DUBE GERALD ; DUBE MICHEL

Agent(s): GOUDREAU GAGE DUBUC

International class (IPC 8–9): E01H1/04 E01H1/05 (Advanced/Invention); E01H1/00 (Core/Invention)

International class (IPC 1–7): E01H1/04 E01H1/05

CPC: E01H1/045

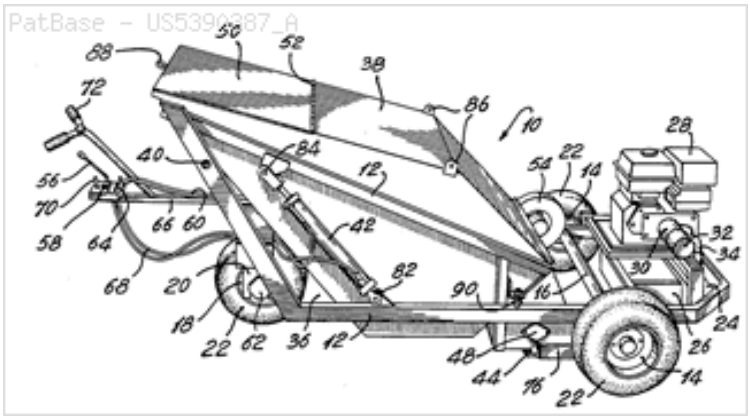
European class: E01H1/04C

US class: 15/79.2 15/792 15/83 56/344 56/400.11

Classification Explorer

Cited documents: US781543 A, US4974283 A, US4674143 A, US4503661 A, US4084284 A, US3947912 A, US2732572 A, US2705644 A, US2300192 A, US1801016 A, US1674306 A, US1168713 A,

Forward Citations: WO15002991, US9351442, US7716773, US7500284, US5848521, US5819352, US5742968, US2007220857, US2006185118, FR3008112, DE10359033, DE10359033,



Abstract:
Source: US5390387A Disclosed herein is a lightweight, self–propelled, hand–guided sweeping apparatus for removing debris lying on the ground, the apparatus comprising: a chassis having wheels with ground engaging flotation tires; a hopper compartment mounted pivotally on the chassis to tilt upwardly and rearwardly about the pivotal connection to dump, by gravity, its debris content; tilting structure for tilting the hopper compartment about the pivotal connection; rotary brush structure for engaging and sweeping the ground surface, the brush structure being mounted integrally, horizontally and rotatively on the hopper compartment and being open to the hopper compartment to propel the debris inside the hopper compartment as the brush structure rotates; drive structure, fixedly mounted to the chassis, for selectively driving: at least one of the wheels, the tilting structure, the rotary brush structure; control structure, mounted to the chassis, for hand–guiding sweeping apparatus and selectively operating the drive structure; wherein the tilting structure is adjustable actuated, under the direction of the control structure, for regulating the position of the hopper compartment and integrally mounted rotary brush relative to the ground surface.

0) DE102010052716B4 – DREIRAEDRIGES FAHRZEUG

78) Family number: 48985994 (DE102010052716B4) © PatBase

Title: DREIRAEDRIGES FAHRZEUG

Priority: TW20090140605 20091127

Family:

Publication number	Publication date	Application number	Application date
DE102010052716 A1	20110609	DE201010052716	20101126
DE102010052716 B4	20120906	DE201010052716	20101126
FR2953184 A1	20110603	FR20100059811	20101126
FR2953184 B1	20170324	FR20100059811	20101126
IT1402764 B1	20130918	IT2010MI02184	20101125
ITMI20102184 A1	20110528	IT2010MI02184	20101125
TW201117997 A	20110601	TW20090140605	20091127
TWI378056 B	20121201	TW20090140605	20091127

Probable Assignee: KWANG YANG MOTOR CO

Assignee(s):(std)**:** KWANG YANG MOTOR CO

Assignee(s): KWANG YANG MOTOR CO LTD

Inventor(s):(std)**:** DING XIN ZHI ; HUANG JUN HAO ; LI YAN XIU ; TING HSIN CHIH ; LEE YEN HSIU ; HUANG CHUN HAO

Inventor(s): CHUN HAO HUANG ; YEN HSIU LEE ; HSIN CHIH TING

Agent(s): CABINET REGIMBEAU

International class (IPC 8–9): B62D61/06 B62K11/02 B62K19/32 B62K21/00 B62K5/02 B62K5/027 B62K5/04 B62K5/05 B62K5/08 (Advanced/Invention) ; B62K11/02 B62K19/32 (Core/Non–invention)

CPC: B62K5/027 B62K5/05 B62K5/08 B62K5/10

European class: B62K5/027 B62K5/05 B62K5/08 B62K5/10

Classification Explorer

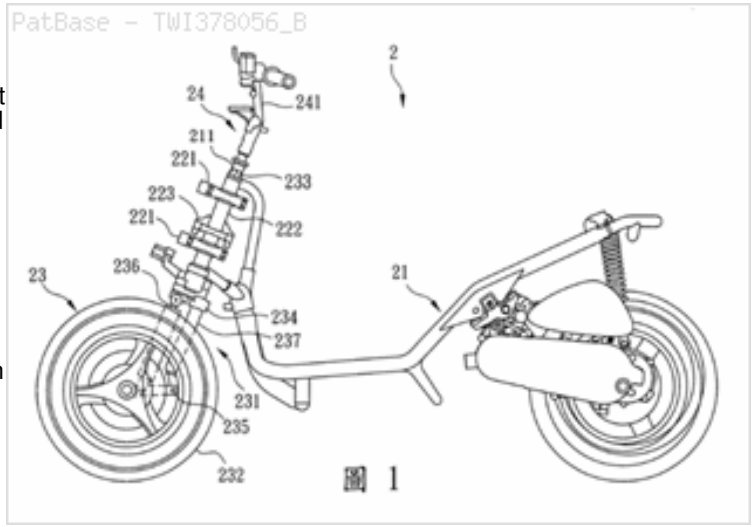
Cited documents: US2007075514 AA, TW469239 B, TW331973 B, TW200817230, TW200815231, TW200530057 A, EP1180476,

DE602005005423 T2

DE60012319 T2, CN201151444,

Forward Citations: WO15115110, WO15115109, WO15002173, WO14065385, WO14065381, WO14046287, WO14046280, WO13104335, WO12007819, US9493208, US9452806, US9452803, US9296420, US9278711, US9238494, US9227662, US9216790, US9211773, US8991542, TWI558600, TWI555666, TWI523790, TWI523789, TWI523788, TWI523787, JP5797367, JP5797366, JP5536967, JP2015115110, JP2015115109, JP2014046287, EP2998209, EP2937270, EP2923931, EP2923930, EP2921388, EP2921387, EP2921384, EP2913255, EP2899107, EP2899105, EP2810861, EP2593352, CN105339252, CN104487333, CN104487322, CN104487322,

Abstract:
Source: DE102010052716B4 Dreiraedriges Fahrzeug (2), mit: – einem Hauptrahmen (21) mit einem hohlen, zentralen Positionierelement (211), – einer Anti–Kippeinheit (20) umfassend – eine Gelenkstangeneinheit (22), die schwenkbar mit dem zentralen Positionierelement (211) verbunden ist und aufweist – ein Paar voneinander beabstandeter Gelenkstangen (221), die in einer horizontalen Richtung verlaufen, wobei jede der Gelenkstangen (221) einen schwenkbar mit dem zentralen Positionierelement (211) verbundenen mittleren Teil hat, – ein Paar seitlicher Stangen (222), von denen eine der seitlichen Stangen (222) schwenkbar mit linken Enden der Gelenkstangen (221) verbunden ist und die andere der seitlichen Stangen (222) schwenkbar mit rechten Enden der Gelenkstangen (221) verbunden ist, wobei jede der Gelenkstangen (221) ein Paar Stabsegmente (224) umfasst, von denen jedes das zentrale Positionierelement (211) schwenkbar mit einer zugehoerigen der seitlichen Stangen (222) verbindet, und jede der seitlichen Stangen (222) mit einem Eingriffsblock (2221) ausgebildet ist, – eine starre Kupplungsstange...



0) US2009108576A – RETRACTABLE STEERING MECHANISM

79) Family number: 43199204 (US2009108576A) © PatBase

Title: RETRACTABLE STEERING MECHANISM

Priority: US20070923673 20071025

Family:

Publication number	Publication date	Application number	Application date
US2009108576 AA	20090430	US20070923673	20071025
US7793980 BB	20100914	US20070923673	20071025

Probable Assignee: FONG JIAN JHONG

Assignee(s):(std)**:** FONG JIAN JHONG

Inventor(s):(std)**:** FONG JIAN JHONG

Agent(s): SAM CHEN

International class (IPC 8–9)**:** B62D1/11 B62D1/18 B62D1/185 B62D1/187 (Advanced/Invention); B62D1/11 B62D1/18 (Core/Invention)

CPC: B62D1/197

European class: B62D1/19D

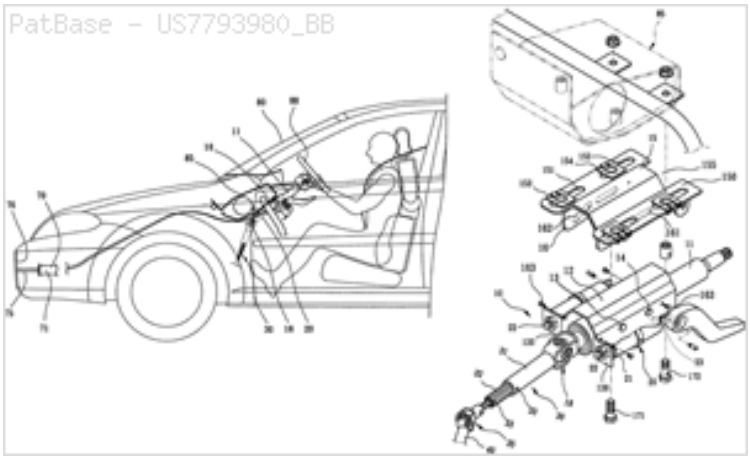
US class: 280/775 280/777 280/779 60/632 60/636 60/638 74/492 74/493

Classification Explorer

Cited documents: US7165786 BA, US6116648 A, US5890397 A, US5113716 A, US2007137381 AA, US2007069513 AA, US2007068311 AA, US2007013183 AA, US2007013180 AA, US2004083844 AA, US2003164608 AA, US2002073798 AA, US2002024208 AA,

Forward Citations: US9333983, US8656852, US7891268, US2014277896, US2011088502, US2009120230, US2008116675, CN103253293,

Abstract:
Source: US2009108576A A retractable steering mechanism includes a steering wheel, a steering column connected to the steering wheel, a telescopic device connected to steering column, a connector for connecting the telescopic device to two front wheels of the vehicle. A first cover is connected to the vehicle. A second cover is connected to the first cover and includes at least two slots defined therein. A shell is used to house the steering column so that the steering column is rotational but not movable in the shell. The shell includes at two bosses formed thereon and movably disposed in the slots. A moving unit is provided between the vehicle and the shell and operable, in a car accident, to retract and tilt the shell due to the bosses moving in the slots.



0) US3746118A – THREE–WHEELED VEHICLE WITH PASSENGER BANKING

80) Family number: 7387552 (US3746118A) © PatBase

Title: THREE–WHEELED VEHICLE WITH PASSENGER BANKING

Priority: US19710162766 19710715

Family:

Publication number	Publication date	Application number	Application date
US3746118 A	19730717	US19710162766	19710715

Probable Assignee: ALTORFER E

Assignee(s):(std)**:** ALTORFER E

Assignee(s): ALTORFER E US

Inventor(s):(std)**:** ALTORFER E

Inventor(s): ALTORFER E US

International class (IPC 8–9)**:** B62D61/06 B62D61/08 (Advanced/Invention); B62D61/00 (Core/Invention)

International class (IPC 1–7)**:** B62D7/20 B62K5/08

CPC: B62D61/065 B62D61/06 B62K5/027 B62K21/00 B62M7/02

European class: B62D61/06 B62D61/06B B62D61/08B

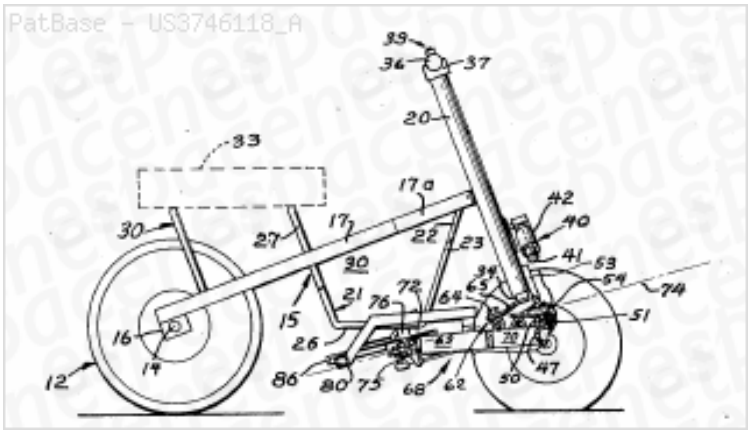
US class: 180/2.5R 180/210 280/124.103 280/267 D12/110

Classification Explorer

Cited documents: US3572456 A, US3447623 A, US2819093 A, US2493817 A, US2152938 A,

Forward Citations: USRE44854, USRE32031, USD449018, US8911332, US8535206, US8430713, US8141890, US7909340, US7793751, US7708291, US7600596, US7552790, US6953203, US6948581, US6755425, US6557873, US6279930, US4903857, US4787470, US4624469, US4546997, US4526392, US4368795, US4360224, US4351410, US4325565, US4116298, US4088199, US4064957, US4020914, US3958814, US2013313802, US2010230924, US2010194068, US2010044977, US2009280718, US2006219464, US2006097471, US2006086555, US2006054370, US2004129483, US2004129473, US2004050605, US2004035626, US2004035625, US2004035623, US2004032120, US2003221891, US2003221890, US2003116930, GB2382334, GB2382334, FR2486899, EP2097145, EP1630081, EP1630081, DE3442574, DE2707562, DE102011106474, AT412151,

Abstract:
Source: US3746118A A three–wheeled vehicle is disclosed having two front wheels connected by means of an axle and a single powered rear wheel centered between the two front wheels. A steering column is connected to a frame which supports the engine and the rider, and the lower end of the steering column is pivotally connected to the front axle assembly. Foot pedals are provided on either side of the engine frame––one is for acceleration and the other is for braking. Both foot pedals are attached to a support which is connected to the front axle assembly. The bottom of the engine frame is pivotally connected to a yoke at a location rearward of the front wheels. A power–actuated mechanism banks the steering column and engine frame about an inclined bank axis when the vehicle is turned to enhance the stability of the vehicle and the comfort of the rider.



0) CN103010303A – VEHICLE CONTROL SYSTEM AND VEHICLE COMPRISING S...

81) Family number: 53476098 (CN103010303A)

© PatBase

Title: VEHICLE CONTROL SYSTEM AND VEHICLE COMPRISING SYSTEM

Priority: CN201110296453 20110928

Family:

Publication number	Publication date	Application number	Application date
CN103010303 A	20130403	CN201110296453	20110928
CN103010303 B	20160113	CN201110296453	20110928

Probable Assignee: BYD CO LTD

Assignee(s):(std)**:** BYD CO LTD

Assignee(s): BYD CO

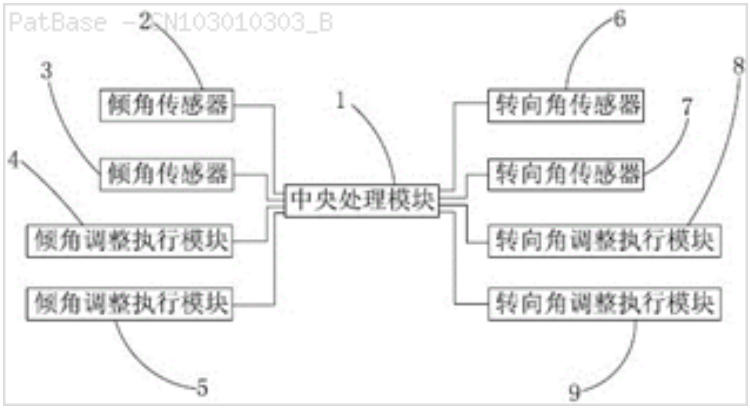
Inventor(s):(std)**:** XU XUNJIN ; YE YING ; ZHOU XUGUANG

International class (IPC 8–9): B62D17/00 (Advanced/Invention)

Classification Explorer

Cited documents: US4998593 A, EP2407370 A1, CN1660615 A, CN101450680 A, CN101003282 A,

Abstract:



Source: CN103010303A The invention provides a vehicle control system and a vehicle comprising the system. The vehicle control system comprises a central processing module, two tilt angle sensors and two tilt angle adjusting execution modules, wherein the two tilt angle sensors are arranged on two front wheels of the vehicle respectively and can be used for detecting tilt angles of the two front wheels respectively; the two tilt angle adjusting execution modules can be used for changing the tilt angles of the two front wheels respectively; the two tilt angle sensors are electrically connected with the central processing module respectively and are used for outputting tilt angle signals to the central processing module respectively; the central processing module is electrically connected with the two tilt angle adjusting executing modules and control signals can be output to the two tilt angle adjusting execution modules respectively; and the tilt angles of the two front wheels are changed by the two tilt angle adjusting execution modules according to the control signals respectively. The tilt angles of the wheels can be freely changed by the vehicle control system to adapt to various situations that the tilt angles of the wheels are required to be changed.

0) DE102004006535A1 – LIGHT AND LOW–POWERED VEHICLE FOR PERSONAL AND ...

82) Family number: 32181068 (DE102004006535A1) © PatBase

Title: LIGHT AND LOW–POWERED VEHICLE FOR PERSONAL AND GOODS TRANSPORT HAS HANDLEBARS CONNECTED TO FRONT WHEEL CARRIER VIA TILTING PIVOT DEVICE

Priority: DE200410006535 20040210

Family:

Publication number	Publication date	Application number	Application date
DE102004006535 A1	20050825	DE200410006535	20040210

Probable Assignee: PACHOLEK GERHARD

Assignee(s):(std)**:** PACHOLEK GERHARD

International class (IPC 8–9)**:** B62K21/00 B62K25/04 B62K5/00 B62K5/05 B62K5/08 B62K7/00 B62M1/24 (Advanced/Invention); B62K21/00 B62K25/04 B62K5/00 B62K7/00 (Core/Invention)

International class (IPC 1–7)**:** B62K21/00 B62K25/04 B62K5/00 B62K7/00

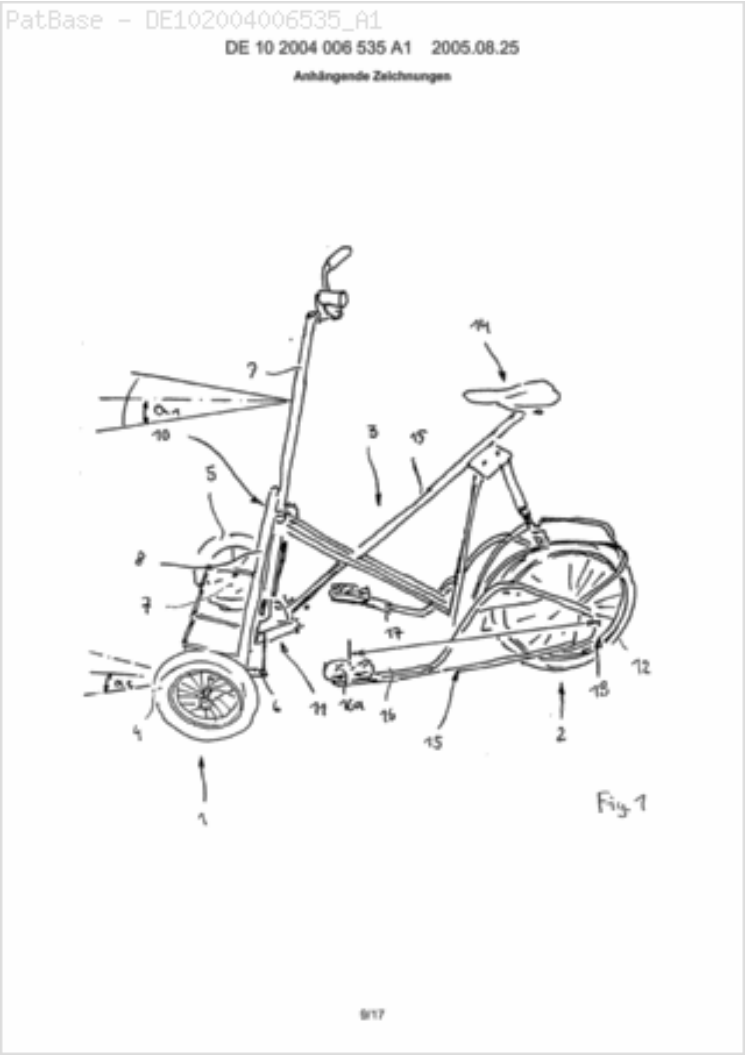
CPC: B62K5/05 B62K5/08 B62K5/10 B62K19/46 B62M1/24

European class: B62K19/46 B62K5/05 B62K5/08 B62K5/10 B62M1/24

Classification Explorer

Forward Citations: WO08043870, ES2323916, EP2077223, EP2077223, CN102616320, CN102616319, CN102602487, CN102602486,

Abstract:
The vehicle has a front wheel device (1), a rear wheel device (2) and a frame structure (3) between them. It has two front wheels (4, 5) on a front wheel carrier (8), which can be steered by handlebars (9). The handlebars are connected to the front wheel carrier via tilting pivot device (10) and to an axle device (7) via a steering rod, so that the axis of arms are turned in a curve by turning the handlebars.



0) US2012146386A – MOTORISED WHEELBARROW

83) Family number: 43910825 (US2012146386A) © PatBase

Title: MOTORISED WHEELBARROW

Priority: GB20090014901 20090825 WO2010GB01605 20100825

Family:

Publication number	Publication date	Application number	Application date
EP2571743 A1	20130327	EP20100763829	20100825
EP2571743 B1	20160928	EP20100763829	20100825
GB200914901 A0	20090930	GB20090014901	20090825
GB2474226 A1	20110413	GB20090014901	20090825
US2012146386 AA	20120614	US20100392392	20100825
US9108690 BB	20150818	US20100392392	20100825
WO11023952 A1	20110303	WO2010GB01605	20100825

Probable Assignee: MUCKTRUCK UK LTD

Assignee(s):(std)**:** MUCKTRUCK UK LTD ; ROWLANDS TERRY C ; ROWLANDS TERRY CHARLES

Assignee(s): TERRY CHARLES ROWLANDS

Inventor(s):(std)**:** ROWLANDS TERRY CHARLES

Inventor(s): TERRY CHARLES ROWLANDS

Agent(s): DEAN MICHAEL BRIAN; WORTHINGTON RICHARD EASTON; COLLARD AND ROE PC

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60K1/04 B60K17/34 B60L11/18 B60L7/00 B60P1/24 B62B1/24 B62B3/08 B62B5/00 B62D51/00 B62D51/04 (Advanced/Invention); B62B5/00 B62B5/04 (Advanced/Non–invention)

CPC: B60K1/04 B60K17/34 B62B1/24 B62D51/002 B60L7/003 B60L11/18 B60L11/1853 B60L11/1877 B60L2200/30 B60L2200/40 B60L2250/24 B60L2260/28 B60P1/24 B62B3/08 B62B5/0046 B62B5/0053 B62B5/0066 B62B5/0404 B62D51/04 Y02T10/7005 Y02T10/705

European class: B60L11/18 B60L11/18M22 B60L11/18M36 B60L7/00B B60P1/24 B62B3/08 B62D51/00B2 B62D51/04 L60L200/30 L60L200/40 L60L250/24 L60L260/28 L62B5/00P2A6 L62B5/00P2B L62B5/00P5 L62B5/04A Y02T10/70B Y02T10/70H4 Y02T10/70H6

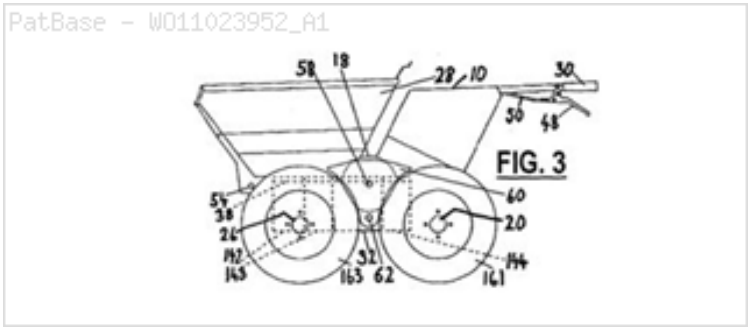
US class: 1/1 180/19.1 180/19.100S 298/2 298/2P

Classification Explorer

Cited documents: USRE33131 E, USD572274 S1, US7845654 BB, US7201453 BB, US7017998 BB, US6955404 BA, US6848526 BB, US6619754 BA, US6578924 BB, US6536845 BB, US6470981 BA, US6415880 BA, US6390213 BA, US6293627 BA, US6290301 BA, US6173799 BA, US6173799 B1, US6155648 A, US6129166 A, US6065555 A, US5350030 A, US5284218 A, US5149116 A, US5106113 A, US4811988 A, US4645264 A, US4632461 A, US4305030 A, US3515313 A, US3433002 A, US3344456 A, US3160439 A, US2918133 A, US2533549 A, US2009178864 AA, US2007261905 AA, US2007216215 AA, US2007194544 AA, US2007079998 AA, US2006119164 AA, US2005212237 AA, US2005168004 AA, US2003193233 AA, US2002084119 AA, US2001000641 AA, JP5085362 A2, JP2000264213 A2, GB2417716 A1, GB2402378 A1, GB2392425 A1, GB2358005 A1, FR2812850 A1, FR2695699 A1, EP1170162 A1, DE4226969 A1, DE4030879 A1, DE29911309 U1, CN201045050 Y,

Forward Citations: WO14166818, USD781520, US9415789, US8997903, US8869922, US2016039445, US2015376862, US2015273995, KR101328094, CN105172916, CN103802871,

Abstract:
Source: US2012146386A A pedestrian motorised wheelbarrow of the so−called four−wheel kind comprising an electric motor (12) to drive the wheelbarrow; adapted for battery means (14), to be carried by the wheelbarrow to power the motor, to be in the region of the front axle means (26), with all four wheels driven by the single electric motor, that drives the rear two wheels (161, 162) directly and these wheels in turn drive the other two wheels; the wheelbarrow having, when empty, a weight distribution with more than half its weight on its front axle means (26), and a hopper (28) such that its load will be substantially on the front axle means, with handle means (30) for tilting the wheelbarrow so as to lift the rear wheels off the ground, with a brake that operates automatically upon interruption of power supply to the motor, and with a pivotal mount (54) for the hopper such that if the wheelbarrow is suddenly braked the hopper will tend pivotally to tilt or overturn to eject its load forwards.



0) WO16082818A1 – ROAD VEHICLE VEHICULE ROUTIER STRASSENFAHRZEU...

84) Family number: 62527906 (WO16082818A1) © PatBase

Title: ROAD VEHICLE

Priority: DE201410017694 20141127

Family:

Publication number	Publication date	Application number	Application date
DE102014017694 A1	20160602	DE201410017694	20141127
WO16082818 A1	20160602	WO2015DE000568	20151126

Probable Assignee: CONSTIN GMBH

Assignee(s):(std)**:** CONSTIN GMBH

Inventor(s):(std)**:** CONSTIEN HANS PETER

Agent(s): KIETZMANN MANFRED

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62D25/20 (Advanced/Invention)

CPC: B62D25/20

Classification Explorer

Cited documents: WO08125946 A1, US6854791 BA, US2009066153 AA, JP2011111124 A2, GB2483272 A1, EP2402192 A1, EP0618128 A1,

DE102013202392 A1

DE102013004833 A1

DE102012101777 A1

DE102011105371 B4

CN102530008 A,

Abstract:
The invention relates to a road vehicle comprising a body (1) and rear wheels (6) suspended on the body (1) and steerable front wheels (5), said front and/or rear wheels (5, 6) can be driven. Said body (1) comprises a front section (2), a passenger compartment (3) with seats (11) and a rear part (4) for accommodating loads. According to the invention, a U shaped transversal support (10) is arranged perpendicular to the longitudinal direction of the vehicle on the end of the passenger compartment (3) arranged on the side of the rear part, the opening thereof being, or can be oriented towards the top or towards the base, and the seats (11) are arranged above the transversal support (10).

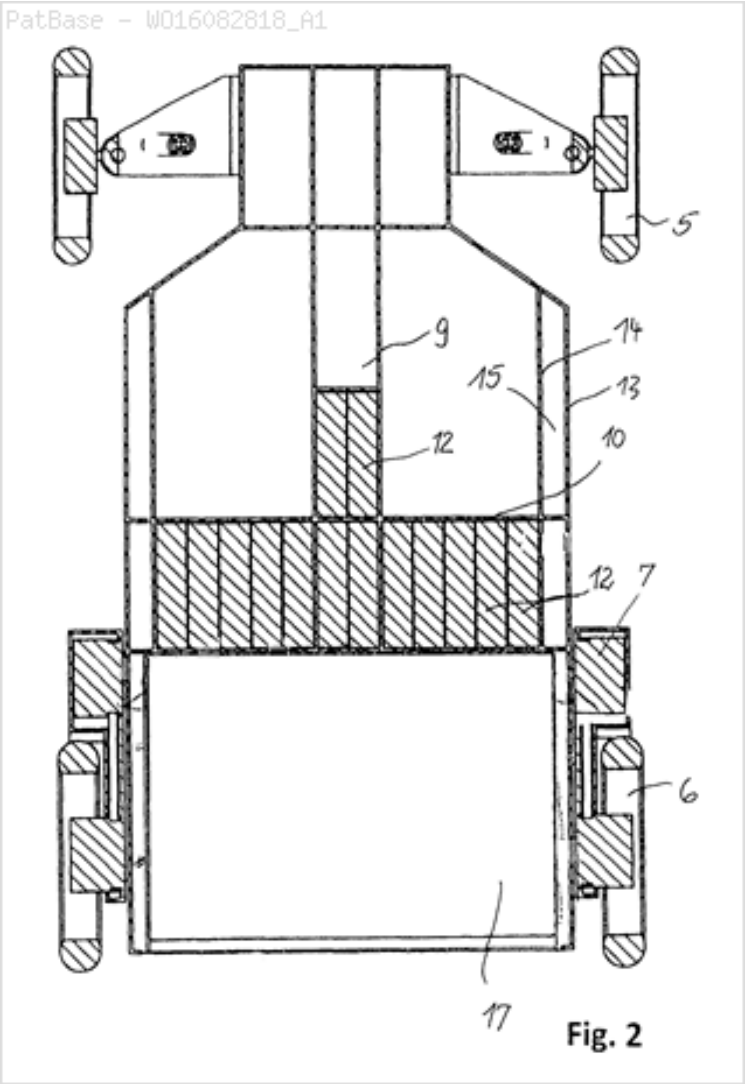


Fig. 2

0) BRMU8903136U – VEICULO COMPACTO DE TRES RODAS COM CHASSI INCLI...

85) Family number: 51363566 (BRMU8903136U) © PatBase

Title: veiculo compacto de tres rodas com chassi inclinavel Compact three–wheeled vehicle with tiltable chassis (Machine translation)

Priority: BR2009MU03136U 20090601

Family:

Publication number	Publication date	Application number	Application date
BRMU8903136 U2	20120619	BR2009MU03136U	20090601

Probable Assignee: FERNANDES ALECSEY EMANUEL FIORAVANTI

Assignee(s):(std)**:** FERNANDES ALECSEY EMANUEL FIORAVANTI

Assignee(s): ALECSEY EMANUEL FIORAVANTI FERNANDES

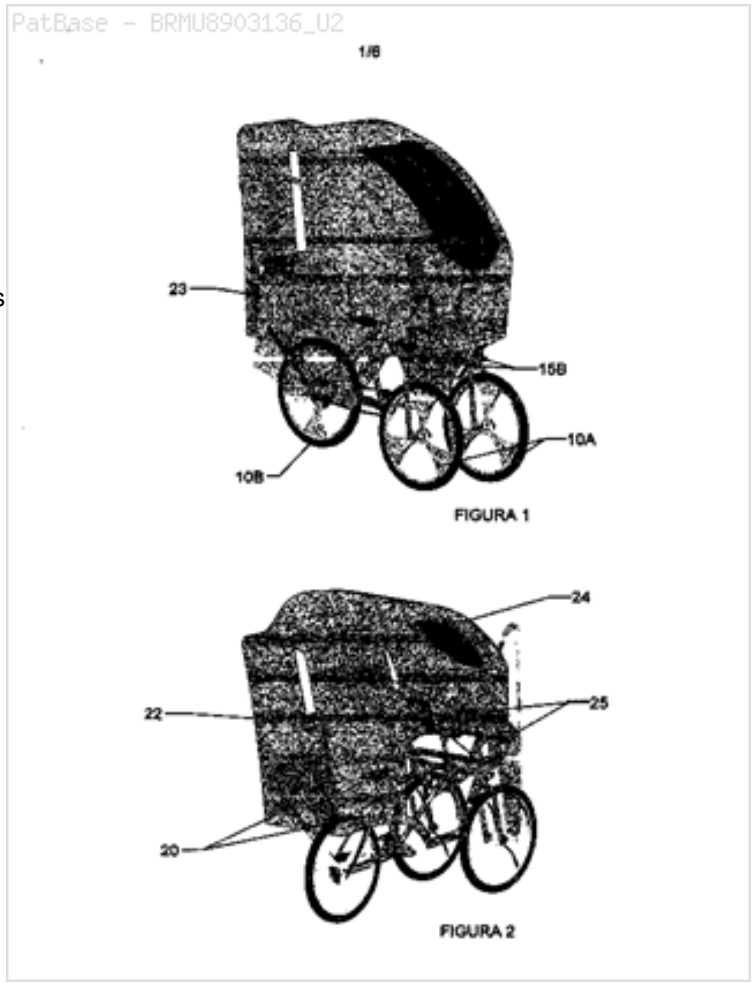
Inventor(s):(std)**:** FERNANDES ALECSEY EMANUEL FIORAVANTI

Inventor(s): ALECSEY EMANUEL FIORAVANTI FERNANDES

International class (IPC 8–9): B62K17/00 (Advanced/Invention)

Classification Explorer

Abstract:
Source: BRMU8903136U VEICULO COMPACTO DE TRES RODAS COM CHASSI INCLINAVEL. Patente de Modelo de Utilidade para um veiculo de tres rodas compreendido por chassi inclinavel (15) contendo uma roda traseira com propulsao humana, eletrica ou motor a explosao e duas rodas dianteiras em garfos duplos (9) utilizando o principio do mecanismo de quatro barras, paralelas duas a duas, formado por dois cubos de direcao verticais (Ii) e dois tubos quadrados horizontais (7 e 8) articulados no quadro por elxos pivotantes (1 5B) com giro lateral dos garfos e rodas acionados pela barra de direcao (5) conectada na mesa central (3) e ao guidao (1) atraves de acionadores de direcao (4), possuindo ainda uma alavanca de travamento (12) da inclinacao do conjunto chassi, ligada a barra de acionamento (13) e na viga de travamento (14) onde na extremidade existe uma cremalheira que ao encaixar na roda dentada (8C) do tubo quadrado inferior (8) trava o giro do mesnio e do chassi podendo possuir uma da carroceria fechada (22) com portas laterais (23) que protege o motorista contra intemperies do tempo e aumenta a seouranca em caso de coi~soes com outros veiculos.



Machine translation: COMPACT THREE–WHEEL VEHICLE WITH CHASSIS tilt. Utility Model Patent for a three–wheel vehicle comprised of a tilting chassis (15) containing a human–powered rear wheel, electric or explosion engine and two wheels in front forks doubles (9) using the principle of four–bar mechanism, parallel in pairs, consisting of two cubes in vertical direction (ii) square tubes and two horizontal (7:08) in the framework articulated by pivoting elxos (1 5b) with lateral rotation of the forks and wheels driven by the bar direction (5) connected to the central table (3) and the handlebar (1) through actuators direction (4) having also a locking lever (12) of inclination of the chassis assembly, connected to the drive bar (13) and locking the beam (14) at the end where there is a rack to engage in the toothed wheel (8C) of the lower square tube (8) locks the rotation of mesnio and the chassis may have a closed body (22) with side doors (23) which protects the driver against the weather forecast and increases in case of seouranca coi ~ soes

with other vehicles.

0) WO14053713A1 – INDIVIDUAL ELECTRIC VEHICLE VEHICULE ELECTRIQU...

86) Family number: 56197038 (WO14053713A1) © PatBase

Title: INDIVIDUAL ELECTRIC VEHICLE

Priority: FR20120002608 20121002

Family:

Publication number	Publication date	Application number	Application date
FR2996205 A1	20140404	FR20120002608	20121002
FR2996205 B1	20141017	FR20120002608	20121002
WO14053713 A1	20140410	WO2013FR00252	20130926

Probable Assignee: CHASTANG GEORGES JEAN BAPTISTE

Assignee(s):(std)**:** CHASTANG GEORGES JEAN BAPTISTE

Assignee(s): GEORGES JEAN BAPTISTE CHASTANG

Inventor(s):(std)**:** CHASTANG GEORGES JEAN BAPTISTE

Inventor(s): GEORGES JEAN BAPTISTE CHASTANG

Agent(s): GEORGES CHASTANG

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G21/00 B60L11/18 B62D9/04 B62K11/00 B62K15/00 B62K3/00 B62K5/05 B62K5/08 B62K5/10 B62M7/12 (Advanced/Invention)

CPC: B62K3/002 B62K5/05 B62K5/08 B62K5/10 B60L11/1864 B60L11/1877 B60L15/20 B60L2200/12 B60L2220/44 B60L2240/12 Y02T10/645 Y02T10/7005 Y02T10/7061 Y02T10/72 Y02T10/7275

Classification Explorer

Cited documents: WO09117528 A2, WO05002957 A1, US6866275 BA, US2010230924 AA, US2008258416 AA, US2004262871 AA, FR2962403 A1, FR2918634 A1, FR2689082 A1, FR2085428 A1, DE20002326 U1, DE10209093 A1,

DE102011111419 A1

Abstract:
An individual electric vehicle (1), characterised in that it comprises a first central portion (2) comprising at least one beam forming a casing housing electric batteries, a motorised rear wheel (4) and a foldable steering column (5), and a second additional portion (3) comprising at least two arms (6) each provided with a foot−rest (7), a steering bearing system of two front wheels and three swivelling connections, the first (8) linking with the rear of the central portion (2), the second (9) with a transverse bar (10) of the second portion (3), which is itself linked at its centre by a flexible member (11) to the front of the casing of the central portion, the third (12) linking to a fixed portion (14) of the steering column via a connection rod (13) of each of the arms.

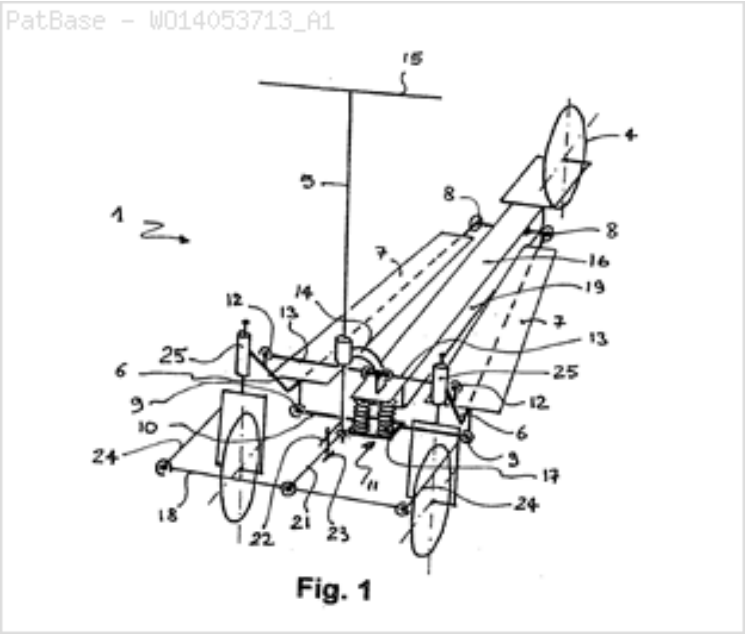


Fig. 1

0) US2015158386A – FOLDABLE, ULTRA–LIGHTWEIGHT TRICYCLE HAVING AN ...

87) Family number: 50470295 (US2015158386A) © PatBase

Title: FOLDABLE, ULTRA–LIGHTWEIGHT TRICYCLE HAVING AN ELECTRIC MOTOR

Priority: FR20100002863 20100707 WO2011FR00400 20110707

Family:

Publication number	Publication date	Application number	Application date
CN103796910 A	20140514	CN201180072158	20110707
CN103796910 B	20170215	CN201180072158	20110707
EP2729350 A2	20140514	EP20110751622	20110707
FR2962403 A1	20120113	FR20100002863	20100707
FR2962403 B1	20150327	FR20100002863	20100707
IN00152MN2014 A	20141121	IN2014MN00152	20140124
JP2014520701 T2	20140825	JP20140517864T	20110707
JP5829749 B2	20151209	JP20140517864T	20110707
KR20140053176 A	20140507	KR20147003218	20110707
RU2014104249 A	20150820	RU20140104249	20110707
RU2591117 C2	20160710	RU20140104249	20110707
TH140085 A	20150227	TH20141000062	20110707
US2015158386 AA	20150611	US20110130938	20110707
US9283848 BB	20160315	US20110130938	20110707
WO12004477 A2	20120112	WO2011FR00400	20110707
WO12004477 A3	20120322	WO2011FR00400	20110707

Probable Assignee: PARIENTI RAUL

Assignee(s):(std)**:** PARIENTI RAOUL ; PARIENTI RAUL

Assignee(s): RAOUL PARIENTI

Inventor(s):(std)**:** PARIENTI RAOUL ; PARIENTI RAUL

Inventor(s): RAOUL PARIENTI

Agent(s): RAOUL PARIENTI; NOGUCHI KENSHO; SEIRYU PATENT PROFESSIONAL CORP; OGAWA SHIN ICHI; JAMES C

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60K31/02 B60L11/18 B62D61/06 B62J99/00 B62K11/00 B62K15/00 B62K3/00 B62K5/02 B62K5/027 B62K5/04 B62K5/05 (Advanced/Invention); B60K31/00 (Advanced/Non–invention); B62K15/00 B62K3/00 B62K5/04 (Core/Invention)

CPC: B60K31/02 B62K5/027 B62K2202/00 B60K2031/0091 B62K15/006 B62K3/002 B62K5/05 B62K2204/00 B60L11/1805 Y02T10/7005

European class: B62K15/00F B62K3/00B B62K5/05 L62K204/00

US class: 1/1 180/178

Classification Explorer

Cited documents: WO0236419 A1, WO0074622 A1, US8695999 BB, US8500147 BB, US8464822 BB, US8170780 BB, US7963352 BB, US7845443 BB, US7810591 BB, US7690447 BB, US7273116 BB, US7192040 BB, US7040443 BA, US7004271 BA, US6907949 BA, US6651766 BB, US6561294 BA, US6367817 BA, US6345678 BA, US6302230 BA, US5830313 A, US5657828 A, US4874055 A, US4354569 A, US4087106 A, US2015122566 AA, US2015068828 AA, US2015035257 AA, US2014265223 AA, US2014090910 AA, US2013300080 AA, US2013175103 AA, US2013056950 AA,

US2012175179 AA, US2010225085 AA, US2009255747 AA, US2009160150 AA, US2009160150, US2007158117 AA, US2006266570 AA, US2006054370 AA, US2003029652 AA, US2002063006 AA, US2002000339 AA, US0160150, TWM378160 Y, RU62887 U, JP59142186 U, JP2011093433 A2, JP2011093433, JP2006062573, JP2005263152, JP2005255074, JP2005193835, JP2005022631, JP2003104264, JP2002220080, JP2002168023, GB2466241 A1, EP1630081 A1, EP1232938 A1, EP0017913 A1, CN203921057 U, CN203888953 U, CN203854800 U, CN1740039 A, CN1637388 A, CN101947990 A,

Forward Citations: WO14053713, USD774979, US9272739, JP6090125, JP2015096376,

Abstract:
Source: US2015158386A Ultralight tricycle with electric engine including a base frame (15) fitted with two front wheels and one driving back wheel (9), an electric engine propelling the driving wheel, and one steering wheel (3) including a steering wheel (4) maneuvered by the user in order to control the steering and/or speed of the tricycle, the tricycle being designed to switch from the unfolded configuration allowing the user positioned on the base frame to ride the tricycle into a folded configuration enabling the user to seize the steering wheel in order to have the tricycle rolling on its two front wheels while keeping the back wheel away from the ground. The tricycle includes a tachymeter that measures the speed of the tricycle and one slowing down/braking command unit connected to the tachymeter and suited to command the transformation of the engine into a generator of electric current provided to a battery when the speed of the engine exceeds a preset speed ranging between 20 km/h and 30 km/h so that the tricycle slows down as a result of the engine being turned into a generator acts as a brake.



FIG. 1

0) IN03569CH2015A – STEERING SYSTEM OF A TRICYCLE

88) Family number: 64740536 (IN03569CH2015A) © PatBase

Title:	STEERING SYSTEM OF A TRICYCLE
Priority:	IN2015CH03569 20150713

Family:

Publication number	Publication date	Application number	Application date
IN03569CH2015 A	20170120	IN2015CH03569	20150713

Probable Assignee:	J JUBIN ANTONY
Assignee(s):	J JUBIN ANTONY
Inventor(s):	A JOSEPH ARUL PRAGASAM ; J JUBIN ANTONY ; J RENCY MARY
International class (IPC 8–9):	B62K5/00 (Advanced/Invention)

Classification Explorer

Abstract:
Source: IN03569CH2015A The present invention provides a suspension system for a tricycle having two front wheels, 355 wherein the suspension system is capable of tilting and turning simultaneously and even independently. The suspension system includes a pair of handles (2), a steering post (1), two sliders (8) and (9), four connector links (10) (11) (12) and (13), two base rods (6) and (7), a base frame (5), two wheel holders (14) and (15), a spring damper system (20) and a limiter system. Based on the angle of tilting and turning of the handle, the front pair of wheel is tilted and 360 turned respectively. The suspension system is designed in such a way that the handle remains vertical even when there is an imbalance between the left and right wheels with respect to a horizontal plane. It helps the handle to return to the vertical position after tilting and also aids in maintaining the vertical position of the handle to prevent unwanted tilting.

0) DE102010052715B4 – RADNEIGEVORRICHTUNG ZUM NEIGEN ZWEIER VORDERRAE...

89) Family number: 48990514 (DE102010052715B4) © PatBase

Title: RADNEIGEVORRICHTUNG ZUM NEIGEN ZWEIER VORDERRAEDER EINES FAHRZEUGS

Priority: TW20090140606 20091127

Family:

Publication number	Publication date	Application number	Application date
DE102010052715 A1	20110609	DE201010052715	20101126
DE102010052715 B4	20120823	DE201010052715	20101126
FR2953185 A1	20110603	FR20100059813	20101126
FR2953185 B1	20131213	FR20100059813	20101126
IT1403252 B1	20131017	IT2010MI02177	20101124
ITMI20102177 A1	20110528	IT2010MI02177	20101124
TW201118003 A	20110601	TW20090140606	20091127
TWI378057 B	20121201	TW20090140606	20091127

Probable Assignee: KWANG YANG MOTOR CO

Assignee(s):(std)**:** KWANG YANG MOTOR CO

Assignee(s): KWANG YANG MOTOR CO LTD

Inventor(s):(std)**:** TING HSIN CHIH ; LEE YEN HSIU ; HUANG CHUN HAO ; LI YAN XIU ; HUANG JUN HAO ; DING XIN ZHI

Inventor(s): CHUN HAO HUANG ; HSIN CHIH TING ; YEN HSIU LEE

Agent(s): CABINET REGIMBEAU

International class (IPC 8–9)**:** B62K21/00 B62K25/04 B62K5/02 B62K5/027 B62K5/04 B62K5/05 B62K5/08 (Advanced/Invention); B62K5/02 (Core/Non–invention)

CPC: B62K5/027 B62K5/05 B62K5/08 B62K5/10 B62K25/16

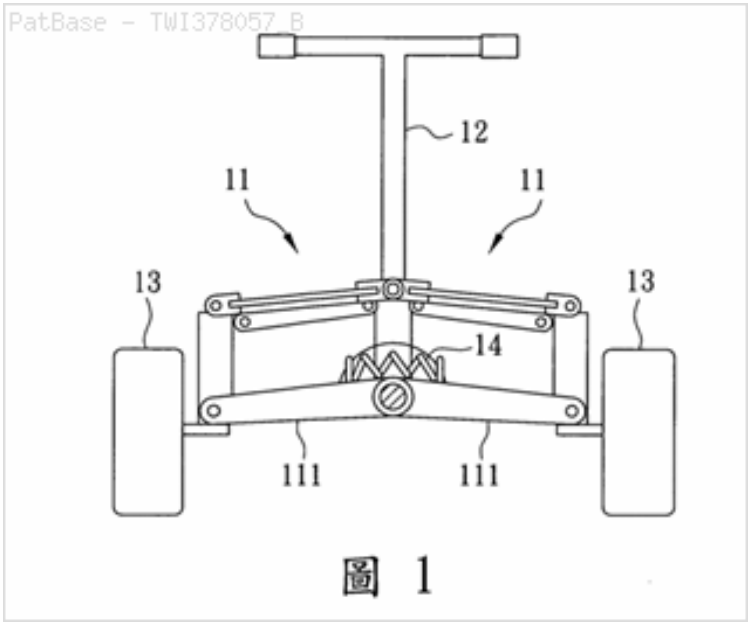
European class: B62K25/16 B62K5/027 B62K5/05 B62K5/08 B62K5/10

Classification Explorer

Cited documents: TW200815231, TW200505735, JP6171569 A2, EP1180476, DE60012319 T2, CN201151444,

Forward Citations: US9517807, US9061564, TWI532629, TWI435824, ES2370889, DE102013223981, CN104554550,

Abstract:
Source: DE102010052715B4
Radneigevorrichtung zum Neigen zweier Vorderraeder (4) eines Fahrzeugs, wobei das Fahrzeug einen Rahmen (2), zumindest ein schwenkbar mit einem hinteren Ende des Rahmens (2) verbundenes Hinterrad (3), eine an einem vorderen Ende (5) des Rahmens (2) angeordnete Lenkeinrichtung (5) sowie die Vorderraeder (4) aufweist, wobei die Lenkeinrichtung (5) dazu betriebsfaehig ist, eine Drehung der Vorderraeder (4) anzusteuern und ein aufrechtstehendes, rohrfoermiges Positionierglied (51), das feststehend auf dem Rahmen (2) angeordnet ist, und eine Lenksaeule (52) umfasst, die sich drehbar durch das Positionierglied (51) erstreckt, wobei die Radneigevorrichtung umfasst: zwei Neigeeinheiten (61), die dazu eingerichtet sind, jeweils an zwei Seiten des Positioniergliedes (51) angeordnet zu sein, wobei jede der Neigeeinheiten (61) eine horizontale obere Anlenkung (611) mit einem inneren Ende, welches schwenkbar mit dem Positionierglied (51) verbindbar ist, und einem aeusseren Ende, eine horizontale untere Anlenkung (612), die unterhalb und von der oberen Anlenkung (611) beabstandet angeordnet ist und ein...



0) US2016355229A – INVERTED TRICYCLE

90) Family number: 60574541 (US2016355229A) © PatBase

Title: INVERTED TRICYCLE

Priority: CN201510301478 20150604 CN201510301478 20150608 CN201520903287U 20151114 CN201520903287U 20151116

Family:

Publication number	Publication date	Application number	Application date
CN104973183 A	20151014	CN201510301478	20150604
CN205239636 U	20160518	CN201520903287U	20151114
EP3103713 A1	20161214	EP20160161441	20160321
US2016355229 AA	20161208	US20160168497	20160531

Probable Assignee: SHENGZHOU ZHONGGONG ELECTRICAL LTD

Assignee(s):(std)**:** SHENGZHOU ZHONGGONG ELECTRIC CO LTD ; SHENGZHOU ZHONGGONG ELECTRICAL CO LTD ; SHENGZHOU ZHONGGONG ELECTRICAL LTD

Assignee(s): SHENGZHOU ZHONGGONG ELECTRICAL CO ; SHENGZHOU ELECTRIC CO WORKERS ; SHENGZHOU ZHONGGONG ELECTRIC CO

Inventor(s):(std)**:** CHEN HONGLIANG ; LI GUANDE

Agent(s): DENNEMEYER AND ASSOCIATES SA

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

International class (IPC 8–9)**:** B62D7/04 B62K25/04 B62K5/027 B62K5/05 B62K5/06 B62K5/08 B62K5/10 (Advanced/Invention)

CPC: B62K5/027 B62K5/08 B62K5/06 B62K25/04 B62K5/05 B62K2202/00 B62K5/10

US class: 180/210

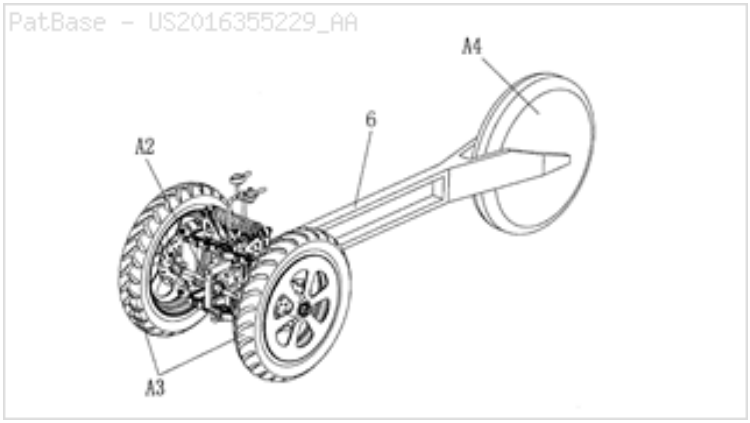
Classification Explorer

Cited documents: US8814186 BA, US2015122566 AA, US2014091551 AA, US2011298191 AA,

DE202004021776 U1

CN202320641 U, CN201030917 Y, CN104494745 A,

Abstract:
Source: US2016355229A An inverted tricycle, which includes: deflecting and steering mechanism, rear frame, driving wheel, two front wheels, said deflecting and steering mechanism configured on the front end of said rear frame, said two front wheels and said deflecting and steering mechanism connected to each other, and symmetrically configured on the left and right sides of the front end of said rear frame, with the rear frame as the axis of symmetry, said driving wheel configured on the rear end of said rear frame. By adopting the above technical scheme, the left and right rocker arms are hinged to the main frame along the same axis. When the tricycle is turned or tilted, they can be always parallel to each other, and the driving will be more stable. The left and right rocker arms are two independent gravity center deflection systems that will not interfere with each other; meanwhile, the structure with single damper can greatly reduce the manufacturing cost of the present invention.



0) FR1229755A – DISPOSITIF POUR L'AVANCEMENT ET LE GUIDAGE DE V...

91) Family number: 22597263 (FR1229755A)

© PatBase

Title: DISPOSITIF POUR L'AVANCEMENT ET LE GUIDAGE DE VEHICULES–JOUETS PAR PESANTEUR DEVICE FOR THE ADVANCEMENT AND GUIDANCE BY GRAVITY TOY VEHICLES (Machine translation)

Priority: FR19590785276 19590129

Family:

Publication number	Publication date	Application number	Application date
FR1229755 A	19600909	FR19590785276	19590129

Inventor(s):(std): CERVI LUPO CORRADI

International class (IPC 8–9): A63H17/36 A63H18/06 (Advanced/Invention); A63H17/00 A63H18/00 (Core/Invention)

International class (IPC 1–7): A63H18/06

CPC: A63F7/386 A63F9/14 A63H17/36 A63H18/06

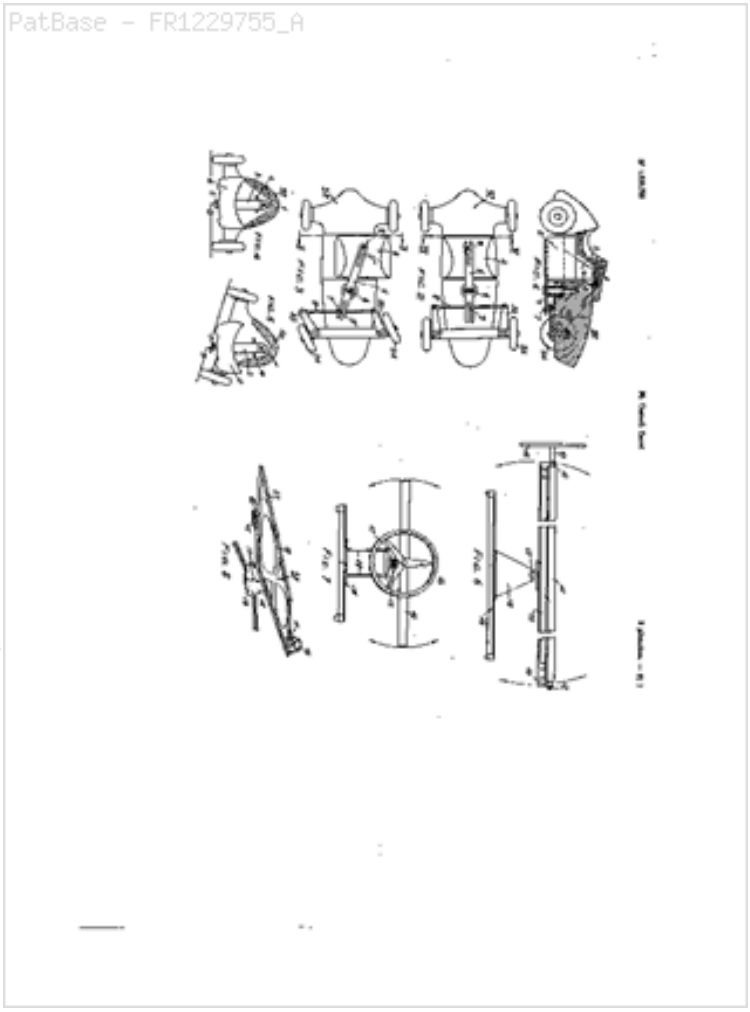
European class: A63F9/14 A63H17/36 A63H18/06 K63F7/38R

Classification Explorer

Forward Citations: US4387532, EP1230965,

Abstract:
Source: FR1229755A (Claim 1) 1. On utilise pour l'avancement l'action de la pesanteur de maniere a realiser un ensemble grace a la combinaison d'un poids oscillant dans un plan vertical a l'axe longitudinal du jouet et d'une plateforme ou surface de course a inclinaison variable par degres en toute direction, sur laquelle ledit jouet monte sur roues prend appui de sorte qu'il est possible d'exploiter l'action combinee de la pesanteur, soit sur la masse du jouet, pour en obtenir l'avancement sur la plate–forme inclinee, soit sur la masse du poids oscillant en direction transversale pour en obtenir la direction;

Machine translation: (Claim 1) 1. Is used to advance the action of gravity so as to achieve a set thanks to the combination of a weight oscillating in a vertical plane to the longitudinal axis of the toy and a platform or running surface has variable inclination by degrees in any direction, on which said toy mounted on wheels is supported so that it is possible to exploit the combined action of gravity or on the mass of the toy, to obtain the advancement of the platform inclined shape, or on the mass of the oscillating weight in the transverse direction to obtain the direction



0) FR2957048B – VEHICULE AGRICOLE, NOTAMMENT POUR LA VITICULTUR...

92) Family number: 49565149 (FR2957048B)

© PatBase

Title: VEHICULE AGRICOLE, NOTAMMENT POUR LA VITICULTURE

Priority: FR20100051493 20100302

Family:

Publication number	Publication date	Application number	Application date
FR2957048 A1	20110909	FR20100051493	20100302
FR2957048 A3	20110909	FR20100051493	20100302
FR2957048 B1	20120217	FR20100051493	20100302
FR2957048 B3	20120217	FR20100051493	20100302

Probable Assignee: ARNAUD FRERES

Assignee(s):(std)**:** ARNAUD FRERES

Inventor(s):(std)**:** ARNAUD DIDIER

Inventor(s): DIDIER ARNAUD

Agent(s): CABINET GERMAIN ET MAUREAU

International class(IPC 8–9)**:** A01B51/02 A01G17/02 B60G21/02 B62D33/063 B62D49/06 (Advanced/Invention)

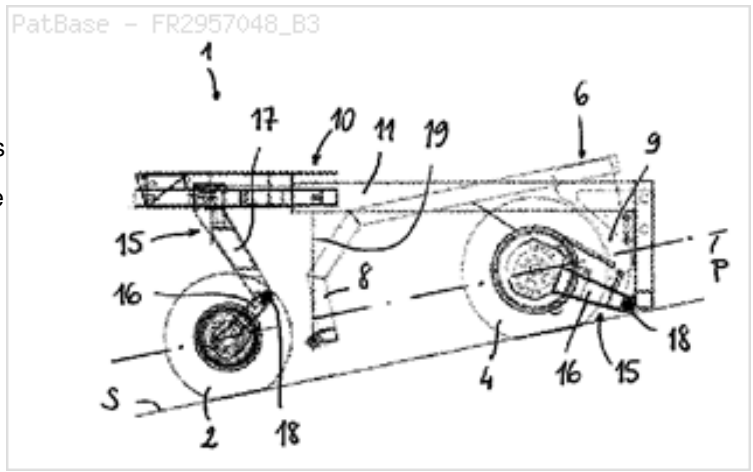
CPC: B60G17/0165 B60G2300/08 B60G2400/82 B62D33/067 B62D49/0607

European class: B60G17/0165 B62D33/067 B62D49/06B L60G300/08 L60G400/82

Classification Explorer

Forward Citations: CN104067709, CN104067709,

Abstract:
The vehicle (1) has a chassis system coupled with two front wheels (2) and two rear wheels (4) in a raised manner, where a row of plants is overhung above the front and rear wheels. The chassis system includes a primary chassis (6) that is coupled with the front and rear wheels at a fixed height with respect to a plane (P) formed by axes of the wheels. The system comprises a secondary chassis (10) equipped with a connection unit that is arranged to allow an inclination of the secondary chassis with respect to the plane formed by the axes of the wheels in forward and backward directions.



0) FR2995255B – SYSTEME DE LIAISON AU SOL POUR VEHICULE INCLINA...

93) Family number: 56014718 (FR2995255B)

© PatBase

Title: SYSTEME DE LIAISON AU SOL POUR VEHICULE INCLINABLE, TEL QU'UN TRICYCLE

Priority: FR20120058376 20120907

Family:

Publication number	Publication date	Application number	Application date
FR2995255 A1	20140314	FR20120058376	20120907
FR2995255 B1	20140919	FR20120058376	20120907

Probable Assignee: LMED

Assignee(s):(std)**:** LMED

Inventor(s):(std)**:** DARMIGNY ERIC ; LIZANET RODOLPHE ; MICHEL JEAN PAUL

Inventor(s): RODOLPHE LIZANET ; ERIC DARMIGNY ; JEAN PAUL MICHEL

Agent(s): CABINET GERMAIN ET MAUREAU

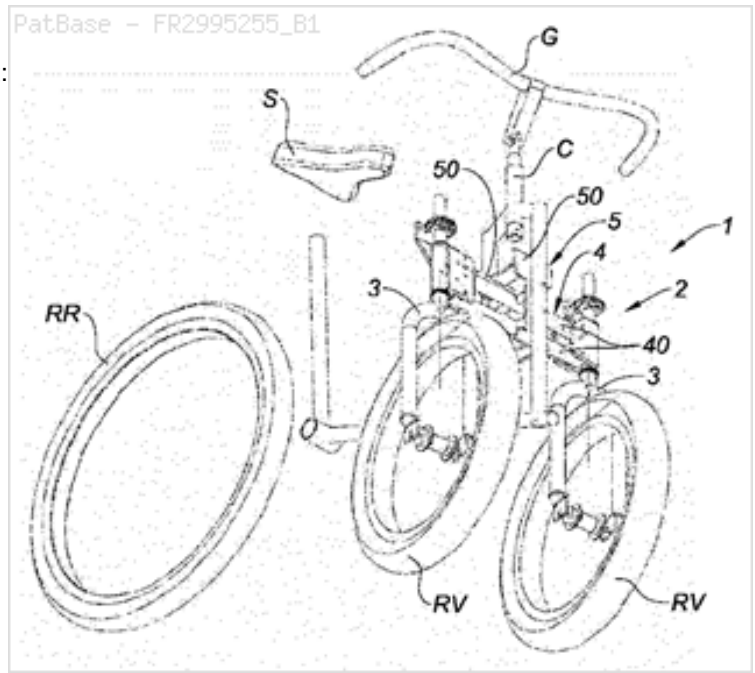
International class (IPC 8–9): B60G21/05 B62K5/00 (Advanced/Invention)

CPC: B60G17/005 B60G17/0162 B60G21/007 B60G2400/0511 B60G2400/102 B60G2400/104 B60G2400/204 B60G2800/012 B60G2800/0194 B60G2800/9123 B62K5/08 B62K5/10

Classification Explorer

Cited documents: WO09069170 A2, WO07127783 A1, WO06130007 A2, WO04011324 A1, US5762351 A, GB191011300 A, FR2960849 A1, FR2933950 A1, EP1090832 A1,

Forward Citations: JP2016175440, FR3040363, EP3069979, EP3069976,



Abstract:
Source: FR2995255A Systeme de liaison au sol (2) pour vehicule (1) inclinable comprenant: – deux supports (3) de roue adjacents; – un dispositif mecanique de liaison (4) entre les deux supports, du type a parallelogramme deformable, comprenant deux bras (40) montes pivotants sur les supports; – un element de maintien (5) du dispositif mecanique de liaison sur un chassis (C) du vehicule, ou chaque bras presente une articulation centrale a pivot sur ledit element de maintien; – un dispositif de verrouillage/deverrouillage du pivotement des bras autour de leurs articulations centrales, comprenant: – un element de verrouillage mobile en translation sur l'element de maintien; – un dispositif mecanique de conversion de la rotation de l'un des bras en un coulissement de l'element de verrouillage, et inversement; – un actionneur mobile entre une position de blocage du coulissement de l'element de verrouillage pour verrouiller le pivotement des bras, et une position de liberation du coulissement de l'element de verrouillage pour autoriser le pivotement des bras. La presente invention trouve une application dans le domaine des tricycles. The system (2) has two supports (3) for supporting left and right wheels (RV). A mechanical connection device (4) includes arms (40) pivotally mounted on the supports. A holding element (5) holds the connecting device on a frame (C) of a tricycle (1). A locking/unlocking device includes a locking element movable in translation of the holding element. A mechanical conversion device converts the rotation of one arm into a sliding motion of the locking element. An actuator is movable between lock and release positions for locking and allowing the swiveling of the mechanical connection device. An independent claim is also included for a tiltable vehicle.

0) US3431979A – SURFACE AND/OR GROUND EMBEDDED ARTICLE PICKERS ...

94) Family number: 858018 (US3431979A) © PatBase

Title:	SURFACE AND/OR GROUND EMBEDDED ARTICLE PICKERS
Priority:	US19660561167 19660628

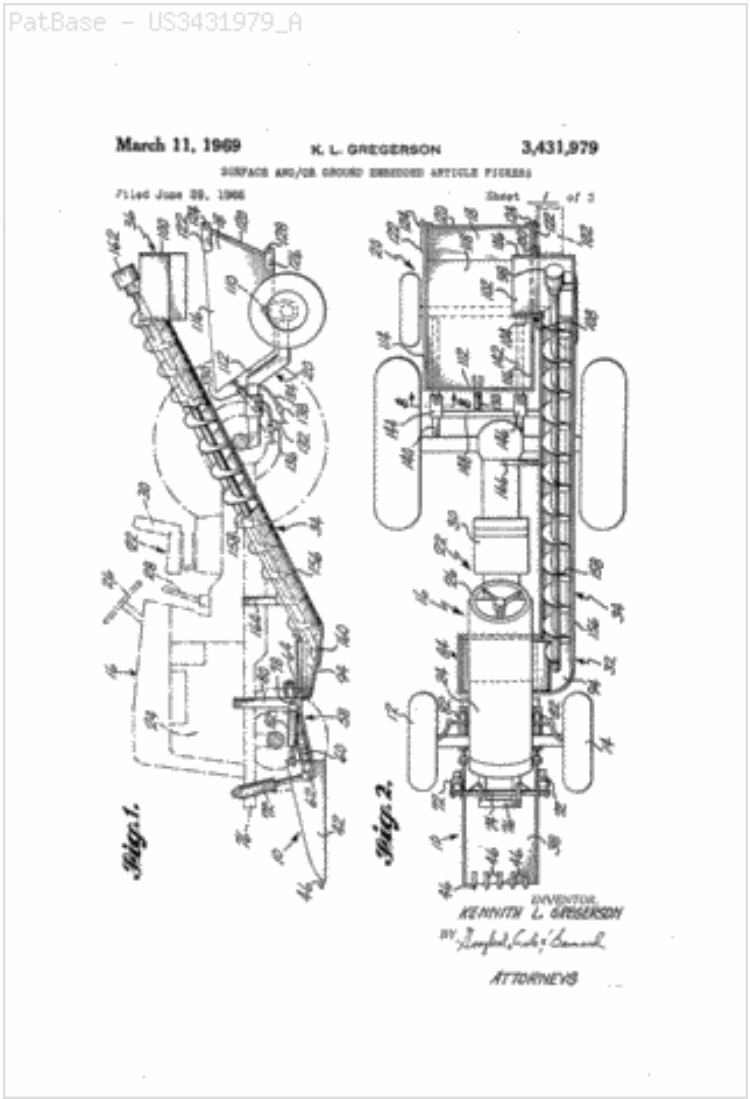
Family:

Publication number	Publication date	Application number	Application date
US3431979 A	19690311	US19660561167	19660628

Probable Assignee:	KENNITH L GREGERSON
Assignee(s):(std)**:**	KENNITH L GREGERSON
Inventor(s):(std)**:**	GREGERSON KENNITH L
Inventor(s):	KENNITH L GREGERSON
International class (IPC 8–9)**:**	A01B43/00 (Advanced/Invention)
International class (IPC 1–7)**:**	A01B43/00
CPC:	A01B43/00
European class:	A01B43/00
US class:	171/63
Classification Explorer	
Cited documents:	US876834 A, US2976936 A, US2732672 A, US2696287 A, US2470211 A, US2453714 A, US1855998 A, GB710650 A,
Forward Citations:	WO11078846, US7658233, US4282932, US4059158, US3596717, US2010051296,

Abstract:
Source: US3431979A ABSTRACT OF THE DISCLOSURE A scoop is mounted below a tractor in a path extending between the tractor's two front wheels. The scoop discharges onto a rearwardly extending first conveyor. lg The first conveyor discharges onto a second conveyor which extends laterally to a side location out from beneath the tractor. The second conveyor discharges onto a third elevating conveyor. The third conveyor raises the articles and deposits them into a bin carried by the tractor 2o or by a trailer behind the tractor.

PatBase - US3431979_A



95) Family number: 46859462 (BRPI0704370A)

© PatBase

Title:	triciclo com duas rodas dianteiras e uma traseira tricycle with two front wheels and a back (Machine translation)
Priority:	BR2007PI04370 20070831

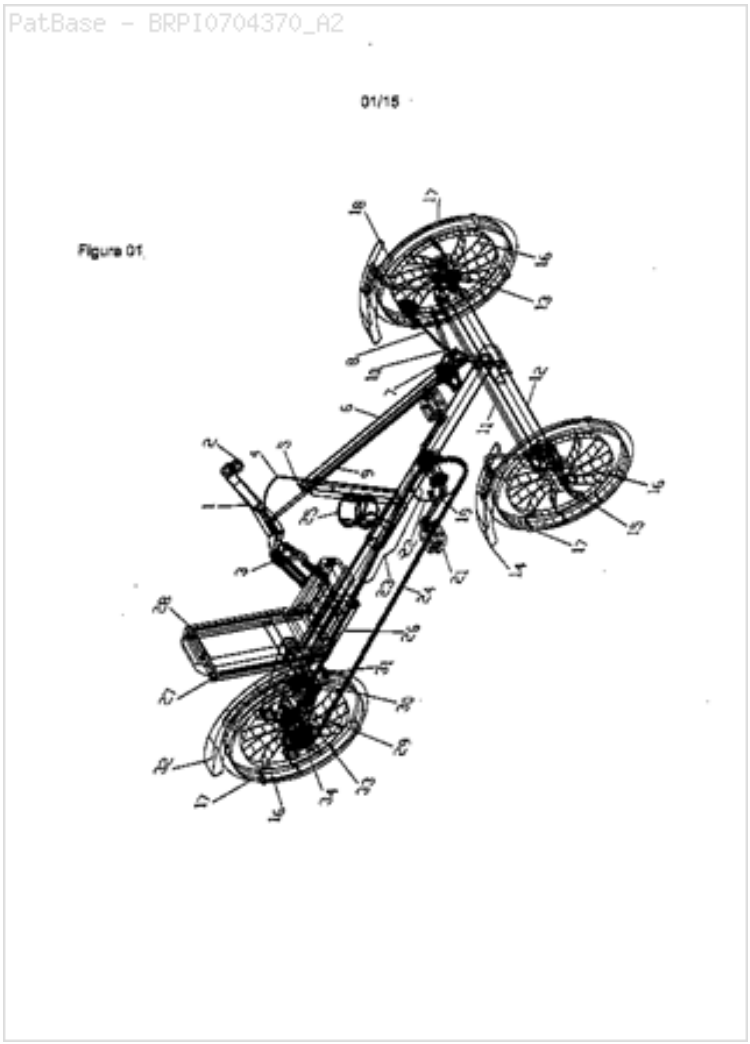
Family:

Publication number	Publication date	Application number	Application date
BRPI0704370 A2	20100908	BR2007PI04370	20070831

Probable Assignee:	CEZAR ADEMIR FERREIRA
Assignee(s):(std):	CEZAR ADEMIR FERREIRA
Assignee(s):	ADEMIR FERREIRA CEZAR
Inventor(s):(std):	CEZAR ADEMIR FERREIRA
Inventor(s):	ADEMIR FERREIRA CEZAR
International class (IPC 8–9):	B62K5/02 (Advanced/Invention); B62K5/00 (Core/Invention)

Classification Explorer

Abstract:
Source: BRPI0704370A TRICICLO COM DUAS RODAS DIANTEIRAS E UMA TRASEIRA, assegura aos condutores grande seguranca pois desenvolve boa velocidade oferecendo grande estabilidade devido ao sistema de alinhamento das rodas e direcao, com estrutura em aco dividido em quatro modulos ou em peca unico, o sistema de tracao e a pedal e utiliza relacao de bicicleta com marcha ou sem, seu sistema de direcao funciona semelhante ao de um automovel com seu angulo de manobra de aproximadamente 450(graus) com extrema leveza devido ao conjunto de rolamentos utilizado no acoplamento das rodas, o freio adotado e o cantilever que em testes nos demonstrou um melhor resultado na frenagem na roda traseira, seu formato em "T" mantem as tres rodas no chao, o posicionamento do assento na parte de tras do "Triciclo" faz com que o sistema de frenagem trabalhe de forma eficiente, os retrovisores da ao condutor uma boa visibilidade, a facilidade de adaptacao do projeto nos possibilita a sua montagem com motor, freio a disco, sistema de suspensao e banco extra para carona, produzido em quatro modulos conforme segue: Quadro Dianteiro Superior, Quadro Dianteiro Inferior, Quadro Traseiro e Banco conforme identificamos na (figura 3), nesta forma possibilitamos que o transporte do brinquedo seja feito com conforto e seguranca.



Machine translation: TRICYCLE WITH TWO FRONT WHEELS AND a BACK, assures to the conductors great security therefore develops good speed offering great stability due to the system of alignment of the wheels and direction, with structure in steel divided in four modules or in sins only, the system tractive and the pedal and uses relation of bicycle with march or without, its system of direction functions approximately similar to the one of an automobile with its angle of maneuver of 450 (degrees) with the extreme slightness due to the set of rolamentos used in the coupling of the wheels, the adopted brake and cantilever that in tests in it more good demonstrated one result to

them in the lockwire in the back wheel, its format in “T” keeps the three wheels in the soil, the positioning of the seat in the behind part of the “Tricycle” makes with that the lockwire system works of efficient form, the retrovisores of to the conductor a good visibility, the easiness of adaptation of the project in them makes possible its assembly with engine, brake the record, system of suspension and extra bank for hitchhiking, produced in four modules in agreement follows: Superior Front picture, Inferior Front Picture, Back Picture and in agreement Bank we identify in (figure 3), in this form we make possible that the transport of the toy is made with comfort and security.

0) IN00327CH2015A – TILTING THREE WHEEL

96) Family number: 63059041 (IN00327CH2015A) © PatBase

Title:	TILTING THREE WHEEL
Priority:	IN2015CH00327 20150123

Family:

Publication number	Publication date	Application number	Application date
IN00327CH2015 A	20160729	IN2015CH00327	20150123

Probable Assignee:	CHETAN S
Assignee(s):	CHETAN S ; CHETHAN K S ; P BALACHANDRA SHETTY
Inventor(s):	CHETAN S ; CHETHAN K S ; P BALACHANDRA SHETTY
International class (IPC 8–9):	B62D (Advanced/Invention)

Classification Explorer

Abstract:
Source: IN00327CH2015A Two front wheel tilting mechanism has been made–up to convert the existing motorbike into tilting three wheel vehicle. The whole assembly mechanism is connected to the steering column after removing the front wheel of the existing motor bike. The rider uses the steering column handle bar for controlling the tilting mechanism. The assembly consists of support frame. connected to the side frame with the help of support rod. There is a rotatable pivot bar support frame with the help of two discs provided in the support frame. The T–strut holds the two shock absorbers. Two front wheels are connected to steering link which in turn connected to drivers handle through steering strut. The. wheel connecting member maintains the directionality of the motor bike. The complete assembly is connected to the steering handle and is capable of pivoting about pivot axis towards the centre of the curvature of the turn, in accordance with the angle of turn of the front wheel. This provides greater stability for the vehicle during a turn. The pivot rod is rotatable at the two supports of support frame. The three wheel vehicle of the present invention accomplishes tilting in accordance to the tilt performed by the rider driving the vehicle. With the adoption of this mechanism, on negotiation of the turning of the motorbike the driver need not exert appreciable force. But for to achieve the tilting his feet always have to bend along with the tilt and he has to maintain this during the normal driving as well. This can be uncomfortable during normal driving. To solve this problem the box frame is provided with two foot rests.

0) CA2439548C – SYSTEM AND METHOD FOR LOADING AND UNLOADING A P...

97) Family number: 31782919 (CA2439548C) © PatBase

Title: SYSTEM AND METHOD FOR LOADING AND UNLOADING A PLATFORM FOR A MOTOR VEHICLE

Priority: CA20032439548 20030828

Family:

Publication number	Publication date	Application number	Application date
CA2439548 AA	20050228	CA20032439548	20030828
CA2439548 C	20070612	CA20032439548	20030828

Probable Assignee: VILLE DE MONTREAL

Assignee(s):(std)**:** VILLE DE MONTREAL

Assignee(s): SAVARD ALAIN

Inventor(s):(std)**:** SAVARD ALAIN

International class (IPC 8–9)**:** B60P1/64 (Advanced/Invention); B60P1/64 (Core/Invention)

International class (IPC 1–7)**:** B60P1/64

CPC: B60P1/6427 B60P1/6454

European class: B60P1/64C1 B60P1/64C4

Classification Explorer

Forward Citations: GB2466970, GB2466970,

Abstract:
Source: CA2439548C Systeme et methode pour effectuer le chargement et dechargement d'une benne. Le systeme comporte un vehicule routier servant a transporter la benne. Levehicule routier est muni d'un systeme de suspension ajustable pour permettre desoulever et d'abaisser son chassis. Le vehicule a un sous−chassis comportant aumoins un rail de guidage arriere. Une plate−forme sert a supporter la benne. Laplate−forme a au moins une patte avant et deux pattes arrieres. La plate−forme aen outre au moins une roulette avant pour rouler sur le rail de guidage arriere duvehicule routier. Des moyens de verrouillage et de basculement installes surchaque patte avant cooperent avec chaque rail de guidage pour permettre dedeverrouiller et de pivoter chaque patte avant entre une position d'appui au solverticale et une position de rangement horizontale lors du chargement, et pourpivoter chaque patte avant entre la position de rangement horizontale et la positiond'appui au sol verticale et verrouiller la patte avant dans la position d'appui au solverticale lors du dechargement.

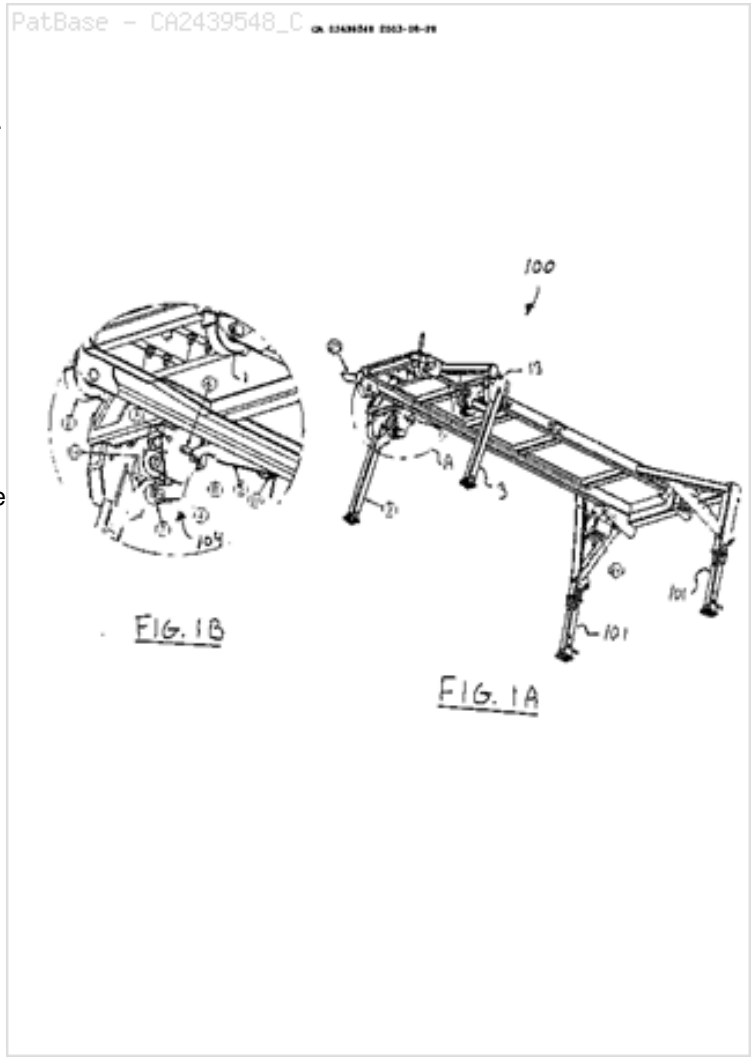


FIG. 1B

FIG. 1A

0) US5515940A – POWER UNIT FOR SADDLE TYPE VEHICLE

98) Family number: 12534610 (US5515940A) © PatBase

Title: POWER UNIT FOR SADDLE TYPE VEHICLE

Priority: JP19930353963 19931229

Family:

Publication number	Publication date	Application number	Application date
JP7195949 A2	19950801	JP19930353963	19931229
US5515940 A	19960514	US19940366047	19941229

Probable Assignee: HONDA GIKEN KOGYO KK

Assignee(s):(std)**:** HONDA MOTOR CO LTD

Assignee(s): HONDA GIKEN KOGYO KABUSHIKI KAISHA ; HONDA GIKEN KOGYO KK

Inventor(s):(std)**:** ITO KATSUHIKO ; SHICHINOHE TAKASHI ; SHIMADA TOSHIO

International class (IPC 8–9)**:** B60K17/08 B60K17/22 B60K17/34 (Advanced/Invention); B60K17/06 B60K17/22 B60K17/34 (Core/Invention)

International class (IPC 1–7)**:** B60K17/08 B60K17/22 B60K17/34

CPC: Y10T74/19084 B60K17/08 B60K17/22 B60K17/34 B60Y2200/124

European class: B60K17/08 B60K17/22 B60K17/34 L60Y200/124

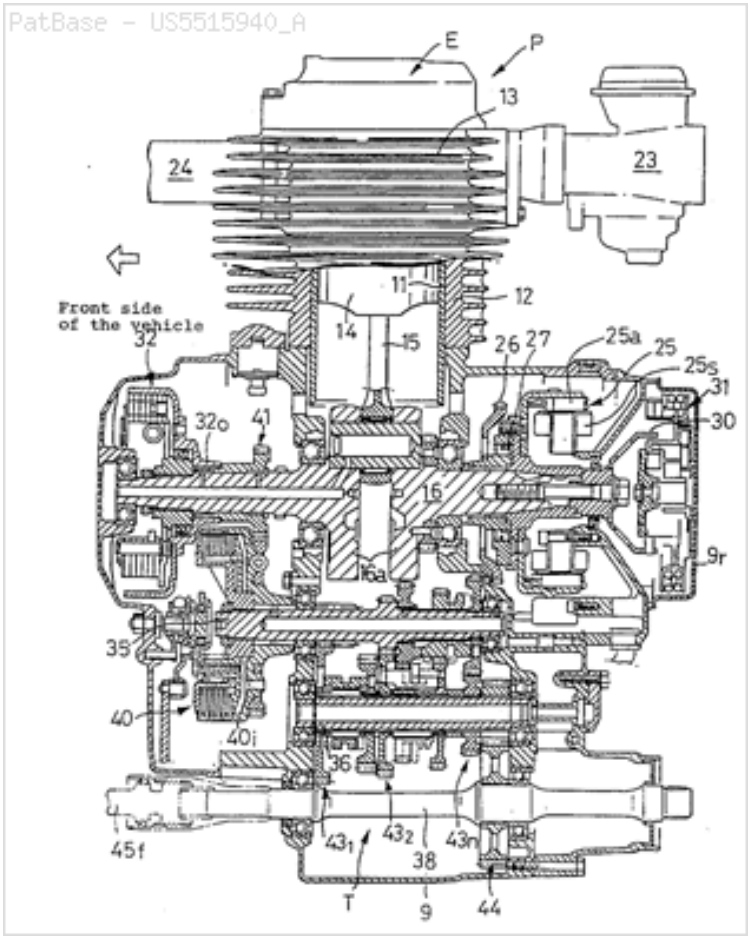
US class: 180/233 180/292 180/376 74/665GA

Classification Explorer

Cited documents: US4719819 A, US4714126 A, US4704920 A, US4699234 A, US4666015 A, JP63046250 A2, JP62110528 A2,

Forward Citations: USD595188, US9297300, US8764601, US8596398, US8579754, US8499880, US8371415, US8281891, US8245672, US8091657, US8075007, US8061467, US7950490, US7866227, US7845452, US7717223, US7673729, US7669686, US7637343, US7487697, US7306067, US7127967, US6948581, US6883630, US6732830, US6691815, US6648093, US6637539, US6632144, US6581716, US6571904, US6524224, US6523634, US6523627, US6491126, US6484607, US6454040, US6443275, US6401857, US6357545, US6269899, US6257081, US6170597, US6155371, US6142905, US6076624, US5992355, US2011214933, US2010181134, US2009320785, US2009266637, US2009211386, US2009071738, US2008284124, US2008283327, US2008283326, US2008257630, US2008076585, US2007181358, US2007062318, US2007051553, US2007029154, US2007006675, US2004235605, US2004129483, US2004129473, US2004050605, US2004040767, US2004035626, US2004035625, US2004035623, US2004032120, US2003221891, US2003221890, US2002063010, JP4744225, JP4530964, JP3750791, JP2007098983, JP2007040451, JP2006283797, JP2002038915, JP2001253380, JP2001105933, ES2293817, EP0911253,

Abstract:
Source: US5515940A A casing of a power unit is formed which is capable of simultaneously driving the front and the rear wheels of a saddle type vehicle. The power unit includes an engine and a transmission in a compact construction. A crankshaft, a main shaft, a secondary shaft and an output shaft are supported in parallel to the longitudinal axis of the vehicle in a casing for both an engine and a transmission. The crankshaft, the main shaft and the secondary shaft are arranged on substantially the same level. The output shaft is disposed below the main shaft and the secondary shaft. The opposite ends of the output shaft project outside from the casing. The opposite ends of the output shaft are connected to a front driving shaft and a rear driving shaft, respectively.



0) CN102092435A – OVERTURN PREVENTING DEVICE FOR VEHICLE WITH TWO...

99) Family number: 49104183 (CN102092435A) © PatBase

Title: Overturn preventing device for vehicle with two front wheels

Priority: CN200910254181 20091210

Family:

Publication number	Publication date	Application number	Application date
CN102092435 A	20110615	CN200910254181	20091210
CN102092435 B	20141105	CN200910254181	20091210

Probable Assignee: KWANG YANG MOTOR CO

Assignee(s):(std)**:** KWANG YANG IND CO LTD ; KWANG YANG MOTOR CO

Inventor(s):(std)**:** DING XINZHI ; HUANG JUNHAO ; JUNHAO HUANG ; LI YANXIU ; XINZHI DING ; YANXIU LI

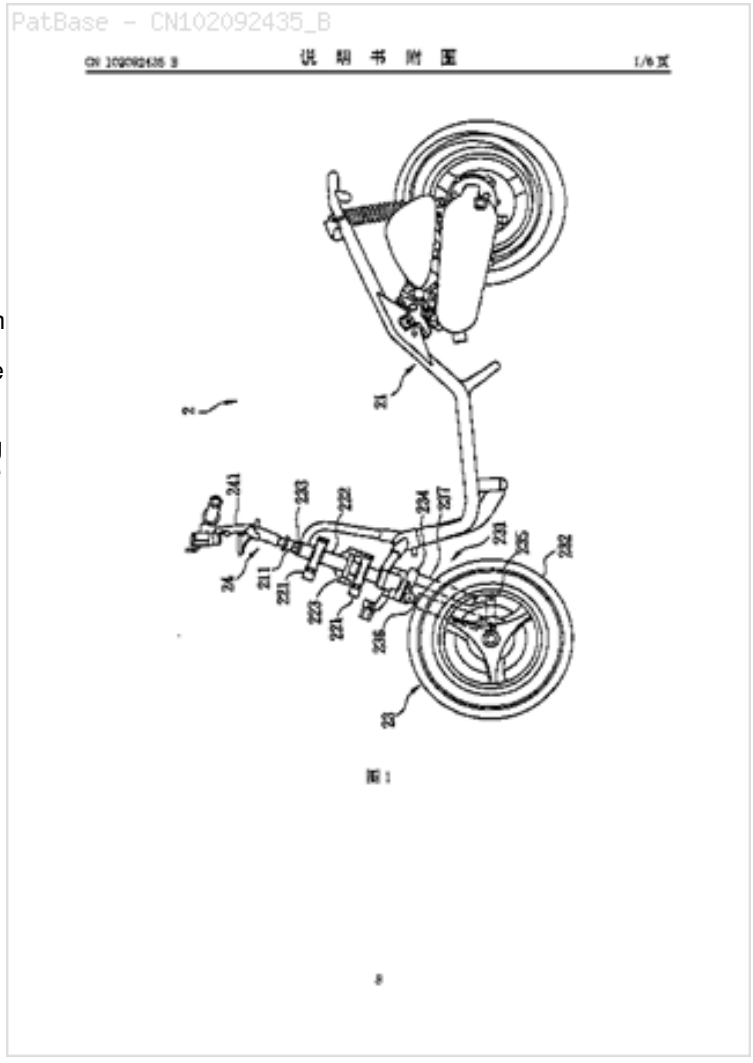
International class (IPC 8–9): B62K25/16 B62K5/08 (Advanced/Invention)

Classification Explorer

Cited documents: EP1391374, EP1090832, CN201151444, CN1572644, CN101161536,

Forward Citations: US8690168, CN104507789, CN104487332,

Abstract:
Source: CN102092435A The invention discloses an overturn preventing device for a vehicle with two front wheels. The vehicle with the two front wheels comprises a frame with a hollow positioning piece, a front wheel unit corresponding to the positioning piece, and a steering unit used for controlling the front wheel unit. The overturn preventing device comprises a tilting unit pivoted to the positioning piece, and a locking unit used for locking the tilting unit, wherein the locking unit is provided with a hydraulic locking mechanism integrated on the tilting unit. The tilting unit is controlled to tilt relative to the positioning piece through the hydraulic locking mechanism, so that the tilting unit is locked in time to be prevented from tilting relative to the positioning piece so as to avoid the overturn of the vehicle with the two front wheels; and the device is simple in integral structure, the installation procedure can be effectively simplified and the waste of space can be reduced.



0) US5722511A – LIFTING VEHICLE AND METHOD OF OPERATING THE VEH...

100) Family number: 10676696 (US5722511A) © PatBase

Title: Lifting vehicle and method of operating the vehicle

Priority: JP19940250864 19941017

Family:

Publication number	Publication date	Application number	Application date
JP8113489 A2	19960507	JP19940250864	19941017
US5722511 A	19980303	US19950542672	19951013

Probable Assignee: BISHAMON IND CORP

Assignee(s):(std)**:** BISHAMON IND CORP ; SUGIYASU KOGYO KK

Assignee(s): BISHAMON IND

Inventor(s):(std)**:** WAKAMIYA KOJI

International class (IPC 8–9): B66F9/075 (Advanced/Invention)

International class (IPC 1–7): B66F9/06 B66F9/075

CPC: B66F9/07522

European class: B66F9/075 B66F9/075C4

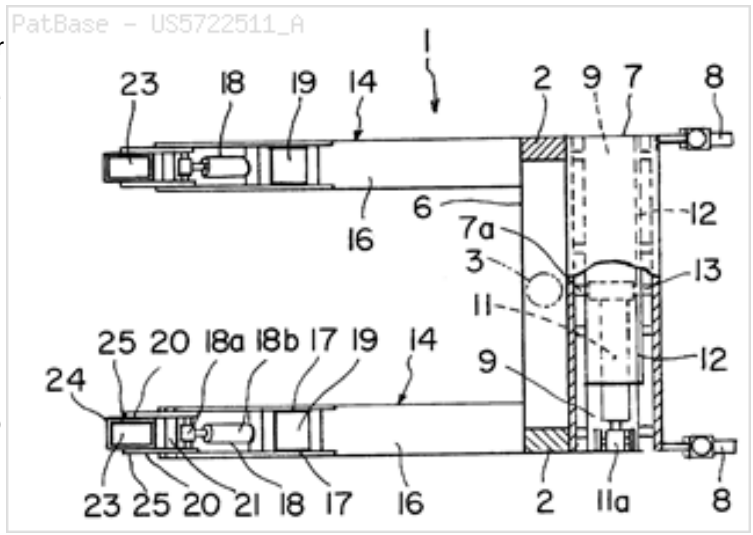
US class: 187/231 187/237

Classification Explorer

Cited documents: US4502568 A,

Forward Citations: US8328236, US7850257, US7665394, US7548797, US7381132, US6379104, US6364601, US6199665, US6021869, US5918703, US2010038180, US2009279994, US2008220840, US2008199292, US2008011553, US2007129144, US2006287051, US2006081674, US2006071046, US2006035698, US2005254934, US2004259631, US2003233168, US2003189288, US2003060261, US2001034263, NL1024919, EP2518005, DE102008034614, CN104608680, CN103058097, CN102815644,

Abstract:
Source: US5722511A A forklift is supported for movement by a pair of elongated wheeled members. The wheeled members are shiftable towards and away from one another to permit the handling of different types of loads. Each of the wheeled members has a rear wheel in the form of a caster as well as two front wheels. The front wheels of a wheeled member can be lowered and raised in such a manner that one of the front wheels is lifted from the ground as the other front wheel is moved down into contact with the ground. A first front wheel of each wheeled member is arranged to roll forwards and backwards while the second front wheel rolls sideways. During the transportation of loads from one location to another, the first front wheels are in contact with the ground. When the wheeled members are to be moved towards or away from one another, the second front wheels are brought into contact with the ground.



0) DE10134528A1 – WHEEL CHAIR HAS TWO FRONT AND TWO BACK WHEELS, ...

101) Family number: 27900783 (DE10134528A1)

© PatBase

Title: Wheel chair has two front and two back wheels, with seat, back rest and arm rests, with crank handles and drive mechanism as later–fitted component

Priority: DE20011034528 20010716

Family:

Publication number	Publication date	Application number	Application date
DE10134528 A1	20030130	DE20011034528	20010716

Probable Assignee: HEYEN JOHANNES

Assignee(s):(std)**:** HEYEN JOHANNES

Inventor(s):(std)**:** HEYEN JOHANNES

International class (IPC 8–9): A61G5/02 (Advanced/Invention); A61G5/00 (Core/Invention)

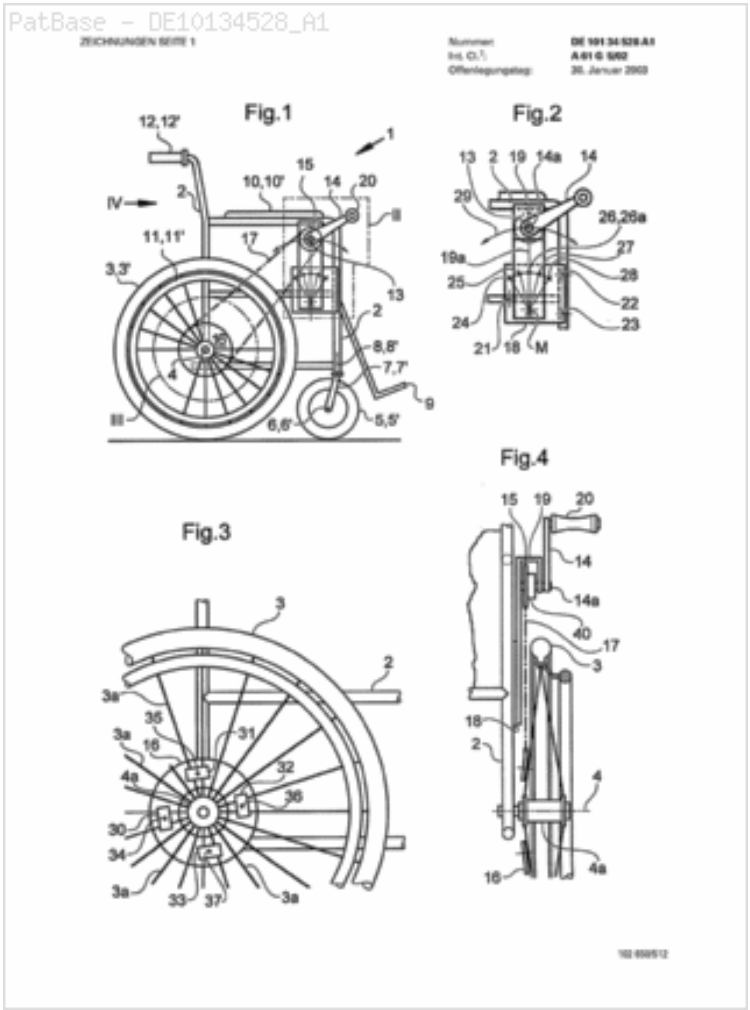
International class (IPC 1–7): A61G5/02

CPC: A61G5/023 A61G5/026

European class: A61G5/02A4 A61G5/02B4

Classification Explorer

Abstract:
Each of the two front wheels is pivot mounted on a vertical axis. Each of the two back wheels is connected to a drive mechanism which has crank handles (14) positioned next to the left and right side–arm in front of the seat. A crank handle grip (20) is fixed to the frame (2) of the wheel–chair for the handicapped. A crank handle and crank–grip. A holder–fitment (18) for a bearing (19) with crank handle and grip is fixed to the frame



0) DE19514912A1 – TROLLEY FOR TRANSPORTATIONAL PURPOSES TRANSPORT...

102) Family number: 12228209 (DE19514912A1) © PatBase

Title: Trolley for transportational purposes

Priority: DE19951014912 19950422

Family:

Publication number	Publication date	Application number	Application date
DE19514912 A1	19961024	DE19951014912	19950422

Probable Assignee: BECKER WALTER

Assignee(s):(std)**:** BECKER WALTER

Assignee(s): BECKER WALTER 36088 HUENFELD DE

Inventor(s):(std)**:** BECKER WALTER

Inventor(s): BECKER WALTER 36088 HUENFELD DE

International class(IPC 8–9)**:** B60P1/64 B60P3/06 B62B3/02 B62B5/00 (Advanced/Invention); B60P1/64 B60P3/06 B62B3/02 B62B5/00 (Core/Invention)

International class(IPC 1–7)**:** B60P3/06 B62B3/02 B62B5/00

CPC: B60P1/003 B60P1/64 B60P3/06 B62B3/027 B62B5/0003

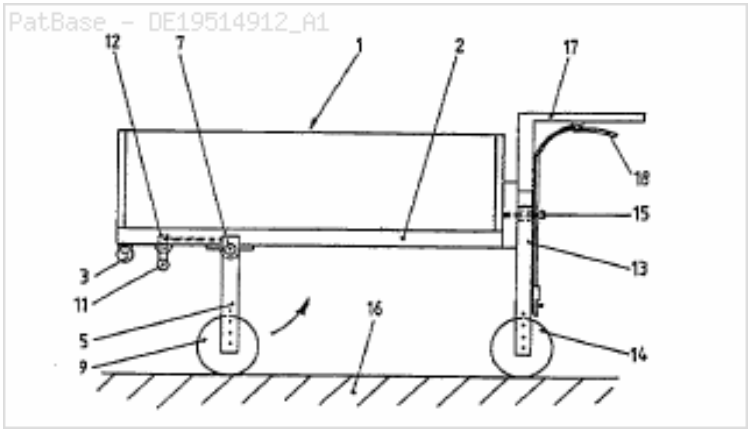
European class: B60P1/00B B60P1/64 B60P3/06 B62B3/02S B62B5/00A

Classification Explorer

Cited documents: EP0311936, DE8700904 U, DE8625262 U, DE3824118, DE2732757, DE2651039, DE2635238,

Forward Citations: WO12175904, WO11046427, WO11046427, US2014140797, NL1037406, FR2807981, FR2789040, EP1026063, EP0855329,

Abstract:
Source: DE19514912A1 The transporting trolley (1) has two rollers (3) below the front narrow site of the body bottom (2). it also has retractable running wheels (9, 14). The front running wheels can be retracted by the wheel carrier (5) so that the trolley can be run onto the loading surface of the vehicle on the rollers and pushed well onto it. There may be a locking lever (11) to secure the wheel carrier, fitted between the roller and the wheel carrier. When the trolley is pushed onto the vehicle loading surface, the lever turns to lock the wheel carriers. There may be two front wheels and wheel carriers, one on each side.



0) GB825716A – IMPROVEMENTS IN VEHICLE SUSPENSION SYSTEMS

103) Family number: 20717368 (GB825716A)

© PatBase

Title: Improvements in vehicle suspension systems

Priority: GB19570010942 19570403

Family:

Publication number	Publication date	Application number	Application date
GB825716 A	19591223	GB19570010942	19570403

Probable Assignee: TROJAN LTD

Assignee(s):(std)**:** JOHN BERTRAM PERRETT ; TROJAN LTD

Assignee(s): TROJAN LIMITED

International class (IPC 8–9): B60G11/06 (Advanced/Invention); B60G11/02 (Core/Invention)

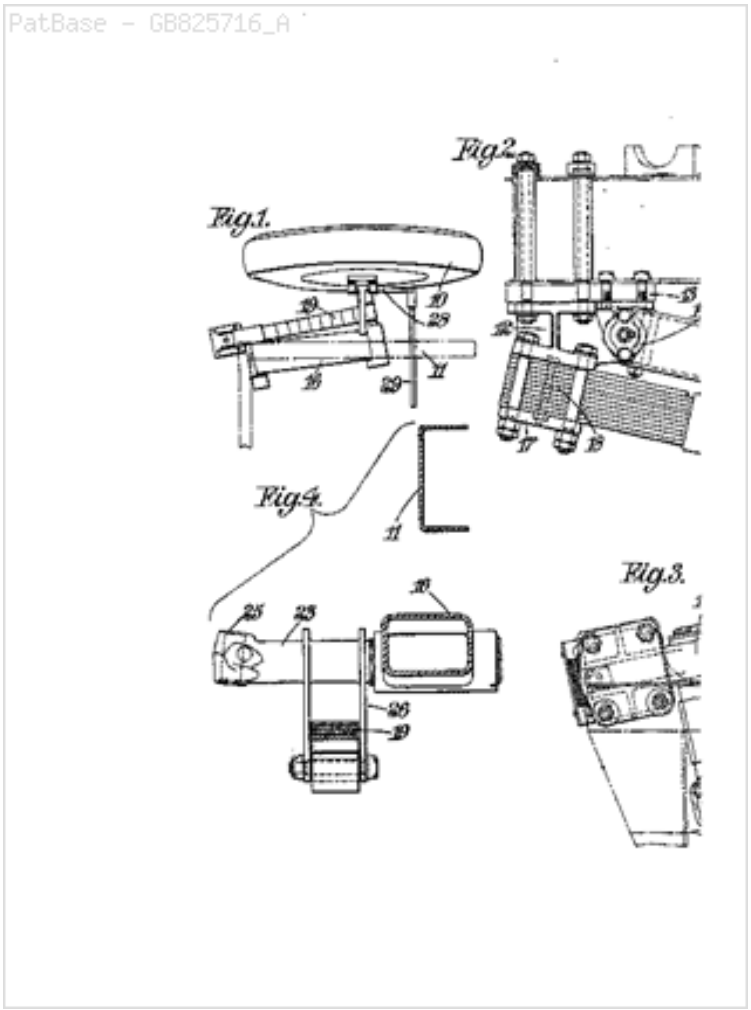
International class (IPC 1–7): B60G11/06 B60G3/14

CPC: B60G11/06 B60G2206/16 B60G2206/162

European class: B60G11/06 L60G206/16 L60G206/162

Classification Explorer

Abstract:
Source: GB825716A 825,716. Road vehicle spring suspensions. TROJAN Ltd., and PERRETT, J. B. March 25, 1958 [April 3, 1957], No. 10942/57. Class 108(2) A steerable road wheel is carried by a king pin mounted in a bearing 25 carried by a pin 22. The latter is pivotally mounted in the outer end of a trailing suspension link 16 and is downwardly forked at 26 to engage the outer end of a quarter elliptic spring 19. Due to the outward inclination of the parallelogram linkage formed by 16 and 19, the small lateral movement which occurs with up– and–down wheel movements, compensates for change in horizontal distance between the track rod pivots



0) WO9003298A1 – IMPROVED THREE–WHEELER FOR TOURIST, SPORTING US...

104) Family number: 17582554 (WO9003298A1) © PatBase

Title: IMPROVED THREE–WHEELER FOR TOURIST, SPORTING USE IN GENERAL

Priority: IT19880009513U 19880921 WO1989EP01066 19890913

Family:

Publication number	Publication date	Application number	Application date
BRPI8907667 A	19910730	BR1989PI07667	19890913
EP0435891 A1	19910710	EP19890910086	19890913
IT218057 U	19920330	IT19880009513U	19880921
IT8809513 U0	19880921	IT19880009513U	19880921
JP4502133 T2	19920416	JP19890509615T	19890913
WO9003298 A1	19900405	WO1989EP01066	19890913

Probable Assignee: MATTINA CARLO

Assignee(s):(std)**:** LAMATTINA CARLO ; MATTINA CARLO

Assignee(s): CARLO LAMATTINA ; LA MATTINA CARLO

Inventor(s):(std)**:** LAMATTINA CARLO

Inventor(s): CARLO LAMATTINA

Designated states: AT BE BR CH DE FR GB IT JP KR LI LU NL SE US

International class (IPC 8–9)**:** B62D61/06 B62D61/08 B62K5/04 (Advanced/Invention); B62D61/00 B62K5/00 (Core/Invention)

International class (IPC 1–7)**:** B62D61/06 B62D61/08 B62K5/04

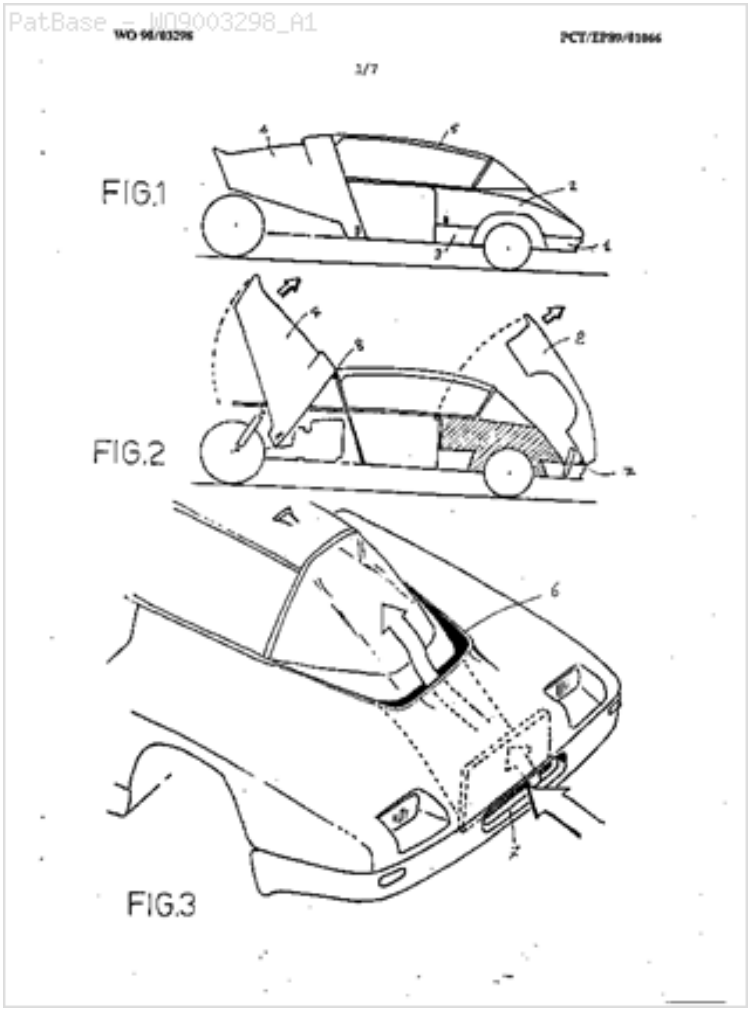
CPC: B62D61/065

Classification Explorer

Cited documents: WO8702951 A1, US4506755 A, GB728401 A, FR2569647 A1, EP0124372 A2, DE645399 A,

Forward Citations: US5343973,

Abstract:
Three−wheeler having two front wheels acting as directional wheels, and one rear wheel acting as the driving wheel, endowed with a considerably high transversal and longitudinal stability thanks to the particular ratio between its values of wheel base and track, to the arrangement of its seats, and to its rear suspension, the vehicle being equipped with reverse gear installed on one of its front wheels.



0) EP2213561A1 – FRONT SUSPENSION AND STEERING SYSTEM FOR CYCLES...

105) Family number: 46416422 (EP2213561A1)

© PatBase

Title: FRONT SUSPENSION AND STEERING SYSTEM FOR CYCLES

Priority: EP20090001332 20090130

Family:

Publication number	Publication date	Application number	Application date
EP2213561 A1	20100804	EP20090001332	20090130

Probable Assignee: WANG LI YANG

Assignee(s):(std)**:** WANG LI YANG

Inventor(s):(std)**:** WANG LI YANG

Agent(s): TER MEER STEINMEISTER AND PARTNER GBR

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK TR

International class (IPC 8–9): B62D9/02 B62K5/00 B62K5/027 B62K5/04 B62K5/05 (Advanced/Invention); B62K5/00 (Advanced/Non–invention)

CPC: B62K5/027 B62K5/05 B62K5/10 B62K2005/001

European class: B62K5/027 B62K5/05 B62K5/10 L62K5/00B

Classification Explorer

Cited documents: US6435522 BA, US5116069 A, US4375293 A, JP2005119450 A2, JP2004237761 A2, GB2038736 A1, FR2918634 A1, DE29701408 U1,

Forward Citations: US9283989, US9248857, US9145168, US9090281, US9045015, KR101270567,

Abstract:
Source: EP2213561A1 The present invention offers a front suspension and steering system for cycles and motorcycles. A mainframe (116) with two front wheels (102,104) and one rear wheel (108), the front wheels (102,104) have flat surface tires, a 2–axial hub, having a wheel axle (110) to support the two front wheels (102,104) and a tilting axis (204) below the wheel axle (110), a steering arm, having a tilting axle, the tilting axle can rotate in the tilting axis (204) when the steering arm is tilting, the steering arm is connected to the mainframe by two wish bones (118) and can rotate in the steering axis. During turning, the body and the rear wheel (108) are tilting to the side of turning to keep the center of gravity on the side of turning to balance the centrifugal force, but the front wheels (102,104) and the 2–axial hub do not tilt, such that it is more stable and safe during turning.

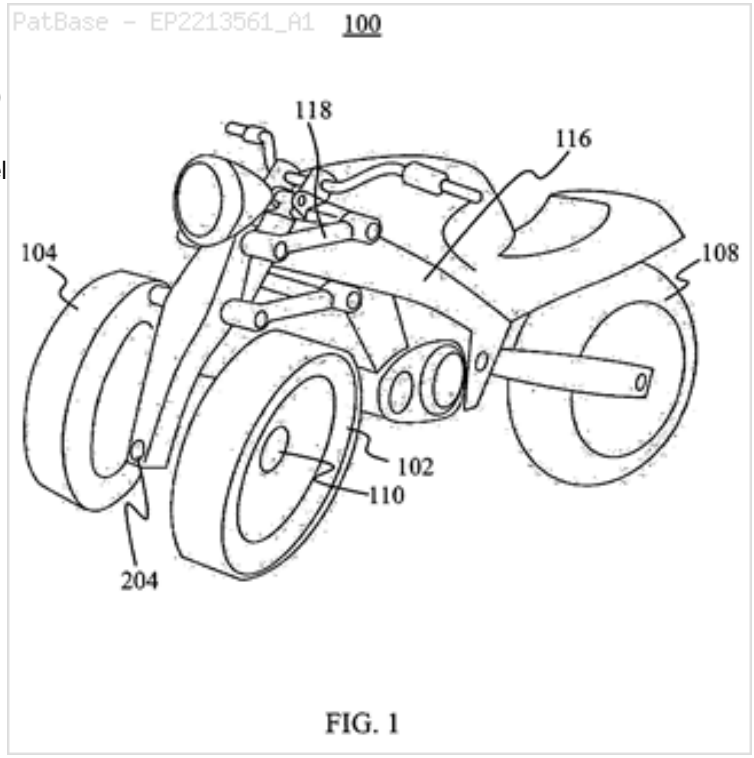


FIG. 1

0) FR1318950A – MACHINE AUTOMOBILE POUR LA POSE DE BANDES PLAST...

106) Family number: 23052640 (FR1318950A)

© PatBase

Title: MACHINE AUTOMOBILE POUR LA POSE DE BANDES PLASTIQUES SUR DES CHAUSSEES ET PLACES POUR LA SIGNALISATION ET LA DELIMITATION DES VOIES DE TRAFIC, PASSAGES POUR PIETONS, PLACES DE STATIONNEMENT AUTOMOTIVE MACHINE FOR LAYING PLASTIC STRIPS ON ROADS AND PLACES FOR SIGNING AND DEFINITION OF WAY TRAFFIC PEDESTRIAN CROSSINGS, PARKING (Machine translation)

Priority: FR19621319672 19620321

Family:

Publication number	Publication date	Application number	Application date
FR1318950 A	19630222	FR19621319672	19620321

Inventor(s):(std)**:** FILIPPINI ANDRE

International class (IPC 8–9): E01C23/24 (Advanced/Invention); E01C23/00 (Core/Invention)

International class (IPC 1–7): E01C23/16

CPC: E01C23/24

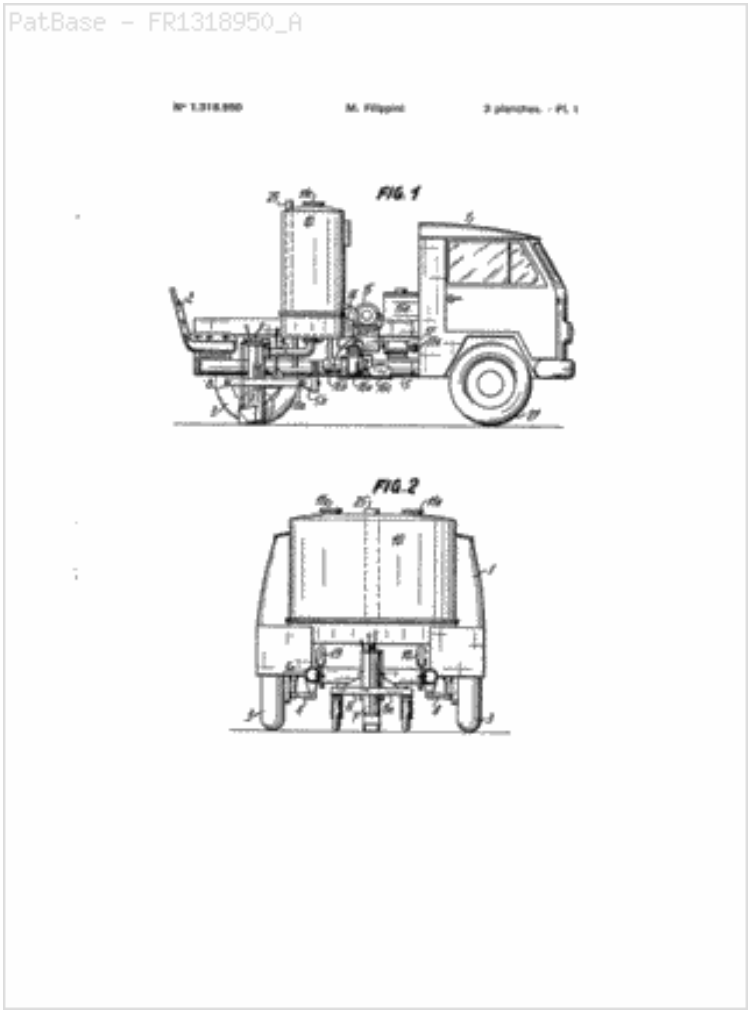
European class: E01C23/24

Classification Explorer

Forward Citations: DE2141961,

Abstract:
Source: FR1318950A (Claim 1) 1. Vehicule routier comportant sur sa plate– forme une chaudiere assurant la fusion des materiaux plastiques avec une tuyere a hauteur reglable reliee a la chaudiere par conduit flexible et placee dans l'axe des roues directrices avec dispositif rechauffeur;

Machine translation: (Claim 1) 1. Road vehicle having on its platform a boiler ensuring the fusion of plastic materials with a nozzle with adjustable height CONNECTED TO the boiler by flexible conduit and placed in the axis of the wheel steering system with preheater;



0) FR1378528A – APPAREIL POUR INCLINER UN VEHICULE AUTOMOBILE ...

107) Family number: 21055130 (FR1378528A)

© PatBase

Title: APPAREIL POUR INCLINER UN VEHICULE AUTOMOBILE APPARATUS FOR TILT MOTOR VEHICLE (Machine translation)

Priority: FR19630958138 19631223

Family:

Publication number	Publication date	Application number	Application date
FR1378528 A	19641113	FR19630958138	19631223

Inventor(s):(std): NIELSEN ERIK HAUBERG

International class (IPC 8–9): B66F7/22 (Advanced/Invention); B66F7/00 (Core/Invention)

International class (IPC 1–7): B66F7/22

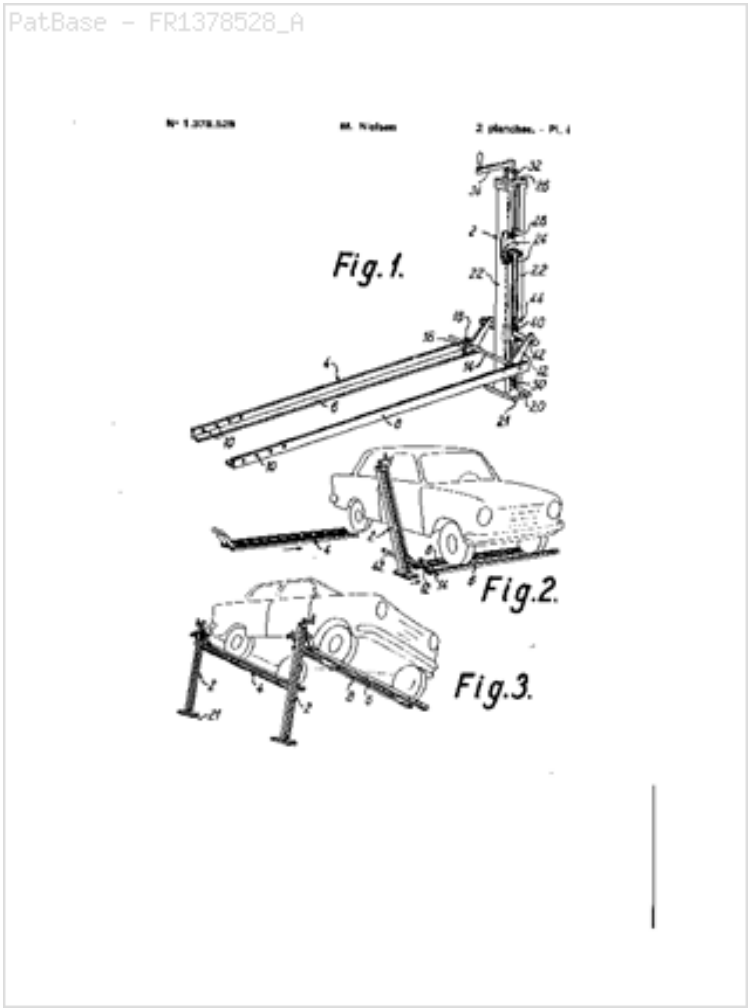
CPC: B66F7/22

European class: B66F7/22

Classification Explorer

Abstract:
Source: FR1378528A (Claim 1) 1 Appareil utilisable:pour incliner un vehicule automobile et comprenant un element de support destine a etre place sous le cote du vehicule a soulever et un element de levage, caracterise en ce que l'element de support affecte la forme d'une membrure allongee etudiee a une extremite en vue de son engagement avec l'element de support et a son autre extremite de maniere a prendre appui contre le sol ou contre une autre surface de sup port.

Machine translation: (Claim 1) 1 Apparatus for use: to tilt a motor vehicle, comprising a support element adapted to be placed under the side of a vehicle lift and a lifting element, characterized in that the support element affects the form of an elongated frame studied at one end for engagement with the support element and has its other end so as to bear against the ground or against another surface of sup port.



0) US2014091551A – BICYCLE CONVERSION KIT AND TRICYCLE APPARATUS

108) Family number: 56138702 (US2014091551A) © PatBase

Title: BICYCLE CONVERSION KIT AND TRICYCLE APPARATUS

Priority: US20120709336P 20121003 US20130044216 20131002

Family:

Publication number	Publication date	Application number	Application date
US2014091551 AA	20140403	US20130044216	20131002
US9114844 BB	20150825	US20130044216	20131002

Probable Assignee: HAULER CYCLES LLC

Assignee(s):(std)**:** HAULER CYCLES LLC

Inventor(s):(std)**:** WALTER CHRISTOPHER J

Agent(s): PRICE HENEVELD LLP

International class (IPC 8–9)**:** B62K13/04 B62K5/05 B62K5/08 B62K7/04 (Advanced/Invention)

CPC: B62K5/08 B62K13/04 B62K5/05 B62K7/04 B62K2710/12 Y10T29/49716

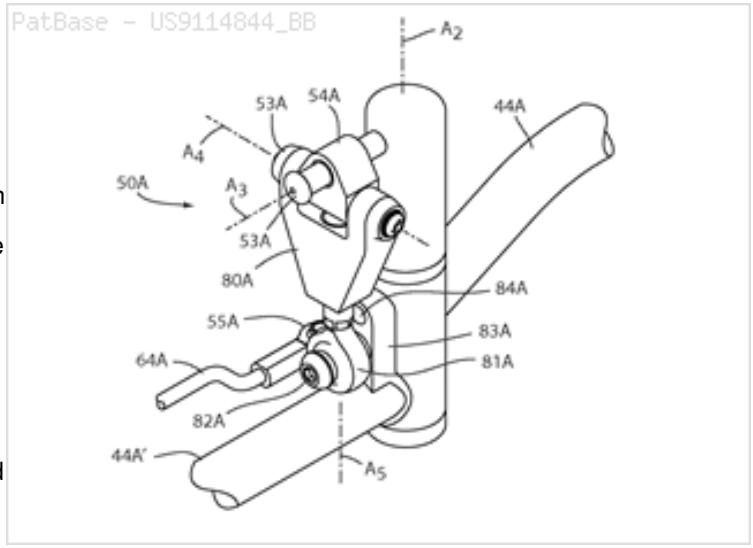
US class: 1/1 280/267 280/279 29/401.1

Classification Explorer

Cited documents: WO08043870, USD576903 S1, USD549074 S1, USD485788 S1, USD449018 S1, USD419123 S1, USD397965 S1, USD396835 S1, USD353963 S1, USD345534 S1, USD332768 S1, USD331902 S1, USD316389 S1, USD315888 S1, USD315328 S1, USD305628 S1, USD291506 S1, USD289630 S1, USD280336 S1, USD263293 S1, US8066295 BA, US8061465 BB, US8028777 BB, US7970530 BB, US7958956 BB, US7909340 BB, US7896207 BA, US7850180 BB, US7739030 BB, US7731213 BB, US7731210 BB, US7722063 BB, US7708291 BA, US7669868 BB, US7591337 BB, US7571787 BB, US7552790 BB, US7543829 BA, US7530419 BB, US7347596 BB, US7273221 BB, US7264251 BB, US7174852 BB, US7172045 BB, US7152868 BA, US7144029 BA, US7137671 BB, US7073806 BB, US6994368 BB, US6981749 BB, US6976690 BB, US6953203 BB, US6948581 BB, US6929080 BB, US6883629 BB, US6763740 BA, US6736618 BB, US6708582 BA, US6663122 BA, US6543564 BA, US6506026 BB, US6491316 BA, US6464030 BA, US6446922 BB, US6398248 BA, US6382485 BA, US6378882 BA, US6367824 BA, US6328268 BA, US6036069 A, US6029874 A, US5961015 A, US5881606 A, US5762351 A, US5641108 A, US5618052 A, US5564726 A, US5513865 A, US5482304 A, US5431243 A, US5330214 A, US5319994 A, US5292143 A, US5265496 A, US5248011 A, US5236060 A, US5232235 A, US5228606 A, US5226340 A, US5199619 A, US5169166 A, US5156031 A, US5141067 A, US5112071 A, US5102153 A, US5025977 A, US4976348 A, US4953425 A, US4944360 A, US4919225 A, US4910053 A, US4909538 A, US4909522 A, US4903975 A, US4903857 A, US4840298 A, US4794815 A, US4715681 A, US4697663 A, US4688749 A, US4671438 A, US4662468 A, US4648694 A, US4629104 A, US4624469 A, US4613129 A, US4600216 A, US4546997 A, US4527811 A, US4484648 A, US4461365 A, US4458556 A, US4437535 A, US4423795 A, US4360224 A, US4351410 A, US4336964 A, US4313517 A, US4301951 A, US4285674 A, US4262829 A, US4258870 A, US4191393 A, US4174120 A, US4088199 A, US4045049 A, US4037924 A, US4020914 A, US3960027 A, US3955730 A, US3955729 A, US2012320943 AA, US2007278763 AA, US2006273544 AA, US2006097476 AA, EP2077223,

Forward Citations: USD746177, US9510983, US9067632, US2017043805, US2016200388, US2015329165, US2014224556, CN104973183,

Abstract:
Source: US2014091551A An apparatus is provided for bicycles to make them more utilitarian and functional. The attachment is easily attached, and potentially attached without damage or significant modification to the bicycle. The apparatus includes a frame member attached to the bottom bracket portion of the existing bicycle, and a gimbal attached to the fork of the existing bicycle in place of the original front tire. The apparatus is steerable using the handle bars and fork on the existing bicycle frame, and is configured for stability when cornering. The apparatus includes a cargo carrier located in front of the cycler where it is easy to see, while maintaining a stable center of gravity and also an ability to lean into corners for cornering stability. Variations include one or two front wheels, and one or two steering drive links. Also, the apparatus is a flexible design providing multiple potential utilitarian uses.



0) DE29915969U1 – MOTOR VEHICLE WITH TWO PASSENGER SEATS, WHICH A...

109) Family number: 17001557 (DE29915969U1) © PatBase

Title: Motor vehicle with two passenger seats, which are tiltable connected with one another

Priority: DE19992015969U 19990910

Family:

Publication number	Publication date	Application number	Application date
DE29915969 U1	19991209	DE19992015969U	19990910

Probable Assignee: TEH LIN PROSTHETIC AND ORTHOPAED

Assignee(s):(std)**:** TEH LIN PROSTHETIC AND ORTHOPAED

Assignee(s): TEH LIN PROSTHETIC AND ORTHOPAEDIC INC TAIPEH T AI ; TEH LIN PROSTHETIC AND ORTHOPAEDIC INC TAIPEH T AIPEI

International class (IPC 8–9): B62D63/02 (Advanced/Invention); B62D63/00 (Core/Invention)

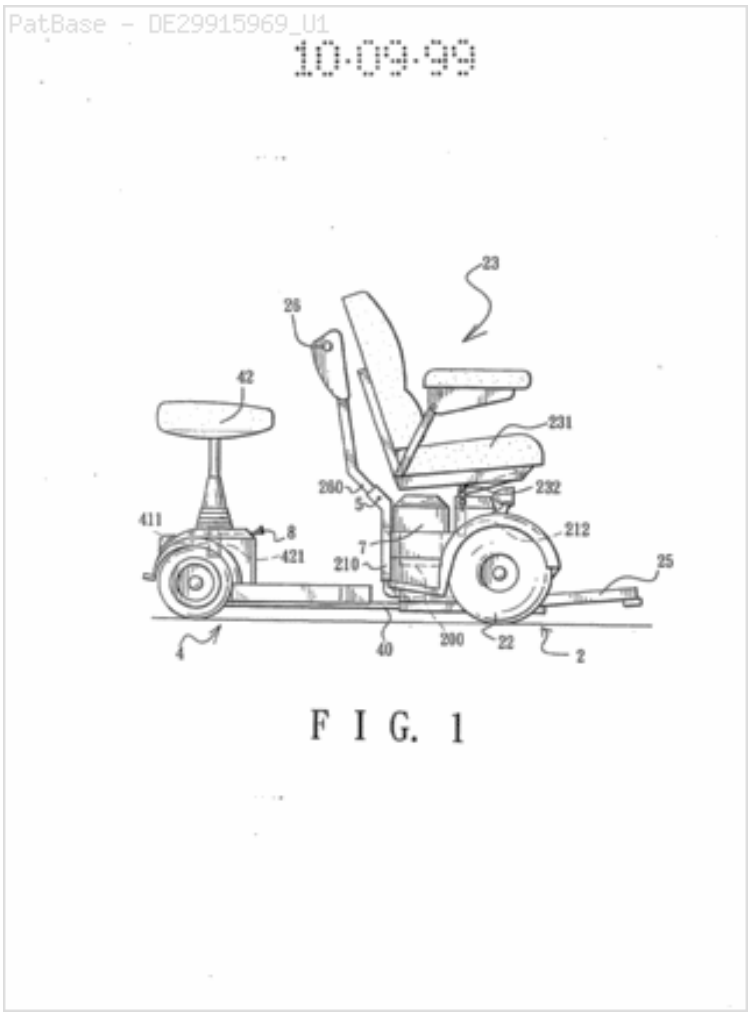
International class (IPC 1–7): B62D63/02

CPC: B62D63/02

European class: B62D63/02

Classification Explorer

Abstract:
Source: DE29915969U1 (Claim 1) 1. Ein Motorfahrzeug, aufweisend:eine vordere Sitzeinheit (2), welche ein vorderes Sitzelement (23), zwei vordere Raeder (22), welche an einem unteren Endabschnitt des vorderen Sitzelements (23) gelagert sind, einen Griff (26), der an dem vorderen Sitzelement (23) befestigt ist und dahinter angeordnet ist, und einen Energieversorgungsaufnahmeraum (200) aufweist, der in der vorderen Sitzeinheit (2) ausgebildet ist und der geeignet ist, um eine Energieversorgung (7) darin zu plazieren;einen vertikalen Schwenkzapfen (3); undeine hintere Sitzeinheit (4), die drehbar und abnehmbar mit einem hinteren Endabschnitt der vorderen Sitzeinheit (2) an einem vorderen Endabschnitt davon durch den vertikalen Schwenkzapfen (3) verbunden ist, wobei die hintere Sitzeinheit (4) ein hinteres Sitzelement (42) umfasst und zwei hintere Raeder, die an einem unteren Endabschnitt des hinteren Sitzelements (42) gelagert sind, wobei der vertikale Schwenkzapfen (3) abnehmbar auf den vorderen und hinteren Sitzeinheiten (2, 4) angebracht ist, derart, dass das Entfernen des vertikalen Schwenkzapfens (3) von den vorderen und hinteren Sitzeinheiten (2, 4) das Trennen der vorderen und hinteren Sitzeinheiten (2, 4) ermoeglicht.



F I G. 1

Machine translation: (Claim 1) 1 A motor vehicle, comprising: a front seat unit (2), which a front seat element (23), two front wheels (22), which on a lower end portion of the front seat element (23) are mounted in a handle (26), where front seat element (23) is fixed and is located behind it, and a power supply receptacle (200) which is formed in the front seat unit (2) and is suitable for a power supply (7) to place in it, a vertical pivot pins (3), anda rear seat unit (4),

which is rotatable and removable with a rear end portion of the front seat unit (2) at a front end portion thereof by the vertical pivot pins (3) connected with the rear seat unit (4) a rear seat element (42) and includes two rear wheels which are mounted on a lower end portion of the rear seat element (42), wherein the vertical pivot pin (3) detachably mounted on the front and rear seat units (2, 4), such that removal of the vertical pivot pin (3) from the front and rear seat units (2, 4) separating the front and rear seat units (2, 4) enables.

0) DE1630289A1 – KRAFTFAHRZEUG MIT EINEM VORNUEBER KIPPBAREN FAH...

110) Family number: 447445 (DE1630289A1)

© PatBase

Title: KRAFTFAHRZEUG MIT EINEM VORNUEBER KIPPBAREN FAHRERHAUS MOTOR VEHICLE WITH A FRONT ON TILTING CAB (Machine translation)

Priority: DE1967D053144 19670523

Family:

Publication number	Publication date	Application number	Application date
DE1630289 A1	19710616	DE19671630289	19670523

Probable Assignee: DAIMLER BENZ AG

Assignee(s):(std)**:** DAIMLER BENZ AG

Inventor(s):(std)**:** BUCHARD PETER DIPL ING

International class (IPC 8–9): B62D33/067 (Advanced/Invention); B62D33/06 (Core/Invention)

International class (IPC 1–7): B60R3/02

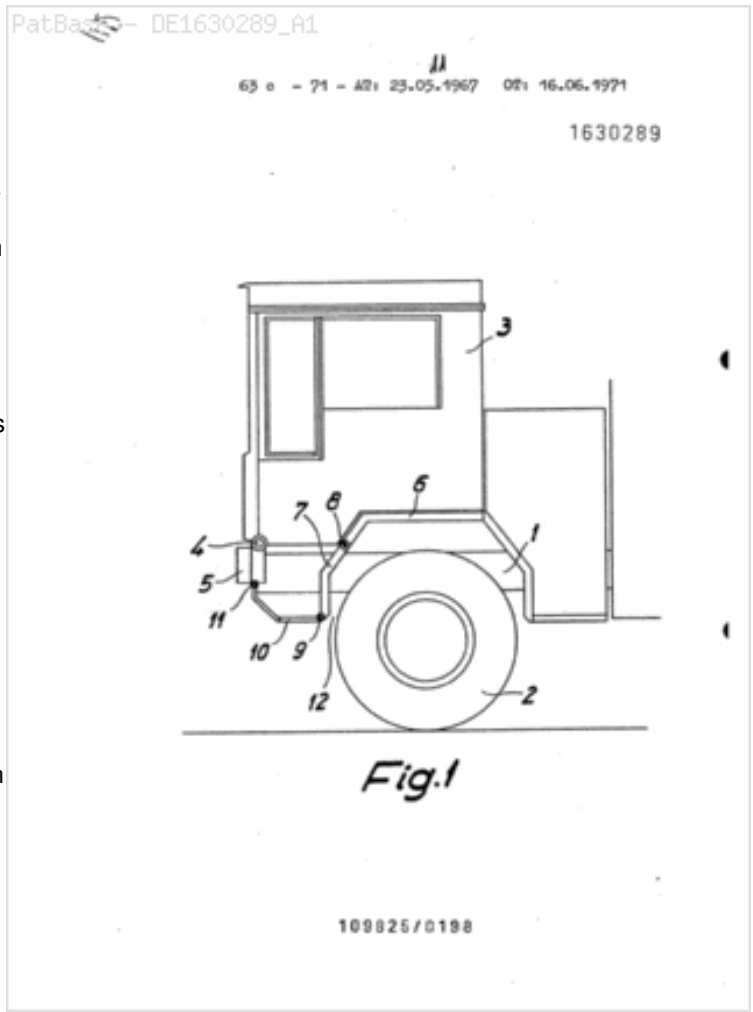
CPC: B62D33/067

European class: B62D33/067

Classification Explorer

Abstract:
Source: DE1630289A1 (Claim 1) 1. Kraftfahrzeug mit einem auf seinem Fahrzeugrahmen und zugleich oberhalb der Vorderraeder nach vorn ueber– kippbar angeordneten, vordere KotflUgelteile bildenden Frontlenker–Fahrerhaus und mit einem Aufstiegtritt inindes– tens vor einem der beiden Vorderraeder, dadurch gekenn zeichnet, daue der Aufstiegtritt (10) mit seinem vorderen Znde (Gelenkbolzen 11) am Fahrzeugrahmen (1) an einer unter der Anlenkstelle (Schwenkachse 4) des Fahrerhauses (3) gelegenen Stelle und mit seinem hinteren Ende am vorderen unteren Ende (Endteil 7) des benachbarten 1?–ot–fluegels (6) angelenkt und der vom Fahrerhaus (3) nach vorn unten ragende Endteil (7) des Kotfluegels mit dem)Fahrerhaus (3) gelenkig verbunden ist.

Machine translation: (Claim 1) 1 Motor vehicle with one on his vehicle frame and also above the front wheels forward about–tilt mounted, front KotflUgelteile fine cab–cab and a rise occurs inindes least before one of the two front wheels, characterized in Daue the rise occurs (10) with its front Znde (hinge pin 11) on the vehicle frame (1) at a below the point of articulation (swivel axis 4) of the cab (3) convenient location and with its rear end on the front lower end (end portion 7) of the adjacent one?–ot–wing (6) articulated and which the driver's cabin (3) forward downwardly extending end portion (7) of the fender with that) cabin (3) articulated.



0) ES1086231Y – DISPOSITIVO DE DOBLE APOYO CON INMOVILIZADOR PA...

111) Family number: 54398317 (ES1086231Y) © PatBase

Title: DISPOSITIVO DE DOBLE APOYO CON INMOVILIZADOR PARA VEHICULOS

Priority: ES20130030839U 20130703

Family:

Publication number	Publication date	Application number	Application date
ES1086231 UA	20130730	ES20130030839U	20130703
ES1086231 Y1	20131025	ES20130030839U	20130703

Probable Assignee: GESTION TECNICA DE CANTERAS S L

Assignee(s):(std)**:** GESTION TECNICA DE CANTERAS S L

Assignee(s): GESTION TECNICA DE CANTERAS SL

Inventor(s):(std)**:** MORA AVILA ANTONIO

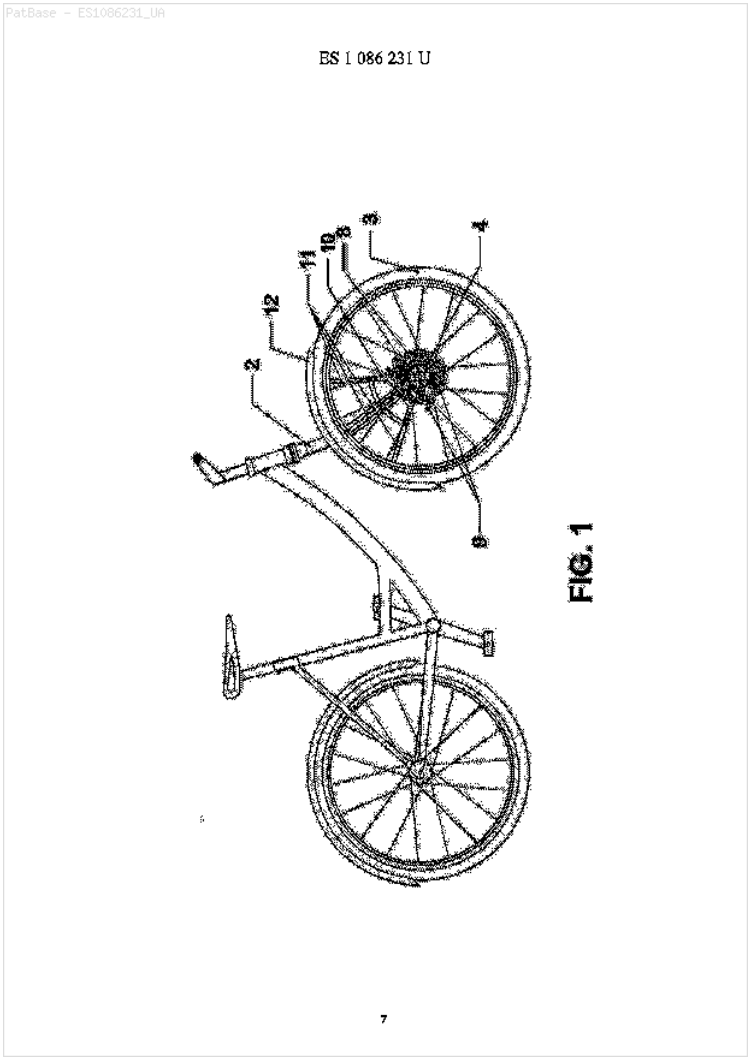
Inventor(s): ANTONIO MORA AVILA

Agent(s): SEGURA MERCEDES

International class (IPC 8–9): B62K5/08 (Advanced/Invention)

Classification Explorer

Abstract:
Source: ES1086231U 1. Dispositivo de doble apoyo con inmovilizador para vehiculos, previsto principalmente para su aplicacion en bicicletas convencionales, transformando la bici en una bicicleta de dos ruedas delanteras y una rueda trasera, que comprende un eje superior para montaje del correspondiente manillar de la bicicleta adaptandose este al tipo de bicicleta que se desee en funcion del buje de direccion de la bicicleta, incluyendo ademas parejas de bielas asociadas a balancines para permitir la inclinacion de las ruedas delanteras con limitacion de dicha inclinacion por superposicion de las propias bielas, caracterizado porque las dos ruedas delanteras de la bicicleta son del mismo diametro y su montaje se realiza a traves de sendos ejes emergentes de ejes con brida previstos en los extremos de los propios balancines, yendo estos a su vez montados con caracter basculante sobre respectivos ejes de rodamientos y estando soportados por las bielas fijadas y articuladas a la parte inferior del eje central. 2. Dispositivo de doble apoyo con inmovilizador para vehiculos, segun reivindicacion 1, caracterizado porque incorpora un disco de freno, que se proyecta desde la parte frontal de uno de los balancines, y cuyo disco de freno va montado sobre un soporte previsto en una de las bielas, estando dicho disco de freno montado en combinacion con una pinza de freno central que hace posible la detencion de la articulacion central mediante maneta situada en el manillar y cable de union entre ambos. 3. Dispositivo de doble apoyo con inmovilizador para vehiculos, segun reivindicaciones anteriores, caracterizado porque las ruedas delanteras estan provistas de un sistema de frenado mediante pinza hidraulica, incorporando en una zona intermedia, entre maneta o palanca de actuacion y las pinzas,



un distribuidor para reparto de fluidos para cada rueda. 4. Dispositivo de doble apoyo con inmovilizador para vehiculos, segun reivindicaciones anteriores, caracterizado porque incorpora soportes para guardabarros relacionado con los balancines. 5. Dispositivo de doble apoyo con inmovilizador para vehiculos, segun reivindicacion 1, caracterizado porque el eje superior de montaje del manillar y fijado sobre el eje central inferior, es desmontable e intercambiable. 1. Double support device for vehicle immobilizer, intended primarily for application in conventional bicycles, turning the bike on a bike two front wheels and one rear wheel, comprising an upper shaft for mounting the bicycle handlebar adapting this to the type bike you want in function steering hub bicycle, including rods also associated with pairs of rocker to allow the inclination of the front wheels that tilt limitation by superposition of their own rods, wherein the two front wheels the bicycle are the same diameter and their assembly is carried out through respective shafts emerging flanged shafts provided at the ends of rocker arms themselves, moving these in turn pivotally mounted on respective shafts being supported by bearings and rods fixed and hinged to the bottom of the central axis. Two. Double support device for vehicle immobilizer according to claim 1, wherein it incorporates a brake disc, which projects from the front of one of the rockers, whose brake disc is mounted on a holder provided on one of the rods, said brake disk mounted in combination with a central brake caliper enables the joint detention center by lever located on the handlebars and cable junction between the two. Three. Double support device for vehicle immobilizer, according to previous claims, characterized in that the front wheels are equipped with a braking system with hydraulic clamp, incorporating an intermediate zone between handle or lever acting and tongs, a distributor for sharing fluid for each wheel. April. Double support device for vehicle immobilizer, according to previous claims, characterized in that it incorporates related fender mounts the rocker. May. Double support device for vehicle immobilizer according to claim 1, wherein the upper shaft of the handle assembly and fixed on the central shaft bottom is removable and interchangeable.

0) CN201384853Y – WHIRLING TOY VEHICLE

112) Family number: 44293262 (CN201384853Y) © PatBase

Title: Whirling toy vehicle

Priority: CN200920008019U 20090327

Family:

Publication number	Publication date	Application number	Application date
CN201384853 Y	20100120	CN200920008019U	20090327

Probable Assignee: JINFANG WANG

Assignee(s):(std)**:** JINFANG WANG

Assignee(s): WANG JINFANG

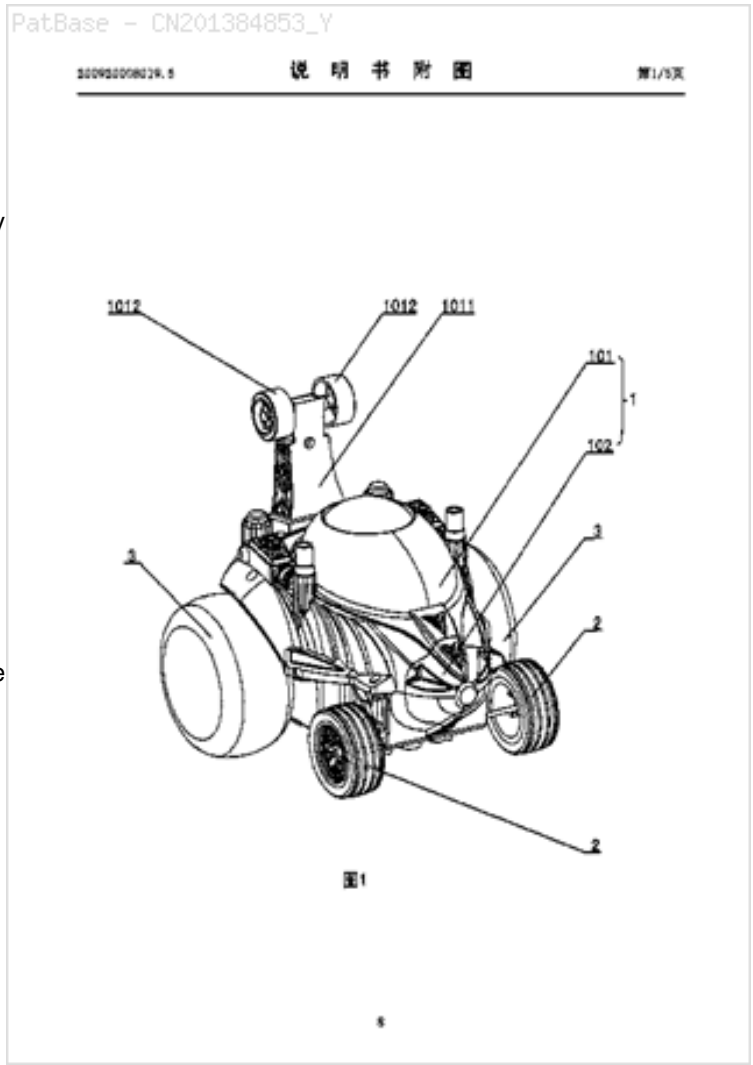
Inventor(s):(std)**:** JINFANG WANG

Inventor(s): WANG JINFANG

International class (IPC 8–9): A63H17/00 A63H17/26 A63H17/267 A63H17/32 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN201384853Y The utility model relates to a whirling toy vehicle, which comprises a vehicle body, two back wheels of the same size and two front wheels of the same size, and is characterized by also comprising two back–wheel driving mechanisms which are respectively connected with the two back wheels, and the vehicle body comprises a front vehicle body and a back vehicle body; the weight of the back vehicle body is larger than that of the front vehicle body, and the size of the back vehicle body is larger than that of the front vehicle body; and the radius of the back wheel is larger than the front wheel. Compared with the prior art, the utility model has the advantages that: the center of gravity of the whirling toy vehicle tends towards the back part, and the two back–wheel driving mechanisms are adopted to respectively drive the two back wheels, so the whirling toy vehicle starts to make whirling movement when one back wheel fast rotates or the two back wheels rotate in reverse direction, and when the speed of the back wheels is fast enough, the front vehicle body tilts, so that the whirling toy vehicle whirls more stably.



0) DE1703062A1 – UEBER 2 RAEDER IN SCHRAEGLAGE SEITLICH AUFKIPPB...

113) Family number: 510792 (DE1703062A1) © PatBase

Title:	UEBER 2 RAEDER IN SCHRAEGLAGE SEITLICH AUFKIPPBARES LENKFAHRSPIELZEUG ON 2 WHEELS IN SIDE Schraeglage AUFKIPPBARES GUIDED DRIVING TOY (Machine translation)
Priority:	DE19681703062 19680327

Family:

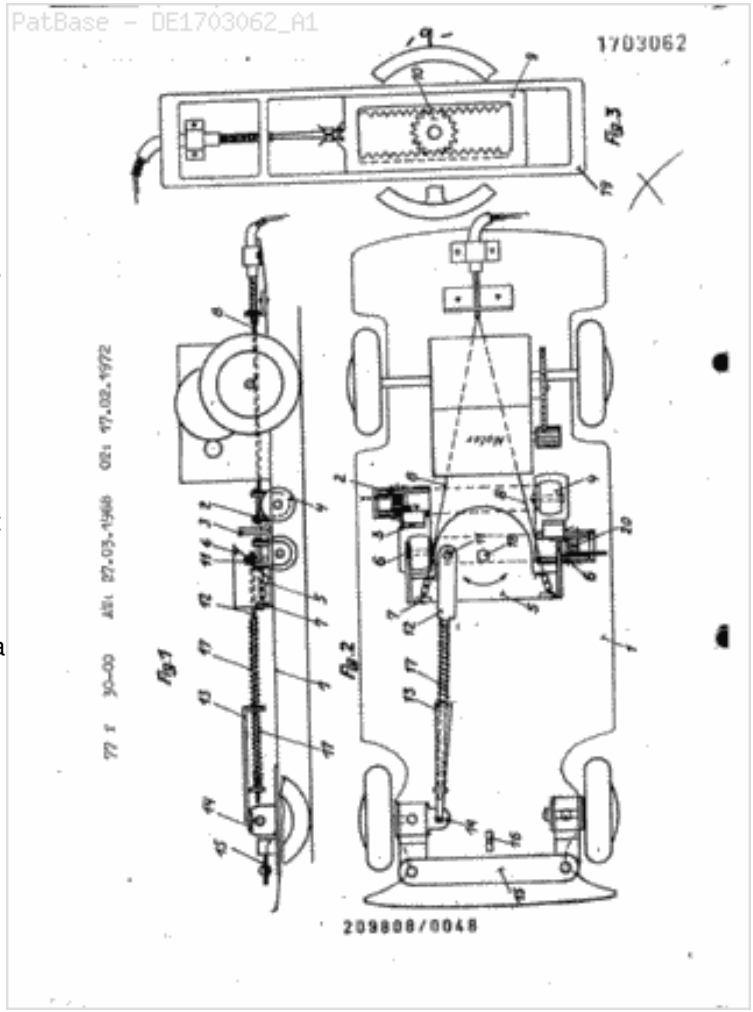
Publication number	Publication date	Application number	Application date
DE1703062 A1	19720217	DE19681703062	19680327

Probable Assignee:	MANGOLD GAMA FAB
Assignee(s):(std):	MANGOLD GAMA FAB
Assignee(s):	GAMA GEORG ADAM MANGOLD FABRIK MECHANISCHER PATENTSPIELWAREN
Inventor(s):(std):	FUCHS KARL
International class (IPC 8–9):	A63H30/00 (Advanced/Invention); A63H30/00 (Core/Invention)
International class (IPC 1–7):	A63H30/00
CPC:	A63H30/00
European class:	A63H30/00

Classification Explorer

Abstract:
Source: DE1703062A1 (Claim 1) 1.) In Schraeglage ueber zwei Raeder seitlich aufkippbares Lenkfahr− apielzeug dadurch gekennzeichnet, dass an der Fahrzeug−Unterseite zwei gegeneinander und gegenueberliegend gelenkig befestigte Stuetzhebel angebracht sind, die durch Betaetigung eines Handsteuer griffes mit Bowdenzug ueber Druckelemente die auf die Stuetzhebel einwirken 1die Schwenkung eines Stuetzhebels um seine gelenkige Lagerung erfolgt und damit das Lenkfahrspielzeug seitlich auf.. gekippt ueber zwei Raeder in Schraeglage gebracht wird und in dieser Stellung sich je nach Betaetigung der Handstenereinrichtung weiter bewegt.

Machine translation: (Claim 1) 1) In Schraeglage two wheels side aufkippbares steering driving apielzeug characterized in that at the vehicle bottom two against each other and opposing pivotally mounted Stuetzhebel are affixed, by operating a manual control handle with Bowden about printing elements on the 1The Stuetzhebel act done by slewing a Stuetzhebels articulated his store and hence the steering toy vehicle on the side.. two wheels tilted Schraeglage is brought in and in this position moves according to the Actuation Handstenereinrichtung further.



0) TW201641333A – STEERING TILTING MECHANISM USED FOR TWO FRONT W...

114) Family number: 64260635 (TW201641333A)

© PatBase

Title: STEERING TILTING MECHANISM USED FOR TWO FRONT WHEELS VEHICLE

Priority: TW20150116721 20150525

Family:

Publication number	Publication date	Application number	Application date
TW201641333 A	20161201	TW20150116721	20150525
TWI571401 B	20170221	TW20150116721	20150525

Probable Assignee: AEON MOTOR CO LTD

Assignee(s):(std)**:** AEON MOTOR CO LTD

Assignee(s): WANG JIA TENG POWER TECHNOLOGY CO LTD ; AEON MOTOR CO

Inventor(s):(std)**:** SU PIN RUI

International class (IPC 8–9): B62D1/16 (Advanced/Invention)

Classification Explorer

Cited documents: TWM466857, TWM441617, TW201210882,

Abstract:
Source: TW201641333A The present invention discloses a steering tilting mechanism used for a two front wheels vehicle, which comprises a tilting mechanism and a steering mechanism provided on the tilting mechanism, the tilting mechanism comprising a steering sleeve, an upper coupling element, two linkage rods and two lower coupling elements pivotally connected with the steering sleeve and the linkage rod group through a plurality of lower pivot joints. The steering sleeve, the upper coupling element and the two linkage rods are pivoted through a plurality of upper pivot joints, the respective lower pivot joints of the lower coupling elements are all outwardly offset with respect to the steering sleeve while maintaining the respective pivot points of the upper and lower coupling elements in balance. Because the width of the upper coupling element is smaller than the total width of the two lower coupling elements, it is only necessary to change the position of the pivotal points of the lower coupling elements to increase the balance of the vehicle body by increasing the wheel pitch of the two front wheels vehicle without changing the frame miniaturization mechanism.

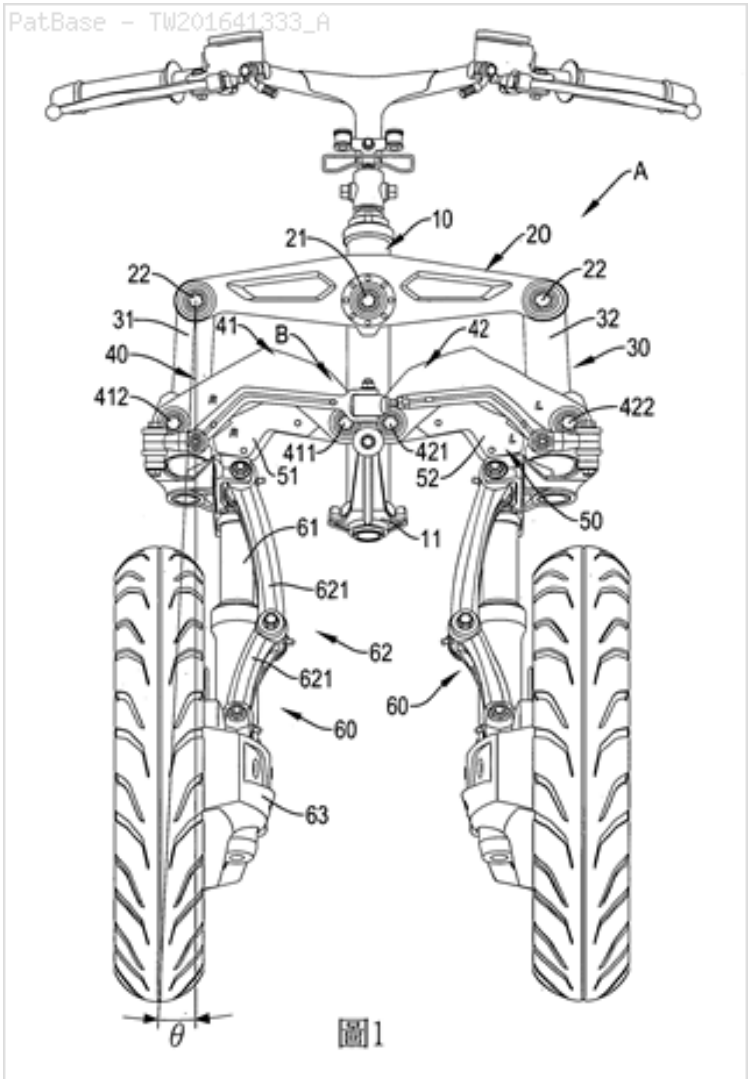


圖 1

0) US3183016A – SUSPENSION DEVICE FOR THE CHASSIS OF A VEHICLE ...

115) Family number: 22731289 (US3183016A) © PatBase

Title:	SUSPENSION DEVICE FOR THE CHASSIS OF A VEHICLE
Priority:	US19640395148 19640909

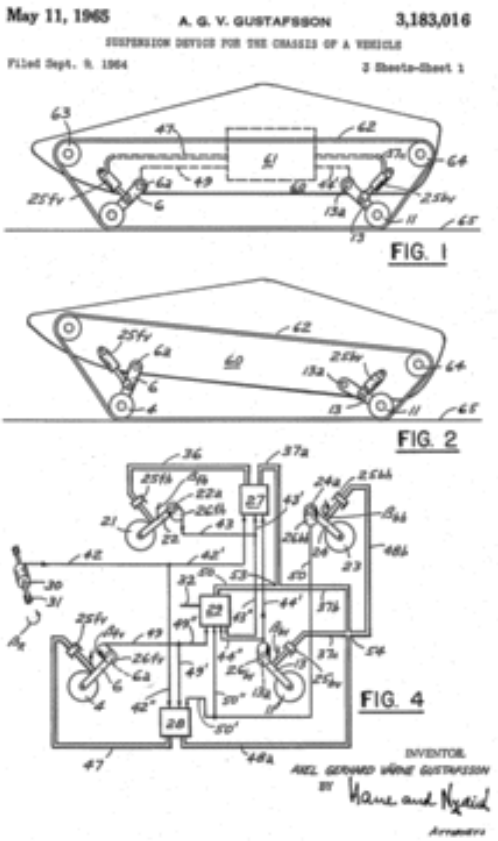
Family:

Publication number	Publication date	Application number	Application date
US3183016 A	19650511	US19640395148	19640909

Probable Assignee:	BOFORS AB
Assignee(s):(std):	BOFORS AB
Assignee(s):	AKTIEBOLAGET BOFORS
Inventor(s):(std):	VARNE GUSTAFSSON AXEL GERHARD
Inventor(s):	GUSTAFSSON AXEL GERHARD VARNE
International class (IPC 8–9):	B62D55/116 (Advanced/Invention); B62D55/104 (Core/Invention)
International class (IPC 1–7):	B60G19/06
CPC:	B62D55/116
European class:	B62D55/116
US class:	180/41 180/9.1 180/9.52 280/104 280/6.156 305/133 305/141
Classification Explorer	
Cited documents:	US3124368 A, US3035853 A, US3029089 A, US2845280 A, US1836446 A,
Forward Citations:	US8757303, US7322435, US6227357, US5947217, US4500139, US4425978, US4402375, US4315631, US3806141, US3658145, US3625303, US3528671, US3423859, US3372769, US3351150, US3343619, US2012126611, US2005274559, FR2649950, EP0597350, EP0347426, AU659760,

Abstract:
Source: US3183016A (Claim 1) 1. A suspension device for a vehicle having two front wheels and two rear wheels, said device comprising in combination, a generally plane chassis, four levers pivotally mounted on said chassis and each rotatably supporting one of said wheels, an electro»hyd.raulic motor coupled to each of said levers for varying the angular position of the respective lever in reference to the general plane of the chassis, a iirst, a second and a third electrohydraulic control means for controlling the dow of pressure lluid to said motors, a first pressure nuid conduit means interconnecting the motors of the two rear wheels with each other, second pressure fluid conduit means connecting the motor for the right front wheel to the first control means, third pressure duirl conduit means connecting the motor for the left front wheel to the second control means, fourth pressure fluid conduit means connectnig the first and second control means with each other and the third control means, and control circuit means interconnecting the motors and the control means, each of said motors in response to a change in the angular position of thc respective lever generating control signals fed to said control means by said circuit means, said control means in response to said signals varying the flow of pressure fluid to said motors so that said levers occupy angular positions at which the general plane of the chassis is substantially level in reference to a support surface for the chassis.

PatBase - US3183016_A



116) Family number: 3250762 (FR2252232A) © PatBase

Title: VEHICLE TRANSPORTER LORRY WITH WINCH – HAS LOWERABLE CHASSIS ON JACK CONTROLLED LINKS CONNECTED TO WHEELS

Priority: FR19730042639 19731123

Family:

Publication number	Publication date	Application number	Application date
FR2252232 A1	19750620	FR19730042639	19731123
FR2252232 B1	19780224	FR19730042639	19731123

Probable Assignee: SAGE JACQUES

Assignee(s):(std)**:** SAGE JACQUES

Assignee(s): SAGE JACQUES FR

International class (IPC 8–9): B60P3/07 (Advanced/Invention); B60P3/06 (Core/Invention)

International class (IPC 1–7): B60P1/18 B60P3/06

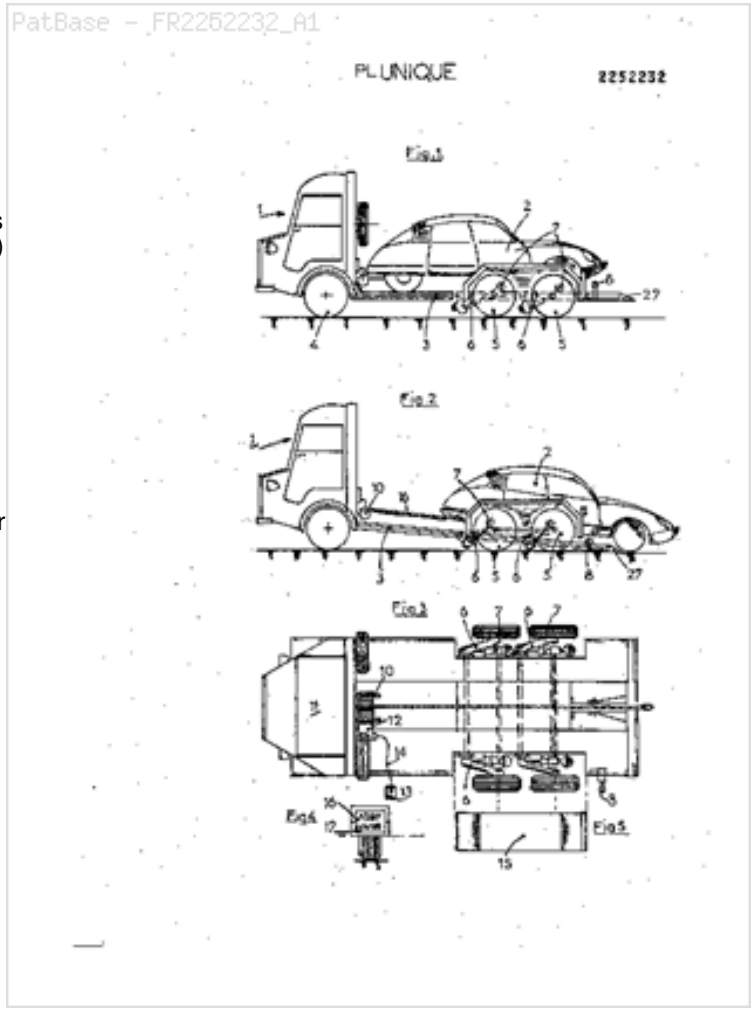
CPC: B60P3/07

European class: B60P3/07

Classification Explorer

Forward Citations: US6530580, US4493491, FR2452427, FR2419191,

Abstract:
Source: FR2252232A (Claim 1) 1 – Vehicule presentant un moyeu a l'avant et au moins deux roues @ l'arriere, caracterise on ce que le chassis prend appui sur les roues arriere par l'intermediaire de moyens permettant a lafois la susponsion et le basculement du chassis autour du moyeu avant, de facon a pouvoir mettre l'extremite arriere de ce chassis en contact avec le sol. The transporter lorry (1) has a chassis (3) on which is housed another (2). The transporter lorry has two front wheels (4) and four rear ones (5) articulated to the chassis by suspension arms (6) operated by hydraulic jacks (7). The read edge (27) of the platform is tapered, and a handle (8) controls the jacks. There is a cable winch behind the lorry club. This is controlled by a switch box on the end of a loose cable and electrically operated. The rear wheels have mudguards. To load, the chassis is tilted down until the rear touches the ground.



0) US2012032408A – STABLE SHOP AND FIELD WELDING CART

117) Family number: 50610480 (US2012032408A) © PatBase

Title: STABLE SHOP AND FIELD WELDING CART

Priority: US20100849817 20100804

Family:

Publication number	Publication date	Application number	Application date
US2012032408 AA	20120209	US20100849817	20100804
US8167322 BB	20120501	US20100849817	20100804

Probable Assignee: GREENE TERRY

Assignee(s):(std)**:** GREENE TERRY

Inventor(s):(std)**:** GREENE TERRY

Agent(s): CONNIE R

International class (IPC 8–9)**:** B62B3/10 (Advanced/Invention)

CPC: B62B1/10 B62B3/104 B62B2202/022

European class: B62B3/10C L62B1/10 L62B202/022

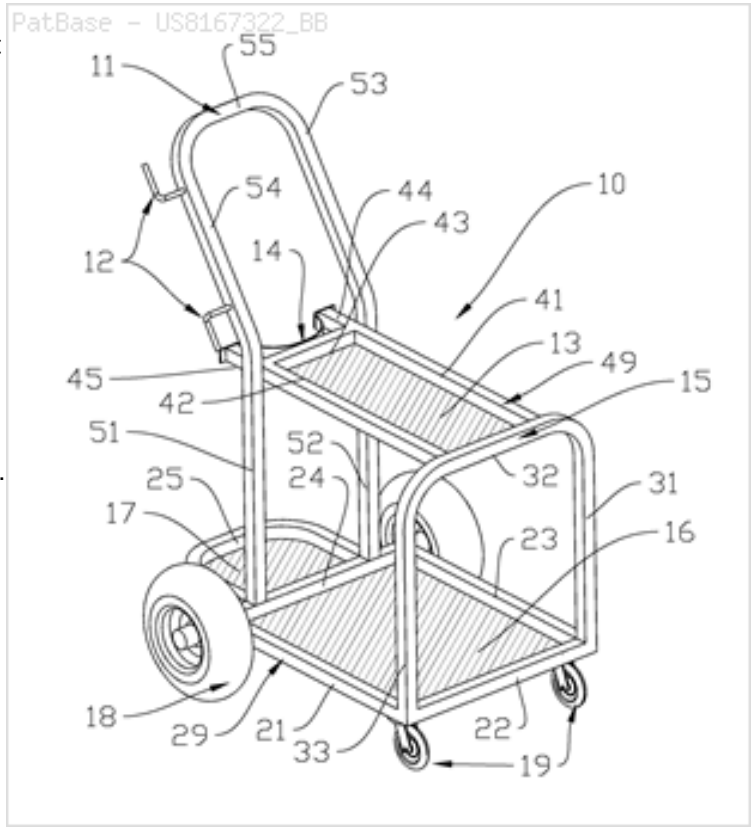
US class: 280/47.24 280/47.26 280/47.34 280/47.35 280/47.350P 280/79.11 280/79.2 280/79.5

Classification Explorer

Cited documents: USD322501 S1, US7661685 BB, US7648147 BB, US7438084 BB, US7168714 BB, US7114732 BA, US7014199 BB, US6942238 BA, US6827357 BB, US6817360 BB, US6497423 BA, US6334622 BA, US6193256 BA, US6179306 BA, US6179306 B1, US6116623 A, US6109644 A, US6102497 A, US6000712 A, US5693286 A, US5658118 A, US4802515 A, US4778154 A, US4609200 A, US3651894 A, US3472392 A, US3174736 A, US2011169249 AA, US2008143069 AA, US2008029981 AA, US2006232033 AA, US2006232032 AA, US2005012286 AA, US2004227315 AA, US2004108670 AA, US2003164600 AA, US2003155730 AA, US2003122331 AA, US2002117819 AA, US2002109318 AA, US1244030 A,

Forward Citations: USD762038, USD730609, US9573608, US9527153, US9517524, US8789836, US8567799, US2015329133, US2012200053, US2011068069,

Abstract:
Source: US2012032408A A portable hand cart particularly suited for carrying a welding system is provided. The cart includes a bottom platform carried by a rectangular bottom frame; a back frame extending upward from the bottom frame and including an angled handle; a top platform carried by a rectangular top frame that is somewhat narrower than the bottom frame; a front frame extending upward from the front sides of the bottom frame; two front wheels; two back pneumatic wheels; a lower tank frame extending rearward from the back bottom frame and supporting a tank platform; and an upper tank cradle extending rearward from the back of the top frame. The cart is stable and balanced both in a shop and in the field when loaded with a welding system and with or without a compressed gas cylinder.



118) Family number: 20549687 (GB695404A)

© PatBase

Title: Improvements in wheel suspension of road vehicles

Priority: GB19510005827 19510310

Family:

Publication number	Publication date	Application number	Application date
GB695404 A	19530812	GB19510005827	19510310

Probable Assignee: BENJAMIN ALDERSON

Assignee(s):(std)**:** BENJAMIN ALDERSON

International class (IPC 8–9): B60G21/055 (Advanced/Invention); B60G21/00 (Core/Invention)

International class (IPC 1–7): B60G19/10

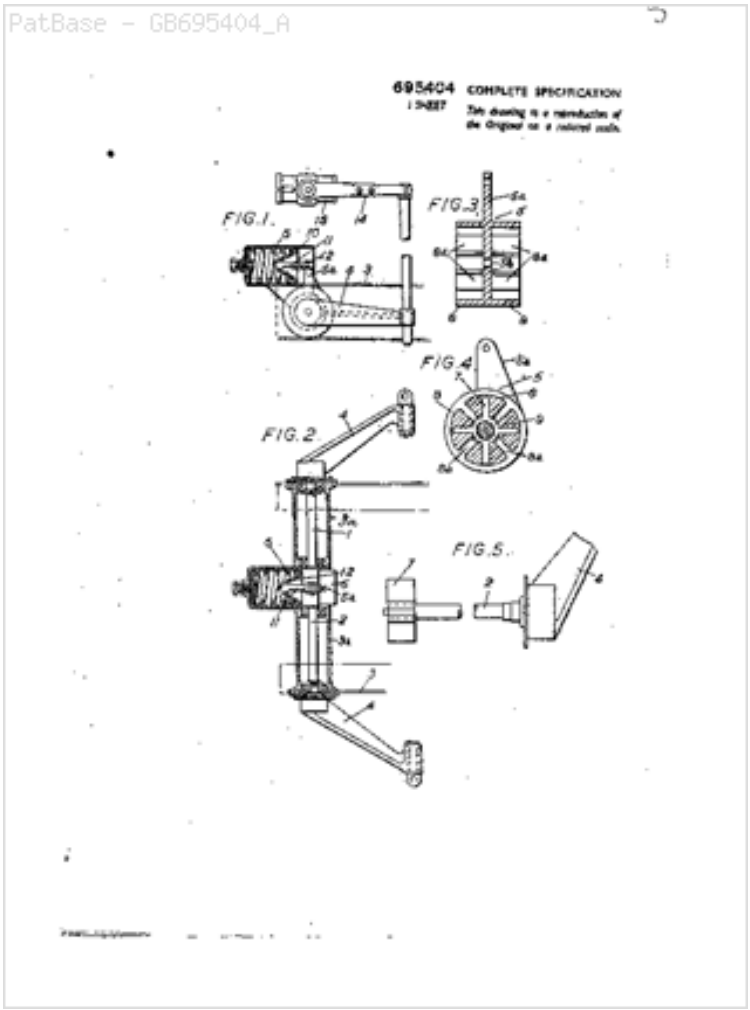
CPC: B60G21/055 B60G2202/22

European class: B60G21/055 L60G202/22

Classification Explorer

Forward Citations: FR2698826, FR2667546, EP0480817, DE1087465,

Abstract:
Source: GB695404A 695,404. Spring suspensions; preventing lateral centring. ALDERSON, B. June 11, 1951 [March 10, 1951], No. 5827/51. Class 108(ii). Means for the spring suspension of the front or rear wheels of a vehicle comprises two aligned shafts having lever arms supporting the road wheels, a resilient device rotatably mounted about and coaxial with the axis of the shafts and coupling the shafts to transmit rotation of one shaft to the other shaft also permit an amount of independent rotation against resilient resistance, and a spring device applying pressure direct to the coupling device and resiliently resisting rotation of the coupling device to counterbalance weight or force supported by both wheels. In the arrangement shown, the inner ends of a pair of shafts 1, 2 having wheelsupporting arms 4, are provided with vanes 7 which are interleaved with vanes 8a and with the interposition of rubber blocks 9 within hollow bosses 8 of a lever device 5. An arm 5a of the device 5 bears against a suspension spring 6 through a link 11 and a plate 12. The arms 4 may support the lower end of king pins, the upper ends of which may be connected, through a link to shock–absorbers.



0) US4838328A – METHOD FOR MECHANIZED THINNING OF A FOREST, AND...

119) Family number: 2260878 (US4838328A) © PatBase

Title: METHOD FOR MECHANIZED THINNING OF A FOREST, AND A HARVESTER AND FORWARDER FOR CARRYING OUT THE METHOD

Priority: CA19860526387 19861229 EP19870900699 19870105 WO1987SE00002 19870105 EP19870900699 19870105 SE19860000120 19860110

Family:

Publication number	Publication date	Application number	Application date
AT58816 E	19901215	AT19870900699T	19870105
AU198768479 A1	19870728	AU19870068479	19870105
AU592151 B2	19900104	AU19870068479	19870105
CA1272104 A1	19900731	CA19860526387	19861229
DE3766575 D1	19910117	DE19873766575	19870105
EP0258282 A1	19880309	EP19870900699	19870105
EP0258282 B1	19901205	EP19870900699	19870105
FI873859 A	19870907	FI19870003859	19870907
FI873859 A0	19870907	FI19870003859	19870907
NO163211 B	19900115	NO19870003758	19870909
NO163211 C	19900425	NO19870003758	19870909
NO873758 A	19871109	NO19870003758	19870909
NO873758 A0	19870909	NO19870003758	19870909
SE459221 B	19890619	SE19860000120	19860110
SE459221 C	19891012	SE19860000120	19860110
SE8600120 A	19870711	SE19860000120D	19860110
SE8600120 A0	19860110	SE19860000120	19860110
SE8600120 L	19870711	SE19860000120	19860110
US4838328 A	19890613	US19870101295	19870825
WO8704045 A1	19870716	WO1987SE00002	19870105

Probable Assignee: OSA AB

Assignee(s):(std)**:** OESA AB ; OSA AB

Assignee(s): OSA BOX AB ; OESA AB ALFTA SE ; OSA A B ; HEROLF OLOF

Inventor(s):(std)**:** HEROLF O ; HEROLF OLOF ; HERLOF OLOF

Inventor(s): HERLOF OLOF S 852 50 SUNDSVALL SE ; O HEROLF ; OLOF HERLOF

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; MCFADDEN FINCHAM; OSLER HOSKIN AND HARCOURT LLP

Designated states: AT AU BE CH DE FI FR GB IT LU NL NO SE SU US

International class (IPC 8–9): A01G23/08 B27L1/00 B60P1/50 B62D49/02 (Advanced/Invention); A01G23/00 B27L1/00 B60P1/00 B62D49/00 (Core/Invention); A01G (Subclass/Invention)

International class (IPC 1–7): A01G23/08 B27L1/00 B60P1/50 B60P1/54 B62D49/02

CPC: Y10S83/928 A01G23/08

European class: A01G23/08

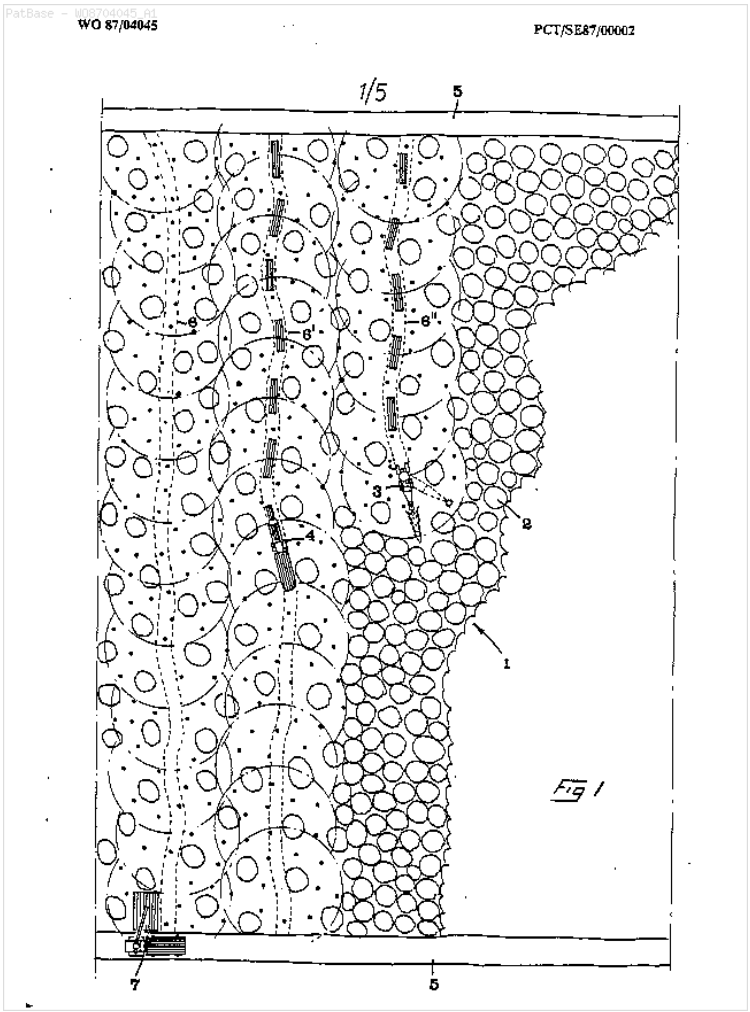
US class: 144/24.13 144/2Z 144/336 144/343 144/3D 144/4.1 280/442 30/379.5 83/928

Classification Explorer

Cited documents: US4540032 A, US4254807 A, US3856060 A, US3719217 A, US3491810 A, US3340912 A, SE205129 C1, FR2479124 B1, AU5537480 A1,

Forward Citations: WO8707474, WO09111816, US6932373, US6675848, US6558105, US6550506, US5975166, US5964262, US5101872, GB2359001, GB2359001, GB2268152, GB2268152, EP1886090,

Abstract:
Source: US4838328A PCT No. PCT/SE87/00002 Sec. 371 Date Aug. 25, 1987 Sec. 102(e) Date Aug. 25, 1987 PCT Filed Jan. 5, 1987 PCT Pub. No. WO87/04045 PCT Pub. Date Jul. 16, 1987.The invention relates to a method for thinning a forest by means of a wheeled harvester and a wheeled forwarder comprising a driver's cab and a load carrier located behind the cab. The harvester (3) is caused to advance in existing forest stands (1) in routes optimally selectable with regard to the characteristics of the stand, between main haul roads or strip roads close to each other, and is parked on suitable places along the routes for felling trees on each parking place. The trees are limbed and placed underneath the harvester between the wheels thereof, and the forwarder (4) is caused to follow the harvester in the same route as this and take care of the tree stems placed underneath the harvester and left behind it. This is achieved in that the felled trees lying in front of the forwarder are lifted by it and moved over and rearwards past the cab of the forwarder to the load carrier situated behind the cab. As the forwarder is advanced along the route, it collects the tree stems for landing them at a suitable main haul road.



0) DE20207491U1 – CHILD VEHICLE KINDERFAHRZEUG

120) Family number: 23891921 (DE20207491U1) © PatBase

Title:	CHILD VEHICLE
Priority:	DE20022007491U 20020513

Family:

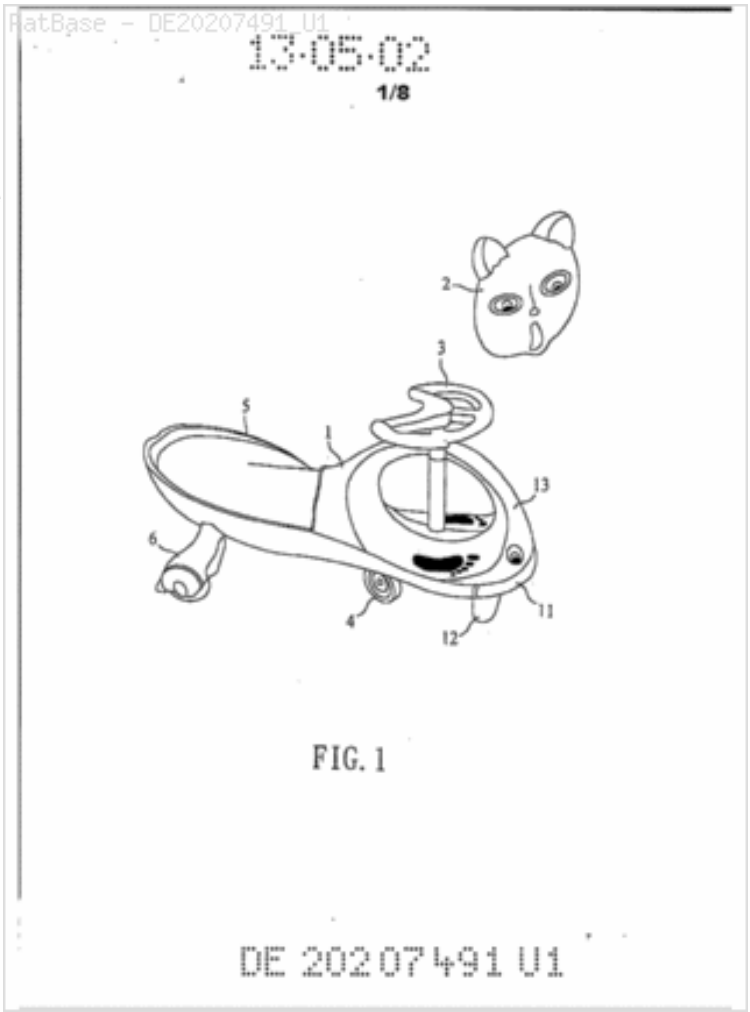
Publication number	Publication date	Application number	Application date
DE20207491 U1	20020814	DE20022007491U	20020513

Probable Assignee:	HSIAO HUANG LIN
Assignee(s):(std)**:**	HSIAO HUANG LIN
International class (IPC 8–9)**:**	B62B3/00 B62K9/00 (Advanced/Invention); B62B3/00 B62K9/00 (Core/Invention)
International class (IPC 1–7)**:**	B62B7/04
CPC:	B62B3/007 B62B2301/00 B62K9/00
European class:	B62B3/00D B62K9/00 L62B301/00

Classification Explorer

Abstract:
Source: DE20207491U1 (Claim 1) 1. Kinderfahrzeug, das im wesentlichen aus einem Hauptkoerper (1), einer Maske (2), einem Lenkrad (3), zwei Vorderraedern (4), einem Sitz (5) und zwei Hinterraedern (6) besteht, dadurch gekennzeichnet, dass der Hauptkoerper (1) an dem vorderen Ende eine Stossstange (11) aufweist, die beiderseitig jeweils mit einer Prallplatte (12) versehen ist, wodurch ein Kippen sowie ein Stoss gegen den Boden des Hauptkoerpers (1) verhindert werden, und dass die Maske (2) an der Innenseite ein Befestigungsstift 21 aufweist und mit einem doppelseitigen Klebeband (17) an das vordere Ende des Hauptkoerpers (1) geklebt wird.

Machine translation: (Claim 1) 1. Child vehicle, that essentially from main body (1), mask (2), one steering wheel (3), two front wheels (4), one seat (5) and two rear wheels (6) exists, by the fact characterized that the main body (1) at the front end exhibits a bumper (11), which is provided with an impact plate (12) mutually in each case, whereby tilting as well as an impact are prevented against the soil of the main body (1), and that the mask (2) at the inside an attachment pin exhibits 21 and with a double–sided tape (17) to the front end of the main body (1 is stuck).



0) GB191324678A – IMPROVEMENTS IN OR RELATING TO THE UNDERCARRIAG...

121) Family number: 37035724 (GB191324678A) © PatBase

Title: Improvements in or relating to the Undercarriages of Perambulators and like Children's Vehicles.

Priority: 19131030

Family:

Publication number	Publication date	Application number	Application date
GB191324678 A	19140604		00000000

Probable Assignee: DOW WARRENDER BERNIE

Assignee(s):(std)**:** DOW WARRENDER BERNIE ; SIMPSON JOHN JAMES

Assignee(s): WARRENDER BERNIE DOW ; JOHN JAMES SIMPSON

Inventor(s):(std)**:** DOW WARRENDER BERNIE ; SIMPSON JOHN JAMES

Inventor(s): WARRENDER BERNIE DOW ; JOHN JAMES SIMPSON

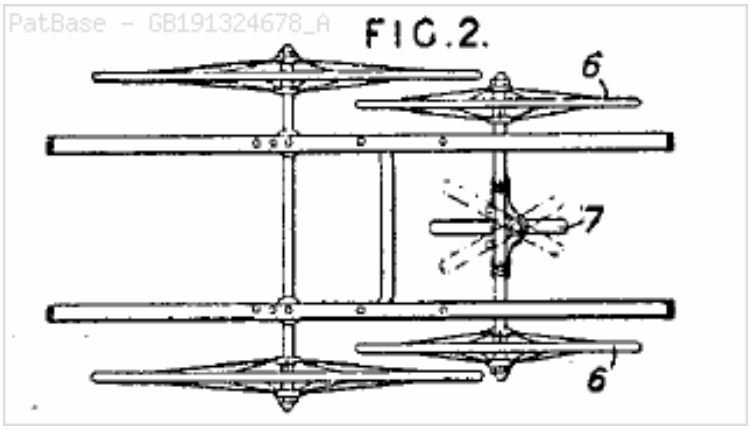
International class (IPC 8–9): B62B9/02 (Advanced/Invention); B62B9/00 (Core/Invention)

CPC: B62B9/02

European class: B62B9/02

Classification Explorer

Abstract:
Source: GB191324678A 24,678. Simpson, J. J., and Dow, W. B. Oct. 30. Wheels, arrangement of.–To facilitate the turning of a perambulator without any tilting movement about the rear axle, a swivelling wheel 7 is mounted between the two front wheels 6 so that the wheels 6 are raised clear of the ground. The wheels 6 form side supports to prevent lateral overturning, and are sufficiently forward of the wheel 7 to prevent this from contacting with a kerb which is to be mounted.



0) FR2996981B – ENGIN AGRICOLE MOTORISE DESTINE A ETRE UTILISE ...

122) Family number: 56334645 (FR2996981B) © PatBase

Title: ENGIN AGRICOLE MOTORISE DESTINE A ETRE UTILISE NOTAMMENT DANS LES METIERS DU MARAICHAGE

Priority: FR20120059976 20121019

Family:

Publication number	Publication date	Application number	Application date
FR2996981 A1	20140425	FR20120059976	20121019
FR2996981 B1	20150515	FR20120059976	20121019

Probable Assignee: MESANGE BLEUE

Assignee(s):(std)**:** MESANGE BLEUE

Assignee(s): LA MESANGE BLEUE

Inventor(s):(std)**:** LACROUTS CAZENAVE IVAN ; LACROUTS CAZENAVE LAURENCE ; LACROUTS CAZENAVE FLORE

Inventor(s): LAURENCE LACROUTS CAZENAVE ; FLORE LACROUTS CAZENAVE ; IVAN LACROUTS CAZENAVE

Agent(s): TOUTI TERRE; CABINET LE GUEN ET MAILLET

International class(IPC 8–9)**:** A01B39/10 A01B51/02 A01B69/00 A01B75/00 (Advanced/Invention)

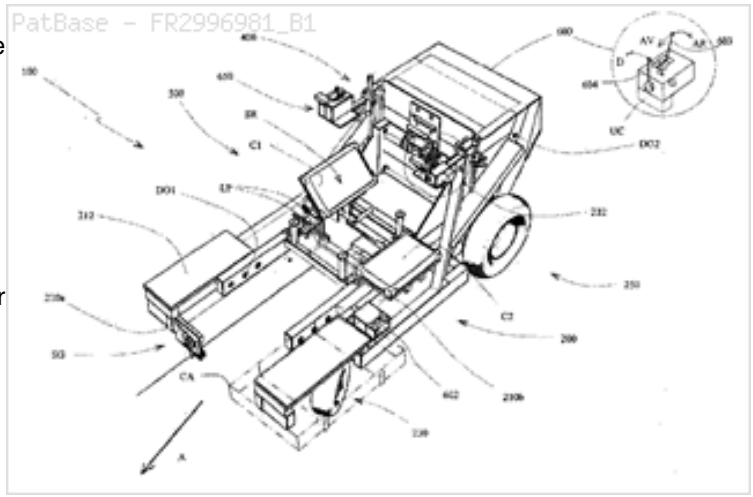
CPC: A01B75/00 A01C9/00 A01D45/001 B60N2/14 B60N2/1615 B60N2/1835 B60N2/24 B60N2/4646 B60N2002/247

Classification Explorer

Cited documents: US5762402 A, US4526248 A, JP10136749 A2, FR2862324 A1,

Forward Citations: WO17051103, WO16128685, FR3041292,

Abstract:
Source: FR2996981A La presente invention se rapporte a un engin agricole motorise (100) destine a etre utilise notamment dans les metiers du maraichage, comprenant un chassis (200) porte par deux roues avant a vocation directrice (230), deux roues arriere motrices (250), le chassis (200) comprenant deux longerons lateraux (210a, 210b) reunis par un berceau (220) en tunnel permettant a l'engin d'enjamber au moins un sillon, le chassis (200) portant un moyen pour supporter une personne. Selon l'invention, un siege ergonomique (SR) est dispose entre les deux longerons lateraux (210a, 210b), ledit siege comprenant un premier coussin (C1), un second coussin (C2) de soutien, pour certaines parties du corps de l'utilisateur, les deux coussins (C1, C2) etant independants, chaque coussin etant pourvu d'un moyen de reglage de sa position suivant au moins une direction. En ajustant la position de chaque coussin, un utilisateur peut etre soutenu suivant une grande variete de postures pour limiter sa fatigue au cours d'une journee de travail sur l'engin. The machine (100) has a frame (200) carried by two nose gear wheel (230) and comprising two side parts (210a, 210b) that are joined together by a cradle allowing a gear tunnel to cover a furrow. The frame carries a part for supporting a person. An ergonomical seat (SR) is placed between the side parts, and comprises two independent cushions (C1, C2) for supporting certain body parts of a user. Each cushion is equipped with an adjustment part for adjusting a position of the cushion along a direction.



0) TWM511457Y – DIRECTION–CHANGE TILTING MECHANISM FOR VEHICLE ...

123) Family number: 61030731 (TWM511457Y)

© PatBase

Title: DIRECTION–CHANGE TILTING MECHANISM FOR VEHICLE WITH TWO FRONT WHEELS

Priority: TW20150208080U 20150525

Family:

Publication number	Publication date	Application number	Application date
TWM511457 Y	20151101	TW20150208080U	20150525

Probable Assignee: AEON MOTOR CO LTD

Assignee(s):(std)**:** AEON MOTOR CO LTD

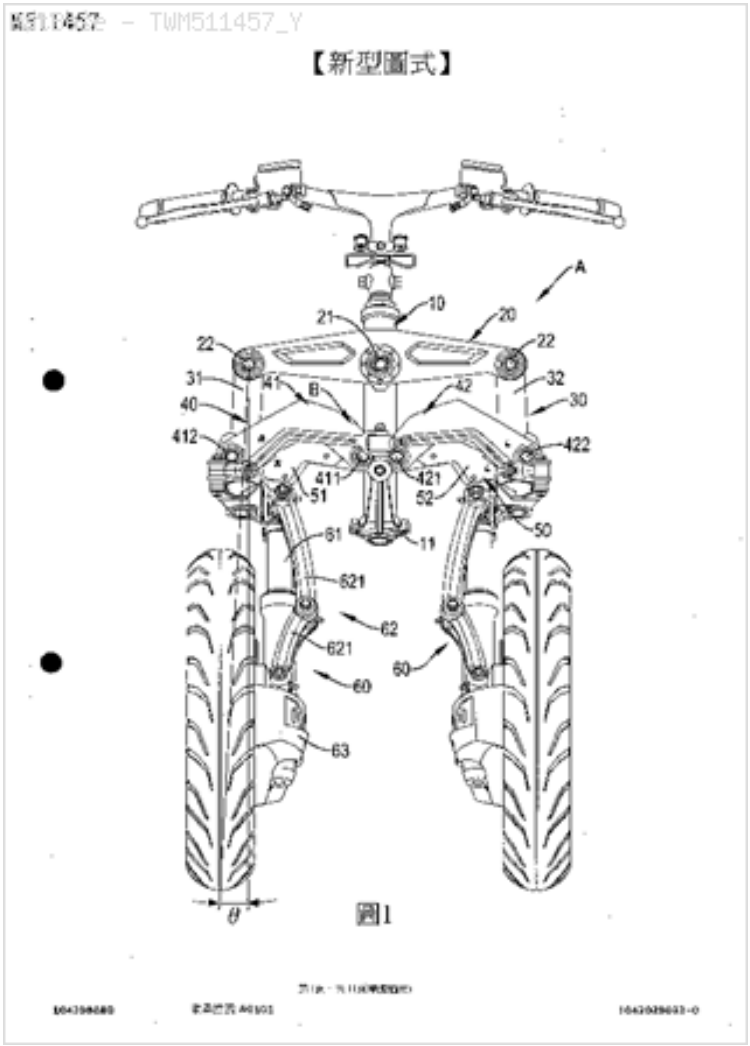
Assignee(s): WANG JIA TENG POWER TECHNOLOGY CO LTD ; AEON MOTOR CO

Inventor(s):(std)**:** SU PIN RUI

International class (IPC 8–9): B62D7/00 (Advanced/Invention)

Classification Explorer

Abstract:
Source: TWM511457Y The novel as a vehicle for having two of the steering wheel tilt mechanism comprising a tilt mechanism and a tilting mechanism is provided on the steering mechanism, the tilt mechanism includes a steering sleeve, an upper link member, two linkage rod and two lower pivot point through a plurality of the steering linkage under the sleeve and the coupling member is pivoted lever group phase of the steering tube, the upper coupling member and the two connecting rod through a plurality of contacts on the pivot relative to pivot provided, each at each of the next pivot point linkage to the steering sleeve centric showed outward shift state still makes each on pivot joints at each coupling member of maintaining balance, and the coupling member is less than the width The overall width of the two lower coupling members, only changing the pivot point of each lower coupling member position, without changing the size of the frame body, the two front wheels increases to increase the degree of balance of the track of the vehicle body.



0) US5328321A – MULTI–STAGE MAST FOR A FORKLIFT TRUCK

124) Family number: 13613558 (US5328321A) © PatBase

Title: Multi–stage mast for a forklift truck

Priority: IE19910003122 19910905 IE19910003123 19910905 IE19920002640 19920908

Family:

Publication number	Publication date	Application number	Application date
BE1003738 AH	19920602	BE19920000048	19920117
GB2259292 A1	19930310	GB19910027539	19911231
GB2259292 B2	19941207	GB19910027539	19911231
GB2260119 A1	19930407	GB19920018915	19920907
GB9127539 A0	19920219	GB19910027539	19911231
GB9218915 A0	19921021	GB19920018915	19920907
IE65047 B	19951004	IE19910003122	19910905
IE922640 A1	19930310	IE19920002640	19920908
US5328321 A	19940712	US19920921899	19920729

Probable Assignee: MOFFETT RES AND DEV LTD

Assignee(s):(std)**:** MOFFETT RES AND DEV LTD ; MOFFETT RESEARCH AND DEV LIMIT

Assignee(s): MOFFETT RESEARCH AND DEVELOPMENT LIMITED ; MOFFETT RESEARCH AND DEVELOPMENT LTD

Inventor(s):(std)**:** MOFFETT CAROL ; MCADAM JAMES ; JAMES MCADAM ; CAROL MOFFETT

International class (IPC 8–9)**:** B60K17/10 B60K17/356 B66F9/075 B66F9/08 B66F9/10 (Advanced/Invention)

International class (IPC 1–7)**:** B66F9/06 B66F9/08 B66F9/10

CPC: B60K17/10 B60K17/356 B66F9/07513 B66F9/07563 B66F9/07572 B66F9/082 B66F9/10 B66F9/08

European class: B60K17/10 B60K17/356 B66F9/075 B66F9/075C B66F9/075L B66F9/075P B66F9/08 B66F9/08B B66F9/10

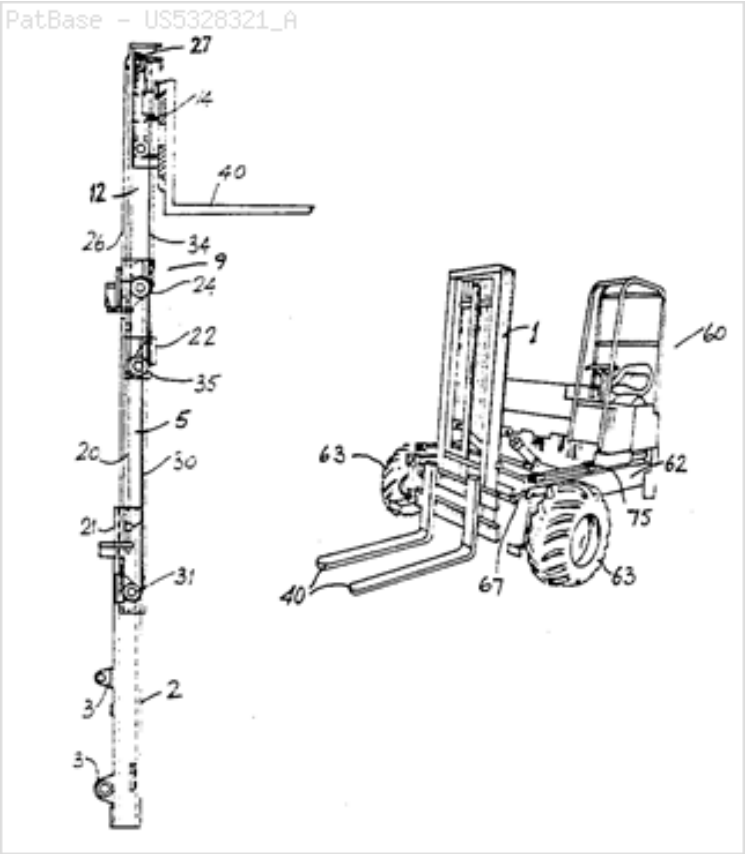
US class: 187/226 187/234 414/631 414/635 414/637 414/663

Classification Explorer

Cited documents: US5036952 A, US4986387 A, US4921075 A, US4762203 A, US4675827 A, US4431083 A, US4415302 A, US4051970 A, US3998345 A, US3934681 A, US3930563 A, US3768595 A, US3672526 A, GB870361 A, GB2098582 A1, GB2077224 A1, GB2032883 A1, GB2016410 A1, GB2016409 A1, GB1550373 A, GB1317859 A, GB1253772 A, GB1015975 A, FR2578235 A1, EP0120149 A1, EP0021805 A1,

Forward Citations: WO09092766, WO08142556, WO08142556, WO08142551, WO08129447, WO05068345, WO03062126, USD776898, USD764740, US9522816, US8794386, US8777545, US8087868, US7927063, US7927061, US7870922, US7823698, US7255202, US7021595, US7001131, US7000991, US6572322, US6543986, US6386307, US6296081, US6269901, US6247887, US6022183, US5879124, US5816768, US5749695, US2015060199, US2013006444, US2011091306, US2009032338, US2005220588, US2004189075, US2004188585, US2004101392, FR2789352, EP1531141, EP1481942, EP1026025, EP0835961, EP0816153, DE102009051625,

Abstract:
Source: US5328321A A three−stage mast (1) for a forklift truck and a forklift truck incorporating the mast (1). The mast (1) has an outer mast section (2) for mounting on the truck. A middle mast section (5) is slidably movable on the outer mast section (2) by rams (7). An inner mast section (12) is slidably mounted on the middle mast section (5) and carries a fork carriage (14). Lifting chains (20) and lowering chains (30) extend between the inner mast section (12) and outer mast section (2) passing over intermediate guides (24, 31) on the middle mast section (5). The chains (20, 30) raise and lower the inner mast section (12) on the middle mast section (5) when the rams (7) are operated. Similarly lifting chains (26) and lowering chains (34) extend between the middle mast section (5) and the fork carriage (14) via guides (27, 35) on the inner mast section (12) for movement of the fork carriage (14) on the inner mast section (12). The fork carriage (14) has a frame bracket (51) with a tine support member (52) rotatably mounted on the frame (51).



0) US6345807B – SMALL VEHICLE LIFT

125) Family number: 16047532 (US6345807B) © PatBase

Title: Small vehicle lift

Priority: US20000590851 20000609

Family:

Publication number	Publication date	Application number	Application date
US6345807 BA	20020212	US20000590851	20000609

Probable Assignee: CACCIATORE JOSEPH

Assignee(s):(std)**:** CACCIATORE JOSEPH

Inventor(s):(std)**:** CACCIATORE JOSEPH

International class (IPC 8–9)**:** B66F7/22 (Advanced/Invention); B66F7/00 (Core/Invention)

International class (IPC 1–7)**:** B60P1/48

CPC: B66F7/22

European class: B66F7/22

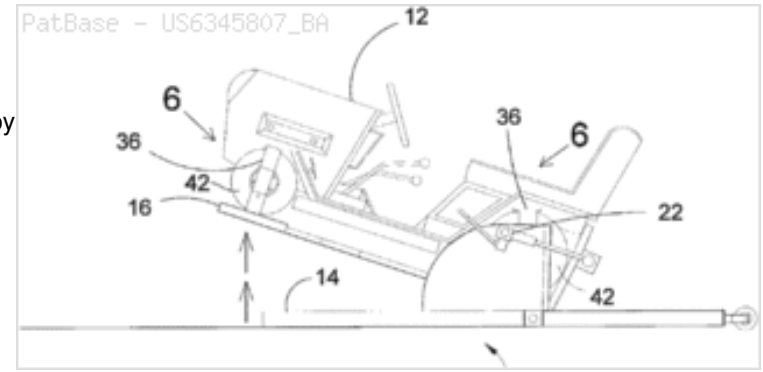
US class: 254/124 254/3B

Classification Explorer

Cited documents: US5971360 A, US5855359 A, US5826857 A, US5678804 A, US5538389 A, US4901980 A, US4460158 A, US4088303 A, US3618894 A, US3363778 A,

Forward Citations: WO11042629, US9162856, US9067772, US8684332, US7278627, US6948724, US6588799, US6474626, US2013248786, US2013228729, US2011266093, US2011089389, US2009121203, US2005253122, US2005047887, US2004251661, US2003226867, US2003084522, FR2951150, AU2010304954,

Abstract:
Source: US6345807B The present invention 10 discloses a small vehicle lift generally consisting of a base assembly 14 and a lift platform assembly 16 secured to each other by a pivot pin 18 located at one end of the base 14 within the anti−tilt extension members 20. The lifting action of the platform 16 is angular to the base 14 and is accomplished through a hydraulic lifting device 22 which is pivotally anchored to the base 14 as well as to the lifting platform structure a short distance from the main lift pivot point. When actuated, the hydraulic lift 22 forces the rotation of the platform 16 about the pivot pin to a maximum 60 Degrees displacement. Additionally, there is a safety pin 24 mounted on the elevated rear portion 26 of the base that slides in and out and that acts as a safety device in case of hydraulic jack failure when the lift is in full up position. This allows for easy and safe access to the underside of the mower for maintenance and repair.



0) DE2805372A1 – THE ROLLER APPARATUS USED FOR TRAINING PURPOSES...

126) Family number: 31389197 (DE2805372A1) © PatBase

Title: The roller apparatus used for training purposes contains two front wheels (6), a carrying frame (1, 3) holding the foot...

Priority: CH19780001337 19780207 DE19782805372 19780209

Family:

Publication number	Publication date	Application number	Application date
AT368010 B	19820825	AT19790000703	19790131
AT70379 A	19820115	AT19790000703	19790131
CH626539 A	19811130	CH19780001337	19780207
DE2805372 A1	19790816	DE19782805372	19780209
DE2805372 C2	19870611	DE19782805372	19780209
IT1112162 A	19860113	IT19790019992	19790207
IT7919992 A0	19790207	IT19790019992	19790207

Probable Assignee: ZEILER GUSTAV A

Assignee(s):(std)**:** ZEILER GUSTAV A ; ZEILER GUSTAV ADOLF

Assignee(s): ZEILER GUSTAV ADOLF LENZBURG CH

Inventor(s):(std)**:** ZEILER GUSTAV ADOLF ; GUSTAV ADOLF ZEILER

Inventor(s): ADOLF ZEILER GUSTAV ; ZEILER GUSTAV ADOLF LENZBURG CH

International class (IPC 8–9): A63C17/04 A63C17/14 A63C5/06 (Advanced/Invention); A63B (Subclass/Invention)

International class (IPC 1–7): A63B69/18 A63C17/00 A63C5/035 A63C5/10

CPC: A63C5/035 A63C17/04 A63C17/045 A63C17/1409

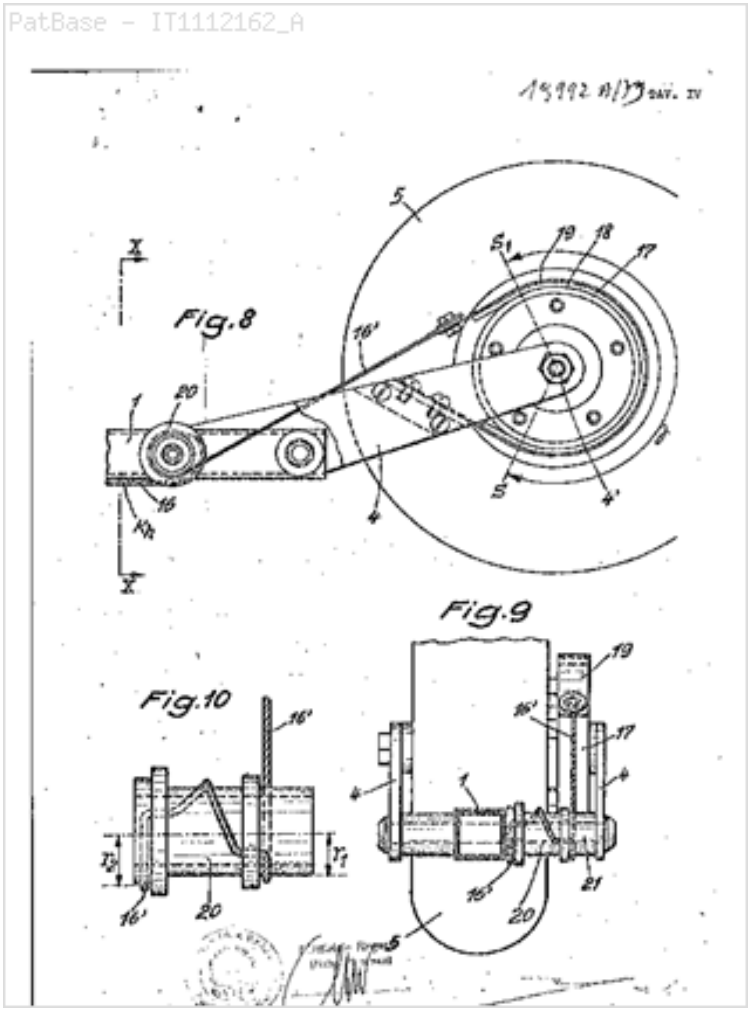
European class: A63C17/04 A63C17/04B A63C17/14B A63C5/035

Classification Explorer

Cited documents: US3891225 A, FR1525328 A, DE1233757 B,

Forward Citations: DE102007017559, DE102007017559,

Abstract:
Source: DE2805372A1 The roller apparatus used for training purposes contains two front wheels (6), a carrying frame (1, 3) holding the foot of the driver and a rear wheel which is arranged asymmetrically with respect to the front wheels. The front wheels (6) can be steered by laterally inclining the carrying frame in that the axle bearing (11) for the steering axle (10) assumes an angle (alpha) of approximately 40 DEG with respect to the horizontal. A rubber–ring spring (12) is provided to restore the apparatus into the normal position used for straight–line running. A braking action is achieved by means of a belt brake which acts on the rear wheel and is actuated by a cable pull (16'). This design of a roller apparatus makes the steerability of the apparatus easy and the handling simple.



127) Family number: 58448920 (WO15014751A1) © PatBase

Title: COLLAPSIBLE CARGO BIKE

Priority: DE201310108112 20130730

Family:

Publication number	Publication date	Application number	Application date
DE102013108112 A1	20150205	DE201310108112	20130730
WO15014751 A1	20150205	WO2014EP66057	20140725

Probable Assignee: CHIKE GMBH AND CO KG

Assignee(s):(std)**:** CHIKE GMBH AND CO KG

Inventor(s):(std)**:** PRAGER MANUEL ; PRAGER TOBIAS

Agent(s): BAUER VORBERG KAYSER

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62B3/02 B62K13/00 B62K15/00 B62K5/05 B62K5/08 B62K5/10 B62K7/04 (Advanced/Invention)

CPC: B62B2206/006 B62K13/00 B62K7/00 B62K15/008 B62B7/12 B62K5/05

Classification Explorer

Cited documents: WO11036424 A1, WO03084807 A1, US6367824 BA, US2010032925 AA, US2008217875 AA, US2006097476 AA, KR20120113950 A, KR101048419 B1, JP6329068 A2, JP61147682 U1, JP61147682 U, JP2013006457 A2, JP2004017949 A2, GB2496124 A1, EP2514661 A1, EP1927539 A2, EP1924489 B1, DE10204478 A1,

DE102010006378 A1

CN2825437 Y, CN202608850 U, CN201136574 Y,

Abstract:
The invention relates to a collapsible cargo bike (10) having a main frame (20) which comprises at least two sub–frames (21; 22), which are connected to one another such that they can be collapsed via an articulation (23), wherein at least one driven rear wheel (32) is fitted on the rear sub–frame (22), as seen in the direction of travel, and at least two front wheels (30; 31) and a transporting apparatus (40) are fitted on the front sub–frame (21), as seen in the direction of travel. The cargo bike (10) can be transferred, by a collapsing movement, between a travelling position and a pushing position, wherein, during this collapsing movement, there is a change in the angle between the two sub–frames (21; 22) in the articulation (23). The cargo bike (10) here is distinguished in that the collapsing movement from the travelling position into the pushing position reduces the distance between the transporting apparatus (40) and the driven rear wheel (32) in that the articulation (23) pivots upwards, in the direction of the transporting apparatus (40), in relation to the wheel axis (52), while the rear sub–frame (22) pivots downwards, and in the direction of the front sub–frame (21), in relation to the articulation (23).

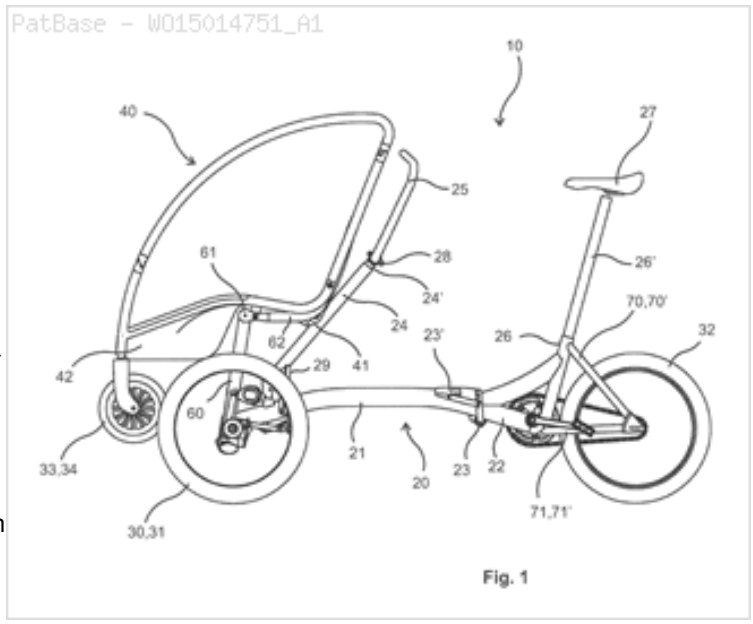


Fig. 1

0) GB1258081A – MASTED LIFT TRUCKS.

128) Family number: 734749 (GB1258081A)

© PatBase

Title: Masted lift trucks.

Priority: GB19680002930 19680119

Family:

Publication number	Publication date	Application number	Application date
GB1258081 A	19711222	GB19680002930	19680119

International class (IPC 8–9): B66F17/00 G01L1/22 (Advanced/Invention); B66F17/00 G01L1/20 (Core/Invention)

International class (IPC 1–7): B66C23/90 B66F17/00

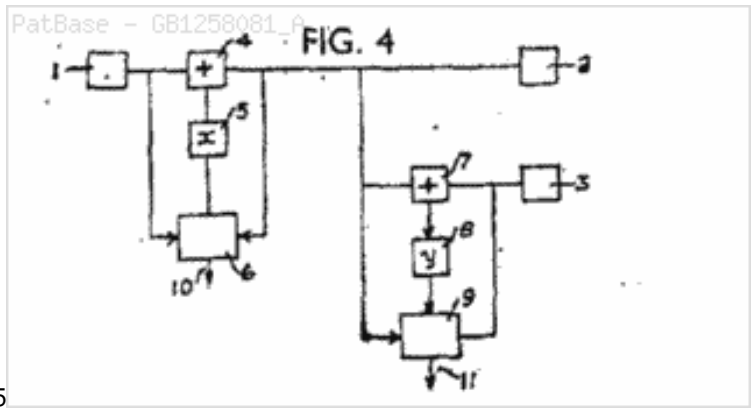
CPC: B66F17/003 G01L1/22

European class: B66F17/00B G01L1/22

Classification Explorer

Forward Citations: WO9902445, WO7900330, WO11154129, US9169110, US6170341, US6050770, US5995001, US4168934, FR2356592, FR2356592, FR2287413, FR2287413, EP0993416, CN102917973, CN102917973, AU726980,

Abstract:
Source: GB1258081A 1,258,081. Masted lift trucks. WESTING– HOUSE BRAKE and SIGNAL CO. Ltd. 15 Jan., 1969 [19 Jan., 1968], No. 2930/68. Heading B8H. In a masted lift truck having a tiltable mast, one of the front wheels, and each of the rear wheels have strain gauges 1, 2, 3 incorporated in their suspensions, the signals from the strain gauges being fed to a circuit in which the signals are compared and which actuates a warning device or imposes a limitation on control means for the apparatus when the truck approaches an unstable condition. In a first embodiment, Fig. 4, the circuit includes a summing circuit 4 and a proportioning circuit 5 which feeds a signal corresponding to a predetermined proportion, x percent, of the sum of the loadings of strain gauges 1, 2 into a comparator circuit 6 which is constructed to produce an output instability signal at 10 when the input from circuit 5 exceeds the lesser of the inputs from the strain gauges. Similarly, a sidewaysinstability signal is produced from a comparator circuit 9 when the input from a proportioning circuit 8 exceeds the lesser of the inputs from the strain gauges 2, 3. In a second embodiment, Fig. 5 (not shown), the criterion for instability is that the smaller loading of two strain gauges shall not be greater than a predetermined proportion of the larger. In a third embodiment, Fig. 6 (not shown), the criterion is that the larger loading of two strain gauges shall be less than a predetermined proportion of the sum of the loadings.



0) GB523471A – PROPULSION MECHANISM FOR AIRCRAFT AND CONVEYANC...

129) Family number: 19936156 (GB523471A)

© PatBase

Title:	Propulsion mechanism for aircraft and conveyances
Priority:	GB19380035291 19381203

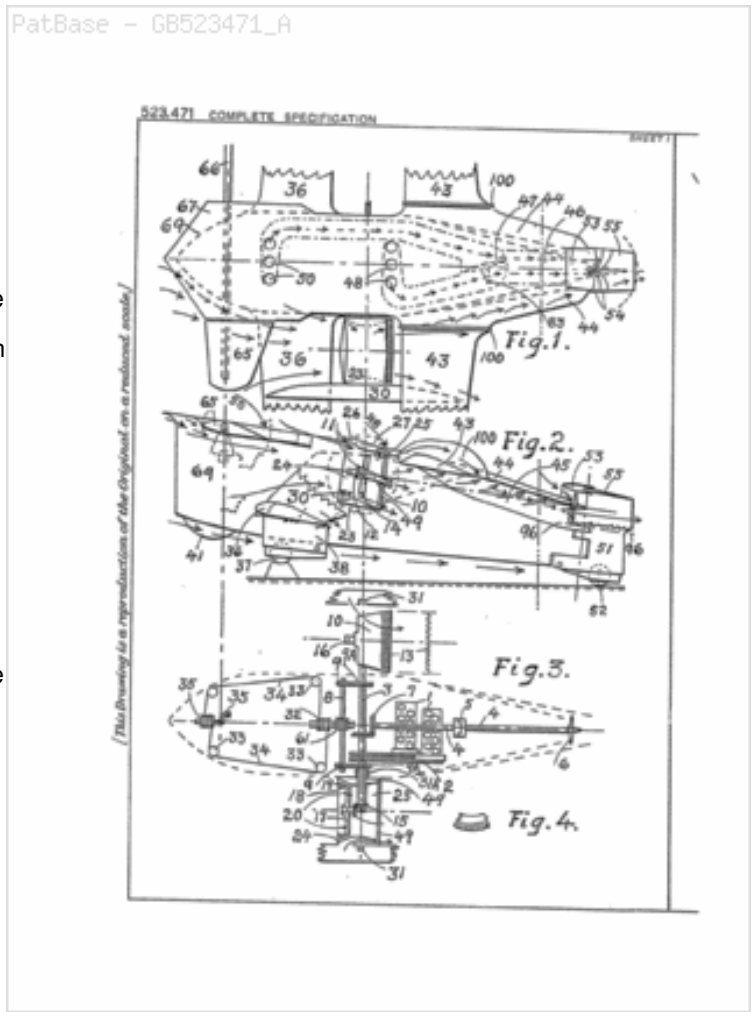
Family:

Publication number	Publication date	Application number	Application date
GB523471 A	19400716	GB19380035291	19381203

Probable Assignee:	HERBERT ELLWOOD IRWIN
Assignee(s):(std)**:**	HERBERT ELLWOOD IRWIN
International class (IPC 8–9):	B64C11/00 (Advanced/Invention); B64C11/00 (Core/Invention)
CPC:	B64C11/001
European class:	B64C11/00B

Classification Explorer

Abstract:
Source: GB523471A 35291. Drawings to Specification. [Class 4] The hub of an air propeller is arranged in the restricted part of a double conical cowl ring. A fin is arranged within the rear part of the cowl. to spread the slipstream. The cowl and fin together with the propeller hub are tiltable. The cowl may have an outer casing closed at the front end and air, controlled by valves, may pass between the cowl parts from apertures in the tops of lower wings. The aeroplane may be controlled by the operation of the valves. The front of the aeroplane may have pivoted stub wings held in normal position by pendulums. When the wings turn during a nose dive, valves are operated by the pendulums to control air inlet passages on the upper surface of the aeroplane. The propellers are arranged on the sides of the aeroplane between upper and lower wings, the air above the upper wings being prevented from passing over the fuselage by vertical fins. A stern propeller is arranged in a telescoping cowling one part of which is connected to a rudder carrying the rear landing wheel. The propeller draws air from openings in the upper part of the fuselage through valves. The invention is applicable also to boats, wheeled vehicles c.



0) JP2010023941A – ATTITUDE CONTROL DEVICE OF FORKLIFT AND FORKLIF...

130) Family number: 44409035 (JP2010023941A)

© PatBase

Title: ATTITUDE CONTROL DEVICE OF FORKLIFT AND FORKLIFT EQUIPPED WITH THE DEVICE

Priority: JP20080184043 20080715

Family:

Publication number	Publication date	Application number	Application date
JP2010023941 A2	20100204	JP20080184043	20080715

Probable Assignee: MITSUBISHI HEAVY IND LTD

Assignee(s):(std)**:** MITSUBISHI HEAVY IND LTD

Assignee(s): MITSUBISHI HEAVY INDUSTRIES LTD

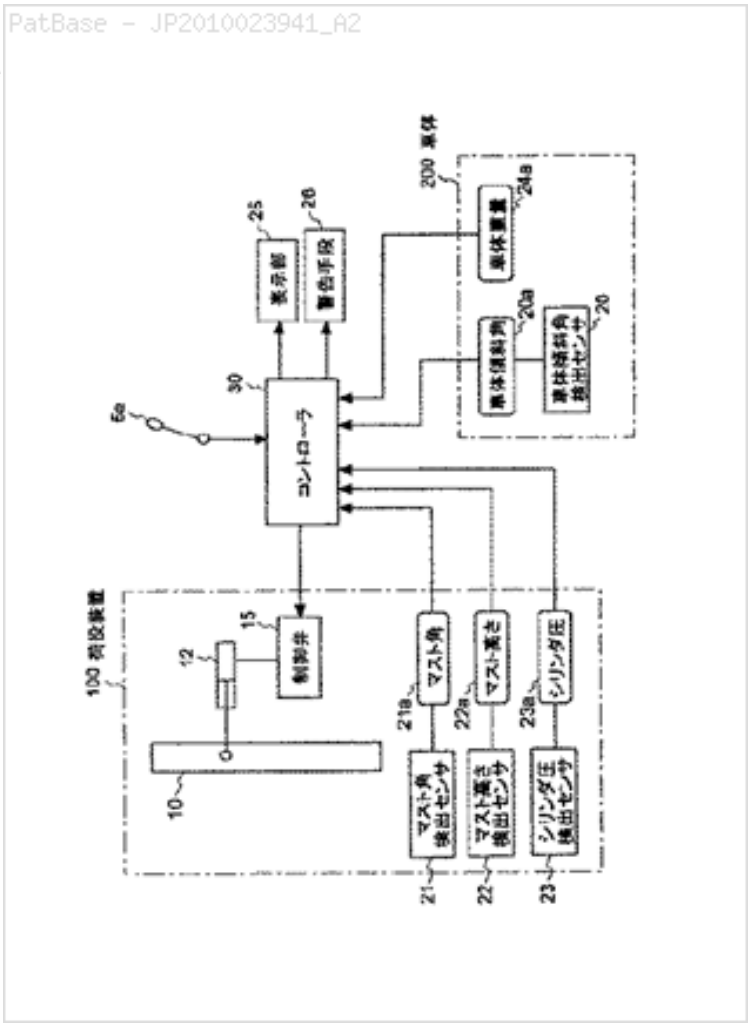
Inventor(s):(std)**:** TSUJI HAJIME

International class (IPC 8–9): B66F9/24 (Advanced/Invention); B66F9/24 (Core/Invention)

Classification Explorer

Forward Citations: US8554415, JP2016038653, EP2444362, CN102452414,

Abstract:
Source: JP2010023941A PROBLEM TO BE SOLVED: To provide an attitude control device of a forklift capable of preventing falling of a vehicle body to the rear when a mast is inclined/extended to the rear on an inclined surface etc. and to provide a forklift equipped with the device. SOLUTION: The attitude control device of the forklift includes: the mast 10; a tilt cylinder 12 to tilt the mast; a controller 30 to control the tilt cylinder in accordance with an operation signal from a tilt lever 5a; a center of gravity position detection means to detect a center of gravity of the vehicle body including a handling article; and a vehicle body inclination sensor 20 to detect inclinations in the longitudinal and cross directions of the vehicle body. The controller 30 is constituted so as to find a triangle provided by projecting two points where two front wheels of the vehicle body respectively ground and one point which is a fulcrum of two rear wheels on and within a horizontal surface by operation, to set the inside of the triangle in a stable region and to regulate rear inclining/extending motion of the mast when it is determined that a center of gravity projected point where the center of gravity position detected by the center of gravity position detection means deviates from the stable region.



0) CN201694318U – THREE–WHEELED MOTOR VEHICLE CAPABLE OF AUTOMATI...

131) Family number: 48131143 (CN201694318U) © PatBase

Title: Three–wheeled motor vehicle capable of automatically dumping

Priority: CN201020229739U 20100618

Family:

Publication number	Publication date	Application number	Application date
CN201694318 U	20110105	CN201020229739U	20100618

Probable Assignee: CHONGQING MODERN MOTORCYCLE RES INST

Assignee(s):(std)**:** CHONGQING MODERN MOTORCYCLE RES INST

Assignee(s): CHONGQING MODERN MOTORCYCLE RESEARCH INSTITUTE

Inventor(s):(std)**:** BO JIANG ; JINGHUA XIANG

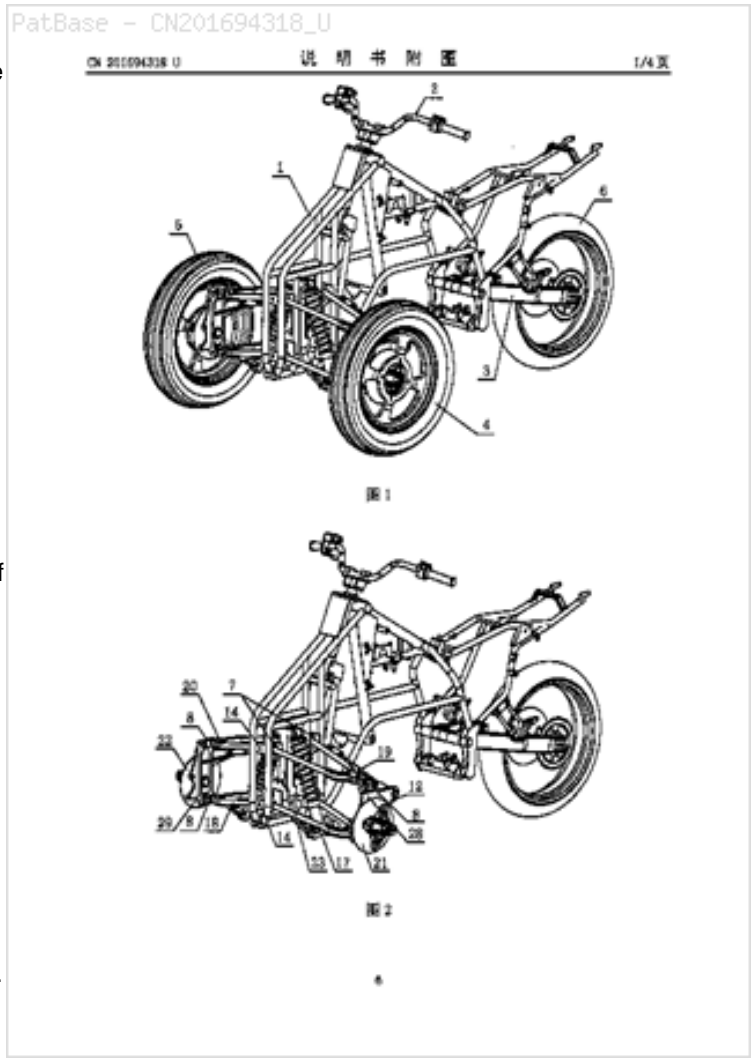
Inventor(s): XIANG JINGHUA ; JIANG BO

International class (IPC 8–9): B62K11/00 B62K25/08 B62K25/24 (Advanced/Invention)

Classification Explorer

Forward Citations: TWI439390, CN104520178, CN104309431, CN104309431, CN102975808, CN102975808,

Abstract:
Source: CN201694318U The utility model relates to a three–wheel motor vehicle capable of automatically dumping, which comprises a frame, a handle, a back fork, a left front wheel, a right front wheel and a back wheel, wherein the two sides of the front end of the frame are symmetrically provided with a left tilting mechanism and a right tilting mechanism, the left tilting mechanism and the right tilting mechanism respectively consist of an upper hanger bracket, a lower hanger bracket and a hub bracket, the hub brackets on the left side and the right side are respectively fixed on the inner sides of corresponding hubs, the upper hanger bracket and the lower hanger bracket are connected with the corresponding hub brackets respectively through a spherical hinge, the other ends of the upper hanger bracket and the lower hanger bracket are connected with the frame respectively through a spindle, and a parallelogram is formed by sequentially connecting the connecting point of the upper hanger bracket and the lower hanger bracket on the left side or right side and the corresponding hub bracket, and the connecting point of the upper hanger bracket and the lower hanger bracket on the left side or right side and the frame. The three–wheel motor vehicle capable of automatically dumping, provided by the utility model, has good stability, and has two stable steering pivots when controlling the steering, two front wheels can tilt towards to one side of the rotation direction under the action of gravity, the steering vehicle speed can be improved, maneuvering property can be obviously strengthened, the operation is simple, and at the same time, driving safety can be improved.



0) WO16067312A1 – THREE–WHEELED VEHICLE FOR GOODS' TRANSPORTATION...

132) Family number: 62245543 (WO16067312A1) © PatBase

Title: THREE–WHEELED VEHICLE FOR GOODS' TRANSPORTATION

Priority: WO2014IT00278 20141027

Family:

Publication number	Publication date	Application number	Application date
WO16067312 A1	20160506	WO2014IT00278	20141027

Probable Assignee: COMMUNICACTION S A S DI LIVIO LORIS AND C

Assignee(s):(std)**:** COMMUNICACTION S A S DI LIVIO LORIS AND C

Assignee(s): COMMUNICACTION SAS DI LIVIO LORIS AND C

Inventor(s):(std)**:** LORIS LUCA

Agent(s): TARABBIA LUIGI

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K5/05 B62K5/10 B62K7/04 (Advanced/Invention)

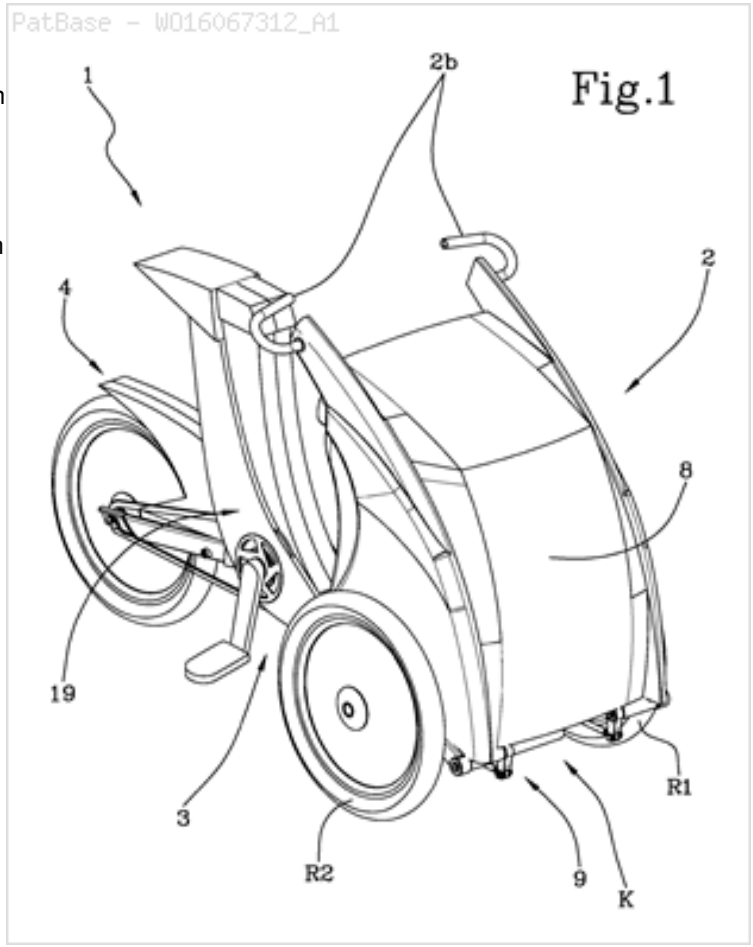
CPC: B62K5/10 B62K5/05 B62K7/04

Classification Explorer

Cited documents: EP2077223 A1,

DE102011111497 A1

Abstract:
A front loading cargo tricycle (1) comprising a forecarriage (2), a frame (3), a rear axle (4) and a motion transmission means (19) wherein the forecarriage (2) is configured to turn about an axis of rotation and it has two front wheels (Rl, R2), the forecarriage (2) defines a cargo space comprising a cargo platform (K) apt for receiving a payload and disposed between the front wheels (Rl, R2) so that the cargo platform (K) is perpendicular to the planes in which the front wheels (Rl, R2) lie, the frame (3) is mechanically connected to the forecarriage (2), the rear axle (4) comprises a rear wheel (R3) and is mechanically connected to the frame (3) so that the planes in which the front wheels (Rl, R2) and the rear wheel (R3) lie tilt in coordination with each other defining a roll angle of the tricycle (1).



133) Family number: 43178520 (BRMU8700864U)

© PatBase

Title: DISPOSICOES INTRODUZIDAS EM TRICICLO COM DUAS RODAS DIANTEIRAS E UMA TRASEIRA LEGISLATION INTRODUCED IN TRICYCLE WITH TWO FRONT WHEELS AND A REAR (Machine translation)

Priority: BR2007MU00864U 20070405

Family:

Publication number	Publication date	Application number	Application date
BRMU8700864 U2	20081118	BR2007MU00864U	20070405

Probable Assignee: CROVADOR RUI LEOPOLDO

Assignee(s):(std)**:** CROVADOR RUI LEOPOLDO

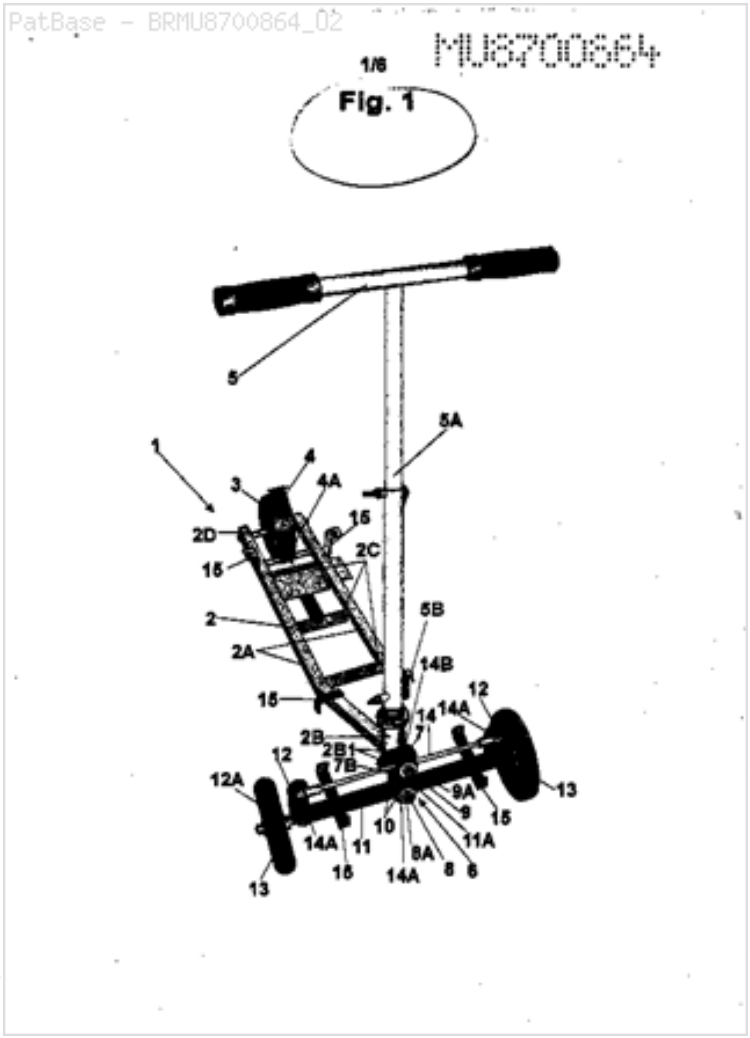
Inventor(s):(std)**:** CROVADOR RUI LEOPOLDO

Inventor(s): RUI LEOPOLDO CROVADOR

International class (IPC 8–9): B62K5/04 B62K5/10 (Advanced/Invention); B62K5/00 (Core/Invention)

Classification Explorer

Abstract:
Source: BRMU8700864U 1 • • • •• •••• # # •• •• •• • • ••• e • • • • ? • • • e # • ••••• ••••••• ••• # # • • # # t • # # # • • •• ##### i » •• • •• # • • • • # # # # RESUMO "DISPOSICOES INTRODUZIDAS EM TRICICLO COM DUAS RODAS DIANTEIRAS E UMA TRASEIRA", refere−se o presente relatorio de modelo de utilidade a um triciclo com duas rodas dianteiras e uma traseira que tem como 5 principio basico a formacao de um triciclo (1) com movimentos pendulares no eixo dianteiro (6) no sentido transversal ao triciclo (1), esse movimento conjugado ao de rotacao, promove a inclinacao do eixo dianteiro (6) simultaneo a inclinacao da base (2), e independendo da velocidade, faz com que o triciclo venca a forca centrifuga. Agregando assim mais estabilidade e seguranca ao piloto, principalmente quando 10 este executar curvas no uso convencional como brinquedo ou manobras mais radicais como esporte e lazer. 1 and • • • •? • • • and • ••••• ••••••• ••• # # # • • # # # # # t • • • •• ##### i »•• • •• • # • • • # # # # SUMMARY "PROVISIONS INTRODUCED IN TRICYCLE WITH TWO FRONT WHEELS AND A BACK" refers to the present report of utility model to a tricycle with two front wheels and one rear that has the fifth principle basic to the formation a tricycle (1) with commuting on the front axle (6) in transverse to the tricycle direction (1), this movement coupled to the rotation, promotes the inclination of the front axle (6) simultaneously the inclination of the base (2), and irrespective of speed, makes the tricycle venca the force centrifuge. So Adding more stability and security to the pilot, especially when 10 this run curves in conventional use as a toy or most radical maneuvers such as sports and leisure.



134) Family number: 43811317 (ES1070610U) © PatBase

Title: SILLA DE RUEDAS WHEELCHAIR (Machine translation)

Priority: ES20090030141U 20090528

Family:

Publication number	Publication date	Application number	Application date
ES1070610 UA	20091002	ES20090030141U	20090528
ES1070610 Y1	20100111	ES20090030141U	20090528

Probable Assignee: IZMAR S L U

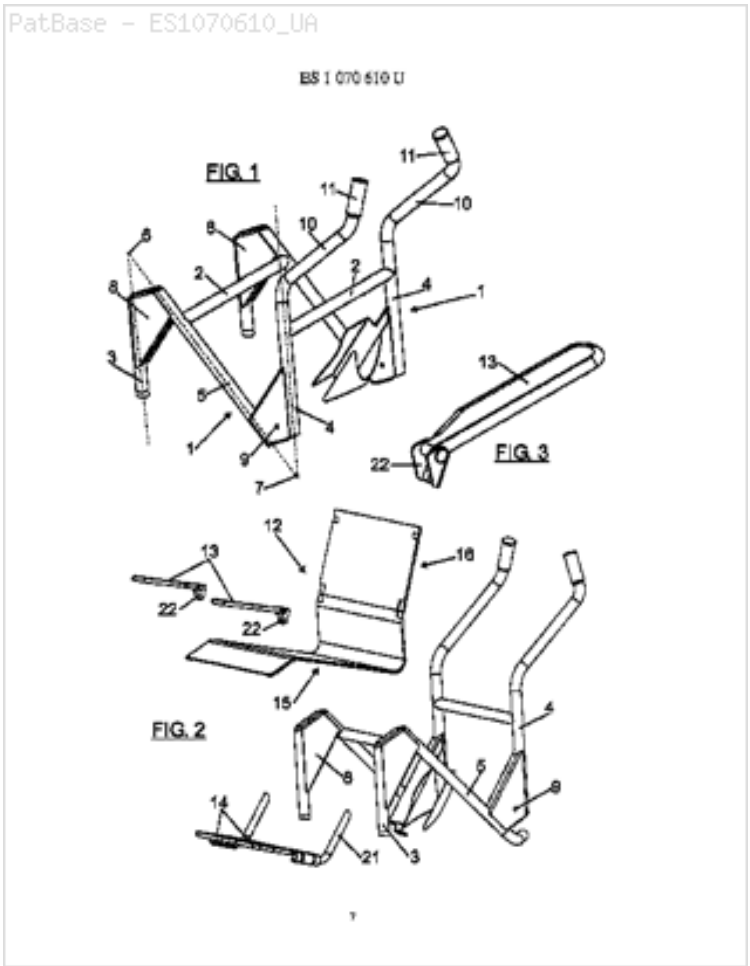
Assignee(s):(std)**:** IZMAR S L U ; UMANA INNOVA S L

Inventor(s):(std)**:** ALFONSO CORNES ALEXANDRE ; ALFONSO CORNES XAVIER

International class (IPC 8–9): A61G5/00 (Advanced/Invention); A61G5/00 (Core/Invention)

Classification Explorer

Abstract:
Source: ES1070610U 1. Silla de ruedas, que comprende un chasis en el que van montadas dos ruedas posteriores, dos ruedas anteriores, un asiento, reposabrazos y reposapies, caracterizada porque el chasis citado esta compuesto por dos armaduras planas, rigidas y simetricas, que van relacionadas mediante elementos intermedios de union, cuyas armaduras planas estan constituidas a base de otros tantos perfiles tubulares que describen sendos trazados en Z, de angulos achaflanados y ramas extremas verticales, una anterior de trayectoria descendente y otra posterior de trayectoria ascendente; estando cada una de las ruedas posteriores montada sobre una de las armaduras, por el exterior de las mismas, mientras que las ruedas anteriores, el asiento, los reposabrazos y reposapies van montados en las armaduras, sin sobresalir lateralmente mismas. 2. Silla segun la reivindicacion 1, caracterizada porque las dos ruedas anteriores van montadas en sendos soportes que se enchufan telescopicamente en el extremo de las ramas extremas anteriores de las dos armaduras planas. 3. Silla segun la reivindicacion 1, caracterizada porque el asiento comprende una placa de soporte de contorno rigido, conformada para definir un panel de asiento y un panel de respaldo, cuyo panel de asiento apoya y se fija sobre el vertice achaflanado definido entre las ramas extrema anterior e intermedia de cada armadura, mientras que el respaldo apoya y se fija sobre la rama extrema posterior de las armaduras. 4. Silla segun la reivindicacion 1, caracterizada porque las ruedas posteriores van montadas en las armaduras mediante sendos soportes que van dispuestos en los angulos definidos por las ramas extrema posterior e intermedia de cada armadura. 5. Silla segun la reivindicacion 1, caracterizada porque cada reposabrazos va articulado a un soporte posterior que se fija a la rama extrema posterior de cada armadura, siendo dicho reposabrazos basculante entre una posicion abatida de uso, en la cual discurre en posicion aproximadamente horizontal, y una posicion elevada en la cual discurre adosado al panel de respaldo. 6. Silla segun la reivindicacion 5, caracterizada porque el panel de respaldo del asiento incluye en sus laterales medios de retencion de los reposabrazos en su posicion elevada. 7. Silla segun la reivindicacion 1, caracterizada porque los reposapies van fijados a la rama extrema anterior de las armaduras. 8. Silla segun la reivindicacion 1, caracterizada porque incluye ademas un pedal posterior dispuesto entre las armaduras, que esta relacionado con al menos una de las



armaduras en un punto situado por encima del eje de las ruedas posteriores y llega hasta un punto situado por debajo y por detras de dicho eje. 9. Silla segun la reivindicacion 1, caracterizada porque los angulo achaflanados definidos entre las ramas extremas y la rama intermedia van reforzados mediante una placa dispuesta por el lado concavo y fijada a las ramas que definen dichos angulos. 10. Silla segun la reivindicacion 1, caracterizada porque el tramo superior en que se prolongan las ramas extremas posteriores discurren en sentido ascendente, con inclinacion hacia atras, y finalizan en una porcion extrema aproximadamente vertical que dispone de una empunadura. 11. Silla segun la reivindicacion 10, caracterizada porque las porciones extremas del tramo superior en que se prolongan las ramas extremas posteriores convergen entre si con ligera inclinacion.

Machine translation: 1. Wheelchair, comprising a chassis on which are mounted two rear wheels, two front wheels, a seat, armrests and footrest, wherein the said chassis is composed of two trusses, rigid and symmetrical, which are linked by intermediate members Joining whose trusses are formed of as many tubular profiles plotted in two separate describing Z, chamfered corners and vertical end branches, one anterior and one posterior descending path of upward path, while each of the rear wheels mounted on one of the armor on the outside of them, while the front wheels, seat, armrests and footrests are mounted in frames, not protruding laterally thereof. 2. Chair according to claim 1, wherein the two front wheels are mounted in two brackets that attach telescopically at the end of the branches of the two extreme preceding trusses. 3. Chair according to claim 1, wherein the seat comprises a support plate contour rigid, shaped to define a seat panel and a back panel, seat panel which supports and is fixed onto the vertex defined between the branches chamfered front end and middle of each frame, while the back supports and arm is fixed on the rear end of the armor. 4. Chair according to claim 1, characterized in that the rear wheels are mounted on the armor means of respective supports which are arranged at the corners defined by the rear end and intermediate branches of each frame. 5. Chair according to claim 1, wherein each armrest is hinged to a rear bracket which is fixed to the rear end branch of each frame, wherein said armrest tilt between a depressed position for use, which runs in approximately horizontal position, and a elevated position in which runs attached to the back panel. 6. Chair according to claim 5, wherein the seat back panel includes in its lateral retention means of the armrest in its elevated position. 7. Chair according to claim 1, wherein the pegs are fixed to the front end branch of the armor. 8. Chair according to claim 1, characterized in that further includes a rear pedal disposed between the reinforcement, which is related to at least one of the trusses at a point above the axis of the rear wheels and reaches a point below and behind that axis. 9. Chair according to claim 1, wherein the chamfered angle defined between the extreme branches and middle branch are reinforced by a plate prepared by the concave side and attached to the branches that define those angles. 10. Chair according to claim 1, wherein the upper section in that last post extreme branches run upwards, with inclination backward, and ending at approximately one end portion has a vertical grip. 11. Chair according to claim 10, wherein the end portions of the upper section which extend in the subsequent extreme branches converge with each other with a slight inclination.

0) DE9114565U1 –

135) Family number: 17684197 (DE9114565U1) © PatBase

Priority: DE19910014565U 19911122

Family:

Publication number	Publication date	Application number	Application date
DE9114565 U1	19920123	DE19910014565U	19911122

Probable Assignee: WIEGAND JOSEF 6419 RASDORF DE

Assignee(s): WIEGAND JOSEF 6419 RASDORF DE

International class (IPC 8–9): A63G25/00 B60M1/34 B60M7/00 (Advanced/Invention); A63G25/00 B60M1/00 B60M7/00 (Core/Invention)

International class (IPC 1–7): A63G25/00 B60L5/00 B60M1/34

CPC: B60L2200/26 B60M7/00 A63G25/00 B60M1/34

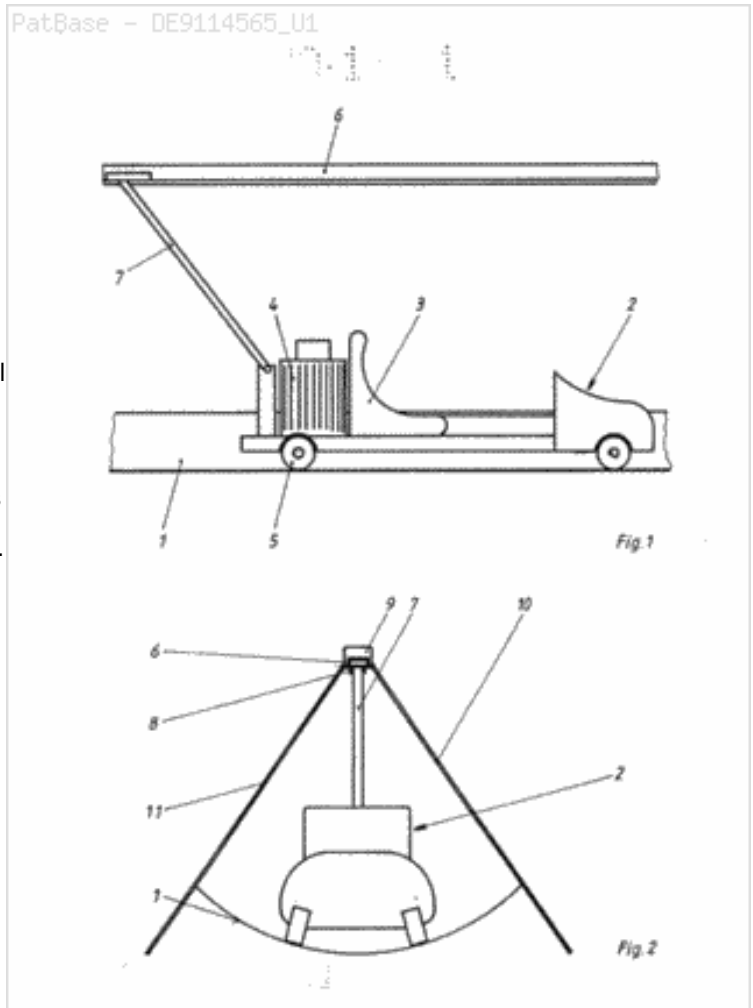
European class: A63G25/00 B60M1/34 B60M7/00

Classification Explorer

Forward Citations: US5443013, EP0548528,

Abstract:
Source: DE9114565U1 (Claim 1) 1. Freizeitanlage mit einer muldenfoermig ausgebildeten Fahrbahn und zumindest einem vierraedrigen Wagen mit einer selbstlenkenden Vorderachse, dadurch gekennzeichnet, dass der Wagen (2) als Antrieb einen Elektromotor (4) hat und dass zur Energieversorgung des Elektromotors (4) der Wagen (2) ueber einen Stromabnehmer (7) mit einer entlang der Fahrbahn (1) verlaufenden, elektrischen Schleifleitung (6) verbunden ist.

Machine translation: (Claim 1) 1 Recreational facility with a muldenfoermig trained roadway and at least a four–wheeled cart with a self–steering axle, wherein the carriage (2) as a drive an electric motor (4) and that the energy supply of the electric motor (4) the cars (2) about a current collector (7) with a is along the road (1) extending, electrical conductor (6).



136) Family number: 61030686 (TWM511456Y) © PatBase

Title: DIRECTION–CHANGE MECHANISM FOR VEHICLE WITH TWO FRONT WHEELS

Priority: TW20150208079U 20150525

Family:

Publication number	Publication date	Application number	Application date
TWM511456 Y	20151101	TW20150208079U	20150525

Probable Assignee: AEON MOTOR CO LTD

Assignee(s):(std)**:** AEON MOTOR CO LTD

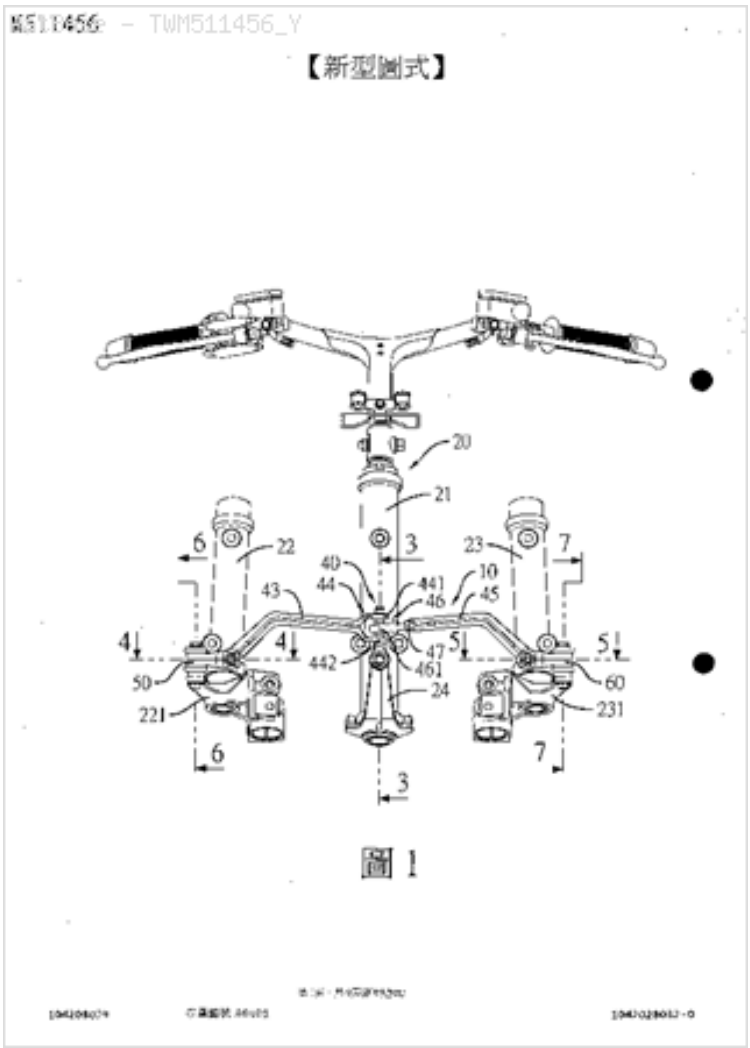
Assignee(s): WANG JIA TENG POWER TECHNOLOGY CO LTD ; AEON MOTOR CO

Inventor(s):(std)**:** SU PIN RUI

International class (IPC 8–9): B62D1/16 (Advanced/Invention)

Classification Explorer

Abstract:
Source: TWM511456Y This relates to a system for the creation of a two–wheel vehicle's steering mechanism, comprising a carrier fixed on the front end of the steering rod one spacer, the spacer has a front end portion pivoted assembly, prior to assembly and then pivoted to the main pivot then pivoting seat assembly is pivoted left and right bogie of the bogie and showed pivoted relations sphere, and therefore, the steering mechanism of the creation of the original rigidity of the bogie to bogie pivot and the right patterns Zhizuo bogie to replace, with the convergence of the relationship between the pivot point, will turn lever steering conveys action, properly communicated to the two front wheels, produced by a slight change in the pivot point between the sides of the truck, leaving control of the steering rod will not be affected, and when the vehicle is in an inclined state, this is not the vehicle steering mechanism of influence tilt mechanism, you can still follow the original trajectory of steering control, providing a more in line with the steering required mechanism.



0) DE19513649A1 – THREE–WHEELED VEHICLE FOR USE LIKE BICYCLE OR M...

137) Family number: 12213264 (DE19513649A1) © PatBase

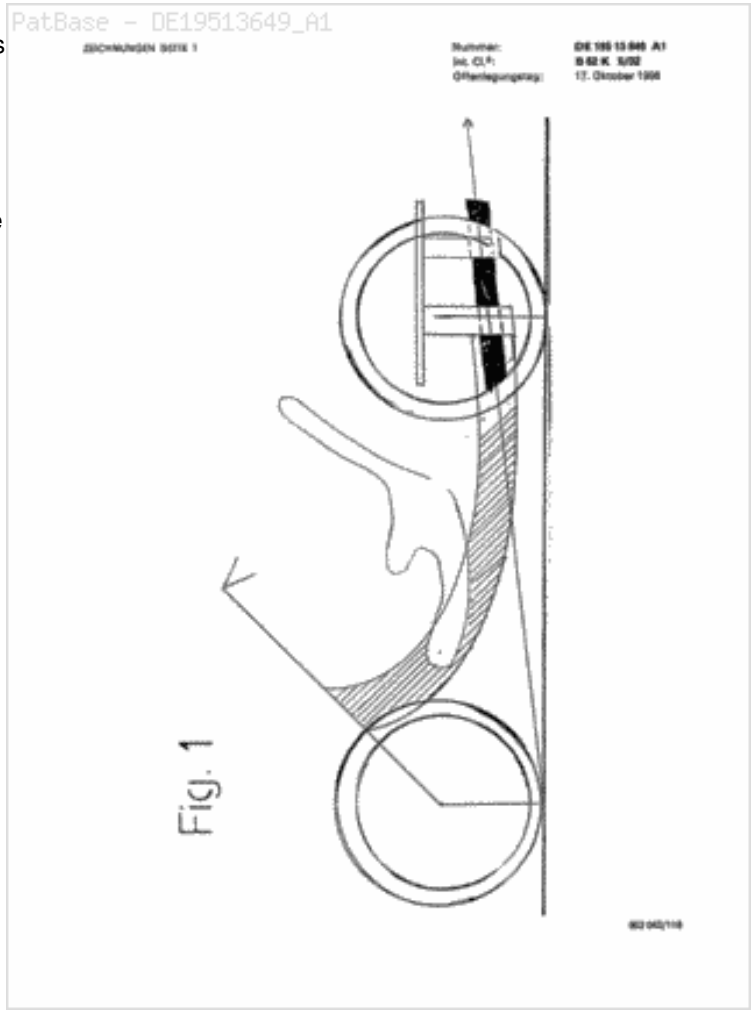
Title:	Three–wheeled vehicle for use like bicycle or motorcycle
Priority:	DE19951013649 19950411

Family:

Publication number	Publication date	Application number	Application date
DE19513649 A1	19961017	DE19951013649	19950411

Probable Assignee:	HOPPE HANS MARTIN
Assignee(s):(std):	HOPPE HANS MARTIN ; HOPPE KURT DR MED
Assignee(s):	HOPPE KURT DR MED 23566 LUEBECK DE ; HOPPE HANS MARTIN 23566 LUEBECK DE
Inventor(s):(std):	HOPPE KURT DR MED ; HOPPE HANS MARTIN
Inventor(s):	HOPPE HANS MARTIN 23566 LUEBECK DE ; HOPPE KURT DR MED 23566 LUEBECK DE
International class (IPC 8–9):	B62K3/00 B62K5/02 (Advanced/Invention)
International class (IPC 1–7):	B62K5/02
CPC:	B62K3/005 B62K5/02 B62K5/027 B62K5/10
European class:	B62K3/00C B62K5/02 B62K5/027 B62K5/10
Classification Explorer	
Cited documents:	US5040812, US4072325, US3995875, US3958814,
Forward Citations:	WO11109851, WO05077683, US8430713, EP2393704, EP1713651, DE202012003848, DE19716506, DE102011017359, DE102011017358,

Abstract:
Source: DE19513649A1 The vehicle chassis is carried on a single wheel at the front and two wheels in a bogie at the rear. In the first version of the vehicle the chassis can be turned w.r.t. the almost horizontal bogie at the back. The driver sits on the chassis in front of the bogie. When driving around curves the driver can lean himself and the front part of the frame towards the centre of the curved path. The combined centre of gravity of the vehicle and rider is moved towards the centre of the curve and lowered. In the second form levers and joints in the bogie (1) allow the rear wheels to lean and the bogie to lower.



0) US2005023793A – PEDAL SCOOTER

138) Family number: 31495588 (US2005023793A) © PatBase

Title: PEDAL SCOOTER

Priority: US20030491662P 20030801 US20040900499 20040728

Family:

Publication number	Publication date	Application number	Application date
CN2732610 Y	20051012	CN200420073198U	20040727
US2005023793 AA	20050203	US20040900499	20040728

Probable Assignee: HAIZHONG FU

Assignee(s):(std): HAIZHONG FU

Assignee(s): FU HAIZHONG ; FU HARRY

Inventor(s):(std): FU HARRY ; HAIZHONG FU ; XIAOGUANG ZHOU

Inventor(s): ZHOU XIAOGUANG ; FU HAIZHONG

Agent(s): HARRY FU

International class (IPC 8–9): B62K17/00 B62K3/00 B62M1/24 B62M5/00 (Advanced/Invention)

International class (IPC 1–7): B62K17/00 B62M1/04 B62M5/00

CPC: B62K3/002 B62M1/30 B62M5/00

European class: B62K3/00B B62M1/30 B62M5/00

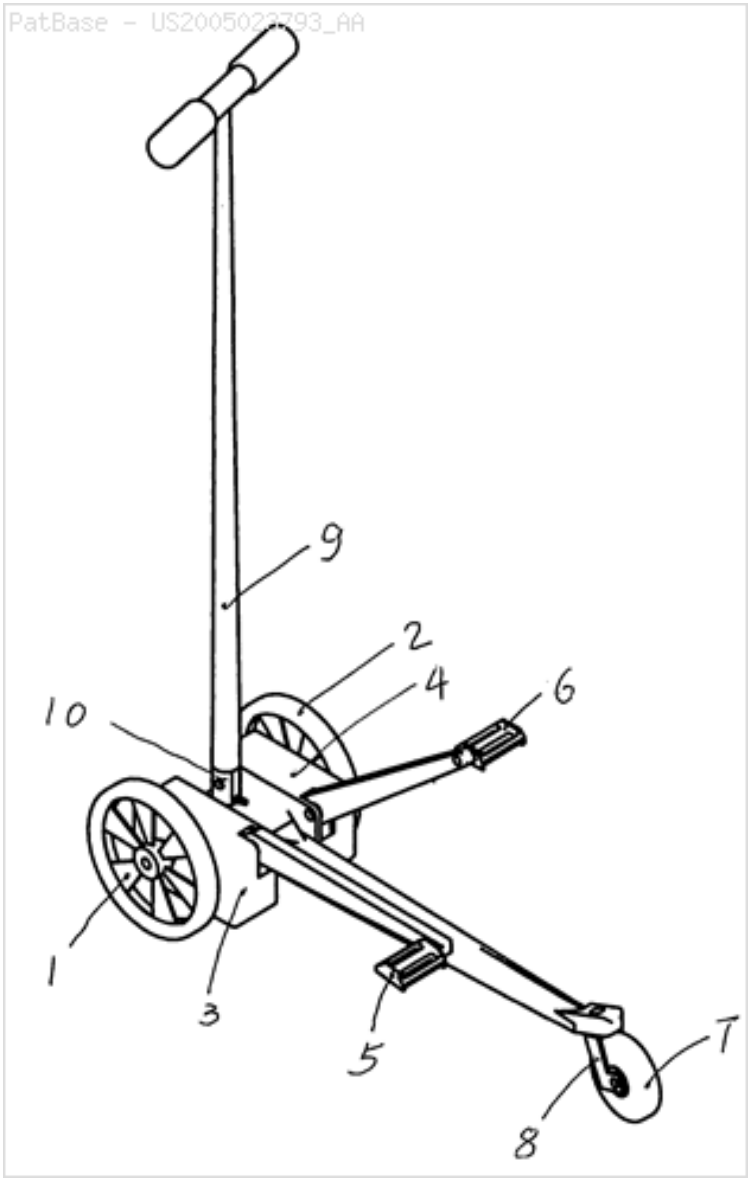
US class: 280/257 280/257P

Classification Explorer

Cited documents: US6325400 BA, US5540037 A, US4925202 A, US4828284 A, US4779863 A, US3403927 A, US2001017450 AA, US1778143 A, US1434105 A,

Forward Citations: US2013161924, TWI312749, CN101947990,

Abstract:
Source: US2005023793A This is a three wheel, foot–powered scooter with a steering column in front. The two front wheels are the driving wheels. Each is driven separately by a foot pedal via a speed–increase gear set. The rear wheel is the steering wheel, which is manipulated by the steering column via a mechanical linkage.



0) NL2005526C – SCOOTER, IN PARTICULAR A MOBILITY SCOOTER, FOR ...

139) Family number: 51326224 (NL2005526C) © PatBase

Title: SCOOTER, IN PARTICULAR A MOBILITY SCOOTER, FOR DRIVING WHILE STANDING OR SEMI–STANDING, HAVING TWO FRONT WHEELS AND A SINGLE REAR WHEEL.

Priority: NL20102005526 20101015

Family:

Publication number	Publication date	Application number	Application date
NL2005526 C	20120417	NL20102005526	20101015

Probable Assignee: SCHMIDT RUDOLF WILHELM JOHANNES

Assignee(s):(std)**:** SCHMIDT RUDOLF WILHELM JOHANNES

Inventor(s):(std)**:** SCHMIDT RUDOLF WILHELM JOHANNES

International class (IPC 8–9): B62K5/04 (Advanced/Invention)

CPC: B62K5/05

Classification Explorer

Cited documents: WO04011324 A1, US2005236803 AA, EP1527944 A1, EP1177972 A2,

Abstract:
Source: NL2005526C A SCOOTER, N PARTICULAR A MOBILITY SCOOTER, FOR AN OPERATOR TO RIDE IN A STANDING OR SEMI–STANDING POSITION, COMPRISING A STEP–THROUGH FRAME WITH A FOOTBOARD 5 FOR THE OPERATOR'S FEET TO REST UPON IN SAID STANDING OR SEMI–STANDING POSITION, FRONT AND REAR WHEELS 3, 2, A POWER UNIT FOR DRIVING AT LEAST ONE OF THE WHEELS, A SUPPORT 6 FOR THE OPERATOR TO LEAN AGAINST IN SAID STANDING OR SEMI–STANDING POSITION, STEERING HANDLE–BARS 8 FOR THE OPERATOR TO GRIP IN SAID STANDING OR SEMI–STANDING POSITION. ACCORDING TO THE INVENTION TWO FRONT WHEELS 3 AND A SINGLE REAR WHEEL 2 ARE PROVIDED. DIT OCTROOI IS VERLEEND ONGEACHT HET BIJGEVOEGDE RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK EN SCHRIFTELIJKE OPINIE. HET OCTROOISCHRIFT KOMT OVEREEN MET DE OORSPRONKELIJK INGEDIENDE STUKKEN.

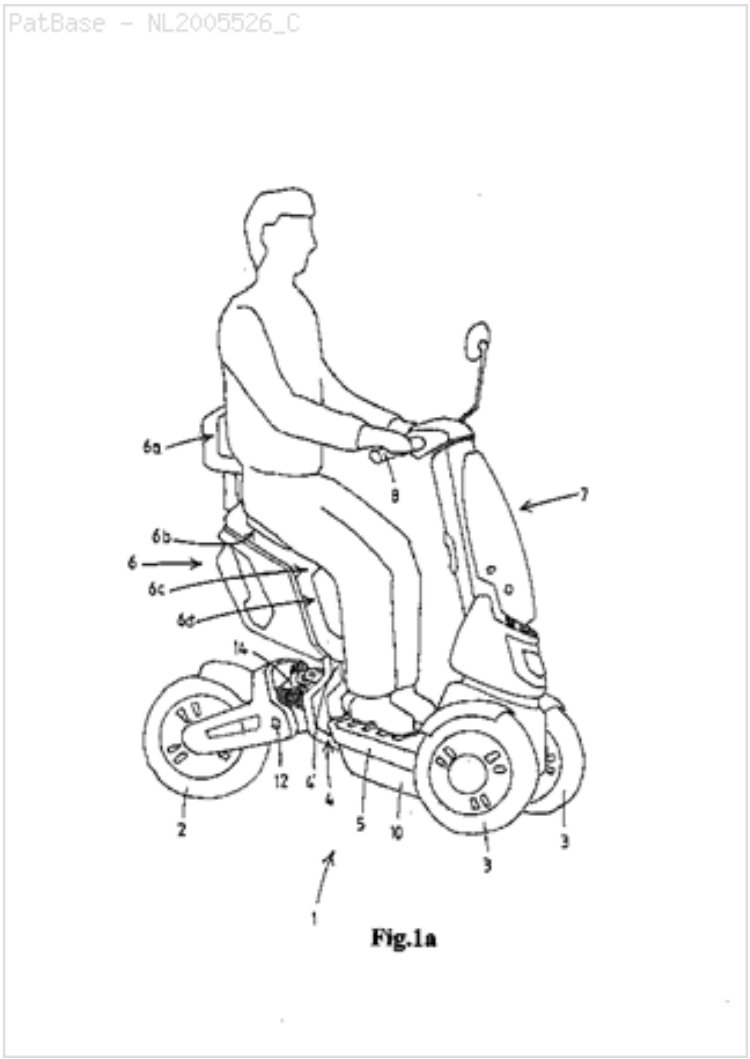


Fig.1a

0) US3887210A – DOWNHILL RACING CART

140) Family number: 1050002 (US3887210A) © PatBase

Title: Downhill racing cart

Priority: DE19732300822 19730109 DE19732351938 19731016

Family:

Publication number	Publication date	Application number	Application date
AT1068173 A	19760315	AT19730010681	19731220
AT333598 B	19761125	AT19730010681	19731220
CA1024185 A1	19780110	CA19740211236	19741011
CH562721 A	19750613	CH19740000188	19740108
DE2300822 A1	19740725	DE19732300822	19730109
DE2300822 B2	19751023	DE19732300822	19730109
DE2300822 C3	19760526	DE19732300822	19730109
DE2351938 A1	19750515	DE19732351938	19731016
DE2351938 B2	19770421	DE19732351938	19731016
DE2351938 C3	19771208	DE19732351938	19731016
FR2323419 A1	19770408	FR19740000705	19740109
FR2323419 B1	19780324	FR19740000705	19740109
IT1005398 A	19760820	IT19740012404	19740103
JP49135735 A2	19741227	JP19740005854	19740109
JP52026181 B4	19770712	JP19740005854	19740109
JP898550 C3	19780225	JP19740005854	19740109
SE7412957 A	19750417	SE19740012957D	19741015
US3887210 A	19750603	US19740430757	19740104

Probable Assignee: ISPOW AG

Assignee(s):(std)**:** ISPOW AG

Assignee(s): ISPOW AG CHUR SCHWEIZ ; ISPOW CHUR SCHWEIZ AG ; FUNKE PETER

Inventor(s):(std)**:** FINKE P ; FUNKE PETER

Inventor(s): FUNKE PETER 8000 MUENCHEN

International class (IPC 8–9)**:** A63G19/08 A63G21/12 B60T1/14 B62B13/18 B62B15/00 B62B17/08 B62B5/04 (Advanced/Invention); B62B5/04 (Advanced/Non–invention); A63G19/00 A63G21/00 B60T1/00 B62B13/00 B62B15/00 B62B17/00 B62B5/00 (Core/Invention); B62B5/00 (Core/Non–invention)

International class (IPC 1–7)**:** A63G21/12 A63G25/00 B60T1/14 B62B11/00 B62B13/18 B62B17/08 B62B5/04 B62B7/04 B62B9/08 B62J1/04 B62K5/00 F16D63/00

CPC: B62B5/049 B62B13/18 B62B15/008

European class: B62B13/18 B62B15/00W B62B5/04Z L62B5/04Z

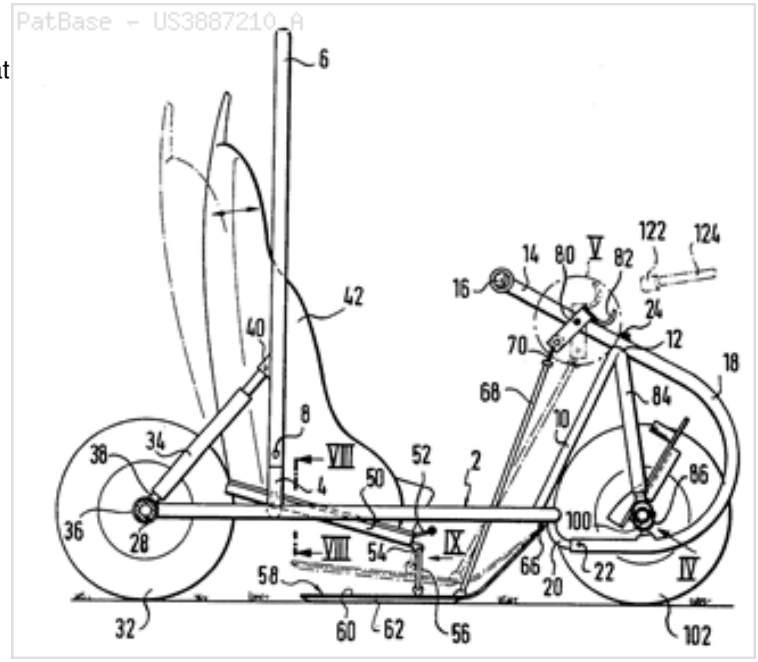
US class: 188/109 188/5 280/400 280/446.1 280/480 280/87.01

Classification Explorer

Cited documents: US3022846 A, US2919139 A, US2869686 A, US2259924 A, US1464465 A,

Forward Citations: USD545245, USD436141, US7070192, US6739610, US6688437, US6273451, US5413544, US4757871, US4217970, US2013257010, US2003189310, GB2488093, FR2587292, FR2449016, ES2141656, DE2736731,

Abstract:
Source: US3887210A A downhill racing cart having a tubular steel frame and a driver's seat mounted on the frame for tilting movement about a transverse axis. When the driver tilts the seat forward, a brake plate is lowered to the surface on which the cart travels. A hook for securing a towing rope to the front of the cart moves from an operative position to a rope−releasing, inoperative position in response to engagement of the brake by the driver.



0) US4286918A – IMPLEMENT TRANSPORTER

141) Family number: 1556961 (US4286918A) © PatBase

Title: Implement transporter

Priority: CA19790340219 19791120 US19790052145 19790626

Family:

Publication number	Publication date	Application number	Application date
CA1130244 A1	19820824	CA19790340219	19791120
US4286918 A	19810901	US19790052145	19790626

Probable Assignee: SHANNON JEFFERSON C

Assignee(s):(std)**:** SHANNON JEFFERSON C

Inventor(s):(std)**:** SHANNON JEFFERSON C

Agent(s): FETHERSTONHAUGH AND CO

International class (IPC 8–9): B60P3/00 (Advanced/Invention); B60P3/00 (Core/Invention)

International class (IPC 1–7): B60P3/00

CPC: B60P3/00

European class: B60P3/00

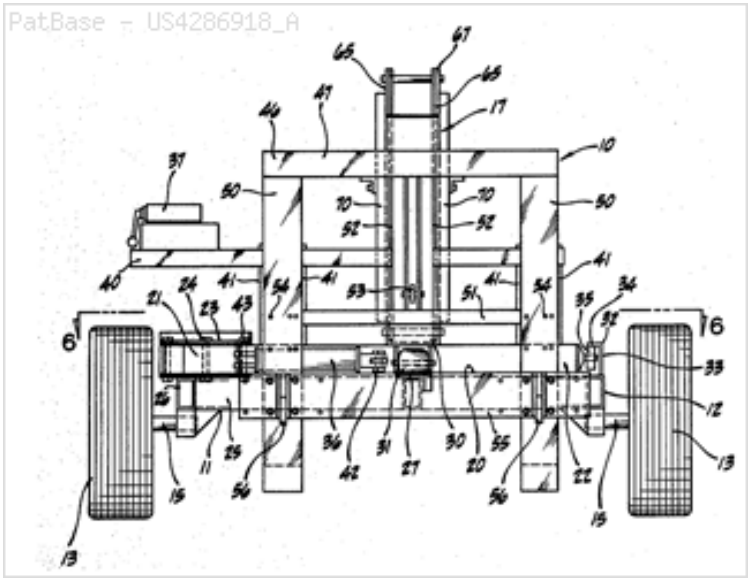
US class: 172/443 172/446 414/680 414/742

Classification Explorer

Cited documents: US3727698 A, US3576267 A,

Forward Citations: US9533612, US8534982, US7410004, US6238170, US5960614, US2014003898, US2012195725, US2005274531,

Abstract:
Source: US4286918A An implement transporter including a trailer carried by two wheels or a pair of rear wheels and a pair of front wheels on axes of rotation with a lifting mechanism for lifting an implement carried by the trailer. One end of the arm is pivotally connected to the trailer at one side at the rear of the trailer. The lifting mechanism holds the implement with its center of gravity spaced from the pivot in a direction towards the opposite end of the arm. The arm is pivotable from a lifting position to a transport position. In the transport position, the center of gravity of the implement is located forwardly of the axes of the rear wheels. A hydraulic arm is pivotally attached at one end to the arm and pivotally attached at the other end to the trailer at a point rearwardly and inwardly from the arm pivot for selective rotation of the arm. The arm is located longitudinally substantially at said one side of the trailer when in the transport position. The lifting mechanism includes a lifting frame and a second pivot operatively connected to the lifting frame. A second hydraulic arm is operatively connected to the lifting frame for raising the lifting frame and attached implement, and moving the implement horizontally closer to the second pivot and for subsequently tilting the lifting frame and implement forwardly and upwardly about the second pivot so that the implement is located close to said one trailer side when the arm is moved to the transport position.



0) EP0960992A2 – DEVICES AND METHOD TO HANDLE PLATE SHAPED ELEME...

142) Family number: 29613559 (EP0960992A2) © PatBase

Title: DEVICES AND METHOD TO HANDLE PLATE SHAPED ELEMENTS

Priority: DE19981024273 19980529

Family:

Publication number	Publication date	Application number	Application date
DE19824273 A1	19991202	DE19981024273	19980529
EP0960992 A2	19991201	EP19990110015	19990521
EP0960992 A3	20000126	EP19990110015	19990521

Probable Assignee: NUEDLING FRANZ C BASALTWERK

Assignee(s):(std)**:** NUEDLING FRANZ C BASALTWERK

Assignee(s): FRANZ CARL NUEDLING BASALTWERKE GMBH AND CO KG

Inventor(s):(std)**:** SCHMIDT THOMAS ; SCHMIDT THOMAS DR

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

International class(IPC 1–7)**:** B62B3/10 B65G7/00 E04F21/18 E04G21/16

CPC: B62B3/108 B62B2203/05 E04G21/16

European class: B62B3/10P E04G21/16 L62B203/05

Classification Explorer

Cited documents: WO9119065 A1, US5713716 A, US5700123 A, US5630696 A, US5449266 A, US5441379 A, US3680715 A, US2740542 A, SE467312 B, EP0779198 A1, EP0413381 A1, EP0223314 A2, DE9305894 U, DE9200211 U, DE3434367 A1, DE3402201 A1, DE29612206 U1, DE2501355 A1, DE2355096 A1, DD295812 A5, DD260045 Z, DD260045 A1, DD102189 Z,

Forward Citations: WO06099647, DE102015106032, AT502476, AT501909,

Abstract:
A handling system for heavy panels eg. prefabricated concrete modules for construction. The system uses a number of wheeled supported which have a first flange (14) onto which a panel is tipped edge on and carried in a near vertical position. The system has other ground supports (3) which enable the panel to be tipped into a horizontal position. This is assisted by curved profile flanges (12) which roll during tipping. The panels are moved with a minimum of manual effort.

PatBase - EP0960992_A2

EP 0 960 992 A2

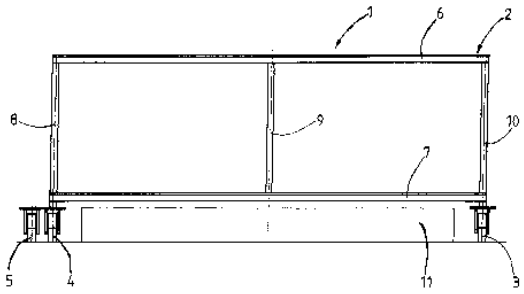


Fig. 1

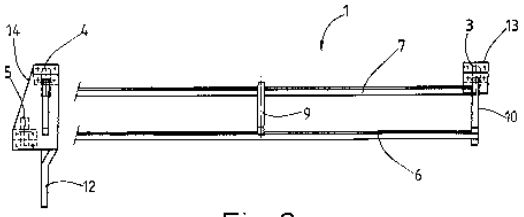


Fig. 2

0) DE202005013899U1 – FOLDABLE BUGGY RACK USED TO TRANSPORT BUGGY IN ...

143) Family number: 32474539 (DE202005013899U1) © PatBase

Title: FOLDABLE BUGGY RACK USED TO TRANSPORT BUGGY IN A MOTOR VEHICLE, HAS SWIVELING SUPPORTS CONNECTED IN SWIVELING MANNER TO FRONT LEGS AND REAR LEGS WITH USE OF REAR WHEEL CONNECTING LINKS

Priority: DE200510021659 20050506 DE200520013899U 20050506

Family:

Publication number	Publication date	Application number	Application date
DE202005013899 U1	20051110	DE200520013899U	20050506

Probable Assignee: HUTCHINSON JAMES M F

Assignee(s):(std)**:** HUTCHINSON JAMES M F

Assignee(s): HUTCHINSON JAMES MF

International class (IPC 8–9)**:** B62B7/06 (Advanced/Invention); B62B9/20 (Advanced/Non–invention); B62B7/00 (Core/Invention); B62B9/00 (Core/Non–invention)

International class (IPC 1–7)**:** B62B7/06

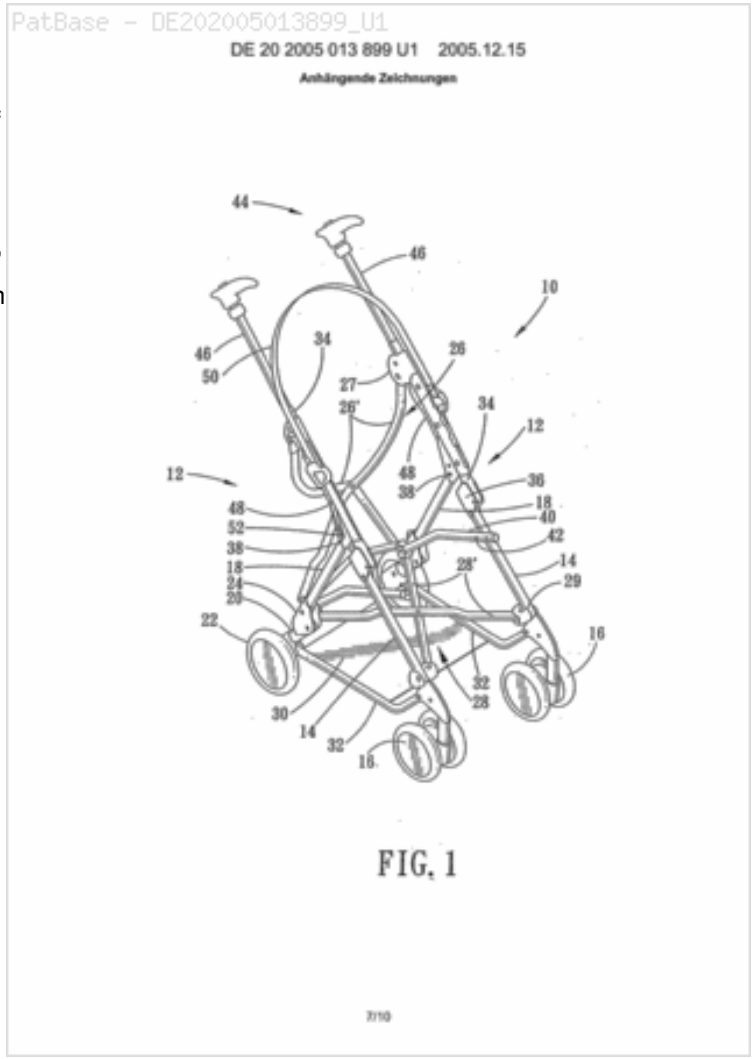
CPC: B62B7/06 B62B7/064 B62B7/066 B62B9/206 B62B2205/02

European class: B62B7/06 L62B205/02 L62B7/06P L62B7/06P2 L62B9/20T

Classification Explorer

Forward Citations: WO14051422, WO11085635, US9403549, CN104797486,

Abstract:
Source: DE202005013899U1 The buggy rack (10) has two swiveling supports (32) connected in swiveling manner to two front legs (14) and two rear legs (18) with the use of rear wheel connecting links (20). Wheels (16,22) are respectively connected to the ends of the front and rear legs. The rear wheel connecting links are coupled to the rear wheels. The front and rear legs are connected, permitting movement away from each other when folding the buggy rack. The rear legs can rotate relative to the front side in one plane when being folded.



144) Family number: 51042226 (WO12057638A1) © PatBase

Title: STAIR–CLIMBING WHEELCHAIR

Priority: PL20100392799 20101029

Family:

Publication number	Publication date	Application number	Application date
PL392799 A1	20120507	PL20100392799	20101029
WO12057638 A1	20120503	WO2011PL00107	20111017

Probable Assignee: MLYNARCZYK TADEUSZ

Assignee(s):(std)**:** MLYNARCZYK TADEUSZ

Inventor(s):(std)**:** MLYNARCZYK TADEUSZ

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): A61G5/06 B62B5/02 (Advanced/Invention)

CPC: A61G5/065 A61G5/042 A61G2203/42

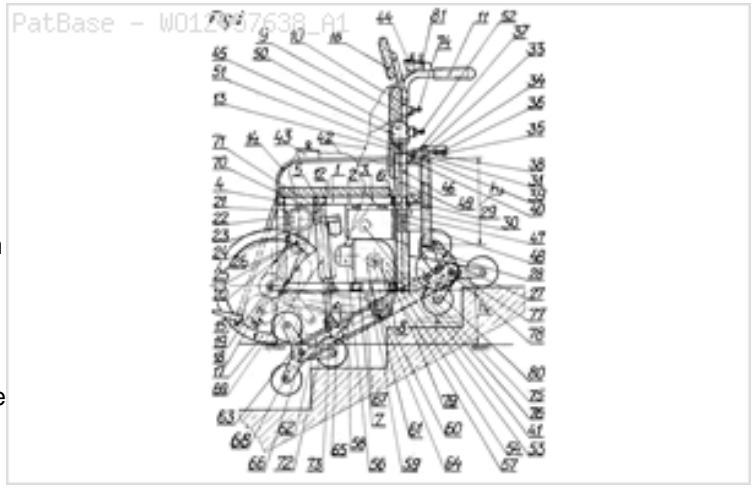
European class: A61G5/06B2 K61G5/04A2

Classification Explorer

Cited documents: US7384046 BB, US6857490 BB, US6484829 BA, US5123495 A, US3346268 A, DE19639836 A1,

Forward Citations: CN104443100, CN103784270, CN103230320, CN103230320,

Abstract:
The stair–climbing wheelchair is an electric wheelchair; it also moves downstairs and on level ground. It is constructed from simple and durable components. It is equipped with the seat (1) with the front wheels (17) moved by the drive (21) via the strand transmissions (21). The rear wheels (27) are mounted in the wheel forks with the steering system (33) mounted above the bushings (30) of the length (h2) favorably approx. 300 mm. The said wheelchair is equipped with the drive (45) that lifts and lowers the rear wheels (27) together with the steering system to the height (h1) of approx 250 mm. It is equipped with the stair–climbing apparatus consisting of the drive (54), front mechanism (58) with the tilting frame (62) and the rear mechanism (75). The frame (62) is tilted by the actuator (69) by the angle (a + beta) favorably lower than 45 degrees. The mechanisms rotate the two three– wheel assemblies (68 and 80), whilst the rear assemblies stop in such a way that the rear wheels are reversible on level ground.



0) FR2710583A – FRONT AXLE ASSEMBLY FOR A MOTOR VEHICLE TRAIN ...

145) Family number: 12805419 (FR2710583A) © PatBase

Title: Front axle assembly for a motor vehicle

Priority: FR19930011620 19930929

Family:

Publication number	Publication date	Application number	Application date
FR2710583 A1	19950407	FR19930011620	19930929
FR2710583 B1	19951222	FR19930011620	19930929

Probable Assignee: CITROEN SA

Assignee(s):(std)**:** CITROEN SA ; PEUGEOT

Assignee(s): PEUGEOT AUTOMOBILES ; CITROEN

Inventor(s):(std)**:** ARMAND FROUMAJOU ; FROUMAJOU ARMAND

International class(IPC 8–9)**:** B60G3/04 B60G3/18 B60G7/00 B60G99/00 (Advanced/Invention); B60G3/00 B60G3/18 B60G7/00 B60G99/00 (Core/Invention)

International class(IPC 1–7)**:** B60B37/10 B62D27/04

CPC: B60G3/04 B60G3/18 B60G7/001 B60G99/00 B60G2200/10 B60G2204/15 B60G2206/016 B60G2206/60

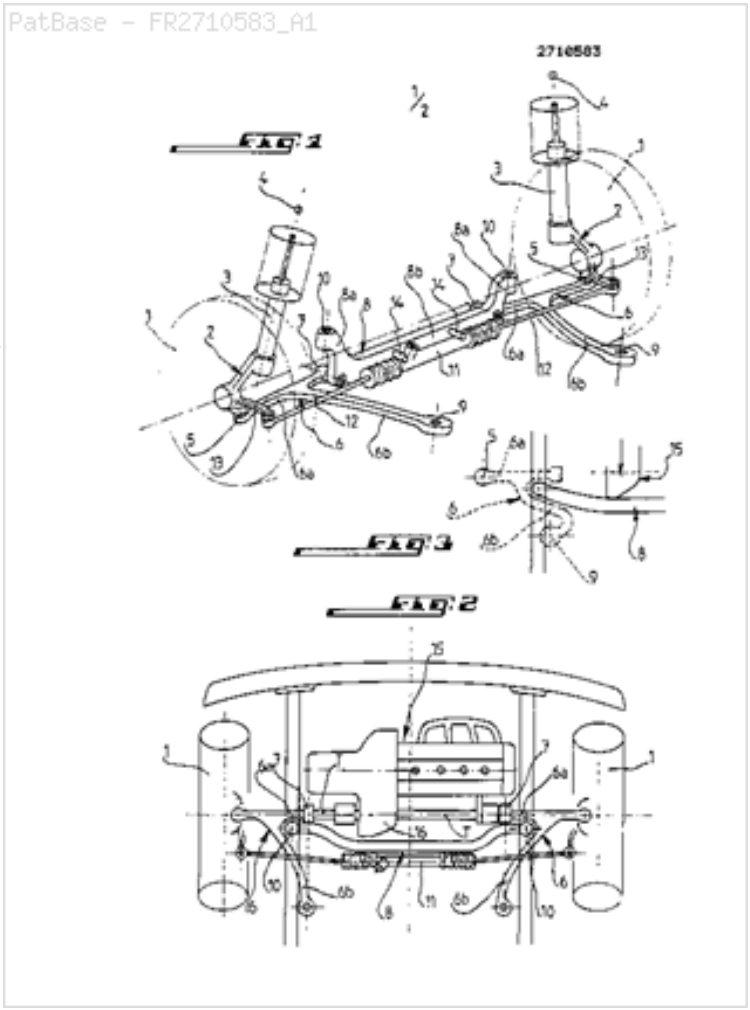
European class: B60G3/04 B60G3/18 B60G7/00A B60G99/00 L60G200/100 L60G204/15 L60G206/016 L60G206/60

Classification Explorer

Cited documents: WO9005083, US4964651, FR2232459, FR1343408, EP0301219, EP0141093, DE4020311, DE4014263, DE3635612, DE3015586,

Forward Citations: US7665751, EP1920952, EP0854067,

Abstract:
The present invention relates to a front axle assembly for a motor vehicle. The front axle assembly is characterised in that it comprises a crossmember (8) connected to the structure of the vehicle by its ends by means of two upper articulations (10) constituting a transverse axis of tilt for the crossmember (8) and, in the event of a frontal impact on the vehicle, allowing the crossmember (8) and front articulations (7) for the lower wishbones (6) connecting the two front wheels (1) to the structure of the vehicle to shift backwards. The invention finds an application in the automobile industry.



0) DE2922691A1 – DREIRAD TRICYCLE WITH DRIVEN REAR WHEEL – HAS ...

146) Family number: 1801258 (DE2922691A1) © PatBase

Title: DREIRAD TRICYCLE WITH DRIVEN REAR WHEEL – HAS STEERABLE FRONT WHEELS ON PARALLELOGRAM LINKAGES PERMITTING STEERING AND INCLINATION FROM VERTICAL

Priority: DE19792922691 19790602

Family:

Publication number	Publication date	Application number	Application date
DE2922691 A1	19801211	DE19792922691	19790602

Probable Assignee: MUELLER JOSEF

Assignee(s):(std)**:** MUELLER JOSEF

Inventor(s):(std)**:** MUELLER JOSEF

International class (IPC 8–9)**:** B62K3/00 B62K5/04 B62K5/05 (Advanced/Invention); B62K3/00 B62K5/00 (Core/Invention)

International class (IPC 1–7)**:** B62K5/02

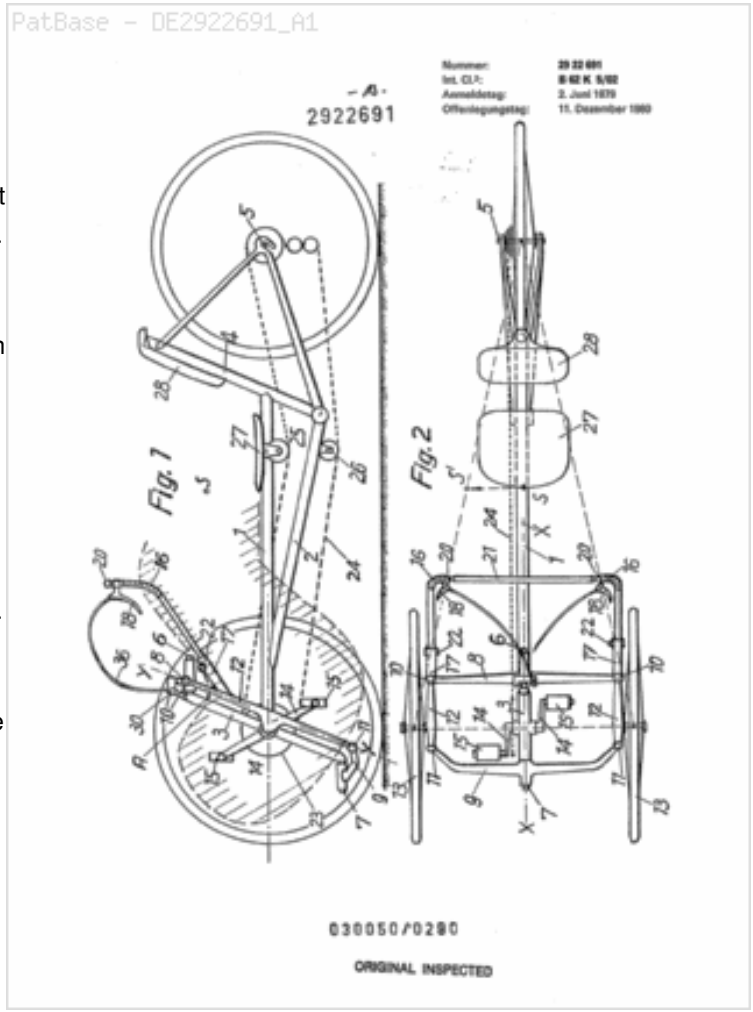
CPC: B62K3/005 B62K5/05 B62K5/10

European class: B62K3/00C B62K5/05 B62K5/10

Classification Explorer

Forward Citations: WO9313470, WO04062994, US5437467, US5415422, US5388847, US4410198, JP5703130, JP5687378, JP2012245861, FR2848152, FR2688465, FR2499015, EP0560670,

Abstract:
Source: DE2922691A1
Patentansprueche,reirad mit zwei an Achsschenkeln gelenkten Vorderraedern, schmaler Spurweite und angetriebenem Hinterrad, dadurch gekennzeichnet, dass die Achsschenkel (12,12) an den oberen und unteren Enden ueber Kugelgelenke (10,11) mit Querschwingen (8,9) so untereinander verbunden sind, dass sie zusammen mit in der Mitte der Schwingen (8,9) an Achszapfen (6,7) aufge haengten Mittelrohrrahmen (3,1,2,4) ein doppeltes Gelenk viereck (10,11,7,6) bilden, wobei die beiden Achszapfen(6,7) am Rahmen (3,1,2,4) nur eine zur Laengsachse // Achse (Achse x–x) Schwingbewegungen zulassen, die vier Kugelgelenke an den Schwingen– und Achsschenkelenden (10,11,zO,1t dagegen sowohl eine Drehung zur Laengsachse // Achse, als auch eine Drehbewegung um die Achsen (y–y) der Achsschenkel (12,1zu zwecks Lenkung des Fahrzeugs ermoeglichen 2. The triangle has two front wheels (13) with narrow track width carried on steering arms (12), as well as a driven rear wheel. The upper and lower ends of the arms are coupled by ball–joints (10, 11) to transverse rods (8, 9) whose centres are pivoted (6, 7) to the main frame (1) and to a central rod (3) parallel to the arms respectively, to form a double parallelogram linkage. The pivots only allow rotation about axes parallel to the longitudinal tricycle axis (x–x), whilst the four ball joints allow rotation about axes parallel to this axis and about the arm centre lines to permit steering motion.



0) DE3415524A1 – MULTI–PURPOSE VEHICLE FOR LEISURE AND SPORTS AC...

147) Family number: 3741109 (DE3415524A1) © PatBase

Title:	MULTI–PURPOSE VEHICLE FOR LEISURE AND SPORTS ACTIVITIES AND FOR THE DISABLED
Priority:	DE19843415524 19840426

Family:

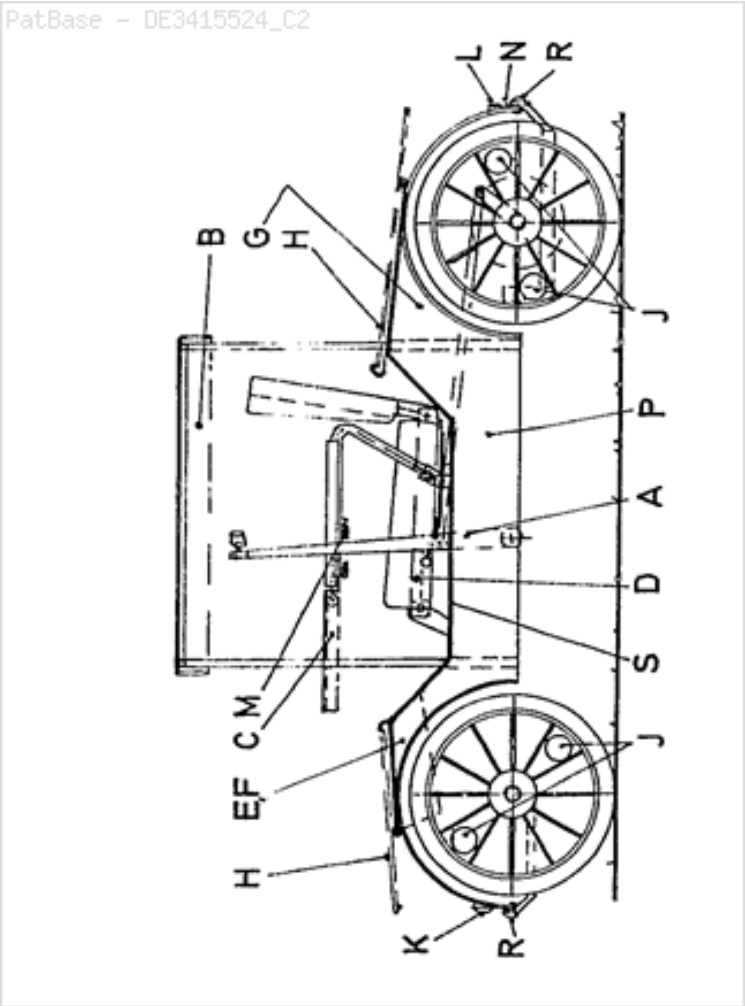
Publication number	Publication date	Application number	Application date
DE3415524 A1	19851031	DE19843415524	19840426
DE3415524 C2	19871022	DE19843415524	19840426

Probable Assignee:	HAPKE HEINZ ING GRAD
Assignee(s):(std)**:**	HAPKE HEINZ ING GRAD
Assignee(s):	HAPKE HEINZ ING GRAD 6457 MAINTAL DE ; HAPKE HEINZ ING
Inventor(s):(std)**:**	HAPKE HEINZ ING GRAD
Inventor(s):	HAPKE HEINZ ING GRAD 6457 MAINTAL DE ; HAPKE HEINZ ING
International class (IPC 8–9)**:**	A61G5/02 A61G5/06 B62B5/02 (Advanced/Invention); A61G5/00 B62B5/02 (Core/Invention)
International class (IPC 1–7)**:**	A61G5/00 B62D63/02
CPC:	A61G5/061 A61G5/006 A61G5/02 A61G5/066 A61G5/1051 A61G5/1059 A61G5/1072 A61G5/1075 B62B5/02 B62B2301/256
European class:	A61G5/00C A61G5/02 A61G5/06A A61G5/06C A61G5/10S12 A61G5/10S14 A61G5/10S2 B62B5/02 K61G5/10G L62B301/25E

Classification Explorer

Cited documents:	DE7927099 U, DE3128112 A1, DE2741323 A1,
Forward Citations:	US6845829, ITPR20090007, ITMC20120020, FR3032113, EP0948954, EP0948954, DE10246921, DE10246921,

Abstract:
Source: DE3415524A1 The provision of a multi−purpose vehicle for leisure and sports activities and for the disabled, which is capable of fulfilling the respective purpose of use by virtue of the utilisation of interchangeable devices and utility devices which can be easily attached, and by virtue of its variable design. A narrow design for one person can also be converted into a wide design for two persons. In particular, steeply inclined roads and steps do not present an insuperable obstacle. Solution: A chassis frame 1 which is manufactured in two parts and is connected to an intermediate element 14 which can be clamped in in a locked fashion receives all the desired body components A to T, including the movement components and their connections via sufficiently attached spring wire−secured receptacles 20 and forms the vehicle, the known wheelchair electric drive for non−powered locomotion being freely selectable also as a manual drive A with crank or swing drive 5 or chain drive via foot−operated or manually operated lever 8 for powered locomotion. The manually driven running face drive brake shoe 17, which can also be subsequently attached to all wheelchairs, and the compensation rollers 18, arranged on the front wheels 2, and rear wheels 3 with compensation roller drive 19 which supports the drive, both of which have a track laying belt 46, serve for difficult routes and steps. A passenger car reclining seat 11 with additionally arranged swivel devices 16 and tilting devices 33−36 and rotary device 30−32 permit the driver's seat... Original abstract incomplete.



0) DE102008006242A1 – SCOOTER OR SKATEBOARD, HAS SPRING ELEMENT PRESS...

148) Family number: 43549730 (DE102008006242A1) © PatBase

Title: SCOOTER OR SKATEBOARD, HAS SPRING ELEMENT PRESSURIZING PIVOTABLY SUPPORTED FRONT WHEELS IN CENTER POSITION, WHERE SPRING ELEMENT IS ARRANGED CO–AXIAL TO CONNECTING ROD THAT IS MOVABLY ARRANGED AT SUPPORT ELEMENT

Priority: DE200810006242 20080125

Family:

Publication number	Publication date	Application number	Application date
CN101492083 A	20090729	CN200910009917	20090122
DE102008006242 A1	20090730	DE200810006242	20080125

Probable Assignee: HUDORA GMBH

Assignee(s):(std)**:** HUDORA GMBH

Inventor(s):(std)**:** FRANK TRZASKA ; TRZASKA FRANK

International class (IPC 8–9): A63C17/00 A63C17/02 B62K17/00 (Advanced/Invention)

CPC: A63C17/0066 A63C17/01 A63C17/013 A63C17/014 A63C17/265 B62K3/002

European class: A63C17/00L A63C17/01 A63C17/01B4 A63C17/01H A63C17/26H B62K3/00B

Classification Explorer

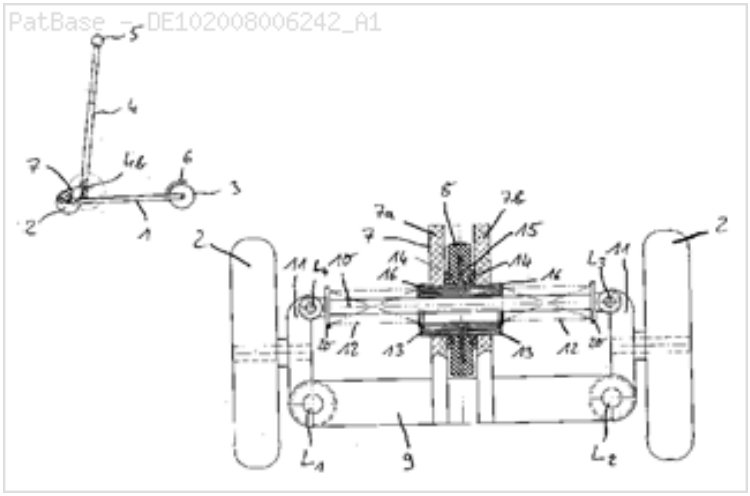
Cited documents: US7140621 BB, US6398238 BA, US6382646 BA, US2002167144 AA,

DE202006019460 U1

DE20102680 U1, DE20100372 U1,

Forward Citations: ITTO20100239, EP2371428,

Abstract:
The skateboard has a footboard (1), two pivotably supported front wheels (2) and a rear wheel (3), where each front wheel is pivotably supported at a support element (7). A connecting rod is rotatably supported or pivotably connected at the respective front wheel directly with ends or with a connecting element, where the connecting rod is movably arranged at the support element. A spring element pressurizes the front wheels in a center position, where the spring element is arranged co–axial to the connecting rod.



0) CN201553224U – ELECTRIC TRICYCLE

149) Family number: 46686025 (CN201553224U) © PatBase

Title:	Electric tricycle
Priority:	CN200920200129U 20091112

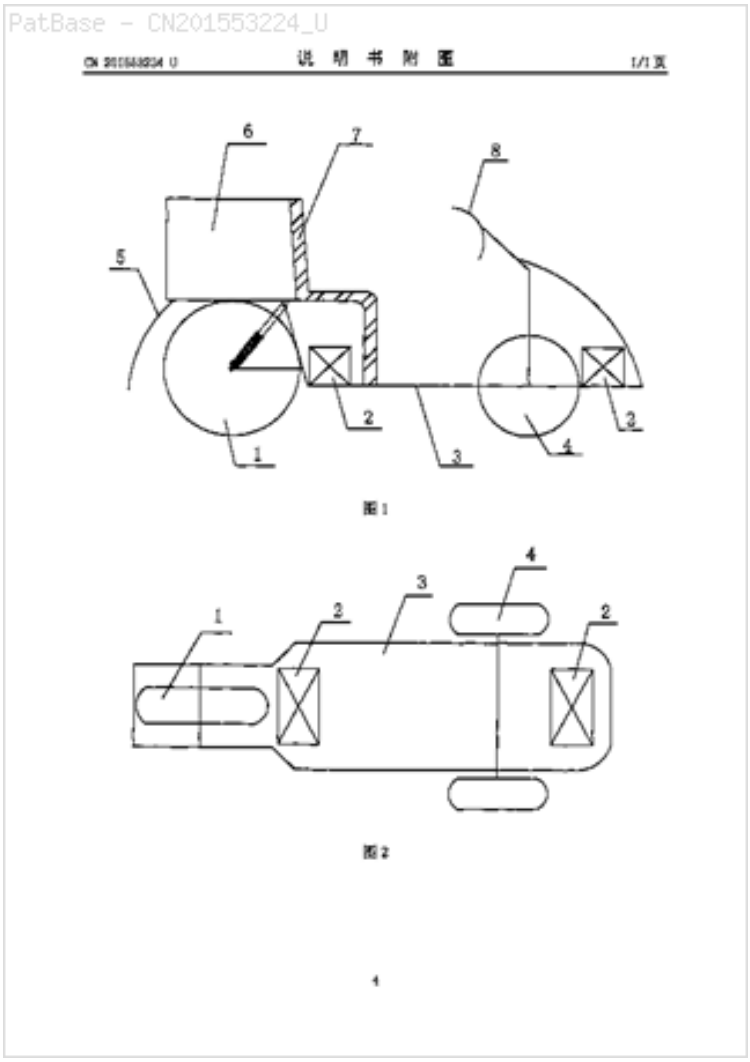
Family:

Publication number	Publication date	Application number	Application date
CN201553224 U	20100818	CN200920200129U	20091112

Probable Assignee:	KANGDI INVEST GROUP CO LTD
Assignee(s):(std):	KANGDI INVEST GROUP CO LTD
Assignee(s):	KANGDI INVESTMENT GROUP CO
Inventor(s):(std):	XIAOMING HU
Inventor(s):	HU XIAOMING
International class (IPC 8–9):	B62D61/06 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN201553224U The utility model provides an electric vehicle, which includes a chassis, and a seat and a direction control device which are arranged on the chassis, wherein two front wheels are arranged on two sides of the front end of the chassis; and a rear wheel is arranged at the center of the rear end of the chassis. Since the tri–wheel positioning structure with the two front wheels and one back wheel is adopted, the tri–wheel electric vehicle has the advantages of good stability without side tilting, reduction of traffic accidents and assurance of user's safety.



0) US4522548A – AERIAL WEAPONS HANDLING TRAILER

150) Family number: 4912473 (US4522548A) © PatBase

Title: AERIAL WEAPONS HANDLING TRAILER

Priority: US19820426220 19820928 US19850698910 19850206 US19890298890 19890117

Family:

Publication number	Publication date	Application number	Application date
US4522548 A	19850611	US19820426220	19820928
US5083892 A	19920128	US19890298890	19890117

Probable Assignee: STANDARD MFG CO

Assignee(s):(std)**:** STANDARD MFG CO

Assignee(s): STANDARD MFG CO INC A CORP OF TX ; DBP LTD ; STANDARD MANUFACTURING CO INC ; STANDARD MANUFACTURING COMPANY ; STANDARD MFG

Inventor(s):(std)**:** OSWALD NORMAN D ; MANKEY HARRY S ; DEAN ROBERT R

International class (IPC 8–9): B60P3/00 F41A9/87 (Advanced/Invention); B60P3/00 F41A9/00 (Core/Invention)

International class (IPC 1–7): B60P3/00

CPC: Y10S414/13 F41A9/87 B60P3/00

European class: B60P3/00 F41A9/87

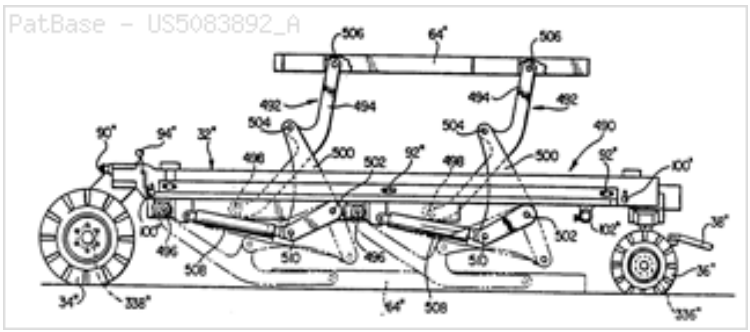
US class: 254/8C 414/458 414/498 414/589 414/917

Classification Explorer

Cited documents: US4522548 A, US4299375 A, US4285416 A, US4223693 A, US4180366 A, US4134504 A, US4122962 A, US3972379 A, US3928946 A, US3758076 A, US3727774 A, US3524556 A, US3472547 A, US3468440 A, US3446366 A, US3424325 A, US3387726 A, US3341042 A, US3259208 A, US3154868 A, US3095981 A, US2956408 A, US2940769 A, US2937003 A, US2934228 A, US2931519 A, US2929655 A, US2929519 A, US2920773 A, US2897989 A, US2836054 A, US2764869 A, US2609267 A, US2471901 A, US2454840 A, US2449863 A, US2417553 A, US2414684 A, US2355341 A, US2219525 A, US1136726 A, SU527377 T, SU503494 D, IT510374 A, GB846161 A, GB651298 A, DE901517 A, DE2247562 A1, DE1114290 B, BE536376 A,

Forward Citations: US9353582, US9315137, US8876455, US8745865, US8602713, US8465005, US8439337, US7976029, US7478704, US7270297, US7103952, US6485247, US6390762, US6330933, US6019565, US6000899, US5992562, US5655733, US5628607, US5595469, US5569013, US5451134, US5449266, US5445489, US5224814, US5201494, US5135346, US5083892, US5056977, US4850787, US4792272, US4685855, US4674941, US4600171, US4599033, US2016185467, US2014353038, US2012284989, US2012211709, US2011064551, US2010276897, US2010264573, US2010180609, US2010054907, US2008135546, US2007253801, US2007160451, US2006045696, US2005198797, US2005184194, EP2427346, EP2081795, EP1734329, EP1361109, DE102011053456,

Abstract:



Source: US4522548A An aerial weapons handling trailer includes a frame comprising longitudinally extending beams and a cross beam interconnecting the front ends of the longitudinally extending beams. The frame is supported on wheels which are pivotable between positions wherein the trailer is movable longitudinally and positioned wherein the trailer is movable laterally. The wheels include drive motors for positioning the trailer. A plurality of lift arms are pivotally supported on the longitudinally extending beams of the frame and in turn support lift beams. The lift arms include inwardly offset portions, and the lift beams are separated by a distance not greater than the width of a weapons package that is lifted and positioned by the trailer. The lift arms are actuated by hydraulic cylinders which are provided with load lock valves to prevent inadvertent lowering of the load carried by the lift beams. The hydraulic cylinders are arranged in sets, with each

cylinder of each set having sufficient capacity to support the entire load regardless of the condition of the other cylinder.

0) US2002163150A – PATIENT CARRIER WITH STORAGE

151) Family number: 30996909 (US2002163150A)

© PatBase

Title: PATIENT CARRIER WITH STORAGE

Priority: US20010850517 20010507 US20020133886 20020429

Family:

Publication number	Publication date	Application number	Application date
US2002163150 AA	20021107	US20010850517	20010507
US2002171215 AA	20021121	US20020133886	20020429
US6860495 BB	20050301	US20020133886	20020429

Probable Assignee: WILLIAMSON WILLIAM P

Assignee(s):(std)**:** WILLAMSON WILLIAM P ; WILLIAMSON WILLIAM P

Inventor(s):(std)**:** WILLIAMSON WILLIAM P ; WILLAMSON WILLIAM P

International class (IPC 8–9)**:** A61G5/00 A61G5/10 (Advanced/Invention); A61G7/05 (Advanced/Non–invention); A61G5/00 (Core/Invention); A61G7/05 (Core/Non–invention)

International class (IPC 1–7)**:** B60R7/00 B61H13/00 B62B7/00 B62M1/14

CPC: Y10S180/907 A61G5/00 A61G5/10 A61G7/0528

European class: A61G5/00 A61G5/10 K61G7/05Z1

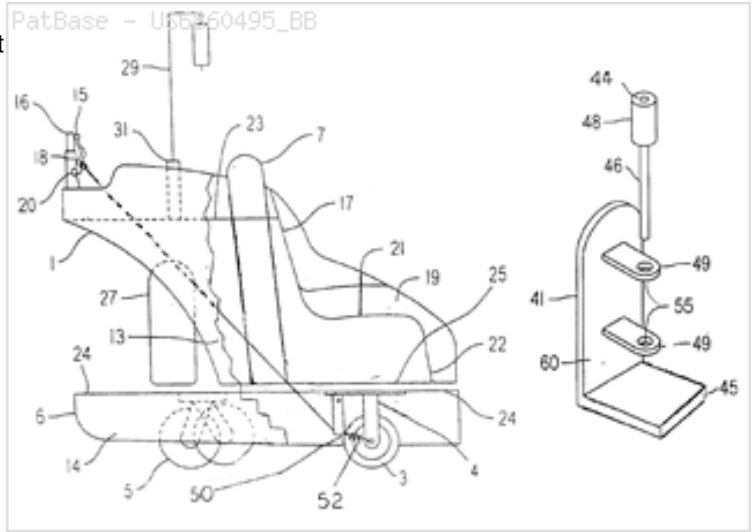
US class: 180/907 188/2F 224/275 280/250.1 280/250.100S 280/304.1 280/304.5 280/47.35 280/47.38 280/47.380P 280/47.4 280/474

Classification Explorer

Cited documents: US78472 A, US6154690 A, US5984334 A, US5370408 A, US5230524 A, US5135191 A, US5028065 A, US4696420 A, US2812041 A,

Forward Citations: US7448633, US2007131730, US2006150985, RU2486882,

Abstract:
Source: US2002163150A A carrier to transport a person in sitting position along with luggage, miscellaneous small articles and, when needed a gas cylinder and a holder to drip feed a patient. The carrier with a manually operable fail safe brake and foot rests that are tilted up and foldable whereby one being transported cannot stand on the foot rests and tip the unit but folds the foot rests to allow standing on the floor. The carrier may be stored in a normal cart space and is suitable for use in hospitals, airports etc.



0) DE9317150U1 – FOLIEN–LEGEGERAET FUER SPARGELDAEMME FOIL PUTT...

152) Family number: 17680723 (DE9317150U1) © PatBase

Title: Folien–Legegeraet fuer Spargeldaemme Foil putting equipment for asparagus dams (Machine translation)

Priority: DE19930017150U 19931110

Family:

Publication number	Publication date	Application number	Application date
DE9317150 U1	19940127	DE19930017150U	19931110

Probable Assignee: HERMELER LEO

Assignee(s):(std)**:** HERMELER LEO

Assignee(s): HERMELER LEO 48336 SASSENBERG DE

International class(IPC 1–7)**:** A01B59/043 A01B63/00 A01B63/16 A01G13/02

CPC: A01G13/0287

European class: A01G13/02B A01G13/02S4

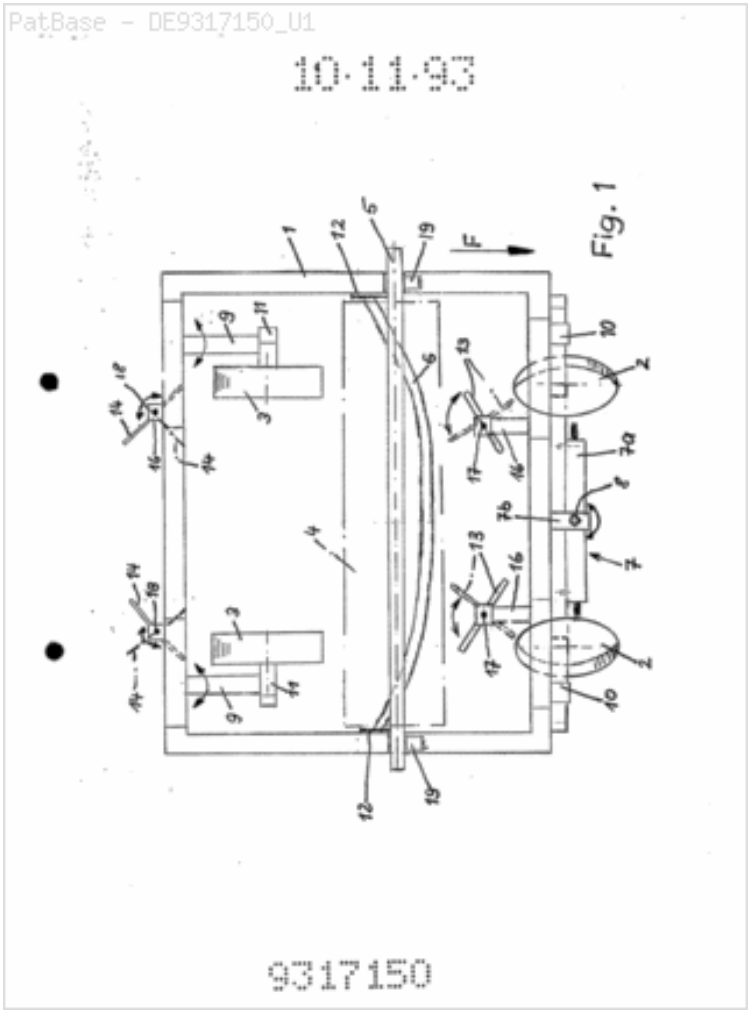
Classification Explorer

Cited documents: US5226376 A, US3559599 A, DE1829592 U, DE1704505 A1, DD50143 Z, CH596748,

Forward Citations: WO16144167, FR2746580, EP0922382, DE19635144, DE19635144, DE19532766, DE19532766,

Abstract:
Source: DE9317150U1 (Claim 1) 1. Geraet zum Legen von Folien ueber Spargeldaemme, gekennzeichnet durch einen von vier schraeg zum Spargeldamm angestellten Raedern (2,3) getragenen Rahmen (1), welcher eine Folienrolle (4) mit einer Welle (5) auswechselbar traegt, einen Folien–Fuehrungsbuegel (6) verstellbar haelt und eine pendelnde Dreipunktaufhaengung (7) zum Anbau an ein Schleppfahrzeug aufweist.

Machine translation: (Claim 1) 1. Equipment for putting foils over asparagus dams, characterized by one of four diagonally frameworks (1), carried to the asparagus dam employee wheels (2,3), which carry a foil role (4) with a wave (5) replaceable, hold a foil guidance handle (6) adjustable and exhibit an oscillating three–point hitch (7) to the cultivation by a dragging vehicle.



0) GB170981A – IMPROVEMENTS IN AND CONNECTED WITH LIFE GUARDS ...

153) Family number: 18173933 (GB170981A)

© PatBase

Title: Improvements in and connected with life guards for vehicles

Priority: GB19200024045 19200818

Family:

Publication number	Publication date	Application number	Application date
GB170981 A	19211110	GB19200024045	19200818

Probable Assignee: ALBERT THOMAS EDWARDS

Assignee(s):(std)**:** ALBERT THOMAS EDWARDS

International class (IPC 8–9)**:** B60R21/34 (Advanced/Invention)

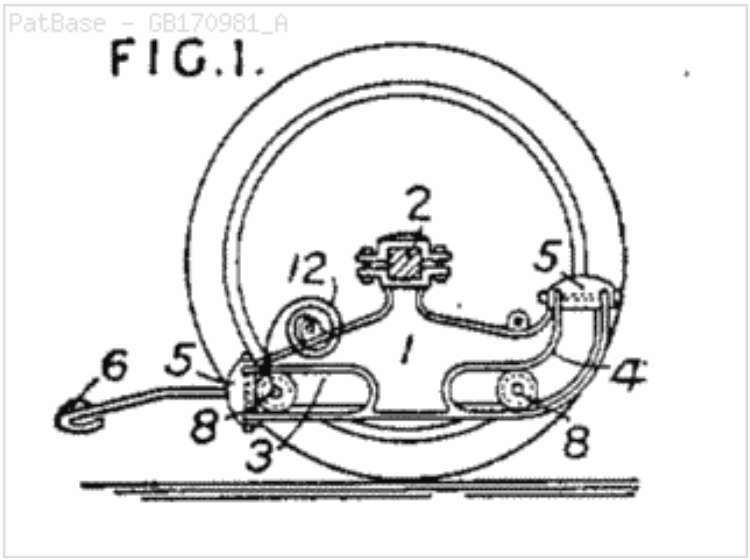
International class (IPC 1–7)**:** B60R19/00

CPC: B60R21/34

European class: B60R21/34

Classification Explorer

Abstract:
Source: GB170981A 170,981. Edwards, A. T. Aug. 18, 1920. Wheel – guards, obstruction–removers, and safety appliances.–In a life–guard for a vehicle of the type in which the guard or cradle is supported on each side by a pair of rollers engaging in a corresponding number of slots in a guide bracket carried by the axle of the vehicle, the forward slots being horizontal and the rear slots upwardly curved whereby the rearward movement of the cradle causes the front end to tilt toward the ground consequent upon the corresponding lifting of the rear end of the cradle by the curvature of the rear slots, the guide brackets are suspended from the front axle and carry the front guard which is returned to its normal position by the action of springs. A pair of guide brackets 1, each having runways 3, 4, for rollers 8, 8 are attached to the front axle 2 between the two front wheels. The rollers 8, 8, are retained in the runways 3, 4 by end caps 5, 5, and carry a front guard 6. When the guard 6 strikes an obstruction it moves rearwardly along the slots 3, 4, the front edge being depressed due to the upward curvature of the rear slot 4. When the obstruction is removed, the guard returns to its normal position by the action of springs 12.



0) FR2836447A – VEHICLE WITH THREE OR MORE WHEELS HAS BODY THAT...

154) Family number: 28938301 (FR2836447A) © PatBase

Title: Vehicle with three or more wheels has body that can be tilted on bends

Priority: FR20020002552 20020228

Family:

Publication number	Publication date	Application number	Application date
FR2836447 A1	20030829	FR20020002552	20020228
FR2836447 B1	20040716	FR20020002552	20020228

Probable Assignee: GUIZARD JEAN

Assignee(s):(std)**:** GUIZARD JEAN

Inventor(s):(std)**:** GUIZARD JEAN

International class (IPC 8–9)**:** B60G21/00 B60G9/02 B62D9/02 B62K5/08 (Advanced/Invention)

International class (IPC 1–7)**:** B62D9/02

CPC: B60G9/02 B60G21/007 B60G2200/32 B60G2200/445 B60G2200/46 B60G2204/4604 B60G2300/122 B60G2300/13 B62D9/02 B62K5/027 B62K5/05 B62K5/08 B62K5/10 B62K2015/005

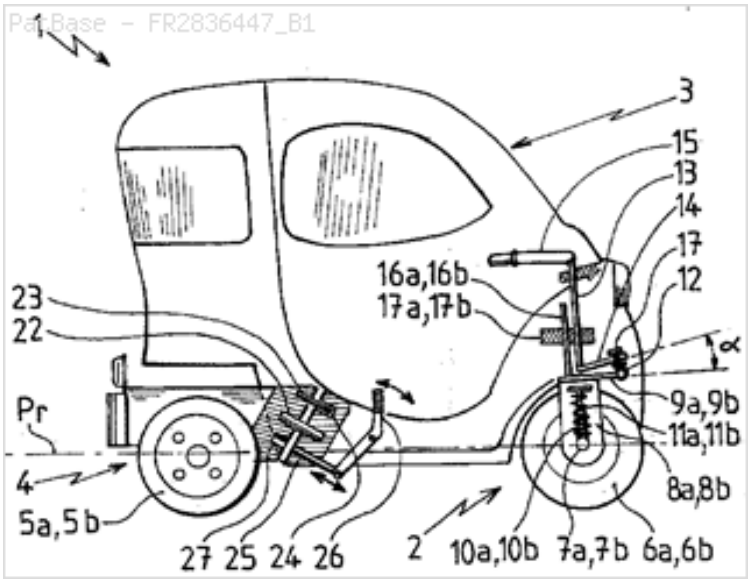
European class: B60G21/00D B60G9/02 B62D9/02 B62K5/027 B62K5/05 B62K5/08 B62K5/10 L60G200/320 L60G200/445 L60G200/460 L60G204/4604 L60G300/122 L60G300/13 L62K15/00D

Classification Explorer

Cited documents: US4469344 A, US4359231 A, FR2796594 A1, FR2560122 A1,

Forward Citations: WO06003489, FR2960185, FR2872773, ES2579491, EP1923303, EP1773609,

Abstract:
The vehicle, which has at least one rear wheel (5a, 5b) and two front wheels (6a, 6b), has a system that allows its body and chassis to tilt on bends so that the wheels on one side are above and the wheels on the other side are below a reference plane (Pr) perpendicular to the saggital plane of the chassis. The tilting movement is produced when the steering handlebar (15) is turned to left or right, by means of a steering bar (12) connected to the wheel hubs by horizontal arms (9a, 9b) and vertical rods (16a, 16b) in guides (17a, 17b), and a connecting piece (14) between the bar (12) and the steering column (13).



0) US4722173A – COTTON HARVESTER HARVESTING UNIT SUPPORT SYSTEM...

155) Family number: 10134494 (US4722173A)

© PatBase

Title: Cotton harvester harvesting unit support system

Priority: US19840619094 19840611

Family:

Publication number	Publication date	Application number	Application date
US4722173 A	19880202	US19840619094	19840611

Probable Assignee: CNH AMERICA LLC

Assignee(s):(std)**:** CASE CO J I

Assignee(s): CASE CORP ; CASE EQUIPMENT CORP ; CNH AMERICA LLC ; INT HARVESTER CO ; J I CASE COMPANY ; JI CASE CO

Inventor(s):(std)**:** COVINGTON MICHAEL J ; FACHINI ROBERT M ; ORSBORN JESSE H

International class (IPC 8–9): A01D46/08 A01D67/00 (Advanced/Invention); A01D46/00 A01D67/00 (Core/Invention)

International class (IPC 1–7): A01D46/08 A01D67/00

CPC: A01D46/08 A01D67/00

European class: A01D46/08 A01D67/00

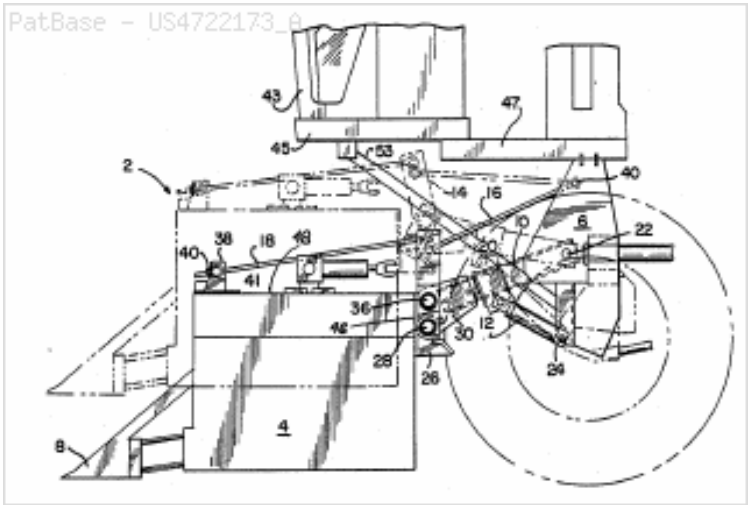
US class: 56/15.6 56/15.9 56/208 56/28

Classification Explorer

Cited documents: US4348856 A, US4249365 A, US3176451 A, US3031828 A, US2688223 A, DE2121181 A1,

Forward Citations: US9474209, US7975460, US7299611, US7175520, US7146789, US6408605, US6381937, US5799483, US5105609, US5010718, US4993216, US4970848, US4947628, US4922695, US4914897, US4905462, US4896492, US4803830, US2014237980, US2011185694, US2005229569, US2005020334, US2003192296, AU601299,

Abstract:
Source: US4722173A The present invention is for a mounting system for supporting harvesting units from the frame of a cotton harvester. The present invention allows greater access to the rear of the harvesting unit while also allowing independent mounting of each harvesting unit.



0) US6685201B – ROAD LUGE

156) Family number: 19180141 (US6685201B)

© PatBase

Title: ROAD LUGE

Priority: US19980046797 19980323 WO1999US04264 19990322

Family:

Publication number	Publication date	Application number	Application date
AU199929754 A1	19991018	AU19990029754	19990322
US6685201 BA	20040203	US19980046797	19980323
WO9948750 A1	19990930	WO1999US04264	19990322

Probable Assignee: SMITH CHARLES T III

Assignee(s):(std)**:** CHARLES T SMITH III ; SMITH CHARLES T III

Assignee(s): SMITH III CHARLES T ; SMITH CHARLES T

Inventor(s):(std)**:** SMITH CHARLES T III ; SMITH III CHARLES T

Inventor(s): CHARLES T SMITH III ; SMITH CHARLES T

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HU ID IE IL IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG UZ VN YU ZW

International class (IPC 8–9): A63C17/01 A63C17/26 B62K3/00 B62K5/05 (Advanced/Invention); A63C17/00 B62K3/00 B62K5/00 (Core/Invention)

International class (IPC 1–7): B62G7/00 B62K1/00 B62M1/00

CPC: A63C17/0026 A63C17/01 A63C17/013 A63C17/014 A63C17/26 A63C2203/42 B62K3/005 B62K5/05

European class: A63C17/00B A63C17/00C A63C17/01 A63C17/01B4 A63C17/01H A63C17/26 B62K3/00C B62K5/05 K63C203/42

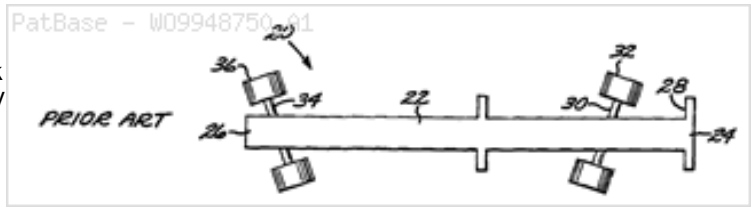
US class: 280/288.1 280/87.01

Classification Explorer

Cited documents: USD332977 S1, US5915707 A, US5785330 A, US5544906 A, US5354084 A, US5354081 A, US5263732 A, US4993733 A, US4796907 A, US4773663 A, US4749207 A, US4592563 A, US4548421 A, US4384731 A, US4336952 A, US4323258 A, US4145064 A, US3913929 A, US3663038 A, US3355184 A,

Forward Citations: WO05075278, WO04056644, WO03000359, USD635212, US9555851, US9211937, US8020881, US7744100, US7635136, US7631884, US7530582, US7374179, US7226067, US7040638, US2015145225, US2012326408, US2010148459, US2010117326, US2010090424, US2010001484, US2008001375, US2007176382, US2007001415, US2006043780, US2005280232, US2004239063, FR2826287, AU2003294515, AU2002329319,

Abstract:



Source: US6685201B A road luge includes an elongated frame having a front end and a back end, a strut extending rearwardly and upwardly from the back end of the frame, a back axle supported on the strut and fixed in orientation relative to the frame, and a single back wheel rotationally mounted on the back axle along the centerline axis of elongation of the frame. The road luge has a front assembly attached to the frame at a location adjacent to the front end of the frame. The front assembly includes two rotationally mounted and steerable front wheels, with one front on either side of the frame. The road luge has a reclining body rest supported on the frame, so that a rider may recline on the body rest with the rider's torso in a substantially horizontal position, and with the rider's feet extending toward the front end of the frame, and the rider's head angled upwardly so as to permit vision toward the front end of the frame.

0) DE202004003741U1 – FOLDING PAVEMENT SCOOTER HAS REAR WHEELS, FRONT...

157) Family number: 30656889 (DE202004003741U1) © PatBase

Title: FOLDING PAVEMENT SCOOTER HAS REAR WHEELS, FRONT WHEELS A FRONT HANDLEBAR FRAME INCORPORATING A BAGGAGE SHELF FOR SHOPPING

Priority: DE200420003741U 20040310

Family:

Publication number	Publication date	Application number	Application date
DE202004003741 U1	20040513	DE200420003741U	20040310

Probable Assignee: ROENITZ ILKA

Assignee(s):(std)**:** ROENITZ ILKA

International class (IPC 8–9): A63C17/04 B62K15/00 B62K3/00 (Advanced/Invention); A63C17/04 B62K15/00 B62K3/00 (Core/Invention)

International class (IPC 1–7): A63C17/04

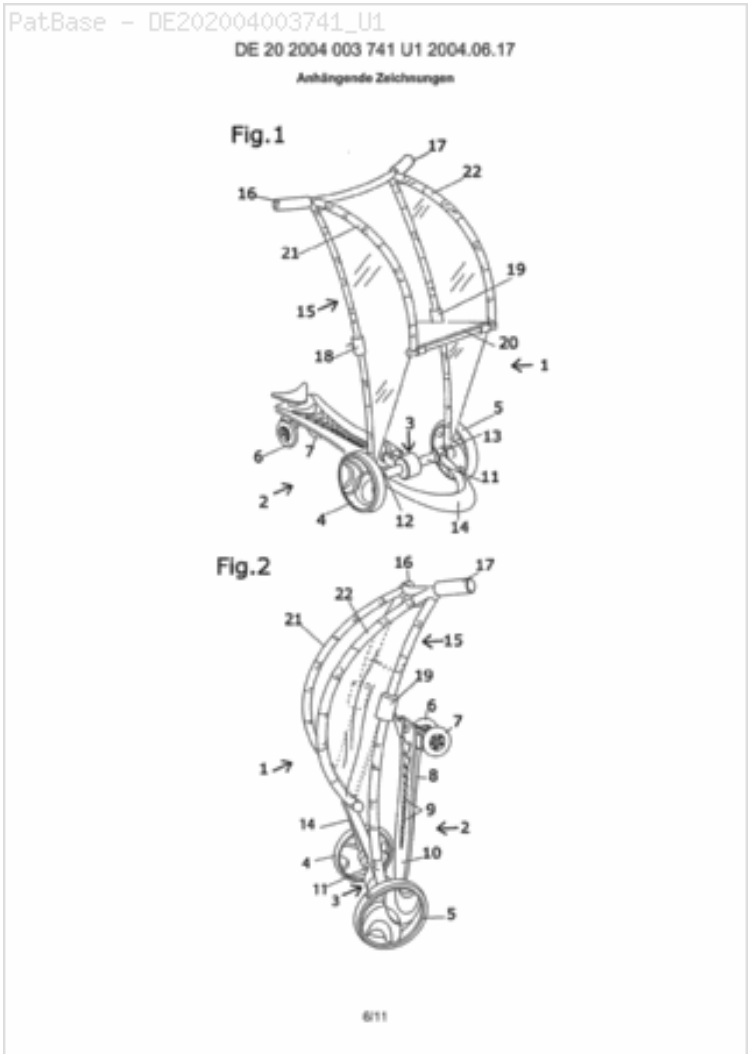
CPC: A63C17/04 B62K3/002 B62K15/006

European class: A63C17/04 B62K15/00F B62K3/00B

Classification Explorer

Forward Citations: WO14048796, NL2009531,

Abstract:
Source: DE202004003741U1 A folding pavement scooter has a footrest terminating at the rear in an axle with two wheels (6, 7), with two front wheels (4, 5) linked to a handlebar (16, 17). The front section (1) esp. has a baggage carrying surface (20).



0) US2005134012A – EASY HANDLING WHEELBARROW

158) Family number: 32019806 (US2005134012A) © PatBase

Title: EASY HANDLING WHEELBARROW

Priority: CA20042458846 20040224 MY20000034902 20031219 MY20030004902 20031219

Family:

Publication number	Publication date	Application number	Application date
CA2458846 AA	20050619	CA20042458846	20040224
MY131856 A	20070928	MY20030004902	20031219
US2005134012 AA	20050623	US20040889087	20040713

Probable Assignee: PRESTAR MFG SDN BHD

Assignee(s):(std): PRESTAR MFG SDN BHD

Assignee(s): PRESTAR MFG SDN BHDLOT 39 RAWANG INDUSTRIAL ESTATE16 1/2 MILES JALAN IPOH RAWANGSELANGORMY ; KAN LIM F ; LIM FONG KAN ; PRESTAR MANUFACTURING SDN BHD ; PRESTAR MFG

Inventor(s):(std): KAN LIM FONG ; LIM FONG KAN ; KAN LIM F

Inventor(s): KAN LIM ; LIM FONG KANMY

Agent(s): FREEDMAN AND ASSOCIATES; SHAPIRO COHEN LLP; BACON AND THOMAS PLLC

International class (IPC 8–9): B62B1/00 B62B3/00 B62B3/08 B62B5/00 (Advanced/Invention); B62B1/18 B62B5/04 (Advanced/Non–invention); B62B1/00 (Core/Invention)

International class (IPC 1–7): B62B1/00 B62B3/08 B62B5/00

CPC: B62B3/08 B62B1/18 B62B5/0433

European class: B62B3/08 L62B1/18 L62B5/04F

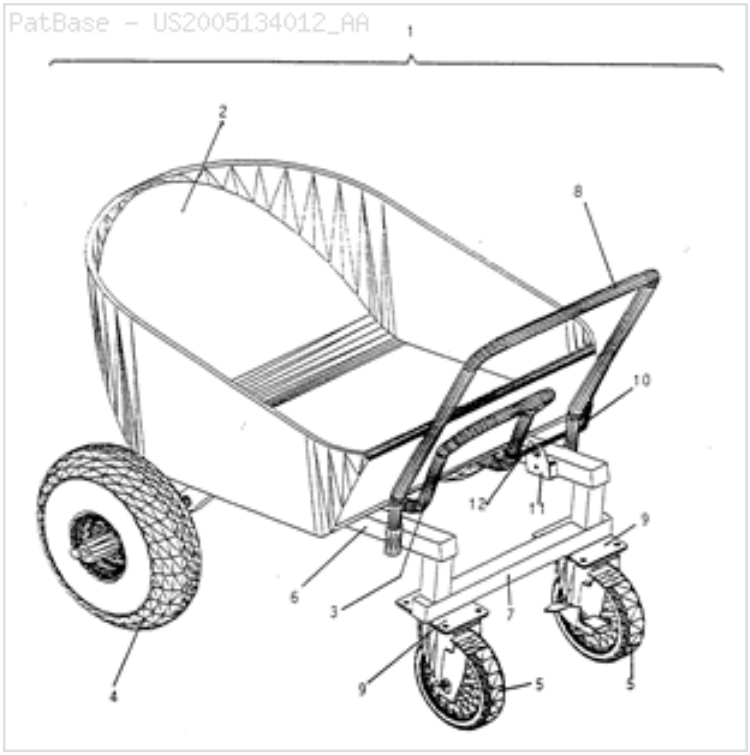
US class: 280/47.34 280/47.340

Classification Explorer

Cited documents: US7017998 BB, US6880852 BB, US6193319 BA, US598390 A, US5758887 A, US5372376 A, US5350030 A, US513132 A, US5087061 A, US4789171 A, US3260547 A, US3092418 A, US2973224 A, US2918133 A, US2766063 A, US2677575 A, US2546030 A, US2544505 A, US2037222 A, US2004164509 AA, US2003122382 AA, US1804403 A,

Forward Citations: US9463730, US8474855, US7641206, US7464441, US2008168625, US2008116650,

Abstract:
Source: US2005134012A A four−wheeled wheelbarrow with main handle and lever releasable container for easy moving and unloading. The wheelbarrow has a tipping handle rigidly connected to the wheelbarrow container, and a support system for supporting the container. The support system includes two front wheels joined by an axle and independent rear wheels joined by a metal pipe and connected to a pair of container support arms. A tipping lock is mounted on one of the support arms of the support system, for securing the container against tipping during loading activities. The tipping lock is a laterally extending metal bar mounted on the container tipping handle that engages a metal bracket fixed to a support arm.



0) WO9006097A1 – A WHEELCHAIR WITH A SIX–WHEEL CHASSIS

159) Family number: 2788682 (WO9006097A1) © PatBase

Title: A WHEELCHAIR WITH A SIX–WHEEL CHASSIS

Priority: EP19890913050 19891109 SE19880004299 19881128 WO1989SE00647 19891109

Family:

Publication number	Publication date	Application number	Application date
AT102003 E	19940315	AT19890913050T	19891109
DE68913554 D1	19940407	DE19896013554	19891109
DE68913554 T2	19940825	DE19896013554T	19891109
DK101991 A	19910528	DK19910001019	19910528
DK101991 A0	19910528	DK19910001019	19910528
DK165045 B	19921005	DK19910001019	19910528
DK165045 C	19930329	DK19910001019	19910528
EP0445171 A1	19910911	EP19890913050	19891109
EP0445171 B1	19940302	EP19890913050	19891109
FI912173 A0	19910506	FI19910002173	19910506
FI94022 B	19950331	FI19910002173	19910506
FI94022 C	19950710	FI19910002173	19910506
NO178053 B	19951009	NO19910001789	19910507
NO178053 C	19960117	NO19910001789	19910507
NO911789 A	19910507	NO19910001789	19910507
NO911789 A0	19910507	NO19910001789	19910507
SE464614 B	19910527	SE19880004299	19881128
SE464614 C	19910919	SE19880004299	19881128
SE8804299 A	19881128	SE19880004299	19881128
SE8804299 A0	19881128	SE19880004299	19881128
SE8804299 L	19881128	SE19880004299	19881128
WO9006097 A1	19900614	WO1989SE00647	19891109

Probable Assignee: MERCADO MEDIC AB

Assignee(s):(std)**:** MERCADO MEDIC AB ; MERCADO MEDIC AB LIDINGOE

Assignee(s): MERCADO MEDIC AB LIDINGOE SE ; MERCADO MEDIC LIDINGOE AB

Inventor(s):(std)**:** DU R ES STEPHAN ; DU REES S ; REES STEPHAN DE ; REES STEPHAN DU ; DU REES STEPHAN ; DU R ES S

Inventor(s): S DU REES ; S DU R ES ; DU REES STEPHAN S 181 60 LIDINGOE SE

Designated states: AT BE CH DE DK FI FR GB IT LI LU NL NO SE US

International class (IPC 8–9): A61G5/04 B62D61/10 (Advanced/Invention)

International class (IPC 1–7): A61G5/04 A61G5/06 A62D61/10 B62D61/10

CPC: A61G5/043 A61G5/06 B62B2301/08 B62D61/10

European class: A61G5/04A4 A61G5/06 B62D61/10 L62B301/08

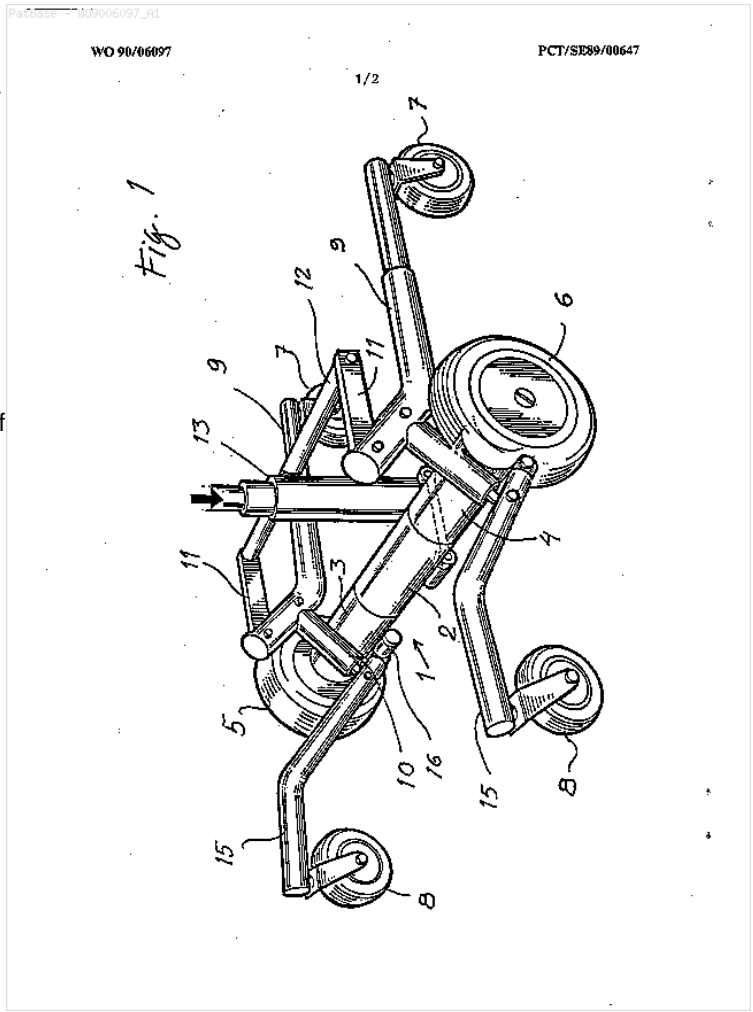
Classification Explorer

Cited documents: WO8706205 A1, US4513832 A, US3506079 A, DE2256934 A1,

Forward Citations: WO9818669, WO9309021, WO0234190, WO0019958, WO0009356, WO0008910, WO0008910, US9603762, US9566200, US9526664, US9370455, US9364377, US9351889, US9346335, US9333130, US9320661, US9308143, US9301894, US9149398, US9010470, US8925943, US8910975, US8851214, US8794359, US8636089, US8573341, US8534679, US8408598, US8408343, US8297388,

US8292010, US8272461, US8181992, US8172016, US8172015, US8113531, US7931300, US7896394, US7766106, US7735591, US7726689, US7597163, US7472767, US7413038, US7389835, US7374002, US7344155, US7316282, US7293801, US7264272, US7232008, US7219755, US7083195, US7066290, US7040429, US7021641, US6935448, US6923280, US6923278, US6640916, US6601863, US6554086, US6467788, US6341657, US6199647, US6186252, US6129165, US6070898, US5944131, US5316328, US5201377, LU91055, LU91054, GB2374322, FR2858764, FR2851731, EP1523971, DE19581724, BE1015902, BE1015900,

Abstract:
The invention relates to a wheelchair chassis of the type having a central, transverse main shaft (1) with two drive wheels (5, 6), driven by separate motors, and a front as well as a rear wheel pair, each consisting of two wheels carried by individual supporting arms (9, 15) which are swingable in a vertical plane. The invention solves the problem of how to maintain a constant wheel pressure and an unchanged lateral stability when the wheelchair passes over obstacles tending to tilt it sidewise. According to the invention each of the supporting arms (15) of the front wheels is individually swingable around an axis (16) adjacent to the main shaft and arranged, in response to an upwardly directed movement of its free end, triggered by its wheel passing an underlying bump, via a linkage (17, 18, 19, 11) to convert this movement to the other front supporting arm which is thereby caused to move downwards in order to maintain a constant wheel pressure.



160) Family number: 32563920 (DE102004032166A1)

© PatBase

Title: LIGHT AIRCRAFT WITH ROAD TRAVEL OPTION HAS ADJUSTABLE FRONT OR REAR WHEELS TO INCREASE THE WHEELBASE FOR ROAD USE

Priority: DE200410032166 20040702

Family:

Publication number	Publication date	Application number	Application date
DE102004032166 A1	20060119	DE200410032166	20040702

Probable Assignee: BARTHOLME SVEN

Assignee(s):(std)**:** BARTHOLME SVEN ; CRNOGORAC ROLAND

Inventor(s):(std)**:** BARTHOLME SVEN ; CRNOGORAC ROLAND

International class (IPC 8–9): B60F5/02 B64C25/04 (Advanced/Invention); B60F5/00 B64C25/00 (Core/Invention)

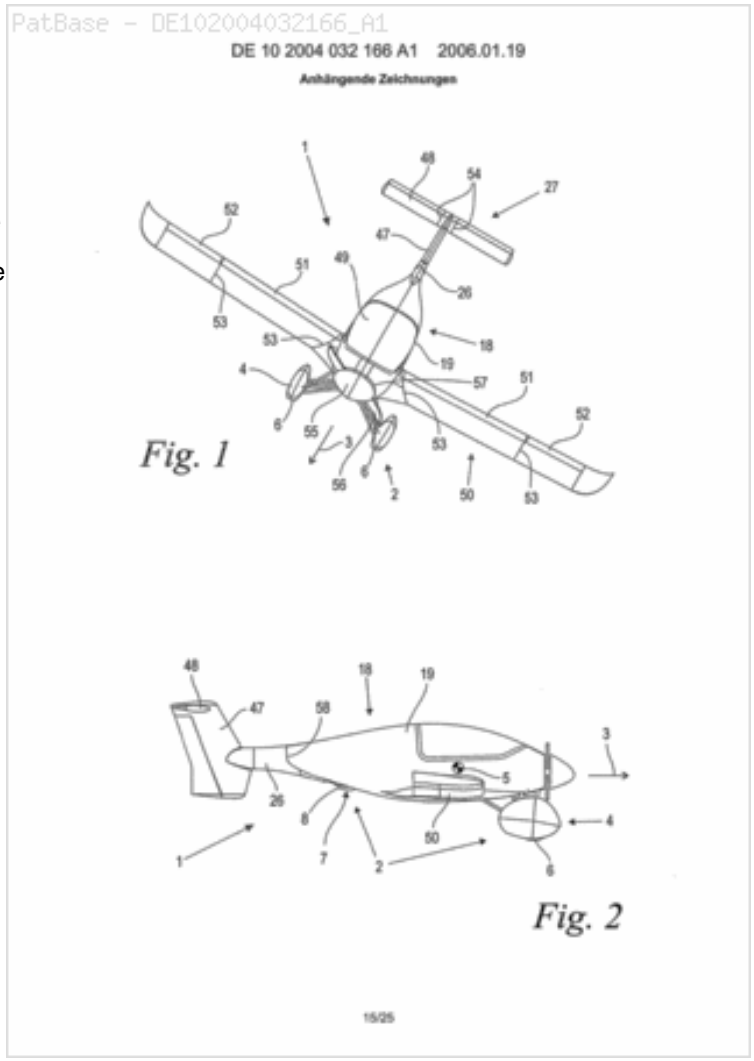
CPC: B60F5/02 B64C25/04 B64C37/00

European class: B60F5/02 B64C25/04 B64C37/00

Classification Explorer

Forward Citations: CN103917388,

Abstract:
A light aircraft with road travel option has folding or removable wings and with at least one front wheel (6) and one rear wheel (8). Either the front of rear wheel is fitted to an adjustable support which moves the wheel away from the centre of gravity of the aircraft to increase the wheelbase and thereby improve road stability. A simple design has the rear wheel(s) on adjustable crank driven supports while the front wheel is coupled to the engine for direct road drive.



0) FR2872699B – FAUTEUIL ROULANT PERMETTANT D'AMELIORER LE TRAN...

161) Family number: 32567332 (FR2872699B)

© PatBase

Title: FAUTEUIL ROULANT PERMETTANT D'AMELIORER LE TRANSFERT ET L'ACCES D'OBSTACLES

Priority: FR20040007460 20040706 FR20040010331 20040930

Family:

Publication number	Publication date	Application number	Application date
FR2872699 A1	20060113	FR20040010331	20040930
FR2872699 B1	20060908	FR20040010331	20040930

Probable Assignee: VEDRINES PATRICK ROBERT ALAIN

Assignee(s):(std)**:** VEDRINES PATRICK ROBERT ALAIN

Assignee(s): PATRICK ROBERT ALAIN VEDRINES

Inventor(s):(std)**:** VEDRINES PATRICK ROBERT ALAIN

Inventor(s): PATRICK ROBERT ALAIN VEDRINES

Agent(s): PATRICK VEDRINES

International class (IPC 8–9): A61G5/06 A61G5/10 (Advanced/Invention); A61G5/00 (Core/Invention)

International class (IPC 1–7): A61G5/06

CPC: A61G5/06 A61G5/065 A61G5/10 A61G5/1054 A61G5/1083 A61G5/1089

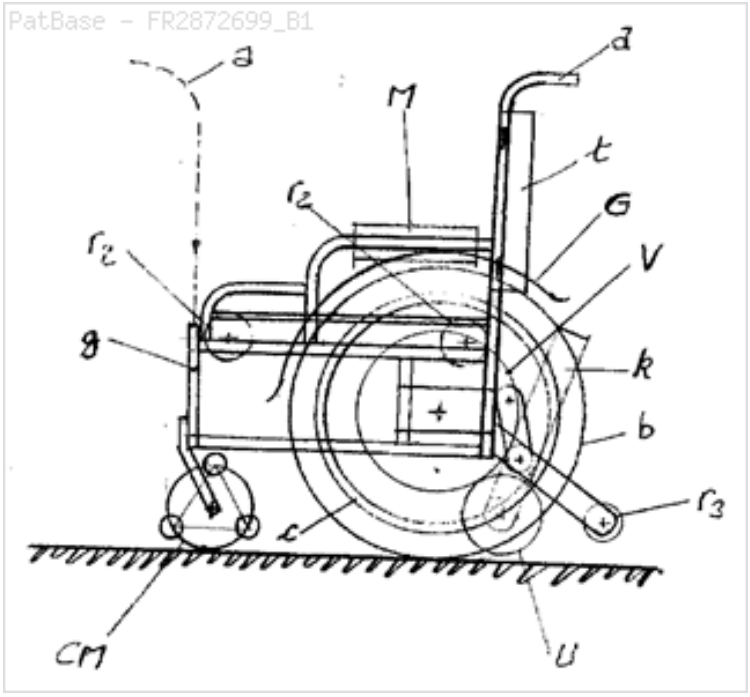
European class: A61G5/06 A61G5/06B2 A61G5/10 K61G5/10H K61G5/10Z3 K61G5/10Z5

Classification Explorer

Cited documents: US4542918 A, US4515385 A, US4375295 A, US4264085 A, US3848883 A, US3231293 A, US3214184 A, US2002125711 AA, EP1323401 A1, DE19639836 A1,

Forward Citations: US9283989, US9248857, US9145168, US9090281, US9045015,

Abstract:
Source: FR2872699B The wheelchair has two cross wheels (CM) mounted on both sides of two front wheels. Anti–tilting wheels (r3) are fixed symmetrically in two drive wheels (b) by two arms that connect the wheels (b) to a frame. A jockey wheel (U) is placed in alignment with the wheels (r3), inside the wheels (b). Two mudguards (G) protect the wheelchair against dust from the wheels (b).



0) US2009273150A – TRANSPORTATION DEVICE WITH PIVOTING AXLE

162) Family number: 43710446 (US2009273150A) © PatBase

Title: TRANSPORTATION DEVICE WITH PIVOTING AXLE

Priority: EP20090717559 20090306 US20080064458 20080306 US20130762895 20130208
US20090399893 20090306 US20080064458P 20080306 US20120481636 20120525
WO2009US36428 20090306 US20140251340 20140411 US20160154486 20160513

Family:

Publication number	Publication date	Application number	Application date
AU2009221691 AA	20090911	AU20090221691	20090306
AU2009221691 BB	20111124	AU20090221691	20090306
CA2719096 AA	20090911	CA20092719096	20090306
CA2719096 C	20130514	CA20092719096	20090306
CN201482128 U	20100526	CN200920150844U	20090306
DE212009000030 U1	20110210	DE200921000030U	20090306
DE602009027068 D1	20141120	DE200960027068T	20090306
EP2265347 A2	20101229	EP20090717559	20090306
EP2265347 B1	20141008	EP20090717559	20090306
JP2011513007 A2	20110428	JP20100549928	20090306
JP2011513007 T2	20110428	JP20100549928T	20090306
JP5390542 B2	20140115	JP20100549928T	20090306
KR101228632 B1	20130131	KR20107021313	20090306
KR20110039211 A	20110415	KR20107021313	20090306
MX2010009667 A1	20110426	MX20100009667	20090306
NZ587695 A	20120727	NZ20090587695	20090306
US2009273150 AA	20091105	US20090399893	20090306
US2012235368 AA	20120920	US20120481636	20120525
US2013147138 AA	20130613	US20130762895	20130208
US2015069725 AA	20150312	US20140251340	20140411
US2016332061 AA	20161117	US20160154486	20160513
US8186693 BB	20120529	US20090399893	20090306
US8371590 BB	20130212	US20120481636	20120525
US8695993 BB	20140415	US20130762895	20130208
US9339720 BB	20160517	US20140251340	20140411
WO09111761 A2	20090911	WO2009US36428	20090306
WO09111761 A3	20091203	WO2009US36428	20090306

Probable Assignee: LEVERAGE DESIGN LTD

Assignee(s):(std)**:** KORTSCHOT MARK T ; KORTSCHOT MARK TIMOTHY ; LEVER DESIGN CO LTD ; LEVERAGE DESIGN LTD

Assignee(s): LEVERAGE DESIGN LTD UNIONVILLE ; LEVER DESIGN CO

Inventor(s):(std)**:** KORTSCHOT M T ; KORTSCHOT MARK T ; KORTSCHOT MARK TIMOTHY ; TIMOTHY KORTSCHOT MARK

Inventor(s): M T KORTSCHOT ; MARK TIMOTHY KORTSCHOT ; MTKORTSCHOT

Agent(s): HALFORDS IP; SIM AND MCBURNEY; HOFFMANN EITLE PATENT U RECHTSANWAELTE PARTMBB; HOFFMANN EITLE; KNOBBE MARTENS OLSON AND BEAR LLP; SIMPSON ANDREW A

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV

SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): A63C17/00 A63C17/01 A63C17/02 A63C17/04 A63C17/14 B62K17/00 (Advanced/Invention); A63C17/00 A63C17/04 (Core/Invention)

CPC: A63C17/0073 A63C17/00 A63C17/0093 A63C17/012 A63C17/014 A63C17/04 A63C17/1418 A63C2017/1463

European class: A63C17/00U A63C17/01 A63C17/01B2 A63C17/01H A63C17/04 A63C17/14B A63C17/14B2

US class: 1/1 280/11.19 280/11.204 280/11.214 280/11.214S 280/11.215 280/11.223 280/11.223P 280/11.27 280/11.28 280/204

Classification Explorer

Cited documents: WO08019482 A1, USD473905 S1, USD472596 S1, USD226440 S1, US8186693 BB, US7232139 BB, US7226063 BB, US7150461 BB, US7007977 BA, US6981711 BB, US6820881 BA, US6679505 BB, US6676138 BA, US6557861 BB, US6481728 BB, US6467560 BA, US6416063 BA, US6406039 BA, US6386330 BA, US6352270 BA, US6302415 BA, US6298952 BA, US6296082 BA, US6286843 BA, US6241264 BA, US6206388 BA, US6158752 A, US6139035 A, US5997018 A, US5971411 A, US5860657 A, US5513865 A, US5347681 A, US5263725 A, US5232235 A, US5143388 A, US5062630 A, US4955626 A, US4930794 A, US4844491 A, US4738456 A, US4681333 A, US4645223 A, US4523767 A, US4403784 A, US4402521 A, US4398735 A, US4185847 A, US4180278 A, US4168076 A, US4167225 A, US4152001 A, US4099734 A, US4088334 A, US4061350 A, US4054296 A, US4043566 A, US4037852 A, US4027890 A, US4003582 A, US3331612 A, US329927 A, US3288251 A, US321466 A, US321434 A, US319839 A, US311936 A, US3087739 A, US304949 A, US253735 A, US252970 A, US2509324 A, US2474082 A, US2430037 A, US2413530 A, US2216359 A, US215081 A, US213546 A, US2126359 A, US2051762 A, US2015122566 AA, US2014332297 AA, US2014042717 AA, US2007126191 AA, US2006279055 AA, US2006125200 AA, US2006049595 AA, US2005127629 AA, US2005116430 AA, US2005012290 AA, US2003127816 AA, US2003020244 AA, US2002167146 AA, US1935187 A, US1854188 A, US1728063 A, US1632997 A, US1603529 A, US1550985 A, US1387091 A, US1194102 A, US1075250 A, US1018512 A, JPS5685381, JP7096047 B4, JP7096047 B2, JP56085381 A2, JP2002529166 A2, DE4424297 A1,

Forward Citations: WO16054439, WO14081445, WO14055550, WO13028087, USD756465, USD736861, USD700937, US9492732, US9339720, US8882114, US8801002, US8695993, US8690165, US8641054, US8544854, US8540284, US8459670, US8025300, US2016206949, US2015069725,

Abstract:
Source: US2009273150A Devices and methods of transport are disclosed. Various embodiments include structural aspects related to steering and changing the direction of conveyances including features which utilize leaning or shifting of weight as part of turning.

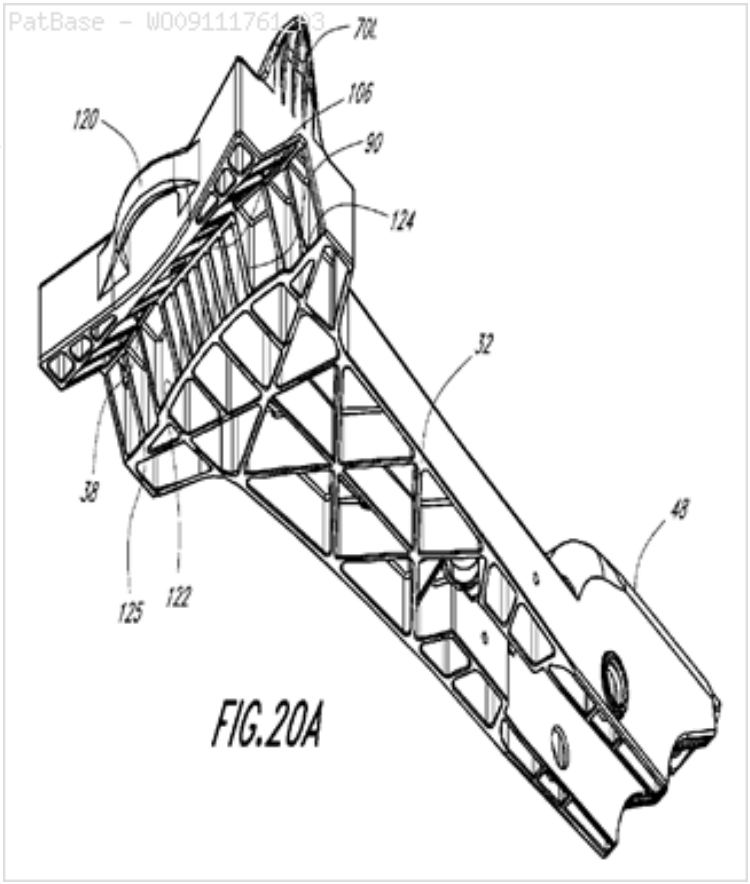


FIG.20A

0) DE202011001913U1 – TRETFAHRZEUG TRETFAHRZEUG (MACHINE TRANSLATI...

163) Family number: 48843856 (DE202011001913U1) © PatBase

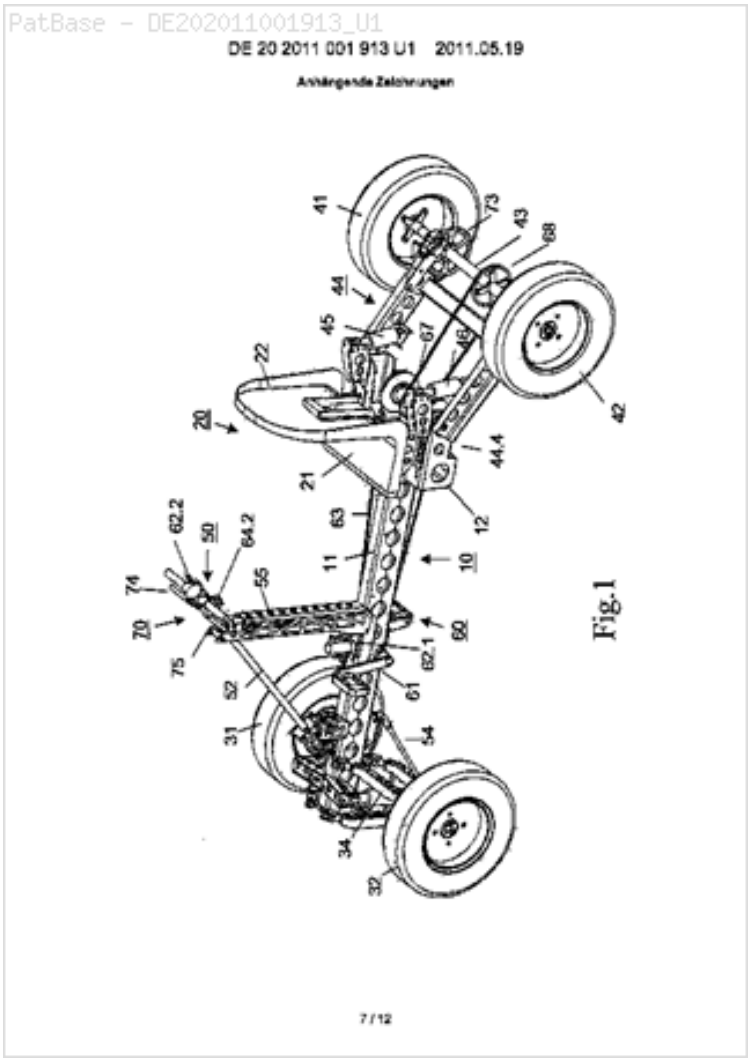
Title:	Tretfahrzeug Tretfahrzeug (Machine translation)
Priority:	DE201120001913U 20110125

Family:

Publication number	Publication date	Application number	Application date
DE202011001913 U1	20110414	DE201120001913U	20110125

Probable Assignee:	WUNDERLICH JAN
Assignee(s):(std)**:**	WUNDERLICH JAN
International class (IPC 8–9):	B62K9/00 B62M1/00 (Advanced/Invention)
CPC:	B62K5/00
European class:	B62K5/00
Classification Explorer	
Cited documents:	US6203043 BA,
Forward Citations:	ES2576781, EP2994374,

Abstract:
Source: DE202011001913U1 (Claim 1) 1. Tretfahrzeug mit einem Rahmen (10), einem Sitz (20), zwei Vorderraedern (31, 32), zwei Hinterraedern (41, 42), einer Lenkvorrichtung (50), einem Tretantrieb (60) und einer Bremsvorrichtung (70), wobei die Vorderraeder (31, 32) jeweils einzeln am Rahmen (10) aufgehaengt und gegenueber diesem jeweils einzeln mit einem Federbein (33, 34) abgestuetzt sind, wobei die Hinterraeder (41, 42) an einer Starrachse (43) befestigt sind, welche ueber eine Schwinge (44) schwenkbar am Rahmen (10) befestigt und gegenueber diesem mit wenigstens einem weiteren Federbein (45, 46) abgestuetzt ist, wobei durch den Tretantrieb (60) die Hinterraeder (41, 42) ueber mehrere Ketten (63, 67) angetrieben werden, und wobei die Bremsvorrichtung Scheibenbremsen (71, 72, 73) und an der Lenkvorrichtung (50) zwei Bremshebel (74, 75) fuer deren Betaetigung umfasst, **dadurch gekennzeichnet**, dass durch den Tretantrieb (60) ausschliesslich die Hinterraeder (41, 42) ueber zwei Ketten (63, 64) angetrieben werden, dass fuer jedes Vorderrad (31, 32) eine vordere Scheibenbremse (71, 72) und fuer beide Hinterraeder (41, 42) eine gemeinsame, hintere Scheibenbremse (73) vorhanden ist, und dass an der Lenkvorrichtung (50) fuer die beiden vorderen Scheibenbremsen (71, 72) ein gemeinsamer, erster Bremshebel (74) und fuer die hintere Scheibenbremse (73) ein zweiter Bremshebel (75) vorhanden ist. (Claim 1) 1. Tretfahrzeug with framework (10), one seat (20), two front wheels (31, 32), two rear wheels (41, 42), a steering system (50), a Tretantrieb (60) and a Bremsvorrichtung (70), Whereby the front wheels (31, 32) are supported individually in each case individually in each case at the framework (10) hung up and opposite this with a shock strut (33, 34), whereby the rear wheels (41, 42) are fastened to a Starrachse (43), which is supported over a rocker (44) tiltable



at the framework (10) fastened and opposite this with at least a further shock strut (45, 46), whereby by the Tretantrieb (60) the rear wheels (41, 42) are propelled over several chains (63 , 67), and whereby the Bremsvorrichtung disc brakes (71, 72, 73) covers and at the steering system (50) two brake levers (74 , 75) for their manipulation, **thus characterized**, that by the Tretantrieb (60) ausschiesslich the rear wheels (41, 42) are propelled over two chains (63 , 64), that for each front wheel (31, 32) a front disc brake (71, 72) is present and for both rear wheels (41, 42) a common, rear disc brake (73), and that at the steering system (50) for the two front disc brakes (71, 72) a common, first brake lever (74) is present and for the rear disc brake (73) a second brake lever (75).

164) Family number: 52409244 (TWM441617Y)

© PatBase

Title: Tilt steering and suspension device of front two wheels for motorcycle

Priority: TW20120212457U 20120628

Family:

Publication number	Publication date	Application number	Application date
TWM441617 Y	20121121	TW20120212457U	20120628

Probable Assignee: AEON MOTOR CO LTD

Assignee(s):(std)**:** AEON MOTOR CO LTD

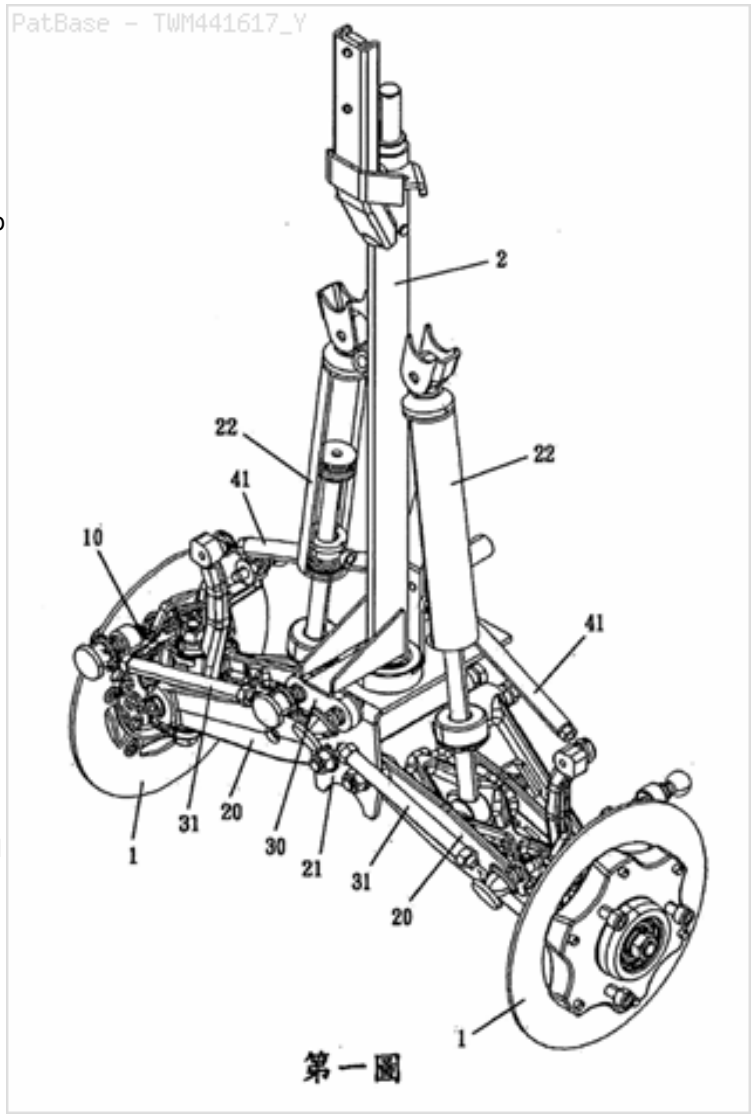
Inventor(s):(std)**:** HUANG HUI HUI ; LIN JUN JI

International class (IPC 8–9): B62K5/08 (Advanced/Invention)

Classification Explorer

Abstract:
Source: TWM441617Y

Machine translation: Department of the creation of an application in has the first two turbines car before two tilt, steering and suspension device applicable in has before Er round of and after a single round of three locomotives; also applicable in has the first two and the latter two of the four locomotives. Mainly in the respective pivot supporting two front wheels of the front wheel frame is connected with a connecting frame with an interposed between the two connector holder pivoted connector holder and the locomotives and controlling the steering handle to the steering shaft to be qualified to limit mechanism defining the inclination of the steering shaft connector holder when synchronization inclined left steering shaft situ, rightward movement, the connector holder is not synchronized for left and rightward movement; the right and left the top surface of the connecting frame each pivotally connected to a shock absorber with a locomotive frame pivoted, and two shock absorber is connected to the buffer force of interworking; fixedly connected to the steering axis of the shaft of a steering shaft interlocking with the body of the fixing plate, each pivotally connected at both ends of the fixing plate of the one–directional link with the corresponding the front wheel frame is pivotally connected; with an extension board connected to a seat with the body linked respectively pivotally connected to both ends of a rod and a pivoting front wheel frame. Serve to take control of two steering, tilt and vertical move up and down the institutions, to ensure that under various operating conditions, be able to maintain two affixed sex to avoid caused by vehicle rollover risk of. The simple structure of the device and has a novelty.



0) RU163372U – VEHICLE FOR DISABLED (MACHINE TRANSLATION)

165) Family number: 62937790 (RU163372U) © PatBase

Title: VEHICLE FOR DISABLED (Machine translation)

Priority: RU20150137183U 20150901

Family:

Publication number	Publication date	Application number	Application date
RU163372 U1	20160720	RU20150137183U	20150901

Probable Assignee: SURKHAY RAMZAN SALAMOVICH

Assignee(s): SURKHAY RAMZAN SALAMOVICH

International class (IPC 8–9): A61G3/06 B62D63/00 (Advanced/Invention)

Classification Explorer

Abstract:
Source: RU163372U Vehicle for disabled person, comprising including a body, two front wheels, two rear wheels, the body is formed consisting of the front portion from the instrument panel and the steering wheel, two side walls, roof, floor and rear wall are connected to form a closed car interior volume, the floor is equipped with a platform to accommodate a wheelchair at the steering wheel, the rear wall is composed of a folding ramp and rear door, hinged ramp is made swing–out out down tilt position for entry into the car and out of the cabin wheelchair car and back to the function of the rear wall, the back door is configured to the opening directions for the wheelchair into the vehicle and the overlap of the rear wall of the opening formed after lifting the hinged ramp to position the function of the rear wall of the passenger compartment is configured to smooth wheelchair from folding ramp to a platform for wheelchair, characterized in that it introduced a guide, a first latch, a second latch and the third latch, the guide is made in the floor at the site for a wheelchair, guide configured to position it first wheel and the second wheel and prevent the displacement of the wheelchair to the side of the side walls, the first lock is installed in the dashboard and is configured to lock the armrest of the wheelchair, the second lock is installed in the roof, and is configured to fix position of the first

0) JP62286876A – RUNNING TYPE POWER DRIVEN TRUCK

166) Family number: 8953757 (JP62286876A)

© PatBase

Title: RUNNING TYPE POWER DRIVEN TRUCK

Priority: JP19860129842 19860604

Family:

Publication number	Publication date	Application number	Application date
JP62286876 A2	19871212	JP19860129842	19860604

Probable Assignee: HONDA MOTOR CO LTD

Assignee(s):(std)**:** HONDA MOTOR CO LTD

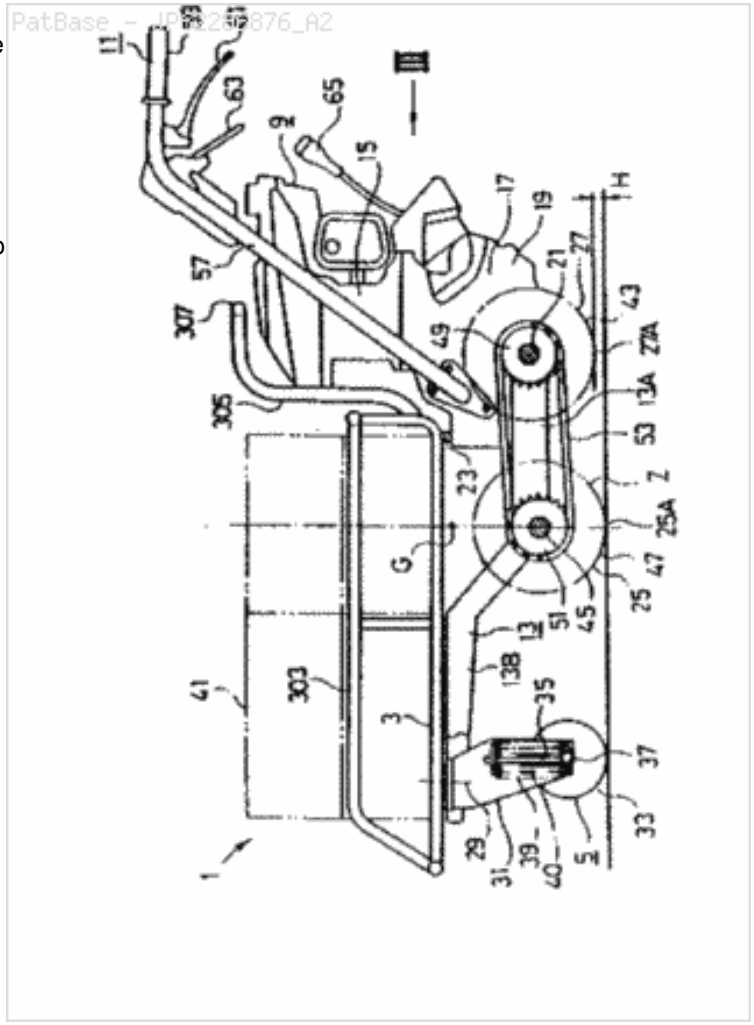
Inventor(s):(std)**:** KAN YOSHINOBU ; SUMIYA YOSHIHARU

International class (IPC 8–9): B62B3/00 B62D51/04 (Advanced/Invention); B62B3/00 B62D51/00 (Core/Invention)

International class (IPC 1–7): B62B3/00 B62D51/04

Classification Explorer

Abstract:
Source: JP62286876A PURPOSE: To improve drivability of a vehicle running on a bad road, by arranging two driving wheels, positioned in the front, in the rear bottom part of a load bed, of the four driving wheels, arranged in the rear of the vehicle. CONSTITUTION: A vehicle has two front wheels 5, provided to be arranged in the front part right and left bottom of a load bed, and four driving wheels 25, 27 provided to be arranged right and left two by two in the rear of the load bed. Of the driving wheels the front two wheels 25 are provided to be arranged in the rear part bottom of the load bed 3, and a truck 1 is constituted such that its center of gravity passes on the axis of the rear wheel 25 when a load is mounted. In this way, the truck 1, whose center of gravity is located on the front two driving wheels when the load is mounted, enables straight advancing drivability on the tilt ground to be maintained while running drivability on a bad road to be improved.



0) GB1230562A – PROPELLING INDUSTRIAL TRUCKS.

167) Family number: 323097 (GB1230562A) © PatBase

Title: Propelling industrial trucks.

Priority: GB19670019699 19670428

Family:

Publication number	Publication date	Application number	Application date
DE1756246 A1	19700319	DE19681756246	19680425
FR1562528 A	19690404		19680425
GB1230562 A	19710505	GB19670019699	19670428

Probable Assignee: BARLOW JOHN ROBERT

Assignee(s):(std)**:** BARLOW JOHN ROBERT

Inventor(s):(std)**:** ROBERT BARLOW JOHN

International class (IPC 8–9)**:** B66F9/075 (Advanced/Invention); B66F9/075 (Core/Invention)

International class (IPC 1–7)**:** B60K17/06 B60L15/00 B62D51/00 B66F9/06 B66F9/22

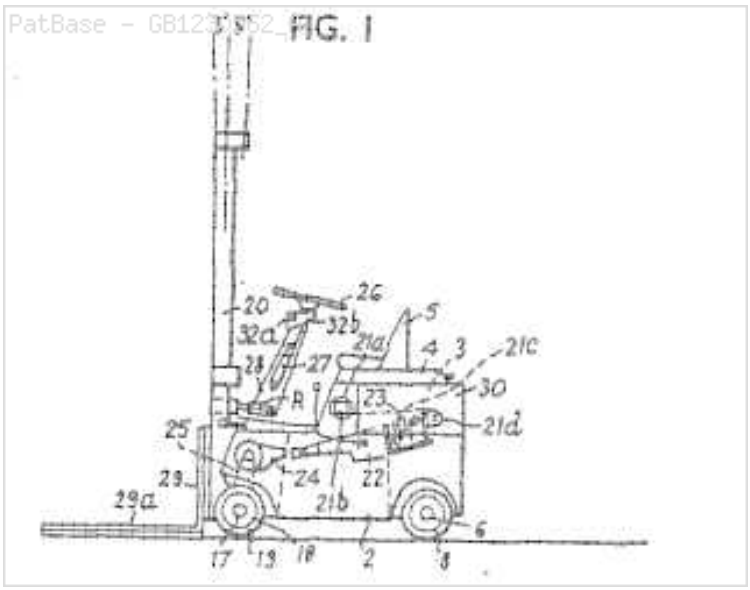
CPC: B66F9/07572

European class: B66F9/075 B66F9/075P

Classification Explorer

Forward Citations: FR2836301, DE3129676,

Abstract:
Source: GB1230562A 1,230,562. Propelling industrial trucks. M.E. MECHANICAL HANDLING Ltd. 23 April, 1968 [28 April, 1967], No. 19699/67. Heading B7H. Propulsion means in a fork–lift truck include an hydraulic motor which drives the truck through change–speed gearing and is fed by a pump coupled to an electric motor, diesel or gas engine. As shown the hydraulic motor 21d is supplied through lines 21c from a pump 21b driven by a battery–fed electric motor 21a and is coupled through a clutch 23 to a changespeed gear–box 22 connected by a flexible drive to differential gearing 24 having chain drives to the front wheels 19. The front wheels 19 rotate on an axle 17 which is secured to the truck frame and supports a lifting mast 20 tiltable about the axle by an hydraulic ram R. Forks 29a on the mast are elevated by cable or chains actuated by a further hydraulic ram. Rear wheels 8 separately pivoted to each end of a rear axle are steered through a chain and sprocket by a telemotor ram connected to a control cylinder actuated by a steering wheel 26. The truck body 1 includes side members each incorporating an hydraulic pannier tank 2 and a battery compartment 3 closed by a cover 4. In an alternative construction two hydraulic motors may be substituted for the one shown with a consequent 50 percent reduction in speed and a corresponding increase in tractive effort.



0) DE102004015062A1 – JOINT CUTTER COMPRISES A STEERING UNIT ARRANGED...

168) Family number: 32333165 (DE102004015062A1) © PatBase

Title: JOINT CUTTER COMPRISES A STEERING UNIT ARRANGED ON THE HANDLE SIDE OF A CHASSIS TO LIFT THE REAR WHEELS OF THE CUTTER DURING MOVEMENT INTO THE STEERING POSITION FROM THE GROUND AND/OR FRONT THE RUNNING SURFACE OF THE JOINT CUTTER

Priority: DE200410015062 20040325

Family:

Publication number	Publication date	Application number	Application date
DE102004015062 A1	20051020	DE200410015062	20040325

Probable Assignee: FERDINAND KOLLER AND SOHN GMBH AND

Assignee(s):(std)**:** FERDINAND KOLLER AND SOHN GMBH AMP AMP ; FERDINAND KOLLER AND SOHN GMBH AND

Assignee(s): FERDINAND KOLLER AND SOHN GMBH AND CO KG

Inventor(s):(std)**:** CARTEUSER ANDREAS

International class (IPC 8–9): E01C23/02 E01C23/09 (Advanced/Invention); E01C23/00 (Core/Invention)

International class (IPC 1–7): E01C23/02 E01C23/09

CPC: E01C23/0933

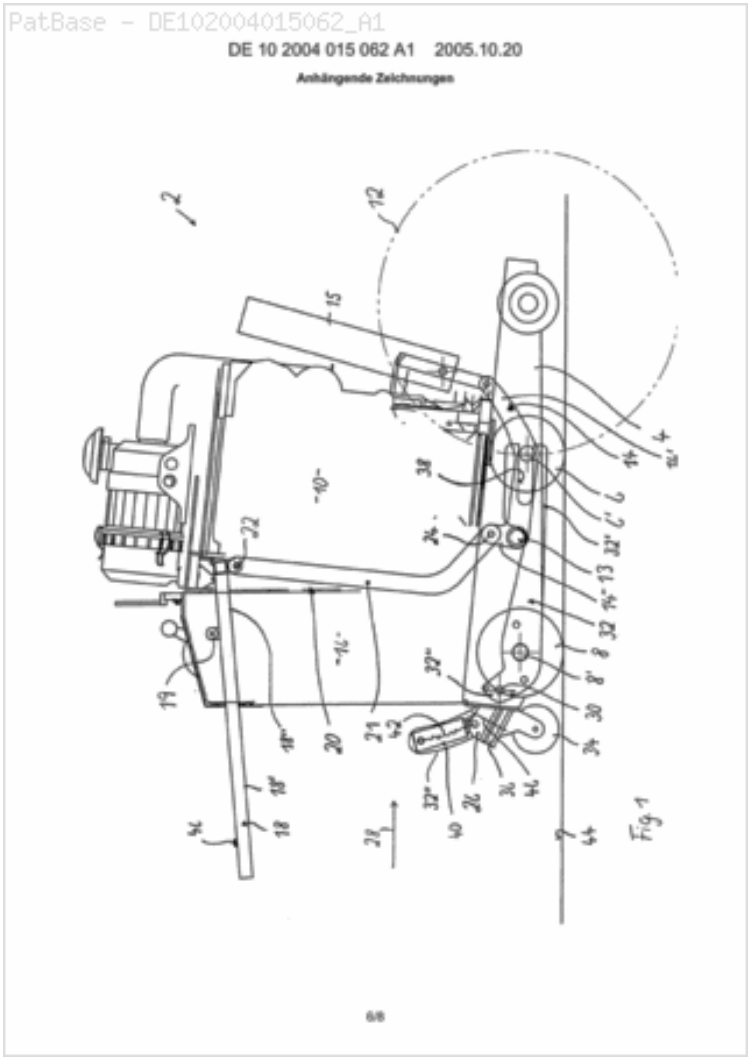
European class: E01C23/09B3B

Classification Explorer

Cited documents: DE8904277 U, DE4212518 A1,

Forward Citations: CN105970786, CN105970786, CN101967792,

Abstract:
Joint cutter comprises a steering unit arranged on the handle side of a chassis (4) to lift the rear wheels (8) of the cutter during movement into the steering position from the ground and/or front the running surface (44) of the joint cutter. Preferred Features: The steering unit has a roller (34) with a rim bearing (36) and is mounted on a roller console (26) which is positioned across the advancing direction or longitudinal direction of the joint cutter.



0) FR1551240A –

169) Family number: 636192 (FR1551240A)

© PatBase

Priority: FR19670128570 19671116

Family:

Publication number	Publication date	Application number	Application date
FR1551240 A	19681227	FR19670128570	19671116

International class (IPC 8–9): A01B51/02 A01B59/044 B62D49/06 B62D49/08 (Advanced/Invention); A01B51/00 A01B59/00 B62D49/00 (Core/Invention)

International class (IPC 1–7): A01B51/02 B62D49/08

CPC: A01B51/026 B60K17/358 B62D49/0678

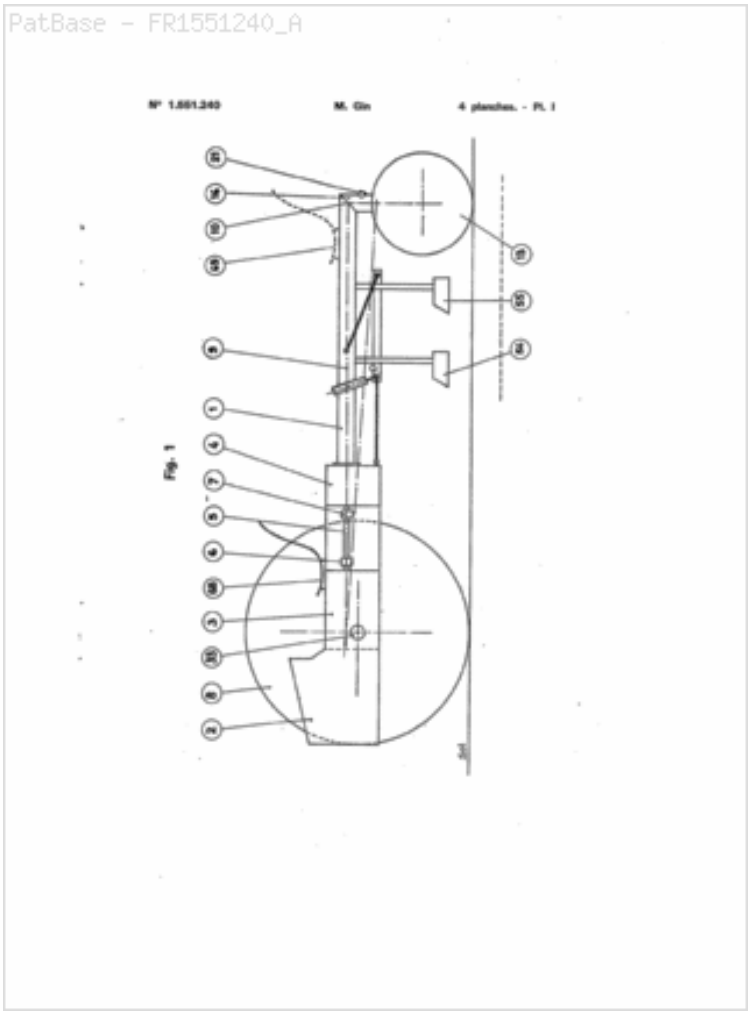
European class: A01B51/02M B60K17/358 B62D49/06H

Classification Explorer

Forward Citations: WO9615656, FR2866195, EP0793411,

Abstract:
Source: FR1551240A (Claim 1) 1. Un vehicule tracteur porte–outils a quatre roues dans lequel les outils peuvent etre situes entre le train avant et le train arriere;

Machine translation: (Claim 1) 1. A towing vehicle toolholder has four wheels in which the tools can be located between the front and rear train



0) US4036384A – TRUCK FOR TRANSPORT OF AIRPLANE BY ITS NOSE LAN...

170) Family number: 1418861 (US4036384A) © PatBase

Title: TRUCK FOR TRANSPORT OF AIRPLANE BY ITS NOSE LANDING WHEEL

Priority: US19760705948 19760716

Family:

Publication number	Publication date	Application number	Application date
US4036384 A	19770719	US19760705948	19760716

Probable Assignee: JOHNSON PHILIP L

Assignee(s):(std)**:** JOHNSON PHILIP L

Inventor(s):(std)**:** JOHNSON PHILIP L

International class (IPC 8–9): B64F1/22 (Advanced/Invention); B64F1/00 (Core/Invention)

International class (IPC 1–7): B60B29/00

CPC: B64F1/22 B64F1/227 Y10S180/904

European class: B64F1/22 B64F1/22E2

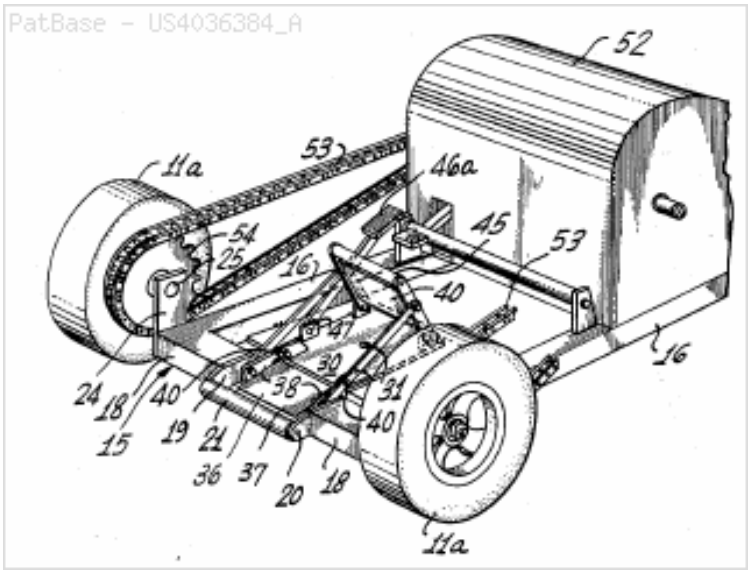
US class: 180/904 187/217 188/32 214/334 414/430

Classification Explorer

Cited documents: US3946886 A, US3825869 A, US3077247 A, US3049253 A, US2732088 A, US2695718 A, US2661817 A, US2573728 A, US2254564 A,

Forward Citations: US9403604, US9199745, US9187185, US9090358, US9085374, US9067691, US9056686, US9022317, US8935049, US8911194, US8825338, US8774983, US8640804, US8544792, US8515594, US8475108, US5511926, US5150860, US4997331, US4859134, US4836734, US4669946, US4632625, US4225279, US2015259077, US2014048342, US2011224845, US2010152784, US2010140392, US2009104009, US2006278756, US2004237386, EP0284836, DE102011010727,

Abstract:
Source: US4036384A The disclosure is of a wheeled truck or transport vehicle, adapted for elevating and supporting the nose wheel of an airplane, of the small or private class, and transporting it about the landing field. The truck has a horizontal nose roller, adapted to be rammed under the nose wheel of the airplane landing gear, and to thereby elevate the nose wheel. The advancing truck has, just behind the nose roller, a horizontally pivoted gate, initially swung down to act as a platform, and behind that a turntable. These ride under the nose wheel, one after the other, as the nose roller is thrust under the nose wheel of the airplane and then on beyond. The gate already mentioned is initially positioned in an approximately horizontal position, just in back of the nose cylinder of the truck, and is pivoted at the bottom on the normally front edge of the turntable. As the advancing turntable centers under the nose wheel, it engages a rearward gate, pivoted at or below its lower edge on the normally rearward edge of the turntable. When this rearward gate is engaged by the nose wheel of the airplane, it tilts back, and, through links, tilts the front gate up. At the end of this action, the nose wheel of the airplane is trapped on the turntable, between these gates, and an automatic locking device has become engaged. Means are provided for unlocking this device, whereupon the gates can drop, and the truck pulled out from under the nose wheel of the airplane.



0) DE202005020068U1 – CHILD'S SCOOTER HAS MORE THAN ONE TRACK FOR RED...

171) Family number: 34215147 (DE202005020068U1) © PatBase

Title: CHILD'S SCOOTER HAS MORE THAN ONE TRACK FOR REDUCED BALANCE CAPABILITY THAN NECESSARY FOR CONVENTIONAL SCOOTERS, FRONT WHEEL ARRANGEMENT DIRECTLY LINKED TO LOWER END REGION OF STEERING COLUMN

Priority: DE200520019205U 20051207 DE200520020068U 20051221

Family:

Publication number	Publication date	Application number	Application date
DE202005020068 U1	20070118	DE200520020068U	20051221
DE202005020068 U9	20080124	DE200520020068U	20051221

Probable Assignee: PUKY GMBH AND CO KG

Assignee(s):(std)**:** PUKY GMBH AND CO KG

International class (IPC 8–9)**:** B62K5/08 B62K9/00 B62K9/02 (Advanced/Invention); B62K5/00 B62K9/00 (Core/Invention)

CPC: B62K9/00

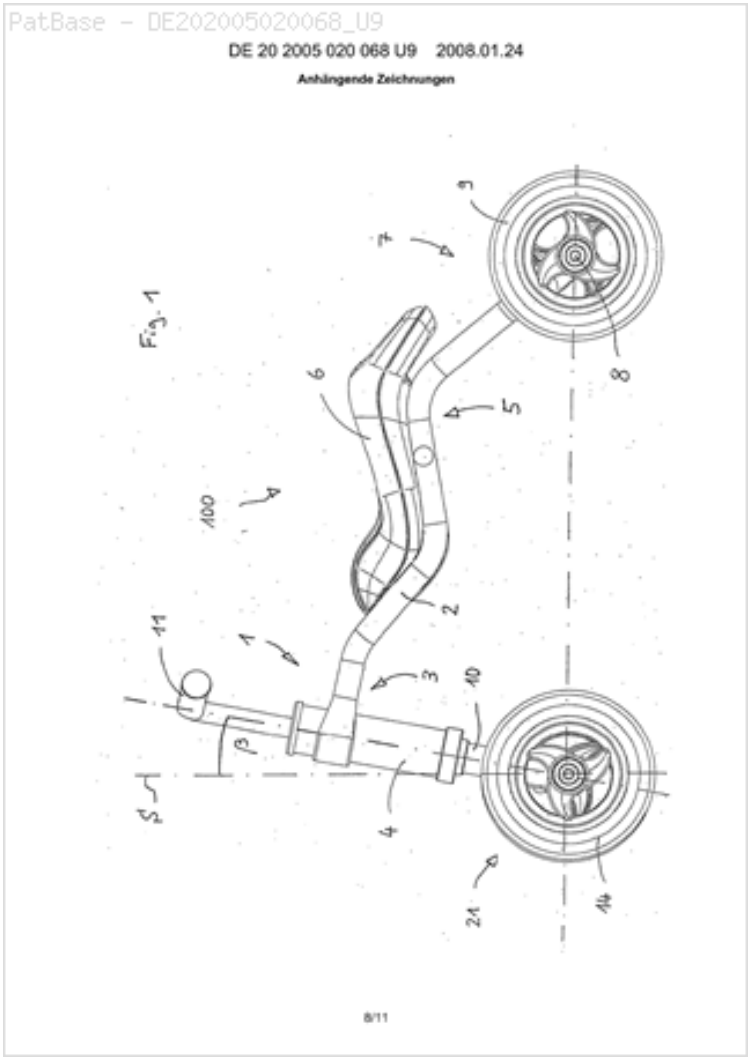
European class: B62K9/00

Classification Explorer

Cited documents: WO04096629 A1, US3442528 A, US2423590 A, US2311424 A, US1344023 A, JP2004237761 A2, GB1099757 A, DE20110957 U1, DE20010174 U1,

Forward Citations: DE102010018129, DE102010018129, DE102008004515,

Abstract:
Source: DE202005020068U1 The scooter has more than one track so that the child has reduced balance requirements than are necessary for conventional scooters. It has a steering column (10) and a front wheel arrangement (21) directly linked to the lower end region of the steering column.



0) TWD172443S – SOME MODELS PLACED SEAT (MACHINE TRANSLATION)

172) Family number: 61196363 (TWD172443S) © PatBase

Title: Some models placed seat (Machine translation)

Priority: TW20150301482F 20150323

Family:

Publication number	Publication date	Application number	Application date
TWD172443 S1	20151211	TW20150301482F	20150323

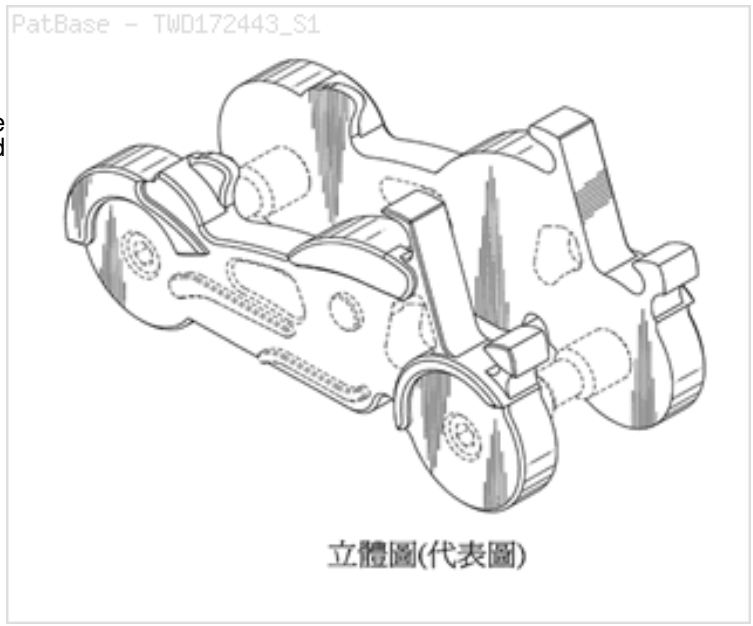
Probable Assignee: YI LIANG CHI

Assignee(s): YI LIANG CHI

Locarno class: 14/03

Cited documents: TWD164145, TWD146456, NCN302967263, NCN302967262,

Abstract:
Source: TWD172443S [Use] items; this design items are placed car seat for placing items.; [Description] design; design feature of the design of that part of the car seat is placed, the car seat placement unit comprising two spaced vehicle body, a front–seat and rear was a seat compartment, each vehicle unit includes a body, a front and a rear wheel. A perspective view from the front and rear views of view, such was the locomotive unit body shape, and the overall contour constituted by the smooth lines, showing a trendy, beautiful visual effects, the preamble was seat comprises two front wheels, respectively, by those with a steep tilt angle upward and beyond extending such support body portion, and two were by those holding the front wheel bent front end portion extending upward, the preamble was the seat of the contour lines showing a stable, solid image, the rear seat includes a glove Two are connected with those supporting part and showed the front protrusion protruding upward of micro, and two were set at the upper end and the rear wheel was after these protrusions sharp styling of the rear seat and the glove body composed of those contour lines showing a generous, elegant visual experience.; In summary, the present design to modeling as the main locomotive, with the front, rear compartment seat of contour lines, thereby constituting the overall appearance of a design specific visual effects.;. A dotted line drawings disclosed, the case is not part of the design of the stand.; 2. use state with reference to Figure 1, a schematic diagram of the handheld electronic device is placed in the front seat was.;. 3 use state with reference to Fig. 2, illustrating another handheld electronic device is placed in the rear seat compartment; Fig.



0) DE4133569A1 – PLAY AND SPORTS VEHICLE – COMPRISES BEARER FRAM...

173) Family number: 10562145 (DE4133569A1) © PatBase

Title: Play and sports vehicle – comprises bearer frame with two front wheels, and rear pivotable holder to which wheel is attached

Priority: DE19914133569 19911010

Family:

Publication number	Publication date	Application number	Application date
DE4133569 A1	19930415	DE19914133569	19911010

Probable Assignee: GEISTHOFF MICHAEL

Assignee(s):(std)**:** GEISTHOFF MICHAEL

Assignee(s): GEISTHOFF MICHAEL 5204 LOHMAR DE

Inventor(s):(std)**:** GEISTHOFF MICHAEL

Inventor(s): GEISTHOFF MICHAEL 5204 LOHMAR DE

International class (IPC 8–9): B62B13/18 (Advanced/Invention); B62B13/00 (Core/Invention)

International class (IPC 1–7): A63C17/28 B62B13/18

CPC: B62B13/18

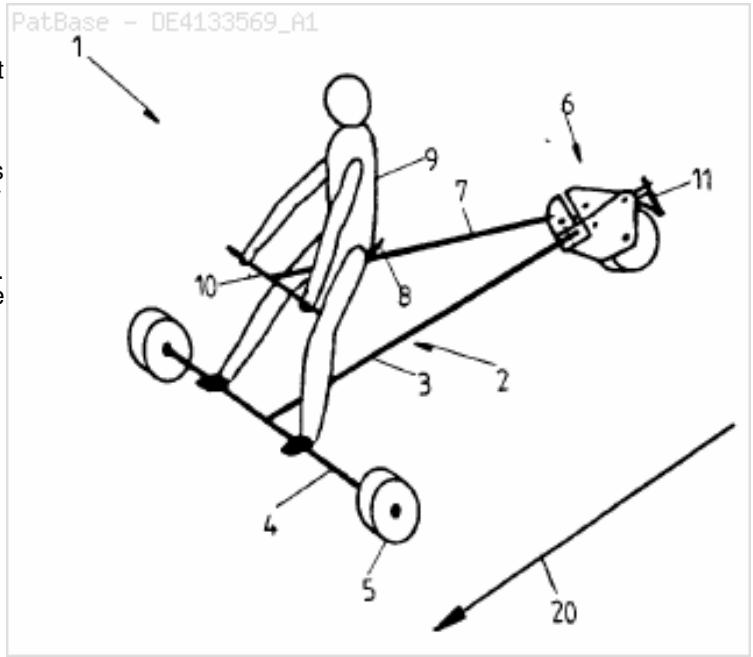
European class: B62B13/18

Classification Explorer

Cited documents: US2605112, CH433998,

Forward Citations: DE10047959, DE10047959,

Abstract:
Source: DE4133569A1 The bearer frame is incorporated on which is fixed a seat (8) and at the front of the frame, spaced apart laterally, are two wheels (5). At the rear of the bearer frame is a holder (6) for a wheel and/or a runner which is pivotable around a vertical axis relatively to the frame (2). A steering assembly is provided for pivoting the holder. The bearer frame consists of a main bearer (3) arranged in the direction of travel and a cross bearer (4). USE/ADVANTAGE – A play and sports vehicle for rolling or sliding on varying solid surfaces, which can be used by more than one person, and is easy to master.



0) DE20100944U1 – FERNGELENKTES SPIELZEUGAUTO REMOTE–CONTROLLED S...

174) Family number: 16106321 (DE20100944U1) © PatBase

Title: Ferngelenktes Spielzeugauto Remote–controlled Spielzeugauto (Machine translation)

Priority: DE20012000944U 20010118

Family:

Publication number	Publication date	Application number	Application date
DE20100944 U1	20010315	DE20012000944U	20010118

Probable Assignee: CHENG CHUNG JEN

Assignee(s):(std): CHENG CHUNG JEN

International class (IPC 8–9): A63H17/00 A63H30/04 A63H33/28 (Advanced/Invention); A63H17/00 A63H30/00 A63H33/28 (Core/Invention)

International class (IPC 1–7): A63H17/26 A63H17/39 A63H29/00

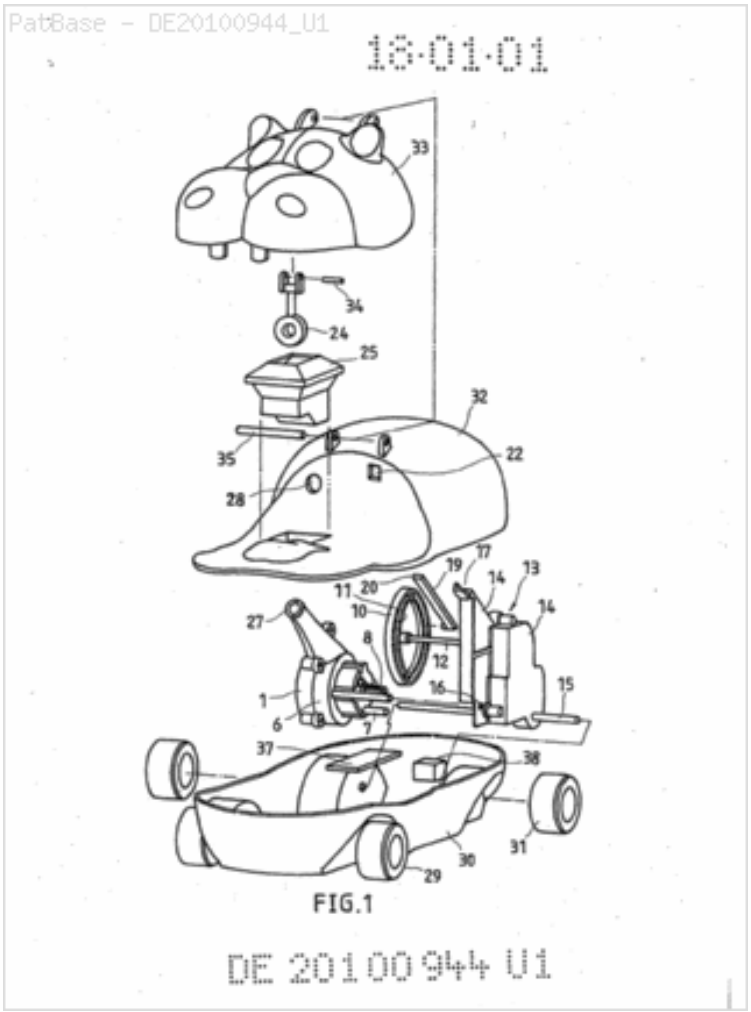
CPC: A63H17/006 A63H30/04 A63H33/28

European class: A63H17/00E A63H30/04 A63H33/28

Classification Explorer

Forward Citations: WO07149116, US7909673, US7470165,

Abstract:
Source: DE20100944U1 (Claim 1) 1. Ferngesteuertes Spielzeugauto mit einem Chassis (30) mit Vorderraedern (29) und Hinterraedern (31), das mit einer Autokarosserie (32) bedeckt ist, dadurch gekennzeichnet, dass es eine Anordnung zum Erzeugen von Blasen, eine schwenkbare Haube (33), eine hin–und herbewegbare Stange (19), die zum oeffnen/Schliessen der Haube (33) ausgebildet ist, einen Ring (24) zum Erzeugen von Blasen, der mit der Haube (33) bewegbar ist und in eine Loesung (26) eines LOE– sungsbehaelters (25) eingetaucht wird, wenn die Haube (33) geschlossen ist, einen Nockenrad (10), das zum Hin–und Herbewegen der hin–und herbewegbaren Stange (19) gesteu– ert wird, ein Windfluegelrad (2), das dazu ausgebildet ist, Luft durch den Ring (24) zum Erzeugen von Blasen zu Blasen, wenn die Haube (33) geoeffnet ist, ein Getriebe (13), das dazu ausgebildet ist, das Nockenrad (10) und die Hinterraeder (31) zu drehen, und einen Motor (4) auf– weist, der durch eine Fernsteuerung steuerbar ist, um das Windfluegelrad (2) und das Getriebe (13) in Drehung zu versetzen.



Machine translation: (Claim 1) 1. Remote controlled Spielzeugauto by a chassis (30) by front wheels (29) and rear wheels (31), which with an autobody (32) is covered, by it marked that it an arrangement for producing blisters, a tiltable hood (33), one hin–und movable bar (19), which to open/latches the hood (33) is trained, a ring (24) for producing blisters, which with the hood (33) is movable and into a solution (26) of a RST sungsbehaelters (25) is dived in, if the hood (33) is closed, Nockenrad (10), to Hin–und moving hin–und the movable bar (19) gesteu ore becomes, a wind impeller (2), which as it is trained, air by the ring (24) for producing from blisters to blisters, if the hood (33) is opened, a transmission (13), which as it is trained to turn the Nockenrad (10) and the rear wheels (31) and an engine (4) up

points, which by a remote control is controllable, to shift in order the wind impeller (2) and the transmission (13) in turn.

0) DE7705921U1 – TRANSPORT– UND VERSETZWAGEN TRANSPORT AND SHIF...

175) Family number: 16567633 (DE7705921U1) © PatBase

Title: TRANSPORT– UND VERSETZWAGEN TRANSPORT AND SHIFTING CAR (Machine translation)

Priority: DE19770005921U 19770226

Family:

Publication number	Publication date	Application number	Application date
DE7705921 U1	19771020	DE19770005921U	19770226

Probable Assignee: SCHEIBENBOGEN GMBH AND CO KG

Assignee(s):(std)**:** SCHEIBENBOGEN GMBH AND CO KG

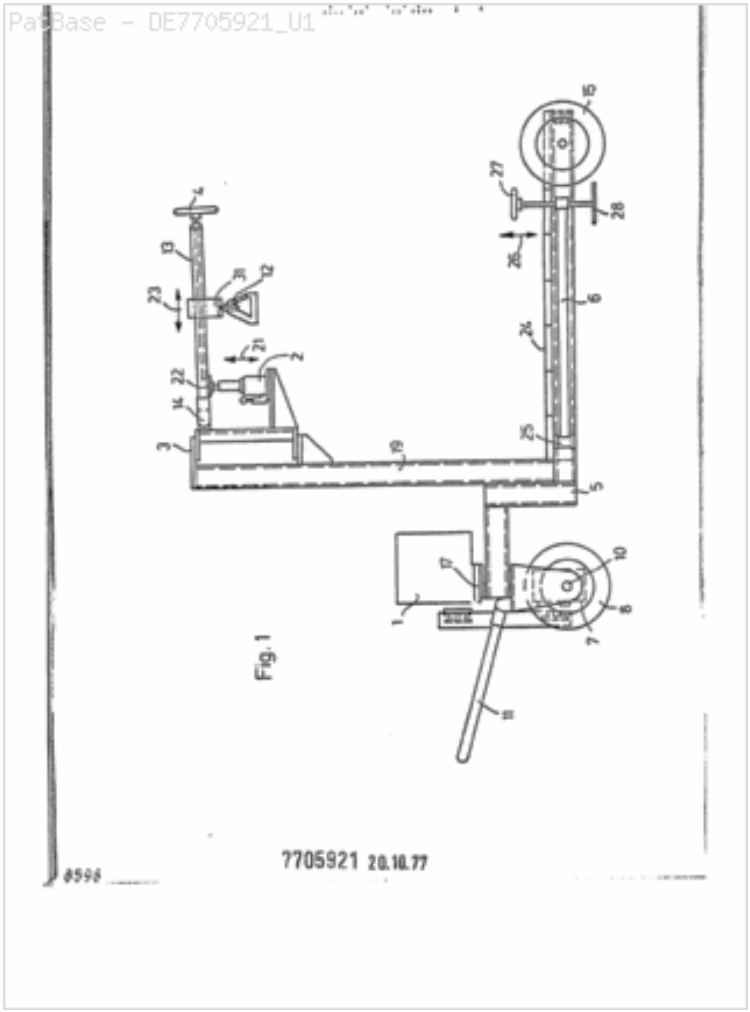
Assignee(s): SCHEIBENBOGEN GMBH AND CO KG 8300 LANDSHUT

International class (IPC 8–9): B60K17/08 B60K5/00 B66C23/48 (Advanced/Invention); B60K17/06 B60K5/00 B66C23/00 (Core/Invention)

International class (IPC 1–7): B60K17/08 B60K5/00 B66C23/48

Classification Explorer

Abstract:
Source: DE7705921U1 (Claim 1) 1. Transport– und Versetzwagen, insbesondere zur Mani– pulation von Grabsteinen, mit Vorder–und Hinterraedern sowie einem schwenkbaren Verladekran, dadurch gekenn– zeichnet, dass zum Antrieb der Vorderraeder (8,9) ein Antriebsmotor (1) im Bereich der Vorderachse (10) ange– ordnet ist. (Claim 1) 1. Transport and shifting car, in particular to the Mani pulation of gravestones, with Vorder–und rear wheels as well as a tiltable Verladekran, thus gekenn draw that for the drive of the front wheels (8,9) a driving motor (1) arranges 10) ange in the range of the front axle (is.



0) DE10148653A1 – WHEEL CHAIR HAS FRONT LIGHTING WITH PIVOT MECHA...

176) Family number: 28401715 (DE10148653A1)

© PatBase

Title: Wheel chair has front lighting with pivot mechanism for has lamp between outer connecting lines between wheels on one side in rest position and protruding beyond line in working position

Priority: DE20011048653 20011002

Family:

Publication number	Publication date	Application number	Application date
DE10148653 A1	20030410	DE20011048653	20011002
DE10148653 C2	20030918	DE20011048653	20011002

Probable Assignee: INVACARE DEUTSCHLAND GMBH

Assignee(s):(std)**:** INVACARE DEUTSCHLAND GMBH

Inventor(s):(std)**:** JAEKEL STEFFEN

International class (IPC 8–9): A61G5/10 (Advanced/Invention); A61G5/00 (Core/Invention)

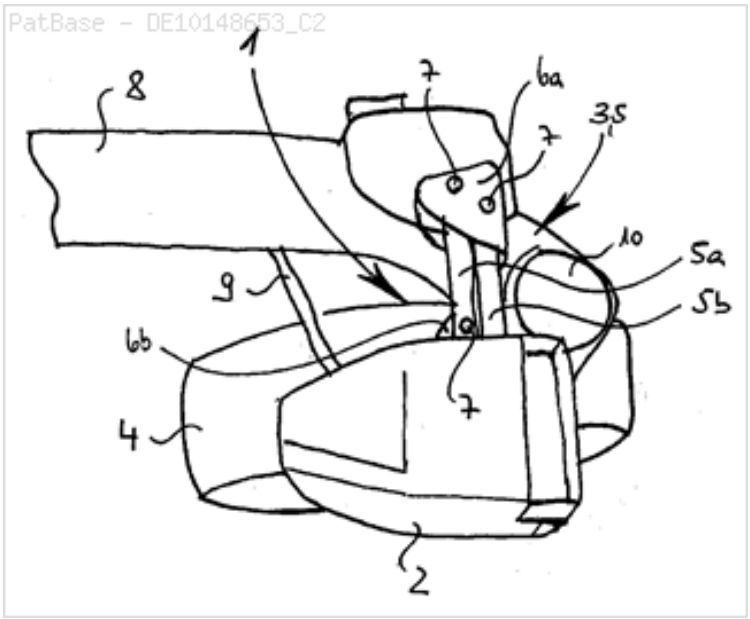
International class (IPC 1–7): A61G5/10

CPC: A61G5/10

European class: A61G5/10

Classification Explorer

Abstract:
The device has at least two front wheels, two rear wheels and at least one front light with a lamp (2) and a holder (3). The lamp is pivotable between a working position and a rest position so that the emitted light beam essentially undergoes a parallel displacement. In the rest position the lamp is between outer connecting lines between wheels (4) on one side and protrudes beyond this line in the working position.



0) DE202011103898U1 – VORDERACHSKONSTRUKTION FUER EINEN SCHLITTENHUND...

177) Family number: 50074353 (DE202011103898U1) © PatBase

Title: Vorderachskonstruktion fuer einen Schlittenhundetrainingswagen Front axle for a sled dog training cart (Machine translation)

Priority: DE201120103898U 20110801

Family:

Publication number	Publication date	Application number	Application date
DE202011103898 U1	20111215	DE201120103898U	20110801

Probable Assignee: BREDEL WERNER

Assignee(s):(std)**:** BREDEL WERNER

Assignee(s): BREDEL

International class(IPC 8–9)**:** B62C3/02 (Advanced/Invention)

CPC: B62C3/02

European class: B62C3/02

Classification Explorer

Abstract:
Source: DE202011103898U1 Vierraedrigen Schlittenhundetrainingswagen zum Training mit Schlittenhundegespannen, der eine Vorderachskonstruktion aufweist, dadurch gekennzeichnet, dass zwei Roller als Tandem quer miteinander verbunden sind.

Machine translation: Four–wheeled dog sled training cart for training with sled dog team, which has one front axle, characterized in that two rollers are connected in tandem across.

0) CN2235215Y – ROLLER FOOTWEAR

178) Family number: 17614857 (CN2235215Y) © PatBase

Title: Roller footwear

Priority: CN19952033560U 19950412

Family:

Publication number	Publication date	Application number	Application date
CN2235215 Y	19960918	CN19952033560U	19950412

Probable Assignee: TAO HE

Assignee(s):(std)**:** TAO HE

Inventor(s):(std)**:** HE TAO ; TAO HE ; WU XUEYI ; XUEYI WU

International class (IPC 8–9)**:** A43B5/00 (Advanced/Invention); A43B5/00 (Core/Invention)

International class (IPC 1–7)**:** A43B5/00

Classification Explorer

Abstract:
Source: CN2235215Y The utility model relates to a pair of self–walking shoes, which is a manpower device instead of walk designed by the theory of people walking with shoes. Compared with a pair of roller skates, the inner parts of two front wheels of each shoe of the self–walking shoes are respectively provided with a detent mechanism, and each front wheel only can slip forward and brake backward; the utility model can adequately utilize the drive of the back stepping force of people, and can prevent the human body tilting forward during walk. The rear end of the self–walking shoes is provided with a vehicle brake, and the self–walking shoes adopt the plastic adhesive tape of hairiness to fix feet. Compared with the roller skate, the utility model has the advantages of labor saving, easy control, safety, convenient wearing, etc.

0) GB820802A – A TRACK LINING MACHINE AND METHOD OF USING SAME...

179) Family number: 20578868 (GB820802A)

© PatBase

Title: A track lining machine and method of using same

Priority: 19560709

Family:

Publication number	Publication date	Application number	Application date
GB820802 A	19590930	GB19570001035	19570110

Probable Assignee: RAILWAY MAINTENANCE CORP

Assignee(s):(std): RAILWAY MAINTENANCE CORP

International class (IPC 8–9): E01B33/02 (Advanced/Invention); E01B33/00 (Core/Invention)

International class (IPC 1–7): E01B29/20

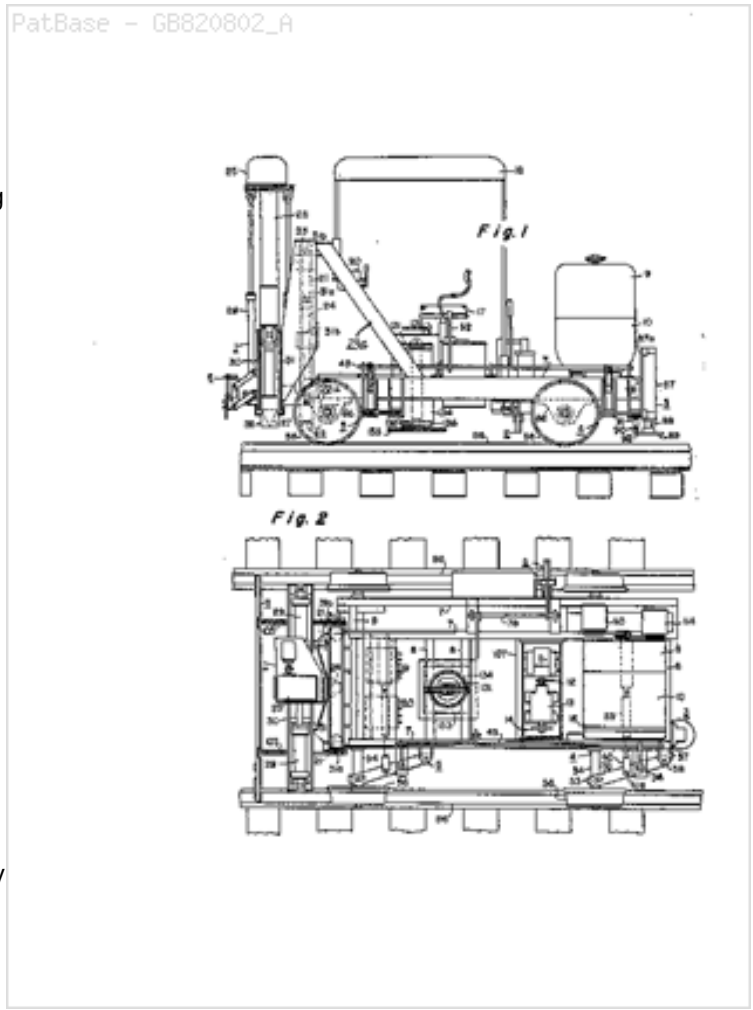
CPC: E01B33/02

European class: E01B33/02

Classification Explorer

Forward Citations: EP0189621,

Abstract:
Source: GB820802A 820,802. Track aligning. RAILWAY MAINTENANCE CORPORATION. Jan. 10, 1957 [July 9, 1956], No. 1035/57. Class 104 (2). A method of lining track comprising moving a track lining machine having wheels moving on the track to the position where aligning is necessary, retracting the wheels on at least one side of the machine to provide an unobstructed view along a rail to be aligned and lining the track. The machine consists of a frame of channel members 7, 8 supporting fuel tanks 9 and an engine 10 driving pumps for fluid for hydraulic cylinders and motors. A motor 11 drives the rear axle through a chain and sprocket. The frame supports an anchoring and track lining assembly 1, retractor mechanism 4, 5 for two wheels, a rail clamp 2, a rear jack 87, a gauge sight bar 93 and hydraulic cylinder 131 for rotating the machine. The anchoring and track lining assembly is similar to that described in Specification 820,801. The assembly is raised and lowered by an hydraulic cylinder 24 secured to a cross–member 23 and pivoted to a plate 31 which has wing plates 31a with sleeves 31b sliding on columns 21 between cross–members 22, 23. A digging head 27 is rotated by a motor 25, is raised and lowered by hydraulic cylinders 28 pivoted to the head and secured to the plates 30, 31, the rods being pivoted to the platform of the motor 25, and is angularly movable by cylinders 29 pivoted to plates 30, 31. The retraction mechanism for each of two wheels actuated by hydraulic cylinders 39 comprises a shifter land 33 and a sliding axle 34 connected to a retracting arm 36, a clevis 41 pivoted to the arm is secured to the cylinder 39 and the arm is pivoted to a bracket on the frame. The arm is movable in a slot 42 in a bracket 43 and is locked in non–retracting position by a pin 45 passing through a hole in the bracket and arm and secured in locking position by a latched lever 52. The rail clamp 2 comprises a pair of scissor–like jaws operated by a handle. The



wheels on one side of the vehicle are raised by a cylinder 87 operating a rear jack which lowers a shoe 89 into contact with the ground. The gauging sight bar 93 carries targets 95, the bar being swung horizontally and vertically by arms 100 pivoted to a support 102 which has pivoted a pair of arms 103 pivoted to the plate 30. When the anchoring and lining machine 1 is lowered into the crib, the bar 93 contacts the top of the rails and the target 95 is urged by a spring 99 into contact with the rail. The sight bar is used with a telescope and manual target to establish a straight line for the track. The telescope is locked to swing in the vertical direction. The lining machine is moved away. A viewer indicates to the machine driver when the target moves in the field of view. At these points it is necessary to align the track. The machine can be rotated by operating a cylinder 131 pivoted at the upper end in a casing 134 so that the bottom plate 133 bears on the ground and raises the wheels from the track. In operation, the machine is wheeled into position, the hydraulic cylinder 24 is actuated until the assembly 1 is lowered on to the ballast. The digging head 27 is rotated by the motor 25 and the casing 26 is driven into the ballast by hydraulic cylinders 28 to anchor the machine. The two front wheels are raised from the track by this means. The clamping jaws are actuated to grip a rail by operating the handle, the rear jack is actuated by the cylinder 87 to raise the rear wheel. The anchoring assembly may be tilted by the hydraulic cylinders 29. The locking pins 45 of the retraction mechanism are disengaged by the handle 52, the wheels are retracted on one side by the cylinders 39 and the track is aligned by the feet 32 pivoted to the plates 30, 31 and actuated by hydraulic cylinders 120 to press against a rail and displace it laterally. A reservoir 107 supplies fluid to pumps 110 and 114 which supply pressurized fluid to right and left valve banks 19, 20. The left valve bank 20 through valve 116 supplies fluid to motor 11 and through valves 117, 118 and 119 supply fluid to hydraulic cylinders 24, 28 and 120. The right valve bank 19 through valves 122, 124, 125 and 126 supply fluid to hydraulic cylinders 39, 87, 29, 127, valve 123 supplies fluid to motor 25. When cocks 130 are open and cocks 130a, are closed, fluid is supplied to hydraulic cylinder 131. All the hydraulic cylinders and motor 11 have return lines to the valves. The right and left valve banks have return lines to the reservoir. The motor 25 has a direct return line to the reservoir. The valves 116 to 119, 122, 124 to 126 are three positioned manually−operated control valves, the third position being for reverse motion. The valve 123 is a two positioned manually−operated valve, the second position stops flow of fluid to the motor 25 which therefore stops.

0) TW551211Y – SLANT–DRIVING–TYPE TRANSMISSION STRUCTURE FOR V...

180) Family number: 30351333 (TW551211Y)

© PatBase

Title: Slant–driving–type transmission structure for vacillation cart

Priority: TW20020216460U 20021016

Family:

Publication number	Publication date	Application number	Application date
TW551211_Y	20030901	TW20020216460U	20021016

Probable Assignee: GU HONG JUN

Assignee(s):(std)**:** GU HONG JIUN ; GU HONG JUN

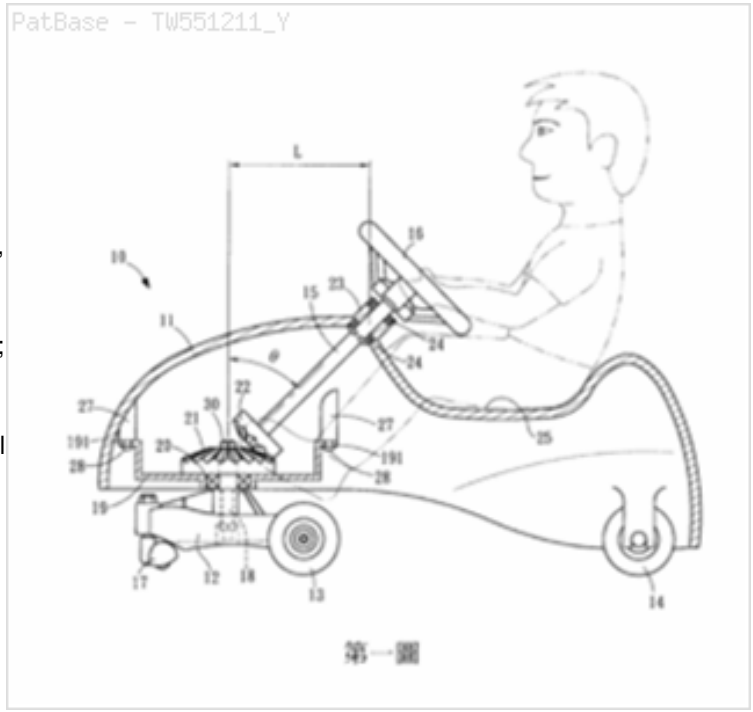
Inventor(s):(std)**:** GU HONG JIUN

International class (IPC 8–9): A63H17/18 (Advanced/Invention); A63H17/00 (Core/Invention)

International class (IPC 1–7): A63H17/18

Classification Explorer

Abstract:
Source: TW551211Y



Machine translation: One kind of swing vehicle drives the type transmission structure slanting, as soon as soon as soon as it after a chassis, is located in front of the chassis the underneath triangulum and the matching two front wheels, two is located in the chassis underneath about the both sides trailing wheel, is located in front end the chassis and uses in actuating the triangulum the drive shaft, to be located in on the drive shaft and for the child the steering wheel which drives by both hands; Among them, place of body the triangulum central is equipped with a revolution axis firmly, this revolution of shafting pivot shaft is located in under the chassis fixed stand central committee, and coordinates the bearing to favor the rotation, also on revolution axis solid then second bevel gear, also meshes mutually with the first bevel gear; But the first bevel gear is meets firmly under the drive shaft, also on drive shaft then the pin connected also is coordinating the bearing in the spindle seat in order to help the rotation, another spindle seat on the chassis is the drift angle establishment, and guarantees revolution axis of with between the triangulum when suitable spacing, therefore the drive shaft is the drift angle establishment, relatively steering wheel also for tilting.

0) DE3150193A1 – MOTOR–PROPELLED WHEELCHAIR FOR THE PHYSICALLY H...

181) Family number: 3063576 (DE3150193A1) © PatBase

Title: MOTOR–PROPELLED WHEELCHAIR FOR THE PHYSICALLY HANDICAPPED

Priority: DE19813150193 19811218

Family:

Publication number	Publication date	Application number	Application date
DE3150193 A1	19830630	DE19813150193	19811218
DE3150193 C2	19870430	DE19813150193	19811218

Probable Assignee: STEIGER BJOERN RETTUNGSDIENST

Assignee(s):(std): RETTUNGSDIENST STIFTUNG BJOERN ; STEIGER BJOERN RETTUNGSDIENST

Assignee(s): RETTUNGSDIENST STIFTUNG BJOERN STEIGER E V ; RETTUNGSDIENST STIFTUNG BJOERN STEIGER E V 7057 WINNENDEN DE ; RETTUNGSDIENST STIFTUNG BJOERN STEIGER EV

Inventor(s):(std): FORNOFF DIETER ; KLETT EBERHARD

Inventor(s): KLETT EBERHARD 6520 WORMS DE ; FORNOFF DIETER 6129 LUETZELBACH DE

International class (IPC 8–9): A61G5/04 A61G5/06 (Advanced/Invention); A61G5/10 (Advanced/Non–invention)

International class (IPC 1–7): A61G5/00 A61G5/04

CPC: A61G5/061 A61G5/045 A61G5/066 A61G5/1059 A61G5/1067 A61G5/1075 A61G2203/42 A61G5/1051

European class: A61G5/04A6 A61G5/06A A61G5/06C K61G5/10G K61G5/10S14 K61G5/10S2 K61G5/10S8

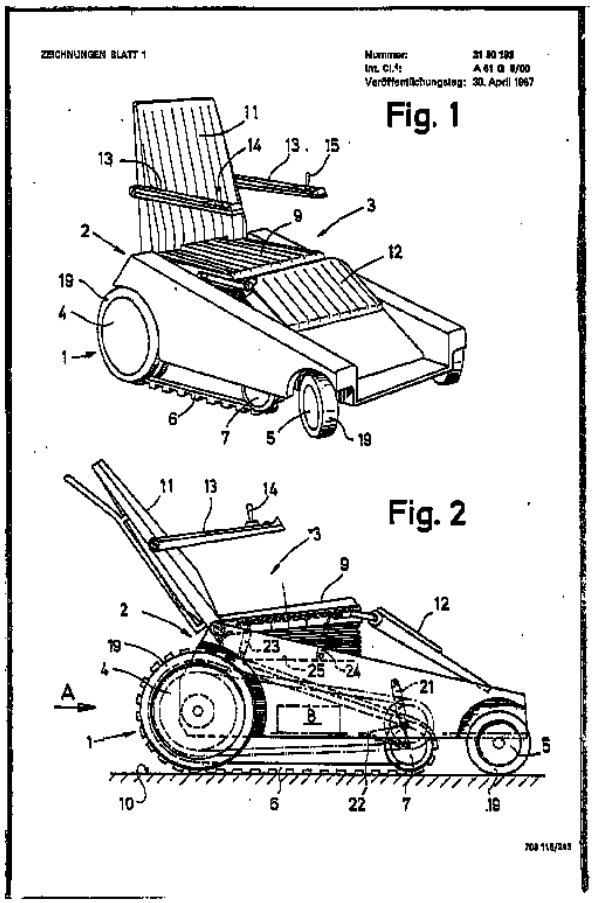
Classification Explorer

Cited documents: DE2419553 A1, DE1505774 B, DE1405732 B,

Forward Citations: WO9725905, WO9502385, WO08128950, WO08128950, WO08041043, US9289338, US6068280, US5518081, US5335741, US4709772, FR2590162, FR2576863, EP0829247, EP0829247, EP0226489, EP0193473, EA015023, DE4231876, DE4216876, DE3943260, DE3827607, DE3803996, AU700392,

Abstract:
Source: DE3150193A1 The invention relates to a motor–propelled wheelchair which can be driven in broken terrain and, in particular, can surmount staircases. For this purpose, truncated cones are assigned to the running wheels of the wheelchair and support running chains. When these truncated cones are pushed together, they push the running chain outward over the circumference of the running wheels, so that the running wheels lift clear of the ground and a track vehicle is produced. In this arrangement, the inclination of the seat relative to the horizontal is automatically adjusted for staircase operation.

PatBase – DE3150193_C2



0) JP3149183U – WHEELCHAIR (MACHINE TRANSLATION)

182) Family number: 43128575 (JP3149183U)

© PatBase

Title: Wheelchair (Machine translation)

Priority: JP20080009196U 20081231

Family:

Publication number	Publication date	Application number	Application date
JP3149183 U	20090312	JP20080009196U	20081231

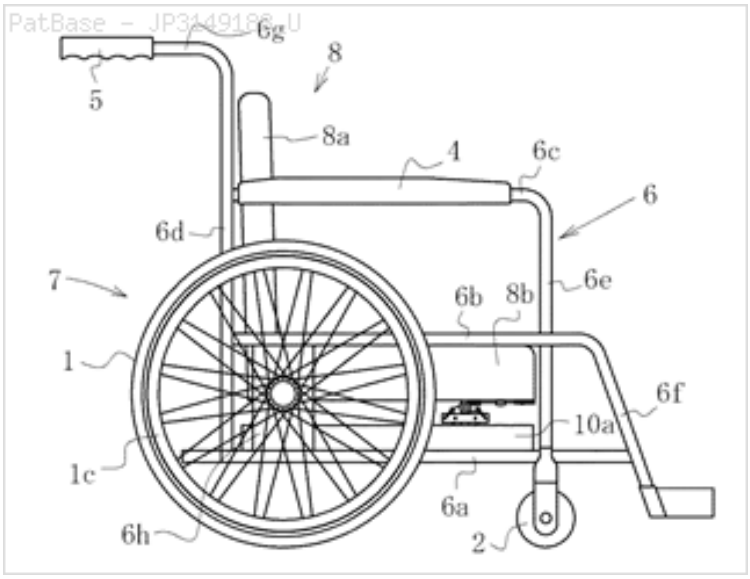
Probable Assignee: MAEJIMA IND CO LTD

Assignee(s): MAEJIMA IND CO LTD

International class (IPC 8–9): A61G5/02 (Advanced/Invention)

Classification Explorer

Abstract:
Source: JP3149183U To provide a wheelchair which eliminates vehicle instability in the case of tilting the backrest backwards by the reclining mechanism. A larger diameter of the two rear wheels 1,1, a small diameter of the two front wheels 2, 2, footrests, armrests 4,4, the body made from the frame 6 supporting handle 5,5 and these for the caregiver a unit 7, as it is constituted by a seat portion 8 to be placed on the two strip–shaped frame of the body part 7, the backrest portion 8a of the seat 8, which may be inclined at an appropriate angle to the rear with respect to the seating portion 8b constitutes the reclining mechanism to and between the lower surface side of the band–shaped frame of said seat seat portion 8 and the body part 7, slidably and rotatably fixed to the seating portion 8b of the seat portion 8 in the longitudinal direction within a predetermined range sliding mechanism that it is obtained by intervening..BACKGROUND 1



183) Family number: 64811936 (CN205916075U)

© PatBase

Title: Large vehicle accident protection devices (Machine translation)

Priority: CN201620939000U 20160825

Family:

Publication number	Publication date	Application number	Application date
CN205916075 U	20170201	CN201620939000U	20160825

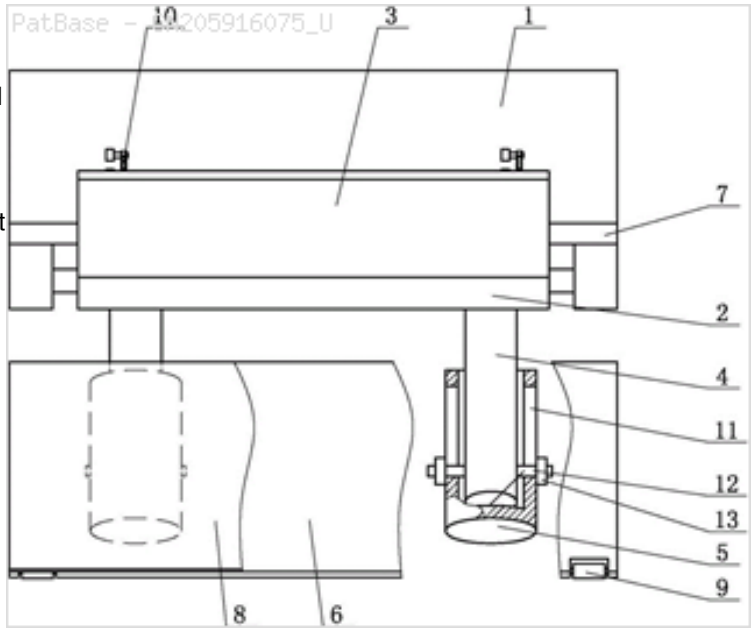
Probable Assignee: LIU FEI

Assignee(s): LIU FEI

International class (IPC 8–9): B60R21/34 (Advanced/Invention)

Classification Explorer

Abstract:
Source: CN205916075U Large vehicles accident accident protection device, including fixed Board, fixed Board lower installation level of hinge, hinge sides respectively installation up tilt of limited bit Board, two a limited bit Board respectively is located in fixed Board sides, hinge lower fixed installation number a connection rod, each connection Rod lower set connection tube, connection tube upper opening, connection rod of lower is located in connection tube within, connection tube can along connection Rod upper and lower sliding, connection tube Shang set protection board. The utility has the advantage: the fixing plate of the utility may have two, two fixed panels were installed in front of the car the two front wheels. Fixing plate can also have several, several fixed panels mounted on large wheels front and rear sides, lower part of the shield in the fixed plate, met in the big car scraping when pedestrians fell to the ground after the first contact with the shield, driver deceleration braking process, avoiding pedestrians were the wheels rolling, reduce the number of traffic accidents causing casualties.



0) CN1069459A – FULLY–DECLINING RECUMBENT TRICYCLE

184) Family number: 9664612 (CN1069459A) © PatBase

Title: Fully–declining recumbent tricycle

Priority: CN19911005556 19910812

Family:

Publication number	Publication date	Application number	Application date
CN1069459 A	19930303	CN19911005556	19910812

Probable Assignee: ZHIGUO LIU

Assignee(s):(std)**:** ZHIGUO LIU

Assignee(s): LIU ZHIGUO

Inventor(s):(std)**:** ZHIGUO LIU

Inventor(s): LIU ZHIGUO

International class (IPC 8–9)**:** B62K5/02 B62K5/08 B62M1/24 (Advanced/Invention)

International class (IPC 1–7)**:** B62K5/02 B62K5/08 B62M1/04

Classification Explorer

Forward Citations: CN102556275, CN102267524, CN102180211,

Abstract:
Source: CN1069459A The present invention provides a full–tilt tricycle integrated system. Characterized in that the two front wheels quadrilateral suspension and steering combined structure, three wheels when turning the turning direction inclined with the vehicle frame, center of gravity moved inside, reclining ride, directional control under the seat. Low–speed stability invention set system fixed tricycle and motorcycle arbitrariness and ride, handling comfort in one, from a standstill to high speed stability under any circumstances.

0) DE29819182U1 – TRICYCLE DREIRAD

185) Family number: 16992596 (DE29819182U1) © PatBase

Title: Tricycle

Priority: DE19982019182U 19981028

Family:

Publication number	Publication date	Application number	Application date
DE29819182 U1	19990610	DE19982019182U	19981028

Probable Assignee: NAGEL HERBERT DIPL ING

Assignee(s):(std)**:** NAGEL HERBERT DIPL ING

Assignee(s): NAGEL HERBERT DIPL ING 73249 WERNAU DE

International class (IPC 8–9): B62K3/00 B62K5/04 B62K5/05 (Advanced/Invention); B62K3/00 B62K5/00 (Core/Invention)

International class (IPC 1–7): B62K11/00 B62K5/04

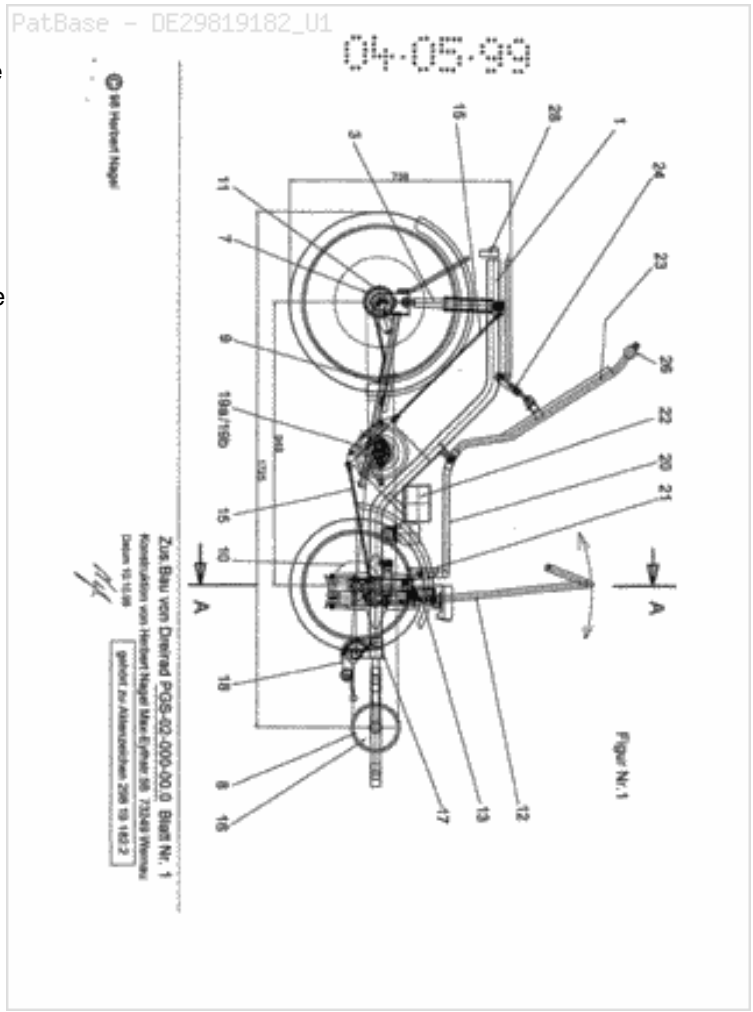
CPC: B62K3/005 B62K5/05 B62K5/06

European class: B62K3/00C B62K5/05 B62K5/06

Classification Explorer

Abstract:
Source: DE29819182U1 (Claim 1) Seite Nr. I Aktenzeichen 298 19 182.2 Schutzansprueche f ue r Dreirad (Korrektur vo m 2.5.99)1) Das Dreirad ist dadurch gekennzeichnet, dass der Radrahmen (Pos.I) mit der zweiraedrigenVorderachse (Pos.

Machine translation: (Claim 1) Page No. I file number 298 19 182.2 Schutzansprueche f u r tricycle (Correction 02/05/99 vo m) 1) The tricycle is characterized in that the wheel frame td (Pos.I) with the zweiraedrigenVorderachse (item



0) FR2881395B – TRIPORTEUR A BALANCIER

186) Family number: 33200174 (FR2881395B) © PatBase

Title: TRIPORTEUR A BALANCIER

Priority: FR20050001168 20050202

Family:

Publication number	Publication date	Application number	Application date
FR2881395 A1	20060804	FR20050001168	20050202
FR2881395 B1	20081031	FR20050001168	20050202

Probable Assignee: DALLE ALEX ANTOINE KLEBER

Assignee(s):(std)**:** DALLE ALEX ANTOINE KLEBER

Inventor(s):(std)**:** DALLE ALEX ANTOINE KLEBER

International class (IPC 8–9): B62K5/06 B62K5/08 (Advanced/Invention); B62K5/00 (Core/Invention)

CPC: B62D9/02 B62K5/05 B62K5/08 B62K5/10

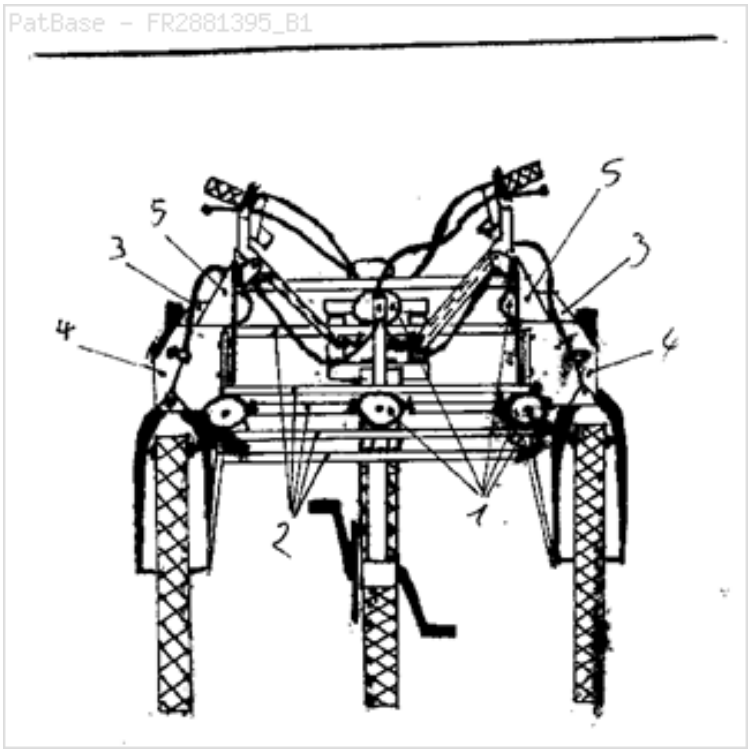
European class: B62D9/02 B62K5/05 B62K5/08 B62K5/10

Classification Explorer

Cited documents: WO0192084 A1, GB2374327 A1, GB191011300 A, FR2085428 A1,

Forward Citations: WO15002167, WO15002166, EP3002201,

Abstract:
Source: FR2881395B The tricycle has three arms with two arms bolt on their center to a cross arm end support, and another support (7) that maintains end of central castors and rear of central front castors, where the supports are fixed by screw. The arms have ends holding each of sides of folded sheets (3) that locks fork using sheets (4). The sheets (3, 4) are joined together with a reinforcing sheet (5) by a cord of 2.5 centimeters.



0) DE202012008893U1 – MOTORRAD MIT GESCHLOSSENER FAHRERZELLE MOTORCY...

187) Family number: 52530843 (DE202012008893U1) © PatBase

Title: Motorrad mit geschlossener Fahrerzelle Motorcycle riders with closed cell (Machine translation)

Priority: DE201220008893U 20120914

Family:

Publication number	Publication date	Application number	Application date
DE202012008893 U1	20121213	DE201220008893U	20120914

Probable Assignee: UNZICKER STEFAN

Assignee(s):(std)**:** UNZICKER STEFAN

Assignee(s): UNZICKER

International class(IPC 8–9)**:** B62J17/00 B62K5/08 (Advanced/Invention)

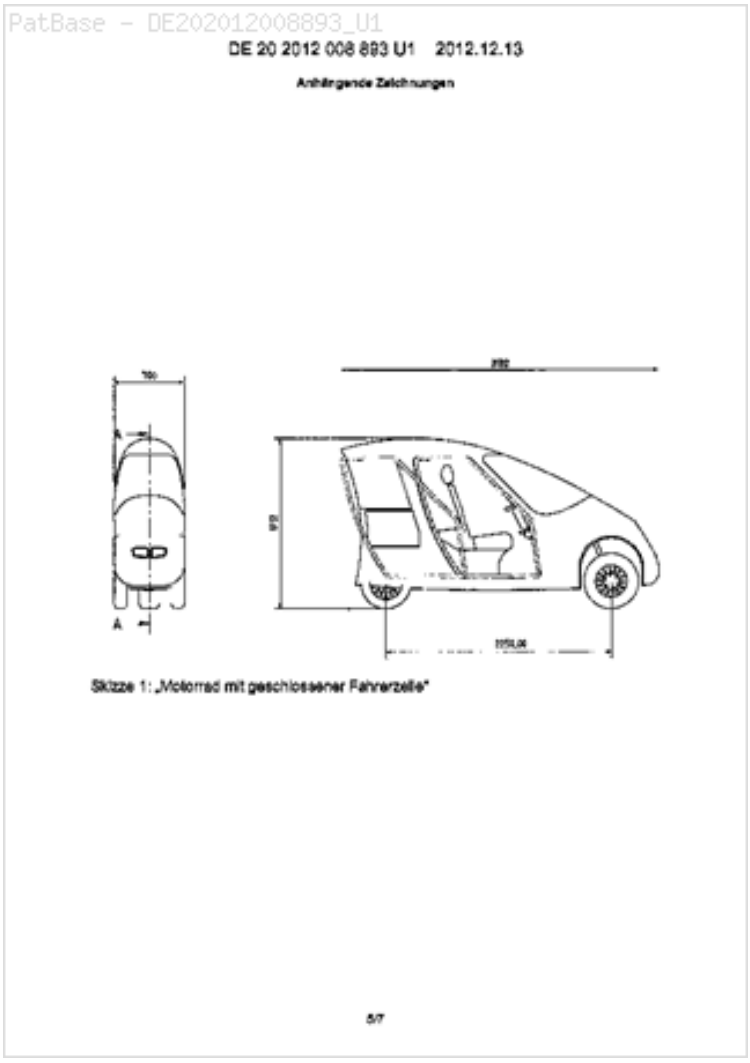
CPC: B62J17/00 B62J17/08 B62K5/027 B62K5/05 B62K5/10 B62K21/00

European class: B62J17/00 B62J17/08 B62K21/00 B62K5/027 B62K5/05 B62K5/10

Classification Explorer

Abstract:
Source: DE202012008893U1 Geschuetzt werden soll ein Motorrad mit vollstaendig geschlossener Fahrerzelle in Kombination mit automatisch oeffnenden Tueren und integrierten 4–Punkt–Gurten.

Machine translation: To be Protected a motorcycle with fully enclosed driver cell in combination with automatically opening doors and integrated 4–point harnesses.



Skizze 1: „Motorrad mit geschlossener Fahrerzelle"

0) DE202013103041U1 – ROLLER MIT TASCHE

188) Family number: 54719904 (DE202013103041U1) © PatBase

Title: ROLLER MIT TASCHE

Priority: SI20120000231 20120711

Family:

Publication number	Publication date	Application number	Application date
AT14030 U1	20150215	AT20130050099U	20130702
CZ26650 U1	20140402	CZ20130028183U	20130709
DE202013103041 U1	20130912	DE201320103041U	20130709
FR2993235 A3	20140117	FR20130056514	20130703
FR2993235 B3	20150320	FR20130056514	20130703
ITMI20130255 U1	20140112	IT2013MI00255U	20130710
SI24153 C2	20140131	SI20120000231	20120711

Probable Assignee: TOMAZ HAM

Assignee(s):(std)**:** HAM TOMAZ ; TOMAZ HAM

Assignee(s): HAM

Inventor(s):(std)**:** HAM TOMAZ

Inventor(s): TOMAZ HAM

Agent(s): CABINET PLASSERAUD

International class(IPC 8–9)**:** B62B3/02 B62B3/04 B62B3/12 B62J9/00 B62K13/00 B62K15/00 B62K25/02 B62K3/00 B62K3/10 B62K5/00 B62K7/04 (Advanced/Invention); B62K13/00 B62K15/00 (Core/Invention)

CPC: B62K3/10 B62K15/00 B62J7/06 B62K3/002 A45C5/14 A45C2009/005 A45F3/04 A45F4/02 B62K5/00 B62B3/02 B62B3/027 B62B3/04 B62B3/12 B62K13/00 B62K25/02

Classification Explorer

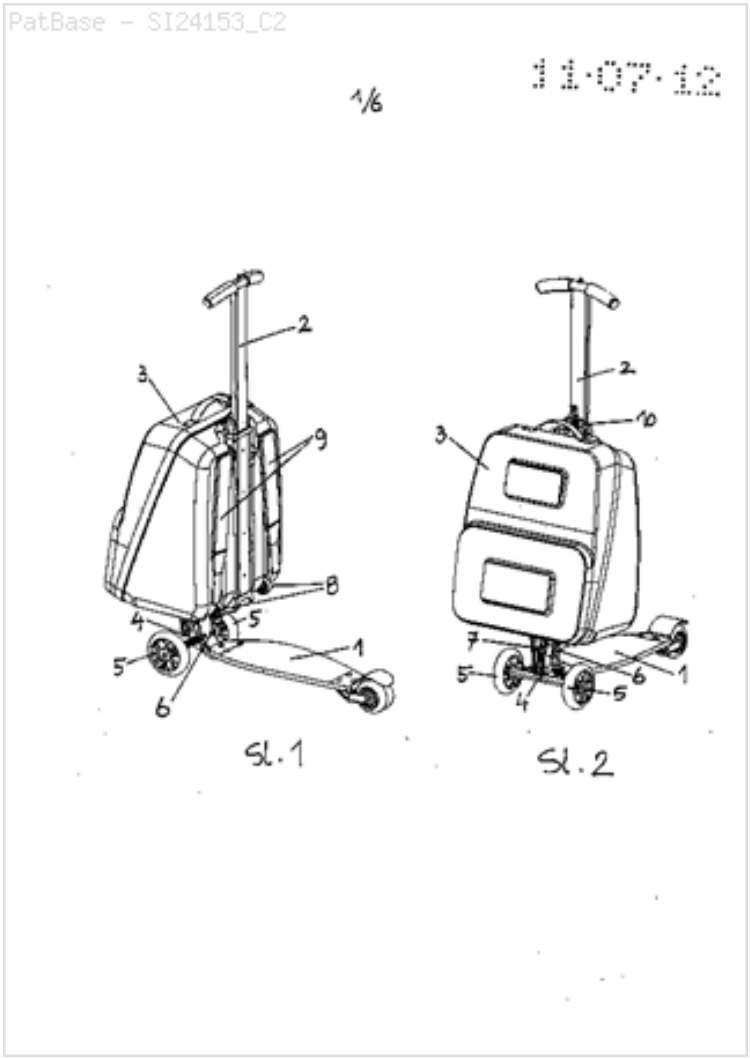
Cited documents: WO0245539 A1, US2011193304 AA, FR2849751 A1,

DE202010001762 U1

DE10204478 A1, DE10144310 A1,

Forward Citations: DE102014222558,

Abstract:
Source: DE202013103041U1 Roller mit Tasche (3), mit einem Brett (1), mit einem Hinterrad oder zwei Hinterraedern, und mit einer Lenkstange (2) mit zwei Vorderraedern (5) auf einer Achse (4), die elastisch eingespannt ist und ein Lenken erlaubt, wobei das Brett (1) klappbar und mit der Lenkstange (2) verbindbar ist, dadurch gekennzeichnet, dass das Brett (1) mit einem Gelenk (6) und die Lenkstange (2) mit einem Traeger (11) durch die Einspannung (12) schwenkverbunden sind, wobei die Lenkstange (2) auf dem Traeger (11) befestigt ist, der sich von der Stelle der Befestigung der Lenkstange (2) ungefaehr in einem rechten Winkel horizontal nach vorne erstreckt und mit dem Vorderteil nach unten in ein Bein (7) verlaeuft, wobei die Bodenlaenge der Tasche (3) bevorzugt ungefaehr gleich der oder bis zu 50 percent groesser als die Laenge des horizontalen Traegers (11) ist, und wobei die Tasche (3) mit ihrem Boden auf dem Traeger (11) ruht und mit Hilfe eines Befestigungsmechanismus (10) loesbar an der Lenkstange (2) angebracht ist.



- **search:** SS8 ft=motorcycle and tilt* and suspension and handlebar and brake* (Results 14)
- List: SS8 1–50 (ft=motorcycle and tilt* and suspension and handlebar and brake*) (Results 14)

0) US2012080249A – FRONT WHEEL ENERGY RECOVERY SYSTEM

1) Family number: 50897763 (US2012080249A) © PatBase

Title: FRONT WHEEL ENERGY RECOVERY SYSTEM

Priority: US20100897534 20101004 US20130838989 20130315 US20140305534 20140616

Family:

Publication number	Publication date	Application number	Application date
TW201223822 A	20120616	TW20110135773	20111003
US2012080249 AA	20120405	US20100897534	20101004
US2013226381 AA	20130829	US20130838989	20130315
US2014291050 AA	20141002	US20140305534	20140616
US8761984 BB	20140624	US20130838989	20130315
US8973690 BB	20150310	US20100897534	20101004
US9043067 BB	20150526	US20140305534	20140616
WO12047754 A1	20120412	WO2011US54227	20110930

Probable Assignee: MORRISON CONSULTING GROUP INC W

Assignee(s):(std)**:** INGRAM BENJAMIN T ; MORRISION CONSULTING GROUP INC W ; MORRISON CONSULTING GROUP INC W ; YATES III WILLIAM M ; YATES WILLIAM M III

Assignee(s): YATES WILLIAM M ; W MORRISION CONSULTING GROUP INC ; W MORRISON CONSULTING GROUP INC ; WMORRISON CONSULTING GROUP INC

Inventor(s):(std)**:** INGRAM BENJAMIN T ; YATES III WILLIAM M ; YATES WILLIAM M III ; YATES WILLIAM M

Agent(s): MCKENNA LONG AND ALDRIDGE LLP; JUNG SONG K

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60K1/00 B60L11/00 B60L15/20 B60L7/18 B62K11/04 B62M23/02 B62M6/40 B62M6/80 B62M6/90 B62M7/02 G06F19/00 H02P3/14 (Advanced/Invention)

CPC: B60L11/002 B60L7/18 B60L15/2045 B60L2200/12 B62K11/04 B62K2204/00 B62M7/02 B62M23/02 Y02T10/7283 Y02T10/645 Y02T10/72

European class: B60L15/20E B60L7/18 B62K11/04 B62M23/02 B62M7/02 L60L200/12 L62K204/00 Y02T10/72D6

US class: 180/220 180/65.21 180/65.31 180/65.310P 180/65.6 290/1R 701/22 701/22S

Classification Explorer

Cited documents: WO9011218 A1, WO05044602 A2, WO0058121 A1, US8413748 BB, US8225897 BA, US8151919 BB, US8056693 BB, US8042641 BB, US7775314 BB, US7570012 BB, US7487854 BB, US7328766 BB, US7290629 BB, US7231998 BA, US6888273 BB, US6833642 BA, US6724165 BB, US6663524 BB, US6505699 BA, US6446985 BA, US6439592 BA, US6398683 BA, US6196347 BA, US6182991 BA, US6161855 A, US6161854 A, US6158543 A, US6068279 A, US6039137 A, US5894903 A, US5873428 A, US5865267 A, US5671821 A, US5644202 A, US5491390 A, US5324057 A, US5253889 A, US5113964 A, US5054572 A, US5052705 A, US5050699 A, US5042608 A, US4479660 A, US4397369 A, US3939932 A, US3934669 A, US3199623 A, US3045772 A, US3024860 A, US2012211291 AA, US2012184379 AA, US2012109483 AA, US2012065825 AA, US2012052995 AA, US2011295454 AA, US2011295452 AA, US2011292667 AA, US2011291462 AA, US2011231085 AA, US2011231060 AA, US2011231041 AA, US2011162900 AA, US2011036656 AA, US2010243350 AA, US2010243349 AA, US2010236849 AA, US2010018787 AA, US2009188738 AA, US2008234933 AA, US2008100027 AA, US2008066984 AA, US2007235235 AA, US2007169973 AA, US2005173176 AA, US2004134696 AA, US2003169002 AA, JP8262971 A2, JP5085444 A2, JP5085443 A2, JP5085441 A2, JP5085439 A2, JP5085438 A2, JP5085437 A2, JP4151390 A2, JP2009161026 A2, JP2004210072 A2, EP0798202 A1,

DE202005013929 U1

CN101525024 A,

Forward Citations: WO15006277, US9573590, US9457668, US9415691, US9387764, US9321358, US9168970, US9050905, US8954212, US8950539, US8919483, US8892292, US8880266, US2016325745, US2015274020, US2015274019, US2015258898, US2015203110, US2014358343, US2014297074, US2014262581, US2014034267, US2013299265, US2013284527, US2013282218, US2013274983, US2013168171, US2012296508, US2012203407, EP2946993, EP2910401,

Abstract:
Source: US2012080249A A kinetic energy recovery system ("KERS system") and motorcycle equipped with the same is disclosed. The KERS system may be mechanical, hydraulic, or a combination thereof. In an embodiment, motorcycle includes a rear wheel, an electric motor, a motor shaft, and a front wheel equipped with a wheel hub that includes a sprag clutch. The motor shaft can be fitted with a motor drive sprocket that drives a jackshaft chain that in turn drives a jackshaft input sprocket that is fitted to the jackshaft. Jackshaft input sprocket may be installed in conjunction with a sprag clutch that allows the rear wheel to free wheel during coasting while the front wheel KERS system is engaged. The motor harvests kinetic energy from the front wheel without simultaneously powering the rear wheel while the use of a geared dead zone allows the front and rear wheels to not lock together to improve safety.

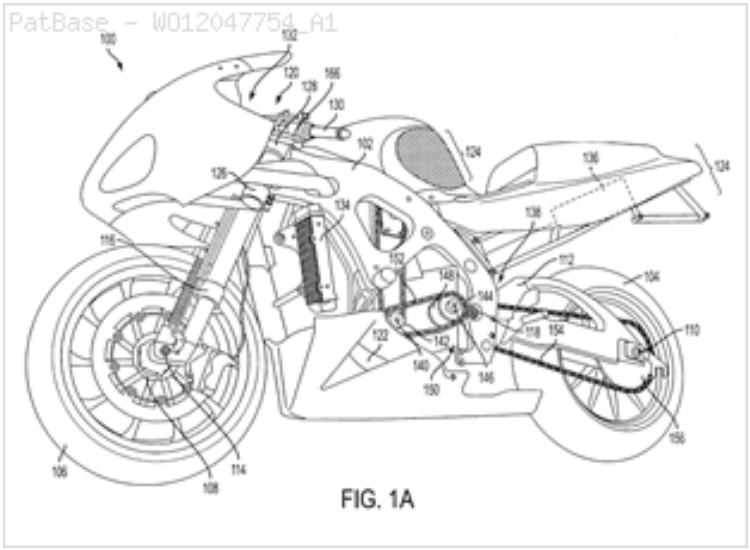


FIG. 1A

0) US2001040063A – ENGINE CRADLE FOR A VEHICLE

2) Family number: 31380924 (US2001040063A) © PatBase

Title: Engine cradle for a vehicle

Priority:

CA19892256944	19891223	CA19982256944	19981223	CA19992293104	19991223
CA19992510795	19991223	CA19992485813	19991223	CA19992293106	19991223
CA20012350285	20010612	CA20012350274	20010612	CA20012435028	20010612
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US20040851476	20040522	US20050654383P	20050218	WO2003CA00248	20030224
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Family:

Publication number	Publication date	Application number	Application date
AU2003206528 AA	20030909	AU20030206528	20030224
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CA2293104 AA	20000623	CA19992293104	19991223
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CA2350264 C	20060214	CA20012350264	20010612
CA2350270 AA	20020404	CA20012350270	20010612
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EP1903257 A2	20080326	EP20070002664	20030224

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US7377347 BB	20080527	US20050212754	20050829	
US7377348 BB	20080527	US20070623195	20070115	
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WO03071162 A1	20030828	WO2003CA00248	20030224	

Probable Assignee: BOMBARDIER RECREATIONAL PRODUCTS INC

Assignee(s):(std)**:** BOMBARDIER INC ; GIROUARD BRUNO ; FECTEAU BERTHOLD ; DION ANNE MARIE ; BOMBARDIER RECREATIONAL PRODUC ; BOMBARDIER RECREATIONAL PRODUCTS INC ; BOMBARDIER RECREATIONAL PRODUCTS ; AUDET MATHIEU ; BOMBARDIER RECREATIONAL PROD ; WUBBOLTS JEROME ; MASSICOTTE ALAIN

Assignee(s): RASIDESCU MIHAI ; LANGLAIS STEVE ; WATSON PETER ; MALLETTE BERTRAND ; MERCIER DANIEL ; SAVOIE PIERRE ; TALBOT JEAN GUY ; AUBE MARTIN ; GILBERT ANDRE ; COTE MARIO ; FOURNIER ANDRE ; BANK OF MONTREAL ; BEDARD YVON ; BERTRAND ERIC ; BOMBERDIER INC

Inventor(s):(std)**:** AUBE MARTIN ; AUDET MATHIEU ; BEDARD YVON ; BERTHOLD FECTEAU ; BERTRAND ERIC ; BRUNO GIROUARD ; COTE MARIO ; DION ANNE MARIE ; FECTEAU BERTHOLD ; FECTEAU BERTHOLD US ; FOURNIER ANDRE ; GILBERT ANDRE ; GIROUARD BRUNO ; GIROUARD BRUNO 87721201A ; LANGLAIS STEVE ; MALLETTE BERTRAND ; MASSICOTTE ALAIN ; MERCIER DANIEL ; RASIDESCU MIHAI ; SAVOIE PIERRE ; TALBOT JEAN GUY ; WATSON PETER ; WUBBOLTS JER DOT OVER OME ; WUBBOLTS JEROME

Inventor(s): WUBBOLTS JER DOT OVER ; GIROUARD BRUNO 23738400P

Agent(s): SMART AND BIGGAR; OSLER HOSKIN AND HARCOURT LLP; BCF LLP; SOLF ALEXANDER; BOMBARDIER RECREATIONAL PRODUCTS INC, INTELLECTUAL PROPERTY DEPT; BOMBARDIER RECREATIONAL PRODUCTS INC INTELLECTUAL PROPERTY DEPT; OSLER HOSKIN AND HARCOURT LLP (BRP); OSLER HOSKIN AND HARCOURT LLP BRP; PILLSBURY WINTHROP SHAW PITTMAN LLP; BRP LEGAL SERVICES

Designated states: AE AG AL AM AT AU AZ BA BB BE BG BR BY BZ CA CH CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GB GD GE GH GM GR HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK MN MW MX MZ NL NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

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Classification Explorer

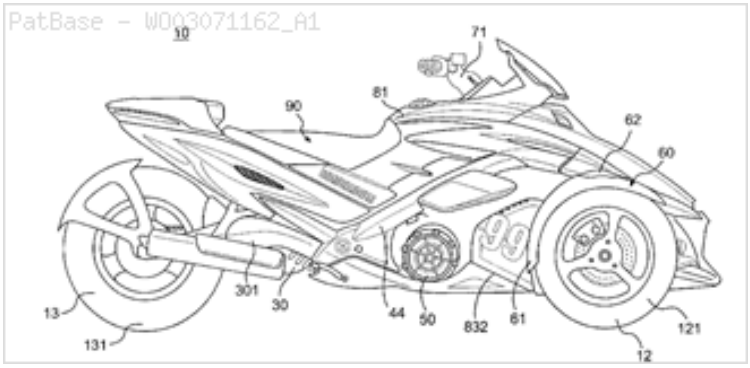
Cited documents: WO9843873 A1, WO0218820 A1, WO0218751 A1, USD449018 S1, USD389440 S1, USD283113 S1, USD175866 S1, USD175666 S1, US7213669 BB, US7014004 BB, US6889787 BB, US6889787 BA, US6868932 BA, US6823957 BB, US6823957 BA, US6796607 BB, US6758197 BB, US6749036 BA, US6733406 BB, US6691812 BB, US6691812 BA, US6685349 BB, US6655487 BB, US6655487 BA, US6651764 BB, US6631925 BA, US6604594 BB, US6604594 BA, US6569056 BB, US6561302 BB, US6561302 BA, US6547027 BA, US6499551 BB, US6499551 BA, US6491125 BB, US6491125 BA, US6491124 BA, US6474662 BA, US6446744 BB, US6446744 BA, US6435522 BA, US6386630 BA, US6357543 BA, US6343666 BA, US6328124 BA, US6286619 BA, US6276482 BA, US6253868 BA, US6235263 BA, US6234263 BA, US6227323 BA, US6224134 BA, US6213514 BA, US6206398 BA, US6170590 BA, US6170590 B1, US6170589 BA, US6155371 A, US6149540 A, US6149288 A, US6109621 A, US6109217 A, US6099097 A, US6086149 A, US6039137 A, US60358436, US60358397, US60358395, US60358394, US60358390, US6024185 A, US6022035 A, US6015022 A, US601418355, US601358439, US601358398, US6009966 A, US6006847 A, US5996717 A, US5992552 A, US5979417 A, US5975624 A, US5960902 A, US5960901 A, US5957230 A, US5947222 A, US5944380 A, US5944133 A, US5904217 A, US5893424 A, US5890558 A, US5860665 A, US5860486 A, US5857538 A, US5855250 A, US5816357 A, US5791760 A, US5791431 A, US5782312 A, US5765846 A, US5762351 A, US5743590 A, US5697452 A, US5685387 A, US5660245 A, US5641180 A, US5634685 A, US5611572 A, US5605642 A, US5586614 A, US5570753 A, US5564517 A, US5544906 A, US5533325 A, US5518081 A, US5515940 A, US5511808 A, US5503242 A, US5495910 A, US5474146 A, US5413187 A, US5372215 A, US5370198 A, US5357775 A, US5279381 A, US5251948 A, US5251773 A, US5251718 A, US5249636 A, US5248011 A, US5236060 A, US5172786 A, US5169367 A, US5127432 A, US5072340 A, US5042606 A, US5038882 A, US5036937 A, US5036931 A, US5031795 A, US5029664 A, US5010989 A, US4913253 A, US4893692 A, US4892165 A, US4892164 A, US4875536 A, US4848503 A, US4848498 A, US4844278 A, US4823895 A, US4804198 A, US4787470 A, US4781264 A, US4779695 A, US4770262 A, US4740004 A, US4735275 A, US4703824 A, US4699229 A, US4697663 A, US4690235 A, US4679647 A, US4662468 A, US4653604 A, US4650442 A, US4650027 A, US4641854 A, US4636922 A, US4633964 A, US4630702 A, US4624469 A, US4620604 A, US4613006 A, US4606429 A, US4600216 A, US4593921 A, US4592737 A, US4573948 A, US4546997 A, US4506753 A, US4505492 A, US4502560 A, US4432107 A, US4421193 A, US4418782 A, US4407383 A, US4361339 A, US4360224 A, US4351410 A, US4348197 A, US4337958 A, US4337529 A, US4325449 A, US4322107 A, US4222453 A, US4204582 A, US4204581 A, US4195702 A, US4184697 A, US4179036 A, US4162605 A, US4088199 A, US4087109 A, US4072325 A, US4058181 A, US4027544 A, US4022484 A, US4020914 A, US4008777 A, US3981373 A, US3931862 A, US3912030 A, US3884314 A, US3884152 A, US3883152 A, US3871460 A, US3870115 A, US3827516 A, US3815696 A, US3804455 A, US3774706 A, US3746118 A, US3736020 A, US3734221 A, US3734219 A, US3698497 A, US3692130 A, US3678635 A, US3666035 A, US3653453 A, US3627073 A, US3622196 A, US3610358 A, US35873702 P, US35843902 P, US35843602 P, US358400, US35839702 P, US35839502 P, US35839402 P, US35839002 P, US3583507 A, US3583506 A, US3578095 A, US3534701 A, US346189, US346188, US3447623 A, US3419098 A, US2987934 A, US2986043 A, US2773392 A, US2746081 A, US2732581 A, US2656904 A, US2493817 A, US2256904 A, US2005205322 AA, US2005205321 AA, US2005205320 AA, US2005126839 AA, US2005115754 AA, US2004134702 AA, US2003201129 AB, US2003201128 AA, US2003183436 AA, US2003127265 AA, US2002053477 AA, US2002020573 AA, US2002017765 AA, US2001047900 AA, US2001040064 AA, US1963273 A, US15602802, US15596402, US1274347 A, US09944159, JPS61163081, JPS5682674, JP9272480, JP8025501, JP7081651, JP64027910 A2, JP63038032, JP63025996 A2, JP6199255 A2, JP61178281 A2, JP61169382 A2, JP61163081 A2, JP61113579 A2, JP61032196 A2, JP61011833 A2, JP60116572 A2, JP60092121 A2, JP6000455, JP59195477 A2, JP59195421 A2, JP59149879 A2, JP59149874 A2, JP59114183 A2, JP59029466 A2, JP58003872 A2, JP56082674 A2, JP53026044 A2, JP5043554 A2, JP5043553 A2, JP5007236 A2,

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Forward Citations: WO16193901, WO16030870, WO15122940, WO15036984, WO13019826, WO10062294, WO09114414, WO08100398, WO08100398, WO07130015, WO07100751, WO03070547, WO03070547, USRE44864, USD761692, USD710274, USD701796, USD695657, USD689794, USD682158, USD678124, USD654420, USD632219, USD631803, USD631395, USD629726, USD629724, USD628129, USD627282, USD627269, USD627263, USD626900, USD603775, USD596081, USD593912, USD593908, USD593455, USD592557, USD592556, USD582823, USD582334, USD581846, USD581845, USD581685, USD581320, USD581319, USD580836, USD580822, USD579380, USD573078, USD552506, USD515457, USD512662, USD495274, USD494889, USD494505, USD494504, USD494503, USD494502, USD494100, USD493390, USD493121, USD490018, USD488404, USD479490, US9610986, US9592713, US9586642, US9555678, US9545967, US9540072, US9506407, US9493185, US9476486, US9446810, US9446661, US9428232, US9387902, US9365232, US9352802, US9346508, US9340248, US9267580, US9266580, US9260152, US9248860, US9227507, US9188198, US9187128, US9162731, US9114844, US9057432, US9050869, US9038502, US9010768, US9004214, US8978794, US8944204, US8936380, US8919477, US8899372, US8897966, US8887853, US8851496, US8844999, US8827291, US8820458, US8801001, US8794106, US8783720, US8783394, US8770601, US8746774, US8733773, US8695746, US8622428, US8613543, US8613534, US8613337, US8590654, US8579063, US8567546, US8555801, US8550514, US8544587, US8540045, US8528683, US8506000, US8490731, US8469137, US8430713, US8430197, US8419104, US8413758, US8408348, US8402861, US8397854, US8393426, US8381857, US8360449, US8342548, US8317257, US8313121, US8312945, US8302726, US8302721, US8302711, US8261683, US8245808, US8226120, US8225896, US8191930, US8191929, US8191677, US8191671, US8191665, US8161929, US8079602, US8075007, US8074759, US8037961, US8029004, US8025540, US8016065, US8007005, US7997372, US7988226, US7954853, US7952305, US7950736, US7950486, US7942447, US7942224, US7926607, US7921948, US7921947, US7905310, US7891455, US7891454, US7870920, US7854290, US7832750, US7819272, US7815000, US7806215, US7802816, US7802646, US7780247, US7779944, US7775313, US7770683, US7753154, US7740100, US7708106, US7708096, US7694768, US7686121, US7661714, US7661501, US7658411, US7644791, US7624829, US7610979, US7591337, US7591332, US7588110, US7571787, US7568733, US7559576, US7543673, US7543672, US7543669, US7537499, US7533749, US7513327, US7478694, US7464781, US7464680, US7448635, US7422083, US7410182, US7401816, US7401674, US7398755, US7383824, US7380628, US7377295, US7360617, US7353898, US7328943, US7328765, US7318494, US7311171, US7303037, US7226136, US7213669, US7213668, US7210439, US7207303, US7204331, US7198127, US7198126, US7188693, US7168998, US7147074, US7124848, US7124847, US7124846, US7124845, US7104353, US7080706, US7063178, US7059440, US7051828, US7048293, US7036619, US7025161, US7011173, US7008014, US7004484, US7000931, US6976550, US6971659, US6971466, US6942050, US6926107, US6904990, US6889787, US6880660, US6823957, US6796395, US6767022, US6758497, US6755271, US6691812, US6561302, US2016236527, US2016229479, US2016194021, US2016159392, US2016075405, US2016023709, US2015267792, US2015021893, US2014319801, US2014291948, US2014262586, US2014167399, US2014085903, US2014062059, US2014025246, US2014004984, US2013200604, US2013153325, US2013153319, US2013032418, US2013032417, US2012205902, US2012187645, US2012145471, US2012126565, US2012090908, US2012014105, US2011317441, US2011284299, US2011278083, US2011275256, US2011272906, US2011219911, US2011198831, US2011198830, US2011186371, US2011174569, US2011168473, US2011132679, US2011115180, US2011089649, US2011048816, US2011045715, US2011012334, US2010320023, US2010288574, US2010288572, US2010263956, US2010230192, US2010194088, US2010108428, US2010108427, US2010089668, US2010078254, US2010078245, US2010071982, US2010071981, US2010059305, US2010044134, US2010013420, US2010012415, US2010012414, US2010006019, US2009322045, US2009321169, US2009308039, US2009302590, US2009301830, US2009294199, US2009280718, US2009267407, US2009250281, US2009224497, US2009218153, US2009211827, US2009184484, US2009154287, US2009152940, US2009107754, US2009095113, US2009057509, US2009020347, US2009000845, US2009000837, US2008284124, US2008277184, US2008257627, US2008238149, US2008223639, US2008217088, US2008203795, US2008202280, US2008196958, US2008185204, US2008185203, US2008185202, US2008173491, US2008173287, US2008142287, US2008135318,

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Abstract:
Source: US2001040063A An engine cradle adapted for receiving an engine includes a left side wall defining a C−shaped opening therein. The engine cradle also includes a right side wall, which is essentially a solid wall that provides a reflective surface for reflecting heat to the engine when contained within the engine cradle. The engine cradle also includes a front wall connected between forward portions of the left and right side walls. The engine cradle also includes a bottom panel and a rear panel connected between bottom portions of the front, left side, and right side walls.



0) US2011006498A – CONTROL SYSTEM FOR LEANING VEHICLE

3) Family number: 48148111 (US2011006498A) © PatBase

Title: CONTROL SYSTEM FOR LEANING VEHICLE

Priority: EP20100731902 20100708 US20090501025 20090710 WO2010US41346 20100708 US20120356985 20120124 US20120541804 20120705 US20120724203 20121221

Family:

Publication number	Publication date	Application number	Application date
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CN102470909 B	20131218	CN201080030222	20100708
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Probable Assignee: BOMBARDIER RECREATIONAL PRODUCTS INC

Assignee(s):(std)**:** BOMBARDIER RECREATIONAL PROD ; BRP US INC ; MERCIER DANIEL

Assignee(s): BOMBARDIER RECREATIONAL PRODUCTS INC ; BOMBARDIER RECREATIONAL PRODUCTS INC VALCOURT ; BANK OF MONTREAL

Inventor(s):(std)**:** DANIEL MERCIER ; MERCIER DANIEL

Agent(s): BCF LLP; PATENT U RECHTSANWAELTE DR SOLF AND ZAPF; CABINET PLASSERAUD; OSLER HOSKIN AND HARCOURT LLP BRP; OSLER HOSKIN AND HARCOURT LLP; CUTLER JONATHAN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

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European class: B62D9/02 B62K5/05 B62K5/10 L60G300/122 L62K207/02 L62K5/00B

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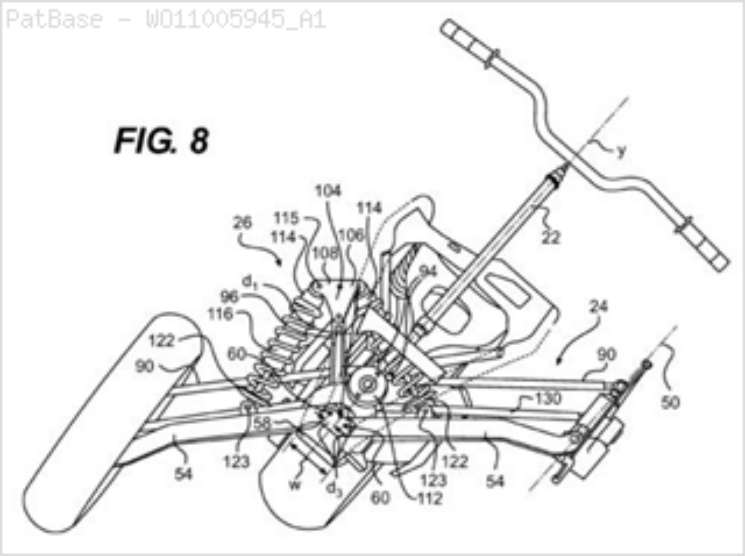
Classification Explorer

Cited documents: WO07041095 A2, WO06130007 A2, WO05075278 A1, US8070172 BA, US7967306 BB, US7931286 BB, US7762368 BB, US7665742 BB, US7648148 BA, US7607695 BB, US7591337 BB, US7568541 BB, US7530419 BB, US7494141 BB, US7487985 BA, US7485984 BB, US7195487 BB, US7076351 BB, US7029014 BB, US6863288 BB, US6859702 BB, US6763905 BB, US6547260 BB, US6435522 BA, US6328125 BA, US6170838 BA, US6170838 B1, US6071032 A, US5927424 A, US5765846 A, US5116069 A, US4951959 A, US4685690 A, US4659106 A, US4632413 A, US3704897

A, US3547466 A, US2843396 A, US2449306 A, US2417316 A, US2260102 A, US2256366 A, US2150199 A, US2063704 A, US2010219598 AA, US2009171530 AA, US2008258415 AA, US2008238005 AA, US2008197597 AA, US2007262656 AA, US2007262549 AA, US2007029751 AA, US2006151968 AA, US2006097471 AA, US2006063137 AA, US2005275181 AA, US2005206101 AA, US2005167174 AA, US2004051269 AA, US2002190494 AA, JP2005053420 A2, JP11005557 A2, EP1798081 A1, EP0251906 A1, DE905577 A, CN2728876 Y, CN101219689 A,

Forward Citations: WO15028767, WO14201463, USD761692, USD710274, USD689794, USD682158, USD678124, US9527543, US9517807, US9511656, US9505459, US9499024, US9493208, US9423795, US9381940, US9381785, US9367066, US9327789, US9327725, US9321472, US9296420, US9283989, US9278711, US9248857, US9238494, US9216763, US9188198, US9145168, US9090281, US9061732, US9061564, US9045015, US9004214, US8887853, US8857551, US8814186, US8781684, US8777242, US8762003, US8746717, US8739914, US8695746, US8657301, US8651503, US8641064, US8607914, US8544587, US8540045, US8408560, US8262111, US2016229480, US2016229246, US2016129967, US2016129937, US2015298736, US2015298735, US2015175184, US2015165855, US2014358369, US2014297124, US2014019006, US2013214503, US2013193656, US2013153311, US2013090828, US2012248717, US2012241238, US2012232758, US2012098225, US2011272906, US2011215544, US2011121524, TWI523789, TWI523787, TWI522269, TWI494242, JP2016175438, GB2476877, GB2476877, EP3059152, EP3059150, EP3059150, EP3056417, EP2765024, DE202014104070, DE102014217247, DE102014217246, CN105813922, CN104520178,

Abstract:
Source: US2011006498A A leaning vehicle has a frame that pivots relative to a pivotable frame member about a pivot axis. A torque exerted on a steering assembly in a first direction causes the frame to pivot relative to the pivotable frame member in a second, opposite direction at least when the speed of the vehicle is above a first threshold speed, to steer the vehicle in the second direction. An actuator urges the frame toward an upright position when the frame is in a leaning position and a speed of the vehicle is below a second threshold speed. A method is also described, in which a torque is exerted on the frame in the direction opposite the steering torque when the speed above the first threshold speed. The torque exerted by the actuator is opposite the leaning angle when the speed of travel is below the second threshold speed.



0) US2003102657A – ENCLOSED MOTORCYCLE

4) Family number: 28630235 (US2003102657A) © PatBase

Title: ENCLOSED MOTORCYCLE

Priority: US20010002901 20011205

Family:

Publication number	Publication date	Application number	Application date
US2003102657 AA	20030605	US20010002901	20011205
US6637763 BB	20031028	US20010002901	20011205

Probable Assignee: KUO MING C

Assignee(s):(std)**:** KUO MING C

Inventor(s):(std)**:** KUO MING C

International class (IPC 8–9)**:** B62H1/12 B62J17/08 B62K11/00 B62K3/00 (Advanced/Invention); B62H1/00 B62J17/00 B62K11/00 B62K3/00 (Core/Invention)

International class (IPC 1–7)**:** B60S9/00 B62K13/06

CPC: B62H1/12 B62J17/08 B62K3/005 B62K11/00

European class: B62H1/12 B62J17/08 B62K11/00 B62K3/00C

US class: 180/219 280/209 280/748 280/755

Classification Explorer

Cited documents: US6106054 A, US5904392 A, US5685388 A, US5518259 A, US5458390 A, US5401055 A, US5181740 A, US5029894 A, US4293052 A, US4133402 A, US4065144 A, US3700059 A, US3322224 A,

Forward Citations: WO10026585, US9499229, US9316267, US9163707, US8851221, US8762003, US8562010, US8480111, US8333398, US8308232, US8139810, US7970530, US7819455, US7594843, US7445539, US7445070, US7407187, US6942053, US6859753, US2016031504, US2015031463, US2014346751, US2013193661, US2012232758, US2012133116, US2012056403, US2011163557, US2010250107, US2010244468, US2008179125, US2008157557, US2007017754, US2006211333, US2006160464, US2006099879, US2005197195, US2005049824, US2005035583, US2004201271, US2004091313, EP2323895, EP2323895, EP1564388, CN103802993, CN103802993,

Abstract:
Source: US2003102657A An enclosed motorcycle (10) that utilizes a structural frame(14), a pair of tandem wheels (36,38), an engine (40) and a handlebar assembly (46) provides transportation for a single driver. A foot brake pedal assembly (96) is pivotally affixed to the frame for stopping the motorcycle and a bench seat (132) is rigidly attached to the frame for seating the driver. A pair of outrigger landing wheels (140) are attached to the motorcycle frame on a common axle and have automatic control to extend the wheels at a predetermined road speed, for preventing tipping at low speeds and when stopped. An enclosure (16) is disposed over and attached to the frame which includes a pair of entrance doors (172) and a pair of leg doors (170), one on each side of the motorcycle for access to the seat for minimizing the enclosure envelope and providing effortless entry into the motorcycle. A two piece external passenger seat (272) is provided over the engine with a fold down cargo compartment underneath. When the seats are hinged upward the cargo compartment mechanically unfolds providing storage space.

PatBase - US6637763_BB

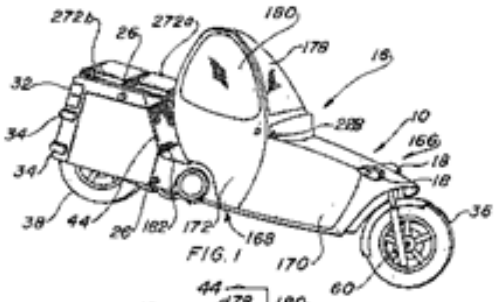


FIG. 1

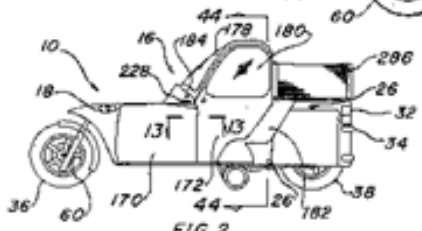


FIG. 2

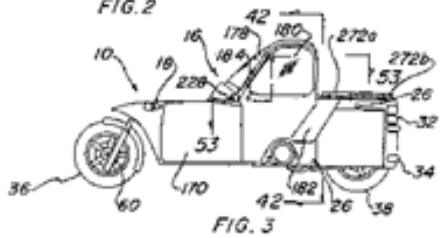


FIG. 3

0) WO11029795A1 – TILT CONTROL FOR TILTING VEHICLES COMMANDE D'I...

5) Family number: 48462139 (WO11029795A1) © PatBase

Title: TILT CONTROL FOR TILTING VEHICLES

Priority: AU20090904277 20090908 EP20100754711 20100906 WO2010EP63040 20100906

Family:

Publication number	Publication date	Application number	Application date
CN102596697 A	20120718	CN201080040011	20100906
CN102596697 B	20141210	CN201080040011	20100906
DE602010008282 D1	20130829	DE201060008282T	20100906
EP2475570 A1	20120718	EP20100754711	20100906
EP2475570 B1	20130703	EP20100754711	20100906
EP2628672 A2	20130821	EP20130168191	20100906
EP2628672 A3	20151111	EP20130168191	20100906
IN00409KN2012 A	20121012	IN2012KN00409	20120223
WO11029795 A1	20110317	WO2010EP63040	20100906

Probable Assignee: INO8 PTY LTD

Assignee(s):(std)**:** INO8 PTY LTD ; WILL FRANK

Inventor(s):(std)**:** FRANK WILL ; WILL FRANK

Agent(s): STUMPF PATENTANWAELTE PARTGMBB; KAUFMANN URSULA JOSEFINE; SPACHMANN HOLGER

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K5/027 B62K5/04 B62K5/05 B62K5/08 B62K5/10 (Advanced/Invention)

CPC: B62K5/10 B62K5/027 B62K5/05 B62K5/08

European class: B62K5/027 B62K5/05 B62K5/08 B62K5/10

Classification Explorer

Cited documents: WO09059099 A2, WO06130007 A2, WO06050809 A1, WO0244008 A2, WO02068228 A1, US4351410 A, JP2006341690 A2, EP1988009 A1, EP1362779 A2, CN1269758 A,

Forward Citations: WO15193705, US9428236, US2015123389, JP6063861, JP2015123959, JP2015123951, EP2889210, DE202014104070, DE202014102328, DE102014217247, DE102014217246, DE102014209329, DE102014209328, CN105492299,

Abstract:
The invention relates to a tilting vehicle (10) including a frame (12) freely tiltable transversely between at least two spaced wheels (14, 114), at least one variable damper (28, 30, 148) with adjustable damping force operatively connected between the frame (12) and the two wheels (14, 114), at least one sensor to generate signals indicative of transverse tilting of the frame (12) relative to a central vertical plane of the vehicle, and a controller in communication with the at least one variable damper (28, 30, 148) and the at least one sensor. The controller is configured to vary transverse damping by the at least one variable damper (28, 30, 148) in accordance with the signals generated by the at least one sensor to passively provide transverse tilt stability to the frame (12) through the force generated in the damper in the opposite direction of the damper movement. The invention suggests to transversly damp a freely tiltable frame in accordance to a damping state for enhancing driving security and comfort of the vehicle.

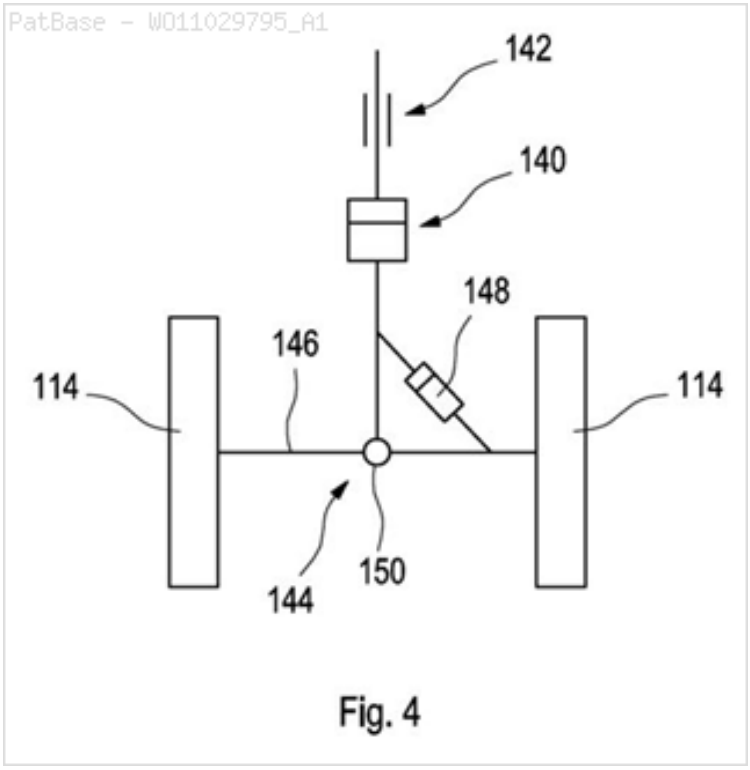


Fig. 4

0) US2014375015A – MOTORIZED REVERSE TRIKE WITH TILTABLE BODY

6) Family number: 51919259 (US2014375015A) © PatBase

Title: MOTORIZED REVERSE TRIKE WITH TILTABLE BODY

Priority: CN201220033590U 20120114 WO2013CN70385 20130111

Family:

Publication number	Publication date	Application number	Application date
CN202414056 U	20120905	CN201220033590U	20120114
US2014375015 AA	20141225	US20130371315	20130111
US8991542 BB	20150331	US20130371315	20130111
WO13104335 A1	20130718	WO2013CN70385	20130111

Probable Assignee: YU JINJUN

Assignee(s):(std)**:** JINJUN YU ; YU JINJUN

Inventor(s):(std)**:** JINJUN YU ; YU JINJUN

Agent(s): TAROLLI SUNDHEIM COVELL AND TUMMINO LLP; DAN SAMS AND ASSOCIATES

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** B62D61/06 B62K11/02 B62K11/14 B62K25/08 B62K25/24 B62K5/027 B62K5/05 B62K5/08 B62K5/10 B62L1/02 (Advanced/Invention); B62K5/00 B62L1/02 (Advanced/Non–invention)

CPC: B62K25/24 B62K5/08 B62K2005/001 B62K5/10 B62K5/027 B62K5/05

US class: 180/209 180/210 180/76 280/124.103 280/267

Classification Explorer

Cited documents: US8596660 BB, US8317207 BB, US7562885 BB, US7264251 BB, US6763905 BB, US4887829 A, US4020914 A, US2007029751 AA, US2006151232 AA, US2005167217 AA, US2005167174 AA, US2005012291 AA, TW201117997 A, TW200530057 A, EP1666346 A1, CN202414056 U, CN201670311 U,

Forward Citations: WO13104335, US9545967, US9517807, US9428240, US9428235, US9371106, US9352798, US9340249, US9296420, US9278711, US9238494, US9216790, US8991542, US2016152292, US2016137253, US2016114850, US2015344091, US2015314827, US2015298736, US2015274245, US2015274244, TWI532629, TWI522273, TWI522269, JP5687378, JP2016175439, EP2923931, EP2913256, EP2899105, CN104703870,

Abstract:
Source: US2014375015A A motorized reverse trike with a tiltable body comprises a frame with a header pipe, two front wheels, a tilting mechanism arranged on the header pipe, two suspension mechanisms hinged between the two front wheels and the tilting mechanism respectively, a steering mechanism with handlebars hinged between the header pipe and the two suspension mechanisms, and a locking mechanism for locking the tilting mechanism.

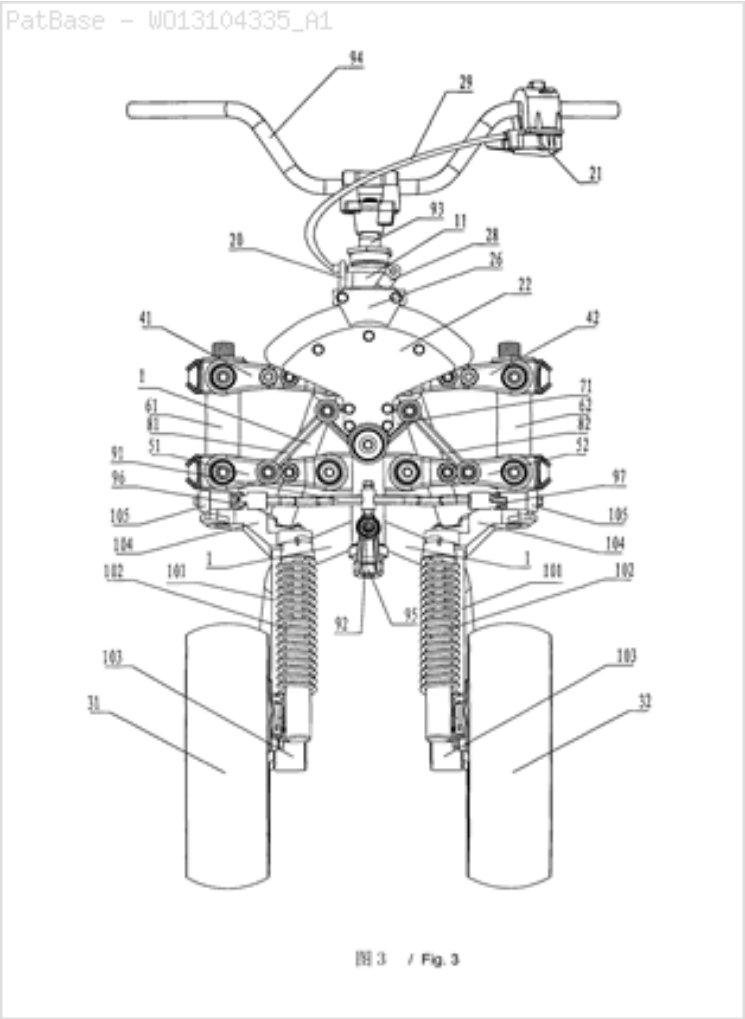


Fig. 3

0) US2001028154A – VEHICLE HAVING SUSPENSION SYSTEM WITH VARIABLE ...

7) Family number: 31018397 (US2001028154A) © PatBase

Title: Vehicle having suspension system with variable camber and vertical suspension in the plane of the wheel

Priority: DE20012014331U 20010830 FR20000004596 20000410 FR20010011860 20010913 GB20010023903 20011004 US20010922155 20010806

Family:

Publication number	Publication date	Application number	Application date
AT258120 E	20040215	AT20010107977T	20010329
DE20114331 U1	20011025	DE20012014331U	20010830
DE60101809 D1	20040226	DE20016001809	20010329
DE60101809 T2	20041104	DE20016001809T	20010329
EP1145879 A1	20011017	EP20010107977	20010329
EP1145879 B1	20040121	EP20010107977	20010329
FR2807378 A1	20011012	FR20000004596	20000410
FR2829460 A3	20030314	FR20010011860	20010913
FR2829460 B3	20030829	FR20010011860	20010913
GB200123903 A0	20011128	GB20010023903	20011004
GB2380459 A1	20030409	GB20010023903	20011004
JP2002052915 A2	20020219	JP20010111443	20010410
US2001028154 AA	20011011	US20010829058	20010409
US2003025291 AA	20030206	US20010922155	20010806
US6511078 BB	20030128	US20010829058	20010409
US6511087 BA	20030128	US20010922155	20010806

Probable Assignee: CONCEPTION AND DEV MICHELIN SA

Assignee(s):(std)**:** CONCEPTION AND DEV MICHELIN SA ; CONCEPTION ET DEV MICHELIN S A ; FONG CHIN LONG ; MICHELIN RECH TECH

Assignee(s): CONCEPTION ET DEVELOPPEMENT MICHELIN SA ; CONCEPTION ET DEVELOPPEMENT MICHELIN S A ; CHIN LONG FONG ; CONCEPTION ET DEVELOPMENT MICHELIN S A ; CONCEPTION ET DEVELOPMENT MICHELIN S A GIVISIEZ ; CONCEPTION ET DEVELOPPEMENT MICHELIN

Inventor(s):(std)**:** FONG CHIN LONG ; SEBE MARC

Inventor(s): CHIN LONG FONG

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

International class (IPC 8–9)**:** B60G17/015 B60G17/016 B60G21/00 B60G3/01 B60G3/20 B60G7/00 B60G7/02 B62D17/00 B62D7/20 B62D9/02 B62K5/00 B62M1/00 (Advanced/Invention); B60G17/015 B60G21/00 B60G3/00 B60G3/18 B60G7/00 B60G7/02 B62D17/00 B62D7/00 B62D9/00 (Core/Invention)

International class (IPC 1–7)**:** A63B22/02 B60G17/01 B60G17/015 B60G21/00 B60G3/01 B60G3/20 B60G7/02 B62D17/00 B62D7/20 B62D9/02 B62K11/00 B62K3/00 B62K5/00 B62M1/00 B62M9/02

CPC: B62K3/002 B62M1/34 B60G3/01 B60G7/001 B60G17/0162 B60G21/007 B60G2200/144 B60G2200/44 B60G2200/46 B60G2200/462 B60G2200/464 B60G2202/413 B60G2204/143 B60G2204/421 B60G2204/422 B60G2204/82 B60G2204/8302 B60G2206/11 B60G2206/1114 B62D9/02 B62D17/00

European class: B60G17/015A2 B60G17/016F B60G21/00D B60G3/01 B60G7/00A B62D17/00 B62D9/02 L60G200/144 L60G200/440 L60G200/460 L60G200/462 L60G200/464 L60G202/413 L60G204/143 L60G204/421 L60G204/422 L60G204/82 L60G204/8302 L60G206/11 L60G206/1114

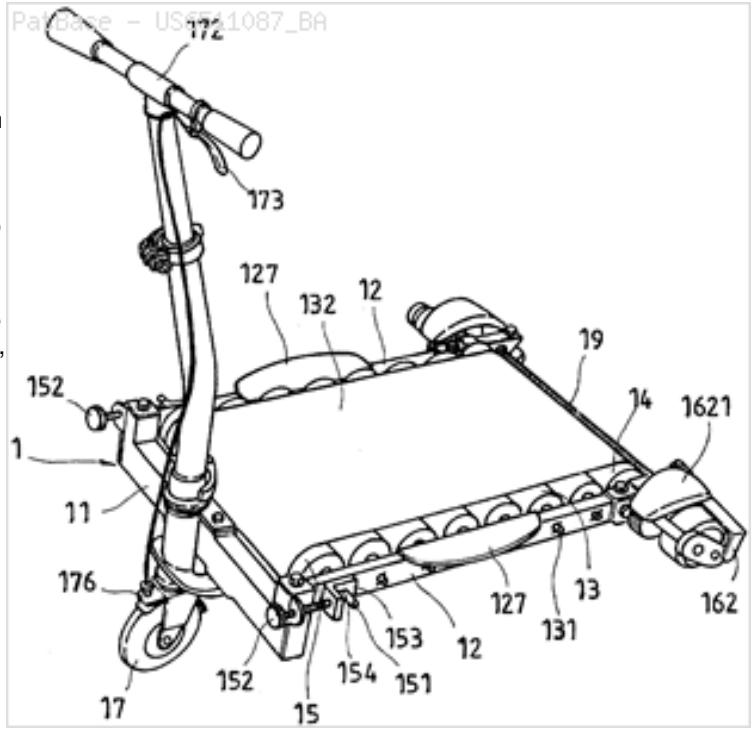
US class: 280/124.103 280/124.127 280/210 280/210P 280/228 280/282 280/5.509 280/5.521 280/86.757

Classification Explorer

Cited documents: WO8702951 A1, US6170838 BA, US6113119 A, US4796720 A, US4700972 A, US4487429 A, US4334695 A, US4159128 A, US3485506 A, US3332704 A, US2152938 A, US1696927 A, US1353011 A, JP63101114 A2, JP46033604 B4, JP46033604 B1, JP11028924 A2, JP10338009 A2, GB210429 A, FR967710 A, EP0878378 A1, EP0878332 A1, DE2822058 A1, DE1214100 B,

Forward Citations: WO05000606, WO04069569, WO03057529, WO03057529, US9283989, US9248857, US9145168, US9090281, US9045015, US9010784, US8818700, US8641064, US8202201, US8128110, US8050820, US7914020, US7905500, US7845666, US7703781, US7673883, US7625000, US7607695, US7591337, US7571787, US7559400, US7425005, US7419175, US7357400, US7246806, US7234708, US7108271, US7013206, US6986519, US6840524, US6695331, US6505845, US2016059661, US2010324808, US2010320023, US2010117313, US2009256326, US2009194965, US2008290618, US2008197597, US2008194386, US2008073168, US2008039289, US2007267883, US2007205576, US2006287165, US2006237941, US2006220335, US2006181050, US2005179225, US2005051976, US2005017471, US2004150179, US2004150178, US2004128040, US2004036443, US2003230443, RU2607691, KR101614701, KR101028058, JP4813360, JP2006027602, FR2858964, EP1944228, EP1889537, EP1736401, EP1506917, DE10241725, DE102014006600, CN103640661, CN102596601, CN102596601,

Abstract:
Source: US2001028154A A ground contact system for a vehicle having a wheel mounted on a wheel carrier, the wheel carrier being mounted on a support by a vertical suspension device, the support being mounted on a chassis by a load transfer arm on one side of which the support is articulated along an essentially horizontal geometrical camber axis, the load transfer arm being connected at its other side to the chassis along an essentially vertical geometrical axis, a camber control rod being mounted articulated to the support some distance from the geometrical suspension axis, the camber control rod being able to move transversely relative to the chassis, a triangulation−forming element connecting the load transfer arm to the chassis around the essentially vertical geometrical axis, such that it controls the moment about the essentially vertical geometrical axis.



0) WO11075860A1 – DEVICE FOR CONTROLLING THE STEERING OF A MOTORC...

8) Family number: 49152065 (WO11075860A1) © PatBase

Title: DEVICE FOR CONTROLLING THE STEERING OF A MOTORCYCLE OR THE LIKE

Priority: CH20090001966 20091221

Family:

Publication number	Publication date	Application number	Application date
CH702447 A2	20110630	CH20090001966	20091221
WO11075860 A1	20110630	WO2010CH00321	20101221

Probable Assignee: SERIO EMILE DI

Assignee(s):(std)**:** SBARRO FRANCESCO ; SERIO EMILE DI

Assignee(s): DI SERIO EMILE ; FRANCESCO SBARRO

Inventor(s):(std)**:** SBARRO FRANCESCO

Inventor(s): FRANCESCO SBARRO

Agent(s): NITHARDT ROLAND

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B62K25/16 B62K3/00 B62K5/02 B62K5/08 (Advanced/Invention)

CPC: B62K5/027 B62K5/05 B62K5/08 B62K5/10 B62K11/00 B62K25/16

European class: B62K11/00 B62K25/16 B62K5/027 B62K5/05 B62K5/08 B62K5/10

Classification Explorer

Cited documents: WO07127783, WO06075411, JP5139357, EP1694555, EP0466624,

Forward Citations: FR2995869,

Abstract:
The invention relates to a device for controlling the steering of a motorcycle or the like that makes it possible for a motorcyclist to benefit easily and at a low cost from the advantages of three−wheel scooters in terms of stability, safety and available room. The steering control device (10) includes a frame (11), handle bars (12), a steering fork (13) to which the handle bars (12) are attached, a rotary assembly (14) supported by the steering fork (13), and two suspension shock−absorbing members (15) mounted on the steering fork (13) for monitoring the vertical movements of the rotary assembly (14). The rotary assembly (14) comprises two independent wheels (14a, 14b) freely mounted respectively on two fixed axes (16) each carried by an A arm (17) including a suspension arm (18) hinged on an element of the frame (11) and a suspension shock−absorbing member (15). The suspension shock−absorbing members (15) are attached to a rocker member (20) hinged at the middle thereof to the steering fork (13).

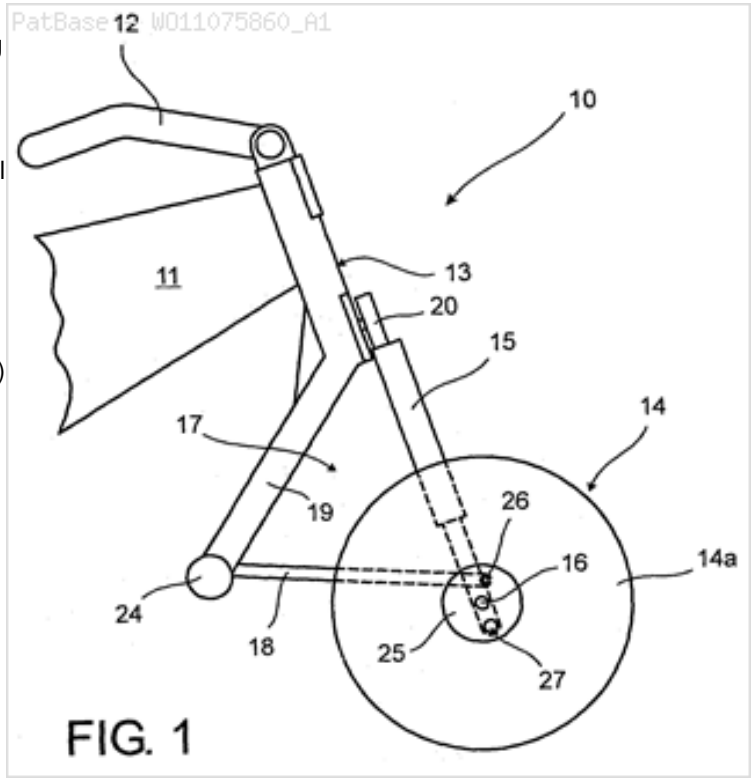


FIG. 1

0) BRMU8902661U – DISPOSICAO CONSTRUTIVA APLICADA EM MOTOCICLETA ...

9) Family number: 49334674 (BRMU8902661U) © PatBase

Title:	DISPOSICAO CONSTRUTIVA APLICADA EM MOTOCICLETA Constructive disposition APPLIED IN MOTORCYCLE (Machine translation)
Priority:	BR2009MU02661U 20091124

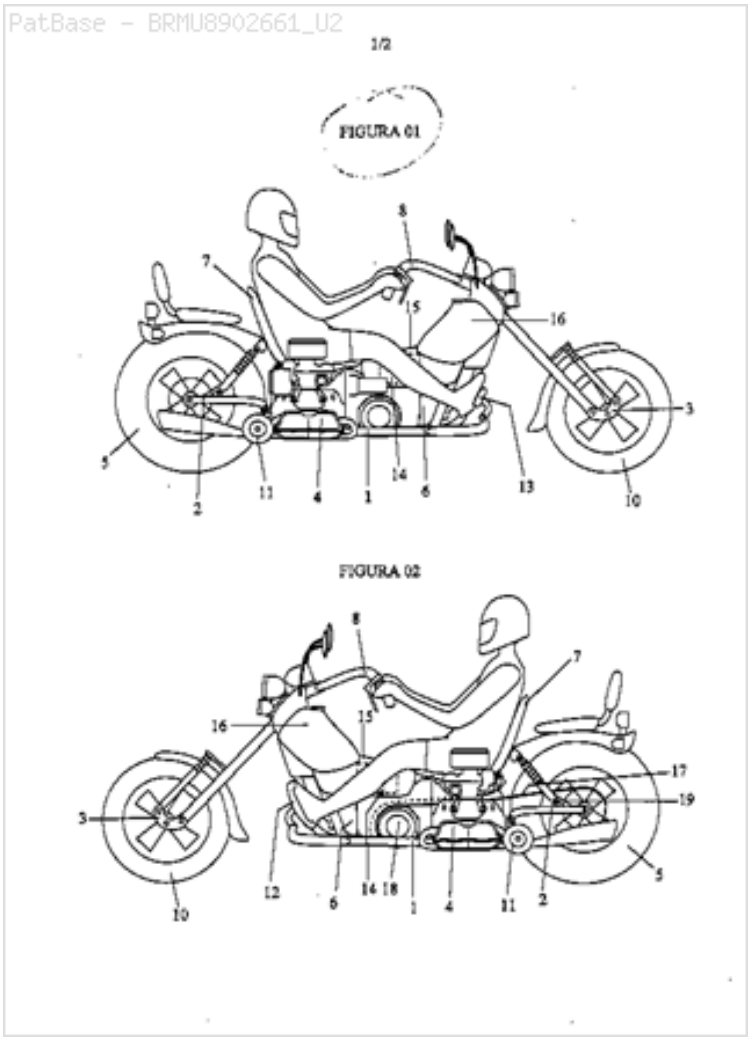
Family:

Publication number	Publication date	Application number	Application date
BRMU8902661 U2	20110719	BR2009MU02661U	20091124

Probable Assignee:	GOMES VALTER DE SOUZA
Assignee(s):(std):	GOMES VALTER DE SOUZA
Assignee(s):	VALTER DE SOUZA GOMES
Inventor(s):(std):	GOMES VALTER DE SOUZA
Inventor(s):	VALTER DE SOUZA GOMES
International class (IPC 8–9):	B62K11/04 B62M7/06 (Advanced/Invention)

Classification Explorer

Abstract:
Source: BRMU8902661U 1 RESUMO "DISPOSICAO CONSTRUTIVA APLICADA EM MOTOCICLETA", a uma motocicleta com o motor posicionado proximo ao eixo traseiro, com a caixa de marchas voltada para a parte frontal da 5 motocicleta, apresentando–se de maneira invertida e com baixo centro de gravidade, que melhora a distribuicao do seu peso os pneus, aumenta a estabilidade e oferece mais conforto para o motociclista, que pilota como se estivesse dirigindo um carro. Apresente "DISPOSICAO CONSTRUTIVA APLICADA EM 10 MOTOCICLETA" e basicamente composta por um chassi (1) robusto, com balanca (2) na suspensao traseira e balancim (3) na suspensao dianteira, com seu motor (4) posicionado proximo ao pneu traseiro (5) e a caixa de marchas (6) voltada para a parte frontal da motocicleta, alem de que, possui o banco (7) do piloto inclinado para traz, um guidao (8) com cruzeta (9) na 15 coluna de giro do pneu frontal (10) e com duas pequenas rodas (11) nas laterais, dentre outras partes comuns as motocicletas. 1 SUMMARY "constructive disposition APPLIED IN MOTORCYCLE," a motorcycle with the positioned engine next to the rear axle with the gearbox facing the front of the 5 motorcycle, presenting inverted manner and with low center of gravity, which improves the distribution of its weight the tires, increases stability and offers more comfort to the rider, who rides as if driving a car. Table "CONSTRUCTIVE APPLIED willingness to 10 MOTORCYCLE" and basically consists of a chassis (1) robust, with balanca (2) on the rear suspension and beam (3) on the front suspension, with its motor (4) positioned next to the rear wheel (5) and the gearbox (6) facing the front of the motorcycle, beyond that has the bank (7) of the inclined pilot brings a handlebar (8) with crosspiece (9) at 15 Front tire spin column (10) and with two small wheels (11) on the sides, among other parts common motorcycles.



0) DE202016105367U1 – PERSONENFAHRZEUG MIT EINER ERSTEN UND EINER ZWE...

10) Family number: 64371349 (DE202016105367U1) © PatBase

Title: PERSONENFAHRZEUG MIT EINER ERSTEN UND EINER ZWEITEN HINTEREN RADAUFHAENGUNG PASSENGER CAR WITH A FIRST AND A SECOND REAR SUSPENSION (Machine translation)

Priority: DE201620105367U 20160927

Family:

Publication number	Publication date	Application number	Application date
DE202016105367 U1	20161215	DE201620105367U	20160927

Probable Assignee: TUEV SUED AUTO SERVICE GMBH

Assignee(s):(std)**:** TUEV SUED AUTO SERVICE GMBH

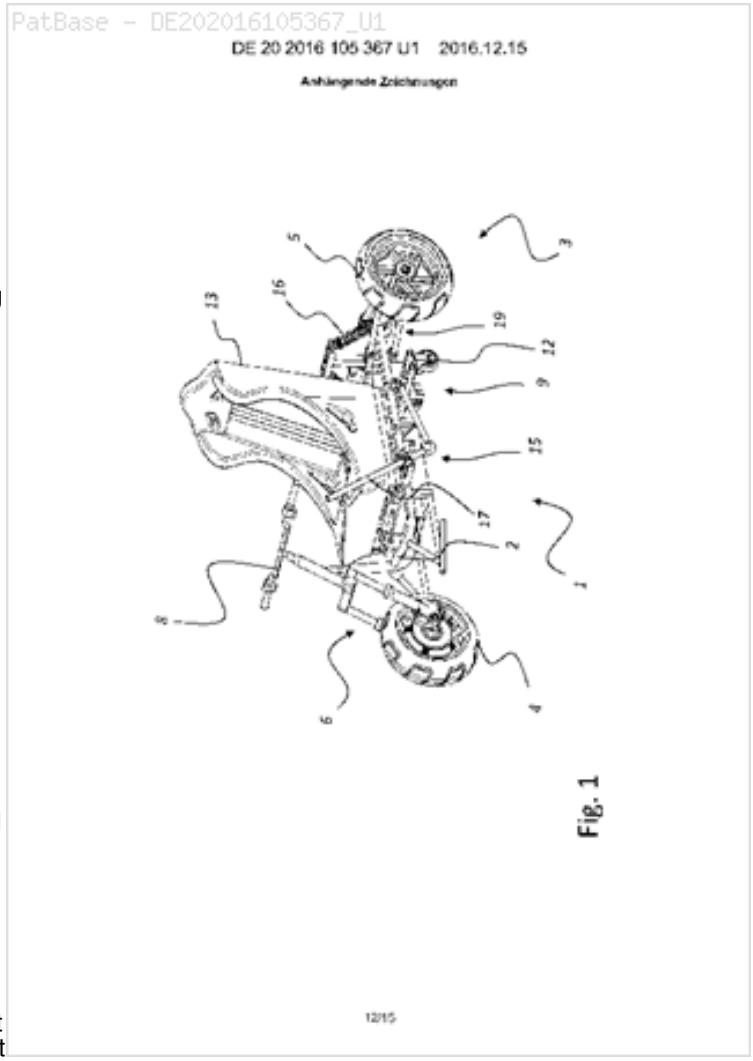
International class (IPC 8–9): B62K5/00 (Advanced/Invention)

CPC: B60G2200/144 B60G2300/45 B60G3/20

Classification Explorer

Cited documents: US8262111 BB,

Abstract:
Source: DE202016105367U1
Personenfahrzeug (1), umfassend – einen Fahrzeugrahmen (2), – mindestens ein mechanisch mit dem Fahrzeugrahmen (2) in Verbindung stehendes lenkbares Vorderrad (4), – eine erste hintere Radaufhaengung (3), welche wenigstens ein erstes Radpaar neigungsbeweglich traegt sowie – eine zweite hintere Radaufhaengung (9), bei welcher wenigstens ein zweites Radpaar ueber eine starre oder im Wesentlichen starre Verbindung neigungsunbeweglich aneinander gekoppelt sind, wobei – selektiv die erste hintere Radaufhaengung (3) mit dem wenigsten einen ersten Radpaar oder die zweite hintere Radaufhaengung (9) mit dem wenigstens einen zweiten Radpaar in eine jeweilige Betriebslage gebracht und/oder in einer jeweiligen Betriebslage festgesetzt werden kann, in welcher jeweiligen Betriebslage das jeweilige wenigstens eine erste oder wenigstens eine zweite Radpaar sowie das mindestens eine mechanisch an den Fahrzeugrahmen gekoppelte lenkbare Vorderrad (4) Kontakt zu einer Bodenflaeche besitzen. Passenger car (1), comprehensive – a vehicle frame (2), – at least one mechanically with the frame of the vehicle (2) related swivelling front wheel (4), – a first rear suspension (3), which tilt mobile carries at least a first pair of wheel well as – a second rear suspension (9), in which at least a second wheel pair through a rigid or essentially rigid connection are tilt–immobile together coupled with – selectively the first rear suspension (3) with the least a first pair or the second rear suspension (9) with at least one second pair can be placed in a particular position and/or set in a respective operating position in which each operating position the have at least a first or at least a second pair, as well as the at least a steerable front wheel linked mechanically to the vehicle frame (4) contact with a ground surface.



0) WO11113091A1 – A COMBINED CLUTCH AND BRAKE ACTUATOR FOR A MOTO...

11) Family number: 49605749 (WO11113091A1) © PatBase

Title: A COMBINED CLUTCH AND BRAKE ACTUATOR FOR A MOTORIZED VEHICLE WHICH MAY BE OPERATED BY EITHER A HANDLE BAR OPERATED LEVER OR A SEPARATE PEDAL. THE COMBINED ACTUATOR LINKING IN TO A 'FLY BY WIRE' TYPE ELECTRONIC CONTROL SYSTEM WITH AT LEAST ONE DYNAMIC

Priority: AU20100901066 20100315

Family:

Publication number	Publication date	Application number	Application date
WO11113091 A1	20110922	WO2011AU00286	20110314

Probable Assignee: INNOVATIVE MOTORCYCLE TECHNOLOGY PTY LTD

Assignee(s):(std)**:** HUTCHINSON OWEN ; INNOVATIVE MOTORCYCLE TECHNOLOGY PTY LTD

Inventor(s):(std)**:** HUTCHINSON OWEN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9)**:** B60K17/00 B60K20/00 B60K23/00 B60T1/06 B60T7/12 B60T7/22 B60W10/02 B60W10/184 B60W30/18 B62D1/00 B62D6/00 (Advanced/Invention)

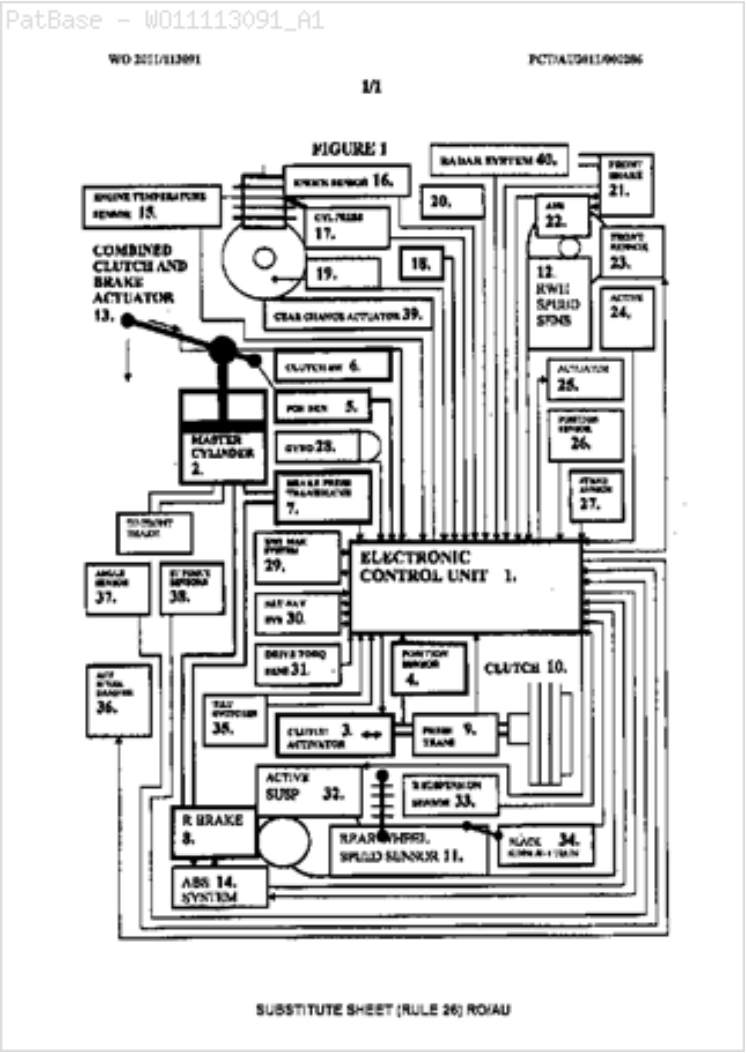
CPC: B60W30/18181 B60K23/02 B60T7/22 B60T8/1706 B60T8/1755 B60T2210/36 B60T2230/03 B60T2260/04 B60W10/02 B60W10/184 B60W30/18136

European class: B60T7/22 B60T8/1755 B60T8/17P7 B60W10/02 B60W10/184 B60W30/18R9F B60W30/18W L60K23/02 L60T210/36 L60T230/03 L60T260/04

Classification Explorer

Cited documents: US6253140, US5058014, US2005258011, CN2815853,

Abstract:
A means by which the control of both the clutch and brake functions may be achieved by the actuation of a single lever or pedal.



12) Family number: 48194502 (BRMU8900910U) © PatBase

Title:	triciclo de carga load tricycle (Machine translation)
Priority:	BR2009MU00910U 20090508

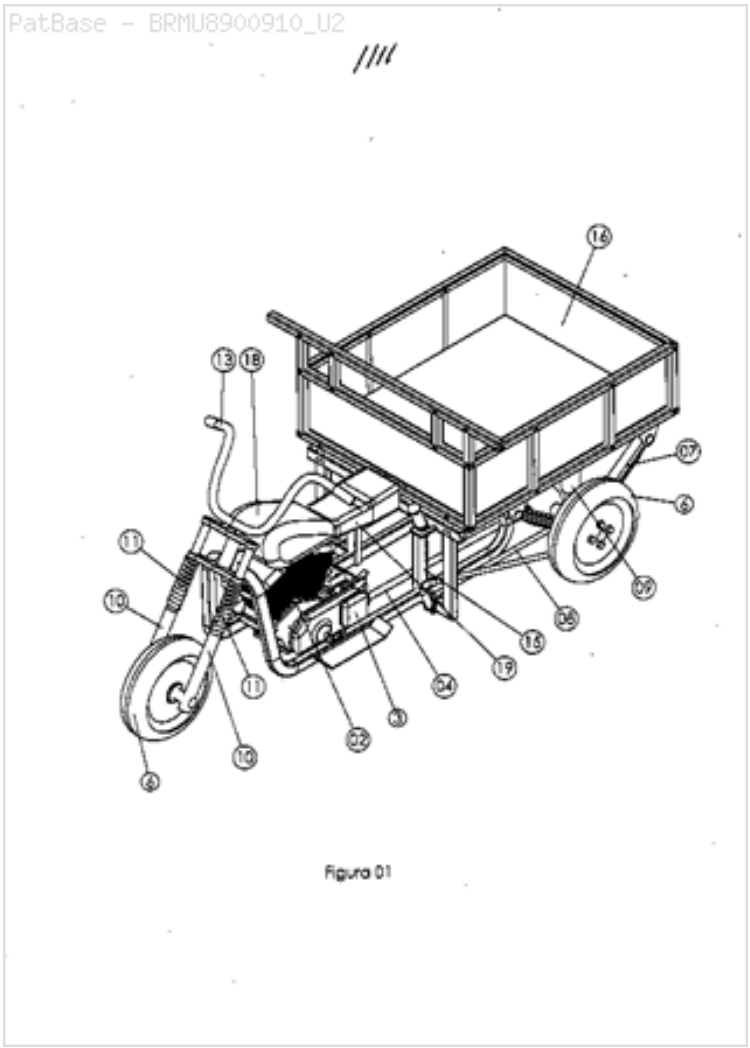
Family:

Publication number	Publication date	Application number	Application date
BRMU8900910 U2	20110118	BR2009MU00910U	20090508

Probable Assignee:	MUZI MARCO ANTONIO TAVARES
Assignee(s):(std)**:**	MUZI MARCO ANTONIO TAVARES
Assignee(s):	MARCO ANTONIO TAVARES MUZI
Inventor(s):(std)**:**	MUZI MARCO ANTONIO TAVARES
Inventor(s):	MARCO ANTONIO TAVARES MUZI
International class (IPC 8–9):	B62K5/02 B62K7/04 (Advanced/Invention)

Classification Explorer

Abstract:
Source: BRMU8900910U RESUMO TRICICLO DE CARGAvformado por um chassi unico (01), um motor de motocicleta (02), uma caixa de cambio com marcha a re (03), um eixo de transmissao com cardan (04), um diferencial (05), tres rodas (06), dois feixes de molas traseiras (07), duas barras estabilizadoras traseiras (08), dois amortecedores traseiros (09), um garfo telescopico (10), duas molas externas de reforco (11), um amortecedor de direcao (12), um guidao (13), um pedal do sistema de freio (14), uma alavanca do sistema de freio estacionario (15), uma carroceria (16), um estepe (17), um tanque de combustivel (18) e um assento (19). ABSTRACT TRICYCLE CARGAvformado by a single chassis (01), a motorcycle engine (02), one gearbox with gear re (03), an axis of transmission with PTO (04), a differential (05), three wheels (06), two beams of rear springs (07), two rear stabilizer bars (08), two rear shock absorbers (09), one telescopic fork (10), two external springs of reinforcement (11), a buffer direction (12), a handlebar (13), a brake system pedal (14), a lever stationary brake system (15), a body (16), a spare (17), a fuel tank (18) and a seat (19).



0) DE9015936U1 –

13) Family number: 17659047 (DE9015936U1) © PatBase

Priority: DE19900015936U 19901122

Family:

Publication number	Publication date	Application number	Application date
DE9015936 U1	19910207	DE19900015936U	19901122

Probable Assignee: ABRAHAM SIEGFRIED 6115 MUENSTER DE

Assignee(s): ABRAHAM SIEGFRIED 6115 MUENSTER DE

International class (IPC 8–9): B60T17/22 B62H1/12 B62J1/00 B62K19/36 B62K3/00 B62L1/00 (Advanced/Invention)

International class (IPC 1–7): B60R22/00 B62H1/12 B62J1/00 B62J17/00 B62J6/00 B62K25/00 B62K3/02 B62L1/00 B62L3/00 B62M1/00 B62M7/00

CPC: B62L1/00 B60T17/22 B62H1/12 B62J1/00 B62J2017/083 B62K3/005 B62K19/36

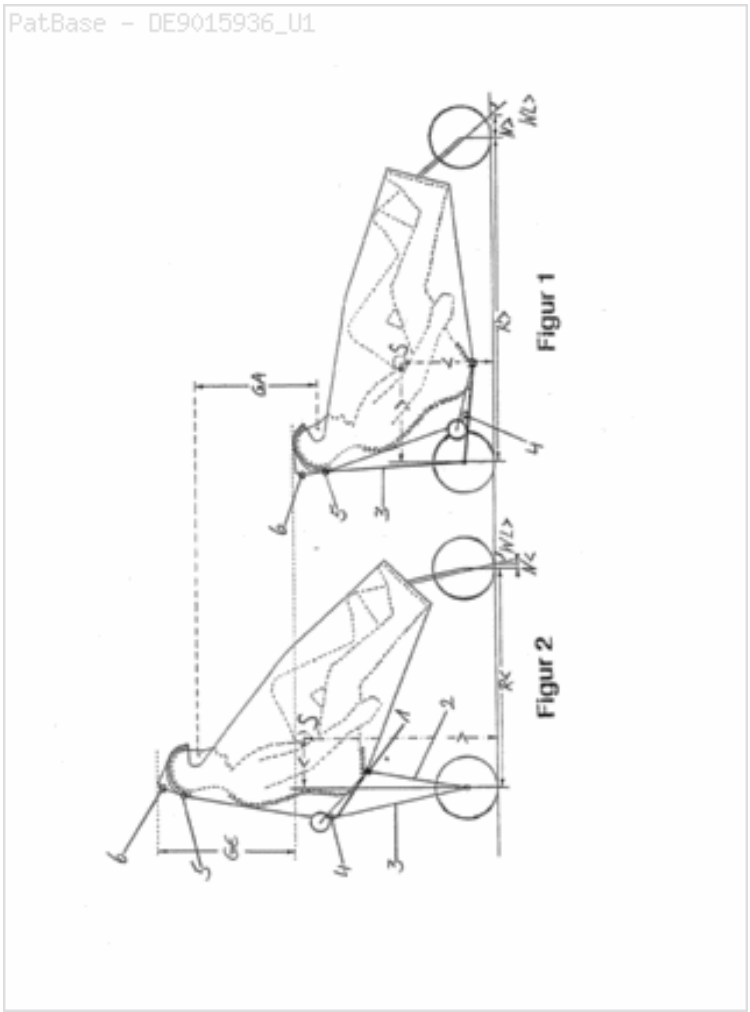
European class: B60T17/22 B62H1/12 B62J1/00 B62K19/36 B62K3/00C B62L1/00 L62J17/08B

Classification Explorer

Forward Citations: WO11078719, WO05105560, DE4223519, DE19838181, DE19838181, DE102011051451, DE102011051451, DE102010004701,

Abstract:
Source: DE9015936U1 (Claim 1)
Schutzansprueche (1) Sesselrad – ohne Kabine und – mit Kabine, sowie als Sesselzweirad – ohne Stuetzraeder und – mit Stuetzraedern, bei dem der Fahrer waehrend der Fahrt – mindestens den Sitz und sich selbst sowie – ggf.

Machine translation: (Claim 1)
Schutzansprueche (1) Sesselrad – without cabin and – with the cabin, as well as two–wheeled chair – without Stuetzraeder and – with Stuetzraedern, in which the driver during the trip – at least the seat and himself as well – possibly



0) BRPI0902106A – VEICULO ARTICULADO I PROPAGATE ARTICULATED (...

14) Family number: 48382975 (BRPI0902106A) © PatBase

Title:	veiculo articulado I propagate articulated (Machine translation)
Priority:	BR2009PI02106 20090619

Family:

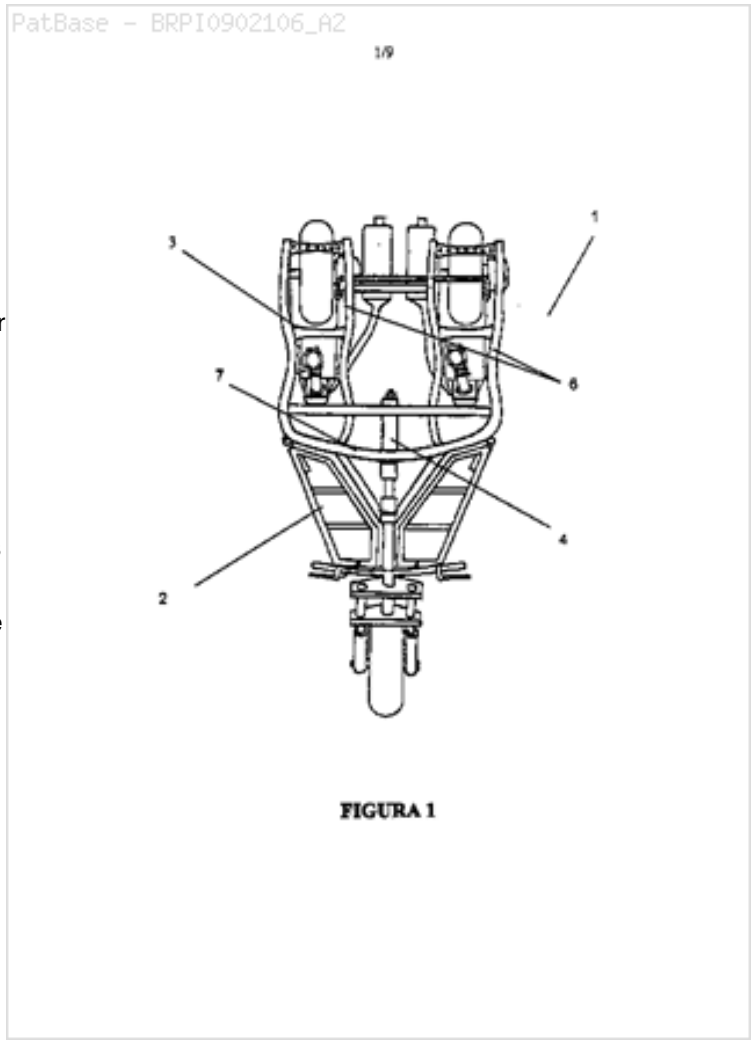
Publication number	Publication date	Application number	Application date
BRPI0902106 A2	20110222	BR2009PI02106	20090619

Probable Assignee:	HANNUD JOAO GUILHERME ZURITA
Assignee(s):(std)**:**	HANNUD JOAO GUILHERME ZURITA
Assignee(s):	JOAO GUILHERME ZURITA HANNUD
Inventor(s):(std)**:**	HANNUD JOAO GUILHERME ZURITA
Inventor(s):	JOAO GUILHERME ZURITA HANNUD
International class (IPC 8–9):	B62K13/04 B62K5/02 (Advanced/Invention)

Classification Explorer

Abstract:
Source: BRPI0902106A VEICULO ARTICULADO A presente invencao e direcionada para a industria automobilistica, no segmento de motocicletas e suas variacoes. Mais especificamente, o objeto revelado pela presente invencao compreende um veiculo articulado provido de 3 (tres) rodas cuja disposicao aplicada em sua conformacao estrutural permite que o condutor tenha a sensacao de estar pilotando um veiculo de apenas 2 (duas) rodas e ainda, referido veiculo e provido da capacidade de transportar ate 2 (dois) passageiros comtotal seguranca e estabilidade.

Machine translation: I PROPAGATE ARTICULATED the present directed invention and for the automobile industry, in the segment of motorcycles and its variations. More specifically, the object disclosed for the present invention understands one propagates articulated provided with 3 (three) wheels whose disposal applied in its structural conformation allows that the conductor has the sensation to be piloting one still propagates of only 2 (two) wheels and, related I propagate and provided with the capacity to carry it ties 2 (two) temporary comtotal security and stability.



- **search:** SS9 ft=vehicle and lean* and two front wheels (Results 40)

- List: SS9 1–50 (ft=vehicle and lean* and two front wheels) (Results 40)

0) US2015210338A – VEHICLE

1) Family number: 56089642 (US2015210338A) © PatBase

Title: VEHICLE

Priority:

EP20130838840	20130924	EP20130863895	20131220	JP20120209873	20120924
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Family:

Publication number	Publication date	Application number	Application date
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Probable Assignee: YAMAHA MOTOR CO LTD

Assignee(s):(std)**:** YAHAMA HATSUDOKI KK ; YAMAHA MOTOR CO LTD

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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G13/04 B60G17/005 B60G17/016 B60G17/08 B60G21/00 B60G21/05 B60G21/055 B60G3/01 B60G3/20 B60T11/04 B60T11/10 B60T17/04 B60T8/17 B62D35/00 B62D7/00 B62D9/02 B62J15/00 B62J17/00 B62J17/02 B62J23/00 B62K11/02 B62K11/14 B62K19/32 B62K19/38 B62K19/40 B62K21/00 B62K21/02 B62K21/08 B62K21/12 B62K21/16 B62K21/18 B62K21/20 B62K25/00 B62K25/04 B62K25/08 B62K25/24 B62K3/00 B62K5/00 B62K5/01 B62K5/02 B62K5/027 B62K5/05 B62K5/06 B62K5/08 B62K5/10 B62K50/08 B62L1/00 B62L3/02 B62L3/08 B62L5/00 (Advanced/Invention); B60T17/04 B62K5/00 (Advanced/Non–invention); B60G17/005 B62D7/00 B62J15/00 B62J23/00 B62K19/40 B62K21/00 B62K21/02 B62K5/02 B62K5/05 B62K5/08 (Core/Invention)

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Classification Explorer

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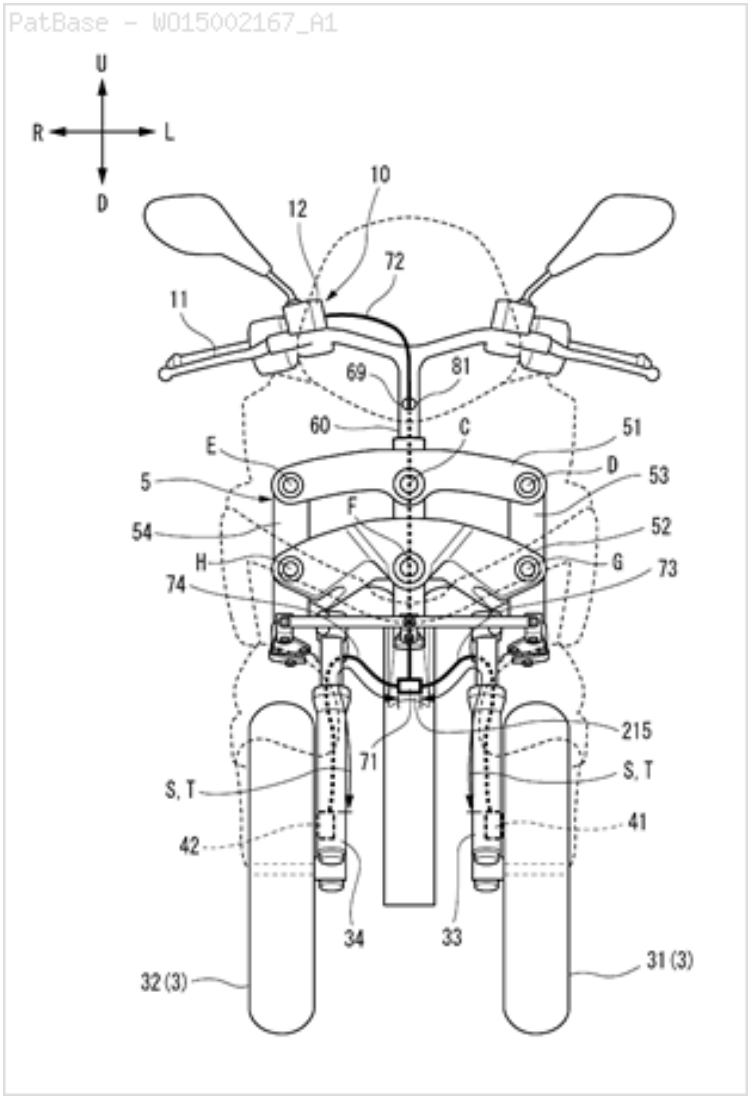
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Forward Citations: WO16052430, WO14181736, WO14181727, US9517807, US9428240, US9428235, US9371106, US9352798, US9340249, US9216790, US2016229480, US2016152292, US2016137253, US2016129964, US2016031520, US2015344091, US2015314827, US2015307149, US2015291241, US2015274244, US2015246704, JP5952516, JP2016175438, EP3144164, EP3069979, EP3069978, EP3069977, EP3069976, EP3002197, EP3002196, CN104743021, CN104554550,

Abstract:
Source: US2015210338A A vehicle includes a center transmission plate, a first center turnable portion configured to turn about a first center turning axis extending in an up−down direction, a second center turnable portion configured to turn about a second center turning axis extending in a front−rear direction, a left transmission plate, a first left turnable portion configured to turn about a first left turning axis extending in the up−down direction, a second left turnable portion configured to turn about a second left turning axis extending in the front−rear direction, a right transmission plate, a first right turnable portion configured to turn about a first right turning axis extending in the up−down direction, and a second right turnable portion configured to turn about a second right turning axis extending in the front−rear direction. A tie rod is supported on the second center turnable portion, the second left turnable portion, and the second right turnable portion.



0) US2015298736A – VEHICLE

2) Family number: 56777493 (US2015298736A) © PatBase

Title: VEHICLE

Priority:

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Family:

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Assignee(s):(std)**:** YAHAMA HATSUDOKI KK ; YAMAHA HUTSUDOKI KK ; YAMAHA MOTOR CO LTD

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Inventor(s):(std)**:** KAORU SASAKI ; MITSUAKI OHTA ; OHTA MITSUAKI ; SASAKI KAORU ; TAKANO KAZUHISA

Inventor(s): ASEP MUHAMAD YANWAR SALIM ; MITSUAKI OTHA ; MUCHAMMED ALFERISI ; KAZUHISA TAKANO ; KUSMAN SUBARJA SPD

Agent(s): JUAN PABLO CADENA SARMIENTO; GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; DIPL ING ROHALDY MULUK; INSAN BUDI MAULANA; SHIN EI PATENT FIRM PC; KEATING AND BENNETT LLP

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G21/00 B60G3/20 B60R21/00 B62B9/02 B62D25/16 B62D9/02 B62J15/00 B62J15/04 B62J17/00 B62J17/02 B62J23/00 B62J99/00 B62K11/02 B62K11/04 B62K11/10 B62K11/14 B62K21/00 B62K21/12 B62K21/18 B62K25/08 B62K5/02 B62K5/027 B62K5/05 B62K5/06 B62K5/08 B62K5/10 G08B21/00 H04W4/00 (Advanced/Invention); B62J17/00 B62K21/12 B62K5/00 (Advanced/Non–invention); B60R21/00 B62J15/00 B62J23/00 B62J99/00 B62K5/05 (Core/Invention)

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US class: 1/1 180/210 280/124.103 280/267 280/269

Classification Explorer

Cited documents: WO201207819, WO15002169 A1, WO13002764 A1, WO12007819 A1, WO11096751 A2, WO08074111 A2, USD656435 S1, USD598328 S1, USD547242 S1, US9145168 BB, US8991542 BB, US8419027 BB, US8141890 BB, US8016302 BA, US7607695 BB, US7497525 BB, US7264251 BB, US7073806 BB, US6817617 BB, US6367824 BA, US547242, US4822067 A, US4740004 A, US4351410 A, US4088199 A, US2990215 A, US2015344097 AA, US2015321721 AA, US2015307149 AA, US2015298736 AA, US2015291241 AA, US2015259027 AA, US2015239522 AA, US2015142289 AA, US2015137472 AA, US2014375015 AA, US2014353940 AA, US2014204598 AA, US2013168944 AA, US2012312609 AA, US2012181765 AA, US2012083973 AA, US2011049205 AA, US2011006498 AA, US2010314852 AA, US2010194068 AA, US2010044977 AA, US2009166120 AA, US2008185205 AA, US2008164085 AA, US2008023242 AA, US20080023242, US2007256882 AA, US2007187940 AA, US2006151232 AA, US2005167217 AA, US2005167174 AA, US2005012291 AA, US2004140645 AA, US2004129473 AA, US2002023795 AA, TW201210882 A, TW201130675 A, TW201125770 A, TW201117997 A, JP7144671 A2, JP61229683 A2, JP61124478 U1, JP61124478 U, JP544772 U, JP5139357 A2, JP5044772 U1, JP2181017 A2, JP2181017, JP2125890 U1, JP2013024100 A2, JP201256503, JP2012056503 A2, JP2011195099 A2, JP2011195099, JP2010228551 A2, JP2010228551, JP2009161015 A2, JP2009161015, JP2008080883 A2, JP2008074249 A2, JP2005313876 A2, JP2004359232 A2, JP2004359232, JP2002337779 A2, JP2002337779, JP11342866 A2, JP11342866, JP05139357, GB673705 A, GB128428 A, EP2399811 A1, EP2399811, EP2368729 A1, EP2347949 A1, EP2077219 A2, EP1391374 A1, EP1155950 A2, EP1155950, EP1090832 A1, EP0705756 A1, EP02399811, EP01155950,

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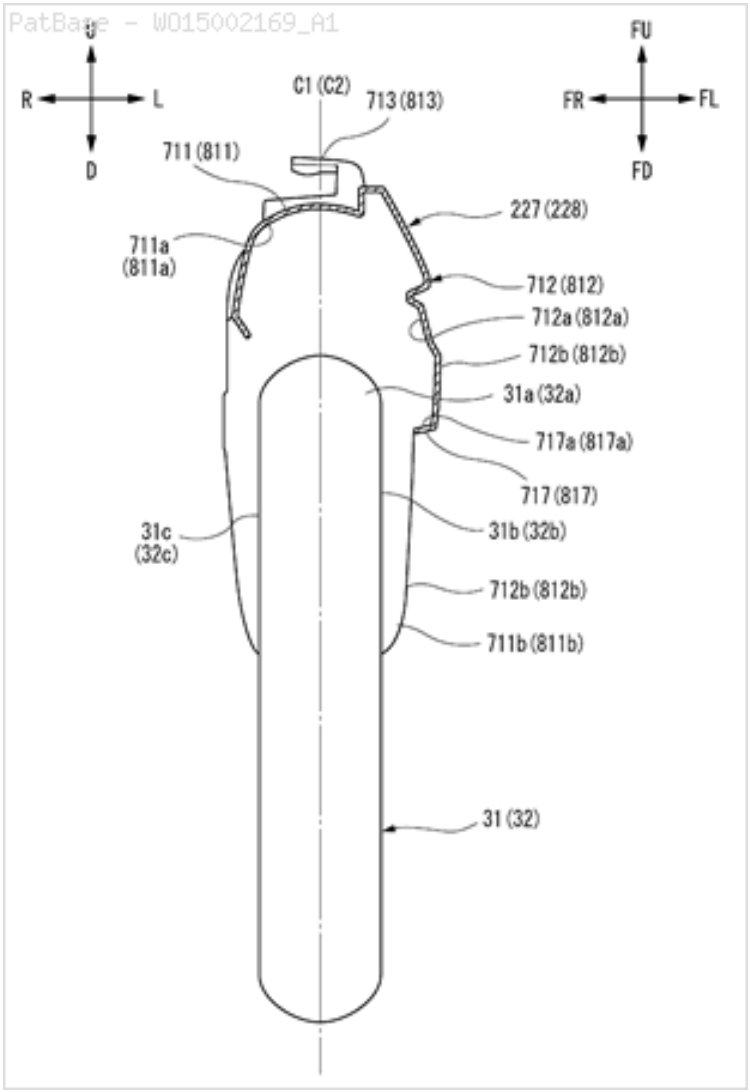
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Forward Citations: WO16052431, WO15002163, US9545967, US9452803, US9428240, US9428235, US9371106, US9352798, US9340249, US2016152292, US2016137253, US2016059923, US2015344091, US2015321721, US2015314827, US2015274244, TWI574876, JP5941601, EP3135571, EP2982588, EP2921389, CN104743021,

Abstract:
Source: US2015298736A A right front fender and a left front fender are displaceable relative to a vehicle body frame in accordance with an operation of a link mechanism. At least a portion of the right front fender is disposed above a center in the up–down direction between an upper end of a right front wheel and a lower edge of the link mechanism or a steering mechanism directly above the right front wheel, and is disposed below a right lower edge of a front portion of a link cover portion, as seen from a front in the front–rear direction of the vehicle body frame when the vehicle body frame is in the upright state. At least a portion of the left front fender is disposed above a center in the up–down direction between an upper end of a left front wheel and a lower edge of the link mechanism or the steering mechanism directly above the left front wheel, and is disposed below the left lower edge of the front portion of the link cover portion, as seen from the front when the vehicle body frame is in the upright state.



0) US2001040063A – ENGINE CRADLE FOR A VEHICLE

3) Family number: 31380924 (US2001040063A) © PatBase

Title: Engine cradle for a vehicle

Priority:

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Family:

Publication number	Publication date	Application number	Application date
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Probable Assignee: BOMBARDIER RECREATIONAL PRODUCTS INC

Assignee(s):(std)**:** BOMBARDIER INC ; GIROUARD BRUNO ; FECTEAU BERTHOLD ; DION ANNE MARIE ; BOMBARDIER RECREATIONAL PRODUC ; BOMBARDIER RECREATIONAL PRODUCTS INC ; BOMBARDIER RECREATIONAL PRODUCTS ; AUDET MATHIEU ; BOMBARDIER RECREATIONAL PROD ; WUBBOLTS JEROME ; MASSICOTTE ALAIN

Assignee(s): RASIDESCU MIHAI ; LANGLAIS STEVE ; WATSON PETER ; MALLETTE BERTRAND ; MERCIER DANIEL ; SAVOIE PIERRE ; TALBOT JEAN GUY ; AUBE MARTIN ; GILBERT ANDRE ; COTE MARIO ; FOURNIER ANDRE ; BANK OF MONTREAL ; BEDARD YVON ; BERTRAND ERIC ; BOMBERDIER INC

Inventor(s):(std)**:** AUBE MARTIN ; AUDET MATHIEU ; BEDARD YVON ; BERTHOLD FECTEAU ; BERTRAND ERIC ; BRUNO GIROUARD ; COTE MARIO ; DION ANNE MARIE ; FECTEAU BERTHOLD ; FECTEAU BERTHOLD US ; FOURNIER ANDRE ; GILBERT ANDRE ; GIROUARD BRUNO ; GIROUARD BRUNO 87721201A ; LANGLAIS STEVE ; MALLETTE BERTRAND ; MASSICOTTE ALAIN ; MERCIER DANIEL ; RASIDESCU MIHAI ; SAVOIE PIERRE ; TALBOT JEAN GUY ; WATSON PETER ; WUBBOLTS JER DOT OVER OME ; WUBBOLTS JEROME

Inventor(s): WUBBOLTS JER DOT OVER ; GIROUARD BRUNO 23738400P

Agent(s): SMART AND BIGGAR; OSLER HOSKIN AND HARCOURT LLP; BCF LLP; SOLF ALEXANDER; BOMBARDIER RECREATIONAL PRODUCTS INC, INTELLECTUAL PROPERTY DEPT; BOMBARDIER RECREATIONAL PRODUCTS INC INTELLECTUAL PROPERTY DEPT; OSLER HOSKIN AND HARCOURT LLP (BRP); OSLER HOSKIN AND HARCOURT LLP BRP; PILLSBURY WINTHROP SHAW PITTMAN LLP; BRP LEGAL SERVICES

Designated states: AE AG AL AM AT AU AZ BA BB BE BG BR BY BZ CA CH CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GB GD GE GH GM GR HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK MN MW MX MZ NL NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

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Classification Explorer

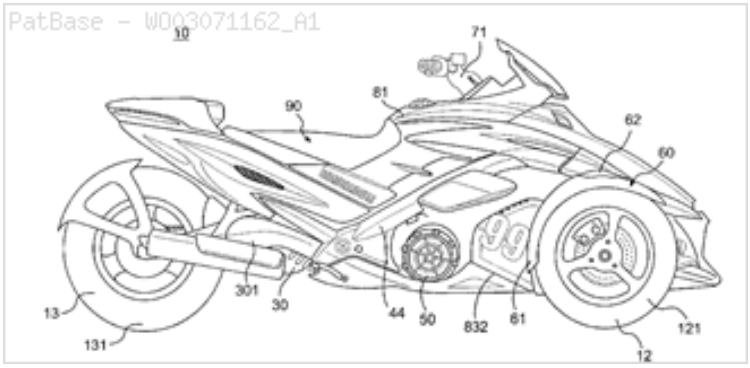
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Forward Citations: WO16193901, WO16030870, WO15122940, WO15036984, WO13019826, WO10062294, WO09114414, WO08100398, WO08100398, WO07130015, WO07100751, WO03070547, WO03070547, USRE44864, USD761692, USD710274, USD701796, USD695657, USD689794, USD682158, USD678124, USD654420, USD632219, USD631803, USD631395, USD629726, USD629724, USD628129, USD627282, USD627269, USD627263, USD626900, USD603775, USD596081, USD593912, USD593908, USD593455, USD592557, USD592556, USD582823, USD582334, USD581846, USD581845, USD581685, USD581320, USD581319, USD580836, USD580822, USD579380, USD573078, USD552506, USD515457, USD512662, USD495274, USD494889, USD494505, USD494504, USD494503, USD494502, USD494100, USD493390, USD493121, USD490018, USD488404, USD479490, US9610986, US9592713, US9586642, US9555678, US9545967, US9540072, US9506407, US9493185, US9476486, US9446810, US9446661, US9428232, US9387902, US9365232, US9352802, US9346508, US9340248, US9267580, US9266580, US9260152, US9248860, US9227507, US9188198, US9187128, US9162731, US9114844, US9057432, US9050869, US9038502, US9010768, US9004214, US8978794, US8944204, US8936380, US8919477, US8899372, US8897966, US8887853, US8851496, US8844999, US8827291, US8820458, US8801001, US8794106, US8783720, US8783394, US8770601, US8746774, US8733773, US8695746, US8622428, US8613543, US8613534, US8613337, US8590654, US8579063, US8567546, US8555801, US8550514, US8544587, US8540045, US8528683, US8506000, US8490731, US8469137, US8430713, US8430197, US8419104, US8413758, US8408348, US8402861, US8397854, US8393426, US8381857, US8360449, US8342548, US8317257, US8313121, US8312945, US8302726, US8302721, US8302711, US8261683, US8245808, US8226120, US8225896, US8191930, US8191929, US8191677, US8191671, US8191665, US8161929, US8079602, US8075007, US8074759, US8037961, US8029004, US8025540, US8016065, US8007005, US7997372, US7988226, US7954853, US7952305, US7950736, US7950486, US7942447, US7942224, US7926607, US7921948, US7921947, US7905310, US7891455, US7891454, US7870920, US7854290, US7832750, US7819272, US7815000, US7806215, US7802816, US7802646, US7780247, US7779944, US7775313, US7770683, US7753154, US7740100, US7708106, US7708096, US7694768, US7686121, US7661714, US7661501, US7658411, US7644791, US7624829, US7610979, US7591337, US7591332, US7588110, US7571787, US7568733, US7559576, US7543673, US7543672, US7543669, US7537499, US7533749, US7513327, US7478694, US7464781, US7464680, US7448635, US7422083, US7410182, US7401816, US7401674, US7398755, US7383824, US7380628, US7377295, US7360617, US7353898, US7328943, US7328765, US7318494, US7311171, US7303037, US7226136, US7213669, US7213668, US7210439, US7207303, US7204331, US7198127, US7198126, US7188693, US7168998, US7147074, US7124848, US7124847, US7124846, US7124845, US7104353, US7080706, US7063178, US7059440, US7051828, US7048293, US7036619, US7025161, US7011173, US7008014, US7004484, US7000931, US6976550, US6971659, US6971466, US6942050, US6926107, US6904990, US6889787, US6880660, US6823957, US6796395, US6767022, US6758497, US6755271, US6691812, US6561302, US2016236527, US2016229479, US2016194021, US2016159392, US2016075405, US2016023709, US2015267792, US2015021893, US2014319801, US2014291948, US2014262586, US2014167399, US2014085903, US2014062059, US2014025246, US2014004984, US2013200604, US2013153325, US2013153319, US2013032418, US2013032417, US2012205902, US2012187645, US2012145471, US2012126565, US2012090908, US2012014105, US2011317441, US2011284299, US2011278083, US2011275256, US2011272906, US2011219911, US2011198831, US2011198830, US2011186371, US2011174569, US2011168473, US2011132679, US2011115180, US2011089649, US2011048816, US2011045715, US2011012334, US2010320023, US2010288574, US2010288572, US2010263956, US2010230192, US2010194088, US2010108428, US2010108427, US2010089668, US2010078254, US2010078245, US2010071982, US2010071981, US2010059305, US2010044134, US2010013420, US2010012415, US2010012414, US2010006019, US2009322045, US2009321169, US2009308039, US2009302590, US2009301830, US2009294199, US2009280718, US2009267407, US2009250281, US2009224497, US2009218153, US2009211827, US2009184484, US2009154287, US2009152940, US2009107754, US2009095113, US2009057509, US2009020347, US2009000845, US2009000837, US2008284124, US2008277184, US2008257627, US2008238149, US2008223639, US2008217088, US2008203795, US2008202280, US2008196958, US2008185204, US2008185203, US2008185202, US2008173491, US2008173287, US2008142287, US2008135318,

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Abstract:
Source: US2001040063A An engine cradle adapted for receiving an engine includes a left side wall defining a C−shaped opening therein. The engine cradle also includes a right side wall, which is essentially a solid wall that provides a reflective surface for reflecting heat to the engine when contained within the engine cradle. The engine cradle also includes a front wall connected between forward portions of the left and right side walls. The engine cradle also includes a bottom panel and a rear panel connected between bottom portions of the front, left side, and right side walls.



0) US2013319784A – VEHICLE CONFIGURATION

4) Family number: 55303403 (US2013319784A) © PatBase

Title: VEHICLE CONFIGURATION

Priority: CA20132817233 20130529 US20120485696 20120531 US20130775133 20130223 WO2014US17269 20140220 US20160143353 20160429

Family:

Publication number	Publication date	Application number	Application date
CA2817233 AA	20131130	CA20132817233	20130529
CA2903168 AA	20150820	CA20142903168	20140220
EP2958792 A2	20151230	EP20140709061	20140220
MX2015010772 A1	20161215	MX20150010772	20140220
TW201441071 A	20141101	TW20140105878	20140221
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US2013319785 AA	20131205	US20130775133	20130223
US2016236737 AA	20160818	US20160143353	20160429
US9180801 BB	20151110	US20120485696	20120531
US9327587 BB	20160503	US20130775133	20130223
WO14130611 A2	20140828	WO2014US17269	20140220
WO14130611 A3	20141120	WO2014US17269	20140220

Probable Assignee: ARCTIC CAT INC

Assignee(s):(std)**:** HUGHES RYAN J ; KENNEDY CRAIG R ; ARCTIC CAT INC

Assignee(s): BANK OF AMERICA NA A NATIONAL BANKING ASSOCIATION ADMINISTRATIVE AGENT AS ; BANK OF AMERICA NA ADMINISTRATIVE AGENT AS ; ECK BRIAN ; ESALA MARK ; MAZOUR SCOTT ; HUGHES RYAN ; SPINDLER JARED ; HULSTEIN ANDREW ; SORENSON DEREK ; KENNEDY CRAIG ; SCHOENECKER PETER ; SEAL JOHN

Inventor(s):(std)**:** ANDREW HULSTEIN ; BRIAN ECK ; CRAIG KENNEDY ; DEREK SORENSON ; ECK BRIAN ; ESALA MARK ; HUGHES RYAN ; HUGHES RYAN J ; HULSTEIN ANDREW ; JARED SPINDLER ; JOHN SEAL ; KENNEDY CRAIG ; KENNEDY CRAIG R ; MARK ESALA ; MAZOUR SCOTT ; PETER SCHOENECKER ; RYAN HUGHES ; SCHOENECKER PETER ; SCOTT MAZOUR ; SEAL JOHN ; SORENSON DEREK ; SPINDLER JARED

Agent(s): SIM AND MCBURNEY; PIASETZKI NENNIGER KVAS LLP; HOFFMANN EITLE; LOWE GRAHAM JONES PLLC; DARREN J; JONES DARREN J

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60F5/00 B60G13/00 B60G3/00 B60J5/04 B60K13/02 B60K15/03 B60K15/063 B60K17/08 B60K17/22 B60K17/34 B60K5/00 B60K5/04 B60K5/12 B60N2/005 B60N2/01 B60N2/24 B60R21/13 B62D23/00 B62D25/00 B62D25/20 B62D33/06 B62D63/02 B62D65/10 (Advanced/Invention); B60K11/04 B60K15/063 (Advanced/Non–invention)

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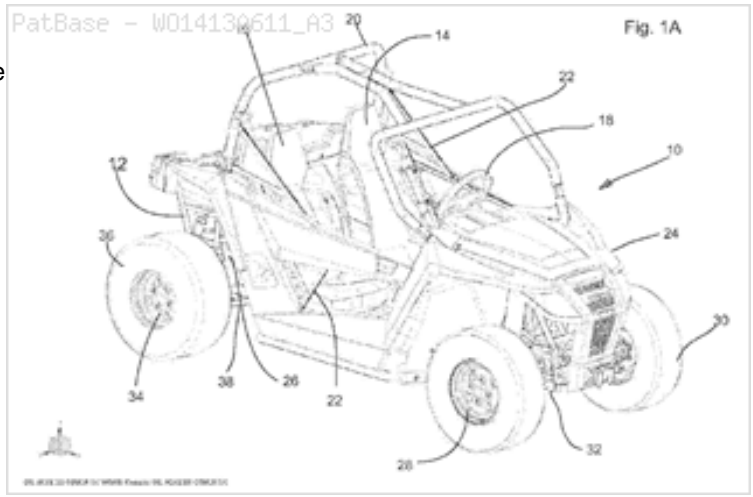
US class: 1/1 180/291 180/292 180/312 180/54.1 280/80.1 29/897.2

Classification Explorer

Cited documents: USD665305 S1, USD555036 S1, US9266417 BB, US9061569 BB, US8998253 BB, US8944465 BB, US8944449 BB, US8827028 BB, US8746719 BB, US8746394 BB, US8640814 BB, US8613336 BB, US8613335 BB, US8596405 BB, US8522911 BB, US8465050 BA, US8459397 BB, US8453775 BB, US8382125 BB, US8292352 BB, US8132827 BB, US8075007 BB, US8037959 BB, US8002331 BB, US7988210 BB, US7896421 BB, US7819220 BB, US7690472 BB, US7658258 BB, US7438147 BB, US7287619 BB, US5251713 A, US2015259011 AA, US2014187372 AA, US2014187366 AA, US2014124279 AA, US2014090918 AA, US2013161109 AA, US2013157793 AA, US2012223500 AA, US2012217078 AA, US2012152637 AA, US2012031688 AA, US2011240393 AA, US2010012412 AA, US2008023249 AA, US2008023240 AA, US2005247506 AA,

Forward Citations: USD781193, USD780627, USD780078, USD744904, USD738785, USD738257, USD722536, US9539871, US9434244, US9272744, US9221508, US8944449, US8827028, US2016185171, US2016146334, US2016032625, US2016031492, US2015314680, US2015259011, US2014090918, US2013161109, US2011240393,

Abstract:
Source: US2013319784A A vehicle configuration wherein the center of mass of the vehicle is approximately superimposed upon the passenger and driver centers of mass when seated within the vehicle. An occupant's center of mass can be approximated using a standard center of mass position approximation, or a combination of any number of standard center of mass position approximations. The vehicle's center of mass can be approximately superimposed upon the occupant's center of mass in at least the longitudinal and vertical directions.



0) US2016280192A – BRAKE SYSTEM AND VEHICLE

5) Family number: 59143000 (US2016280192A) © PatBase

Title: BRAKE SYSTEM AND VEHICLE

Priority: JP20130227455 20131031 JP20140219736 20141028 WO2014JP78809 20141029

Family:

Publication number	Publication date	Application number	Application date
EP2942247 A1	20151111	EP20140858786	20141029
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JP5816354 B2	20151118	JP20140219736	20141028
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TWI535598 B	20160601	TW20140137943	20141031
US2016280192 AA	20160929	US20140033548	20141029
WO15064658 A1	20150507	WO2014JP78809	20141029

Probable Assignee: YAMAHA HATSUDOKI KK

Assignee(s):(std)**:** ADVICS CO LTD ; ADVICS KK ; YAMAHA MOTOR CO LTD

Assignee(s): YAMAHA HATSUDOKI KK

Inventor(s):(std)**:** HAMAMOTO YUTAKA ; KAJIHARA KUNIO ; OHASHI KUNIHIDE ; SETO HIROAKI ; TAKADA HIDEKI ; TERASAKA MASATO ; TSUJI YOSHINORI ; YAMAMURA TAKESHI ; TERASAKA MASAHITO ; KI YOSHINORI ; KAJIWARA KUNIO

Agent(s): GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; SHIN EI PATENT FIRM PC

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60T8/17 B60T8/1755 B60T8/176 B60T8/1761 B60T8/32 B62K5/05 B62K5/10 B62L3/00 (Advanced/Invention)

CPC: B60T8/17554 B62K5/05 B60T8/1706 B60T8/3225 B60T2230/03

US class: 280/282

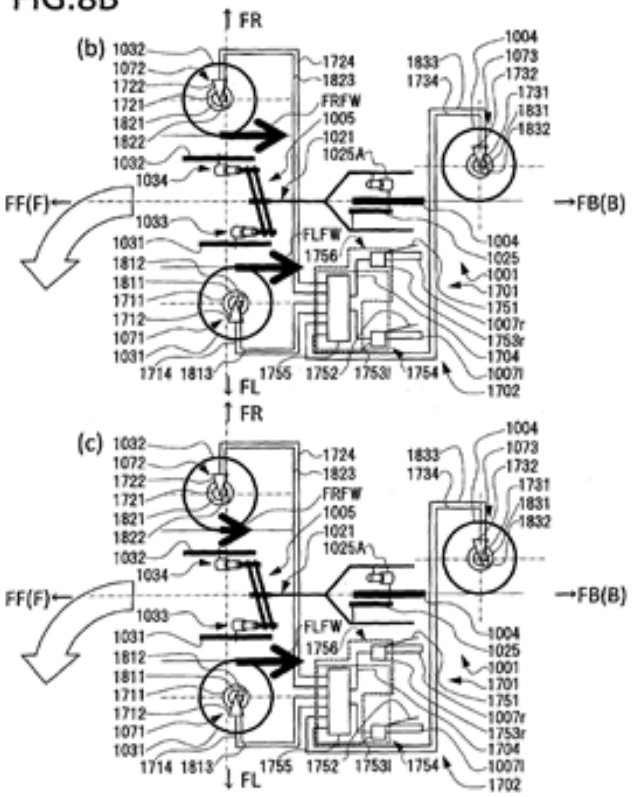
Classification Explorer

Cited documents: WO12007819 A1, WO07130043 A1, US7143853 BA, US5224766, TWI367175, JP60252058 A2, JP60252058, JP60244665 A2, JP60244665, JP4176768 A2, JP4176768, JP2011195099 A2, JP2011126514 A2, JP2011126514, EP1847429 A1,

Abstract:
Source: US2016280192A A brake system does not change immediately an operating condition of a left front brake although a slipping condition is detected at the left front wheel based on a signal detected by a left detector in such a state that a slipping condition is not detected at a right front wheel based on a signal detected by a right detector, and does not change immediately an operating condition of a right front brake although a slipping condition is detected at the right front wheel based on a signal detected by the right detector in such a state a slipping condition is not detected at the left front wheel based on a signal detected by the left detector.

PatBase - WO15064658_A1

FIG.8B



0) US2008108257A – AMPHIBIAN

6) Family number: 33589366 (US2008108257A) © PatBase

Title: AMPHIBIAN

Priority:

AU20070287372	20070824	AU20140202754	20140520	CA20072661499	20070824
AU20160204662	20160705	CN200780038790	20070824	EP20070789321	20070824
WO2007GB03234	20070824	US20070895604	20070824	US20100914736	20101028
GB20060016845	20060824	JP20090525111	20070824	JP20150021689	20150206
JP20090525111T	20070824	US20160139763	20160427		

Family:

Publication number	Publication date	Application number	Application date
AU2007287372 AA	20080228	AU20070287372	20070824
AU2014202754 AA	20140612	AU20140202754	20140520
AU2016204662 AA	20160721	AU20160204662	20160705
CA2661499 AA	20090223	CA20072661499	20070824
CA2661499 C	20170103	CA20072661499	20070824
CA2874359 AA	20080228	CA20072874359	20070824
CN101528487 A	20090909	CN200780038790	20070824
CN101528487 B	20160518	CN200780038790	20070824
CN106427431 A	20170222	CN201610245261	20070824
EP2059401 A2	20090520	EP20070789321	20070824
EP2059401 B1	20160720	EP20070789321	20070824
EP3147142 A1	20170329	EP20160179628	20070824
GB200616845 A0	20061004	GB20060016845	20060824
GB2441518 A1	20080312	GB20060016845	20060824
IN00999KN2009 A	20090522	IN2009KN00999	20090316
JP2010501397 T2	20100121	JP20090525111T	20070824
JP2015110420 A2	20150618	JP20150021689	20150206
KR20090057037 A	20090603	KR20097005897	20090323
KR20140071443 A	20140611	KR20147010704	20070824
RU2009110495 A	20100927	RU20090110495	20070824
RU2014102714 A	20150810	RU20140102714	20140128
RU2520665 C2	20140627	RU20090110495	20070824
TW200831316 A	20080801	TW20070131497	20070824
TW201228856 A	20120716	TW20120109171	20070824
TWI429545 B	20140311	TW20070131497	20070824
US2008108257 AA	20080508	US20070895604	20070824
US2011045715 AA	20110224	US20100914736	20101028
US2016236527 AA	20160818	US20160139763	20160427
US8025540 BB	20110927	US20070895604	20070824
US9555678 BB	20170131	US20100914736	20101028
WO08023191 A2	20080228	WO2007GB03234	20070824
WO08023191 A3	20080529	WO2007GB03234	20070824

Probable Assignee: GIBBS TECH LTD

Assignee(s):(std): DZHIBBS TEKNOLODZHIZ LTD ; GIBBS ALAN TIMOTHY ; GIBBS TECH LTD

Assignee(s): GIBBS TECHNOLOGIES LIMITED ; GIBBS TECHNOLOGIES LTD

Inventor(s):(std): ALAN TIMOTHY GIBBS ; DZHIBBS ALAN TIMOTI ; GIBBS ALAN T ; GIBBS ALAN TIMOTHY ; TIMOTHY GIBBS ALAN

Inventor(s): GIBBS ALAN

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; SMART AND BIGGAR; HICKS PAUL EDWARD ET AL; BOULT WADE TENNANT; FURUSAWA HIROSHI; SEMBA TSUKASA; TANAKA TATSUYA; YOSHIDA MINORU; FULWIDER PATTON LLP; GUNTHER O; PLUCKROSE ANTHONY WILLIAM ET AL

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60F3/00 B60G3/20 B63B1/32 B63B35/73 B63C13/00 B63H11/02 B63H11/08 B63H11/11 B63H25/38 B63H25/46 B63H5/08 (Advanced/Invention); B60F3/00 B63B35/73 B63H11/00 B63H25/00 B63H25/06 B63H5/00 (Core/Invention)

International class (IPC 1–7): B60F3/00

CPC: B60F3/00 B60F3/0007 B60F3/003 B60F3/0069 B60F2301/04 B60G3/20 B60G2200/144 B60G2204/421 B60G2300/28 B60G2300/45 B60F3/0046 B63H11/02

European class: B60F3/00 B60F3/00B B60F3/00C B60F3/00D2 L60F301/04

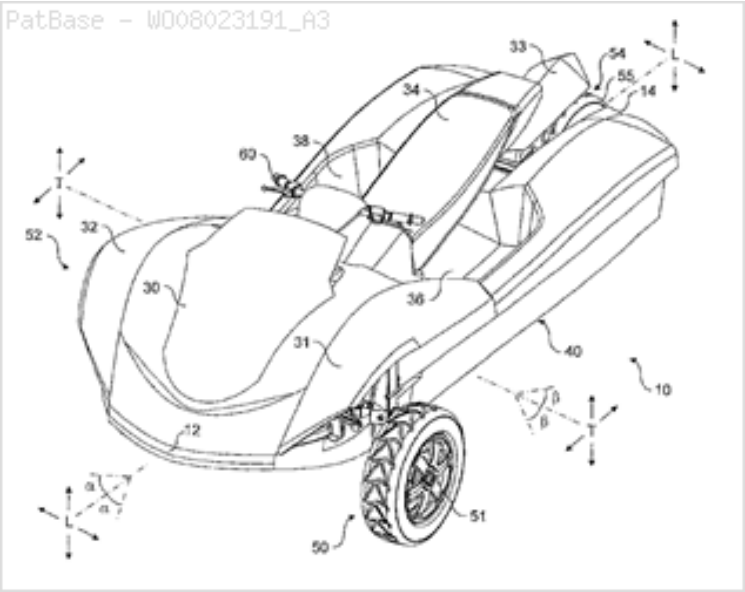
US class: 440/12.5 440/12.500S 440/12.51 440/12.510P

Classification Explorer

Cited documents: WO9924273 A1, WO8807453 A1, WO88/07453, WO2006/067458, WO2006/040563, WO06067458 A2, WO06043088 A1, WO06040563 A1, WO05028300 A1, WO04039613 A1, WO0212005 A1, WO02060707 A2, WO02/12005, USRE36901 E, USRE036901 E, US8025540 BB, US7234982 BB, US7207851 BA, US7004801 BB, US6994358 BB, US6945832 BB, US6886837 BB, US6540569 BA, US6505694 BB, US6386929 BA, US5690046 A, US5632221 A, US5531179 A, US4597353 A, US4597353, US4241686 A, US3741146 A, US2049702 A, US2007006788 AA, US2006234567 AA, US2006172626 AA, US2006148340 AA, US2006105644 AA, US2005034646 AA, US2004168623 AA, US2004072479 AA, US2004035624 AA, US2003060095 AA, US2003047899 AA, US2002200 A, US2002098748 AA, US2001047894 AA, RU53227 U1, RU53227 U, JP62125603 U1, JP62125603 U, JP60134096 U1, JP60134096 U, JP60095386 U1, JP60095386 U, JP60090093 U1, JP60090093 U, JP57191109 A2, JP49053485 U1, JP4504692 T2, JP3298379 B2, JP29008379 B1, JP2212289 A2, JP2010536661 T2, JP2010536660 T2, JP2005506238 T2, JP2004524204 T2, JP2004520991 T2, JP2004507399 T2, JP2004507398 T2, JP2004506568 T2, JP2003502201 T2, GB254831, GB2420318 A1, GB2401829 A1, GB2401829, GB2392415 A1, GB2254831 A1, GB2254831, GB2170759 A1, DE19831324 C2, DE19831324 A1, DE10344957 A1, BE896799, BE396799 A2, BE396799 A, AU700280 B2, AU700280 B2,

Forward Citations: WO15092751, WO12001535, WO11077090, WO11063702, WO09153578, WO09153561, WO09027661, WO09027647, WO09027646, USD760623, US9555680, US9555678, US9511640, US9415649, US8888543, US2016236527, US2013217280, US2011275256, US2011045715, RU2555253, KR101008105, JP5823409, JP2015155300, JP2013514942, JP2011524836, JP2011524835, JP2010269764, GB2461081, GB2461081, EP3138705, EP3098098, CN104995046, CN104773043, CN103917387, CN103917386, CN103818536, CN103129338, CN103085618, CN103085618, CN102811872, CN102390454, CN102092253,

Abstract:
Source: US2008108257A The present invention provides, with reference to Fig. 1, an amphibian for use in land and marine modes comprising: a planing hull; three wheel stations, two of the three wheel stations being front wheel stations provided one on each side of and in the front half of the amphibian, and the third wheel station being a rear wheel station provided in a central region in the rear half of the amphibian; at least one wheel provided at each wheel station, each wheel being movable between a protracted land mode position and a retracted marine mode position; land propulsion means to propel the amphibian on land in the land mode, the land propulsion means comprising at least one of the wheels; and marine propulsion means to propel the amphibian on water in the marine mode, the marine propulsion means comprising at least two impellers or propellers provided one on each side of the rear wheel station.



0) US2012181765A – FREE–TO–LEAN THREE–WHEELED PASSENGER VEHICLE, P...

7) Family number: 51511261 (US2012181765A) © PatBase

Title: FREE–TO–LEAN THREE–WHEELED PASSENGER VEHICLE, POWER PLANT CONTROLLER AND BODY THEREFOR

Priority: US20110930871 20110119

Family:

Publication number	Publication date	Application number	Application date
US2012181765 AA	20120719	US20110930871	20110119
US8662228 BB	20140304	US20110930871	20110119

Probable Assignee: GREEN LITE MOTORS CORP

Assignee(s):(std)**:** GREEN LITE MOTORS CORP ; HILL ROBERT B ; LUX FRED ; MILLER TIMOTHY MICHAEL ; STILWELL EDMUND JEROME

Inventor(s):(std)**:** STILWELL EDMUND JEROME ; MILLER TIMOTHY MICHAEL ; LUX FRED ; HILL ROBERT B

International class (IPC 8–9): B60K6/42 B60N2/00 B60W10/04 B60W20/00 B62D39/00 B62D61/06 G06F19/00 (Advanced/Invention)

CPC: B60K6/42 B62K5/05 B60W2030/043 B60W2520/10 B60W2520/105 B60W2520/125 B60W2520/18 B60W2720/125 B60W2720/18 B62K5/027 B62K5/10 B62K2204/00 B62D21/08

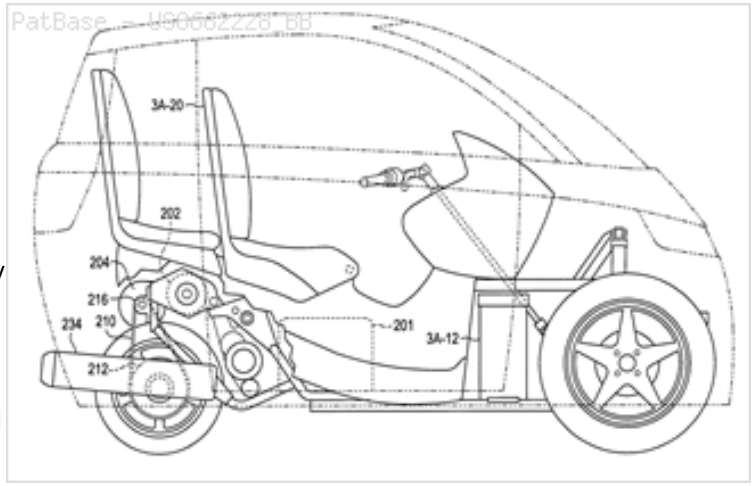
European class: B62K5/027 B62K5/05 B62K5/10 L60W30/04D L60W520/10 L60W520/10B L60W520/12A L60W520/18 L60W720/12A L60W720/18 L62K204/00

US class: 180/210 180/210S 180/65.22 180/65.220S 280/62 280/62P 701/22 701/22S 903/902 903/902S

Classification Explorer

Cited documents: US7648148 BA, US7647999 BB, US7591337 BB, US7487985 BA, US4903857 A, US2010164189 AA, US2007075517 AA, US2003102176 AA,

Forward Citations: WO14145878, USD779594, US9604683, US9592876, US9555871, US9499024, US9452803, US9428236, US9327725, US9193407, US9172477, US9129460, US9117246, US9067565, US8963702, US8892292, US8890717, US8890673, US8880266, US8857551, US8794641, US8762003, US8678123, US8651503, US8630768, US8607914, US2016229251, US2015321721, US2015274160, US2015166138, US2014358369, US2014062051, US2014058624, US2013282218, US2013274983, US2013227952, US2013127125, US2013075177, US2012232758, US2011215544, US2011148052, US2008262670,



Abstract:
Source: US2012181765A A three–wheeled leaning passenger vehicle comprises a frame rigidly mounting a passenger seat; a drive wheel rotatably mounted on the frame preferably in a rearward region thereof; a frame–mounted rotary drive cooperatively coupled with the drive wheel for rotation of the drive wheel relative to the frame; and a frame–mounted coast/steer system including two rotatable and preferably front wheels freely rotatable relative to the frame in a forward region thereof, and a handlebar coupled with the two front wheels for turning the two rotatable wheels in a plane defined by their rotational axes substantially parallel with one another to corner, the vehicle being configured to substantially freely lean left and right in a natural response to a driver thereof in the driver seat steering the vehicle and leaning respectively left and right, and, alternatively or additionally, to have controlled leaning in response to a hydraulically or otherwise provisioned leaning, suspension, and stand–up mechanisms. The rotary drive includes a frame–mounted power plant operatively couple–able with the drive wheel, the rotary drive including an internal combustion engine and an electric motor selectively operatively couple–able with the drive wheel to power the

vehicle. The power plant is selectively operable to power the vehicle in three modes of operation including a hybrid mode characterized by operation of the internal combustion engine and the electric motor coordinated substantially to optimize fuel economy, an electric–only mode characterized by operation only of the electric motor, and a sport mode characterized by concurrent operation of the internal combustion engine and the electric motor.

0) US2007001422A – MOBILE ELLIPTICALLY DRIVEN DEVICE

8) Family number: 34068961 (US2007001422A) © PatBase

Title: MOBILE ELLIPTICALLY DRIVEN DEVICE

Priority: EP20060785998 20060630 US20050173213 20050701 US20050713213 20050701 US20090225776P 20090715 US20100785147 20100521 US20130959117 20130805 WO2006US25647 20060630 WO2010US41929 20100714

Family:

Publication number	Publication date	Application number	Application date
AU2006265891 AA	20070111	AU20060265891	20060630
AU2006265891 BB	20111124	AU20060265891	20060630
AU2010273439 AA	20110120	AU20100273439	20100714
AU2010273439 BB	20160512	AU20100273439	20100714
CN100594048 C	20100317	CN200680030522	20060630
CN101242878 A	20080813	CN200680030522	20060630
CN102596698 A	20120718	CN201080032104	20100714
CN102596698 B	20141105	CN201080032104	20100714
DE602006034926 D1	20130502	DE200660034926T	20060630
EP1904188 A1	20080402	EP20060785998	20060630
EP1904188 A4	20091118	EP20060785998	20060630
EP1904188 B1	20130306	EP20060785998	20060630
EP2454148 A2	20120523	EP20100800459	20100714
EP2454148 A4	20150805	EP20100800459	20100714
ES2411304 T3	20130705	ES20060785998T	20060630
US2007001422 AA	20070104	US20050173213	20050701
US2010230924 AA	20100916	US20100785147	20100521
US2013313802 AA	20131128	US20130959117	20130805
US7803090 BB	20100928	US20050173213	20050701
US8535206 BB	20130917	US20100785147	20100521
US8911332 BB	20141216	US20130959117	20130805
WO07005640 A1	20070111	WO2006US25647	20060630
WO11008826 A2	20110120	WO2010US41929	20100714
WO11008826 A3	20110428	WO2010US41929	20100714

Probable Assignee: HPN HOLDINGS

Assignee(s):(std)**:** HPN HOLDINGS INC ; KRAUS DAVID ; KRAUS DAVID W ; DAVID KRAUS ; MARO DEAN

Assignee(s): WATKINS GARRETT MR ; FLETCHER EDWARD ; HPN HOLDINGS ; WATKINS GARRETT B

Inventor(s):(std)**:** DAVID KRAUS ; KRAUS DAVID ; KRAUS DAVID W ; MARO DEAN

Inventor(s): DAVID W KRAUS

Agent(s): EF WELLINGTON AND CO; E F WELLINGTON AND CO; MITSCHERLICH PATENT U RECHTSANWAELTE PARTMBB; GREENWOOD MATTHEW DAVID ET AL; GREENWOOD MATTHEW DAVID; FOOT PAUL MATTHEW JAMES; CARPINTERO MARIO; PAUL SYKES, BRADLEY ARANT ROSE AND WHITE LLP; PAUL SYKES BRADLEY ARANT ROSE AND WHITE LLP; BRADLEY ARANT BOULT CUMMINGS LLP,INTELLECTUAL PROPERTY DEPARTMENT; BRADLEY ARANT BOULT CUMMINGS LLP; SRADLEY ARANT BOULT CUMMINGS LLP; NICHOLAS J; PAUL M; LANDAU NICHOLAS ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE

NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): A61H3/04 A63B21/00 A63B22/00 A63B22/02 A63B22/06 A63B22/20 A63B23/04 A63B71/00 A63C17/01 A63C17/12 B62D17/00 B62D5/14 B62D5/24 B62D7/14 B62K3/00 B62K5/05 B62K5/08 B62K5/10 B62M1/00 B62M1/06 B62M1/12 B62M1/26 B62M3/06 (Advanced/Invention); A63B22/00 A63B23/04 A63C17/01 (Advanced/Non–invention); A61H3/00 A63B21/00 A63B22/00 A63B71/00 (Core/Invention); A63B22/00 (Core/Non–invention)

CPC: A63B22/00 B62K5/10 B62M3/06 B62K5/08 A63B22/001 A63B22/0664 A63B22/20 A63B23/0423 A63B2022/067 A63C17/01 A63C17/12 B62K3/002 B62K5/05 B62M1/12 B62M1/26

European class: A63B22/00 A63B22/00A6 A63B22/06E A63B22/20 A63C17/12 B62K3/00B B62K5/05 B62K5/08 B62K5/10 B62M1/12 B62M1/26 K63B22/06E2 K63B23/04B3 K63C17/01

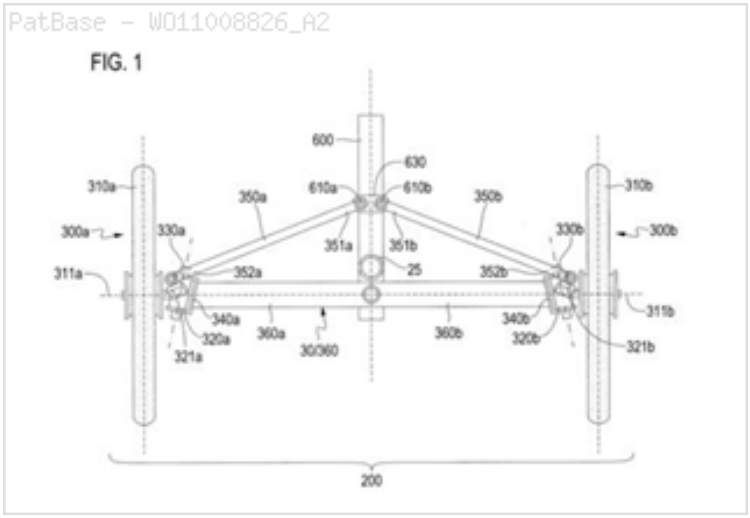
US class: 280/200 280/200P 280/210 280/210P 280/224 280/257 280/86.754 280/86.754S 482/51 482/51S 482/52 482/57 482/62

Classification Explorer

Cited documents: WO9707860 A1, US7976046 BB, US7487985 BA, US7270625 BB, US7223210 BB, US7033305 BA, US6994657 BA, US6878084 BB, US6852060 BA, US6846272 BB, US6773022 BB, US6708997 BB, US6663127 BB, US6572128 BB, US6485041 BA, US6468178 BA, US6419252 BA, US6402174 BA, US6398695 BB, US6386566 BA, US6367824 BA, US6171217 BA, US6171217 B1, US6048287 A, US6045487 A, US6032970 A, US602536 A, US594773 A, US5775708 A, US5630774 A, US5591107 A, US5527246 A, US5383829 A, US5242343 A, US5228710 A, US5224724 A, US4986556 A, US4936597 A, US4903857 A, US4735430 A, US4721015 A, US4715246 A, US4706982 A, US4705284 A, US4702121 A, US4693487 A, US4666172 A, US4647060 A, US4615845 A, US4456277 A, US4451064 A, US435665 A, US3895825 A, US3746118 A, US3519097 A, US3305243 A, US3181883 A, US2995384 A, US2793874 A, US2705539 A, US2684253 A, US2505464 A, US2444025 A, US2304291 A, US2203344 A, US2125763 A, US2115915 A, US2007075517 AA, US2007001422 AA, US2006049597 AA, US2006009331 AA, US2004209741 AA, US2004005960 AA, US2003193158 AA, US2003127822 AA, US1845192 A, US1798384 A, US1798383 A, US1398883 A, US1397174 A, US1180126 A, JP3131561 U, JP3131561 A2, JP26068, JP2006068 A2, JP2003026068 A2, GB2279047 A1, DE20319128 U1, DE20319128, DE19502630 A1, DE10331352 A1, DE10158594 A1, DE10058466 A1, CN1397466 A, AT394694 B, AT394694,

Forward Citations: WO15051426, WO15005778, WO14071484, WO14053713, WO14016174, WO12102605, WO11157910, WO11061128, WO10143008, WO08132191, USD772990, USD696984, US9592883, US9352183, US9294127, US8973695, US8628102, US8419598, US8322735, US8028777, US7967313, US7958956, US2015329165, US2015065310, US2013219245, US2013017938, US2012258840, US2011304117, US2011233885, US2010219603, US2010059955, US2009309326, US2009032323, US2007219067, US2006260857, US2006189447, KR20150134150, KR101597702, ITRM20090111, GB2494263, FR2998254, FR2996205, FR2993854, FR2986497, FR2961475, FR2961474, FR2937613, ES2584103, ES2390175, EP3112245, EP3056420, EP2454148, EP2042421, EP1982908, DE102012003894, CN104321245, CN103707990, CN103707990, CN103129684, CN102975764, CN102975764, CN102343958, CN102287501, CN102039827,

Abstract:
Source: US2007001422A A mobile wheeled device driven by a user's striding his feet on a pair of footbeds through an elliptical path while applying reciprocal force to a pair of upright arm members. The device may utilize an internal gear system in the rear hub.



0) US4217970A – CONFIGURATION AND CONSTRUCTION OF FOUR WHEELED ...

9) Family number: 7850569 (US4217970A) © PatBase

Title: Configuration and construction of four wheeled motor vehicles

Priority: US19740437482 19740128 US19750597311 19750808 US19770857567 19771205 US19770857568 19771205 US19770857566 19771205

Family:

Publication number	Publication date	Application number	Application date
US4217970 A	19800819	US19770857568	19771205
US4227589 A	19801014	US19770857567	19771205
US4229018 A	19801021	US19770857566	19771205
US4290620 A	19810922	US19750597311	19750808

Probable Assignee: CHIKA JOHN J

Assignee(s):(std)**:** CHIKA JOHN J

Inventor(s):(std)**:** CHIKA JOHN J

International class (IPC 8–9)**:** B60G21/055 B62D23/00 B62D31/00 B62K13/06 B62K27/02 B62M6/10 B62M6/25 B62M6/35 (Advanced/Invention)

International class (IPC 1–7)**:** B60K17/00 B62D21/12 B62D61/00 B62K13/06 B62K27/12

CPC: B60G21/055 B62D23/005 B62K5/08 B62K13/06 B62K27/00 B62D31/003 B62K27/02 B62M6/10 B62M6/25

European class: B60G21/055 B62D23/00B B62D31/00B B62K13/06 B62K27/00 B62K27/02 B62K5/08 B62M6/10 B62M6/25

US class: 180/205.7 180/206 180/221 180/298 180/342 180/366 180/89.1 280/203 280/209 280/282 280/283 280/93.514 296/193.05 296/205

Classification Explorer

Cited documents: US784042, US739633 A, US646791 A, US636155 A, US4093258 A, US4028957, US3961807, US3951427, US3941075, US3902738 A, US3894615, US3887210, US3794352 A, US3768834 A, US3517764, US3435701, US3429584, US3013814 A, US2891804, US2691421, US2625230, US2578886 A, US2409887 A, US2248223 A, US1848451 A, US1478316 A, SU553132 T, SU231326 T, IT443900 A, GB728346, GB506208 A, GB189818531 A, GB189622529 A, GB1078535 A, FR971572, FR605567 A, FR601057 A, DE812643 A, DE121044 A, AT182323 B,

Forward Citations: WO9627518, WO16022493, WO15155697, WO15119506, WO14039761, WO13030225, WO11004093, WO07103188, WO07103188, WO07068000, WO04067367, WO04067367, WO03037679, WO0249889, WO0063065, USD766137, USD638333, USD586696, USD586695, USD586261, USD586260, USD585790, USD585789, USD585788, USD575675, USD564410, USD563274, USD507993, USD505364, USD503661, US9394027, US9365251, US9340250, US9321494, US9284007, US9217501, US9211924, US9205730, US9174693, US9114851, US9085335, US9016774, US9004535, US8998216, US8955632, US8944492, US8944301, US8899615, US8894081, US8851558, US8827028, US8827020, US8827019, US8752743, US8746719, US8640796, US8613336, US8613335, US8596405, US8486846, US8397844, US8382125, US8146937, US8141668, US7967312, US7874566, US7819220, US7775538, US7770682, US7721836, US7695393, US7658258, US7530411, US7473204, US7461864, US7213866, US7066530, US7017702, US7004502, US6994179, US6905138, US6860512, US6755265, US6634701, US6631925, US6623067, US6578904, US6561532, US6554308, US6527290, US6435601, US6428086, US6419304, US6311997, US6250711, US6250410, US6170844, US6145922, US6065557, US6059058, US6022036, US6010155, US5934745, US5845937, US5806620, US5741045, US5613918, US5511809, US5292142, US5251721, US4924959, US4834410, US4787647, US4740004, US4425976, US2017021893, US2015210319, US2015069732, US2015042063, US2015014957, US2014224564, US2014224557, US2013263696, US2013187407, US2013092466, US2013056293, US2012318595, US2012242110, US2012098300, US2012037672, US2011308872, US2011285170, US2011272925, US2011048828, US2011018225, US2010314852, US2009178871, US2009114465, US2009001764, US2008314668, US2008246301, US2008023249, US2008023240, US2007261900, US2007207889, US2007144799, US2007000715, US2006151224, US2006033361,

US2005285415, US2005280254, US2005280217, US2005034904, US2004245745, US2004154854, US2004129489, US2004124033, US2004104065, US2004084889, US2004066025, US2004026144, RU2507086, GB2492786, FR2947797, FR2727377, FR2720048, FR2640575, FR2559119, FR2530212, ES2412031, EP2060477, EP1977922, EP1717138, EP0534831, DE4125832, DE19804104, DE19613446,

Abstract:
Source: US4217970A A four−wheeled motor vehicle constructed by operatively coupling two exclusively configured left and right longitudinal side structures by plural, transversely positioned connecting and bracing members. Each side structure operatively supported by its own front wheel adapted for steering and rear wheel adapted for propelling the vehicle. Each of the connecting members comprising a longer mid−portion positioned transversely between the two longitudinal sides, and two shorter end−portions which are secured to correspondingly positioned structurally rigid sections of them. Steering system operatively couples the two front wheels of the two sides for steering thus coupled vehicle. A propulsion plant propels at least one of the wheels. All operating controls are configured for safe and legal operation of the vehicle by its driver. The longer mid−portions of said connecting members support body panels positioned intermediate the two side structures, vehicle floor and seats. The basic configuration is adaptable to be combined into variously configured, open, closed and convertible vehicle bodies. Various facets of the basic concept are adaptable for partial application in construction of new and conversion of existing conventionally constructed motor vehicles of all types.



0) US2014060951A – THREE–WHEELED VEHICLE WITH STEERING APPARATUS C...

10) Family number: 55891359 (US2014060951A) © PatBase

Title: THREE–WHEELED VEHICLE WITH STEERING APPARATUS CONFigureD FOR ENHANCED OPERATION DURING A BANKING TURN

Priority: EP20130180616 20130815 JP20120191548 20120831 JP20130094387 20130426

Family:

Publication number	Publication date	Application number	Application date
CN103661712 A	20140326	CN201310376234	20130826
CN103661712 B	20160629	CN201310376234	20130826
DE602013001906 D1	20150716	DE201360001906T	20130815
EP2703270 A1	20140305	EP20130180616	20130815
EP2703270 B1	20150603	EP20130180616	20130815
JP2014061870 A2	20140410	JP20130094387	20130426
US2014060951 AA	20140306	US20130974242	20130823
US8739914 BB	20140603	US20130974242	20130823

Probable Assignee: HONDA MOTOR CO LTD

Assignee(s):(std)**:** HONDA MOTOR CO LTD

Assignee(s): HONDA MOTOR CO

Inventor(s):(std)**:** HORII YOSHIYUKI ; KASHIWAI MIKIO ; KOBAYASHI YOSHITAKA ; MATSUO HISAFUMI ; MATSUO HISASHI ; TOMINAGA TAKASHI ; WATANABE TAKATO

Inventor(s): WATANABE TAKATO WAKO SHI ; TOMINAGA TAKASHI WAKO SHI ; MATSUO HISASHI WAKO SHI ; KOBAYASHI YOSHITAKA WAKO SHI ; KASHIWAI MIKIO WAKO SHI ; HORII YOSHIYUKI WAKO SHI

Agent(s): DEHNS; STEVENS JASON PAUL; JOSEPH P; CARRIER BLACKMAN AND ASSOCIATES PC; WILLIAM D

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

International class (IPC 8–9): B62D3/02 B62D9/02 B62K5/027 B62K5/05 B62K5/06 B62K5/08 B62M6/40 (Advanced/Invention) ; B62M6/40 (Advanced/Non–invention)

CPC: B62K5/05 B62K5/027 B62K5/08 B62H1/12 B62K2204/00

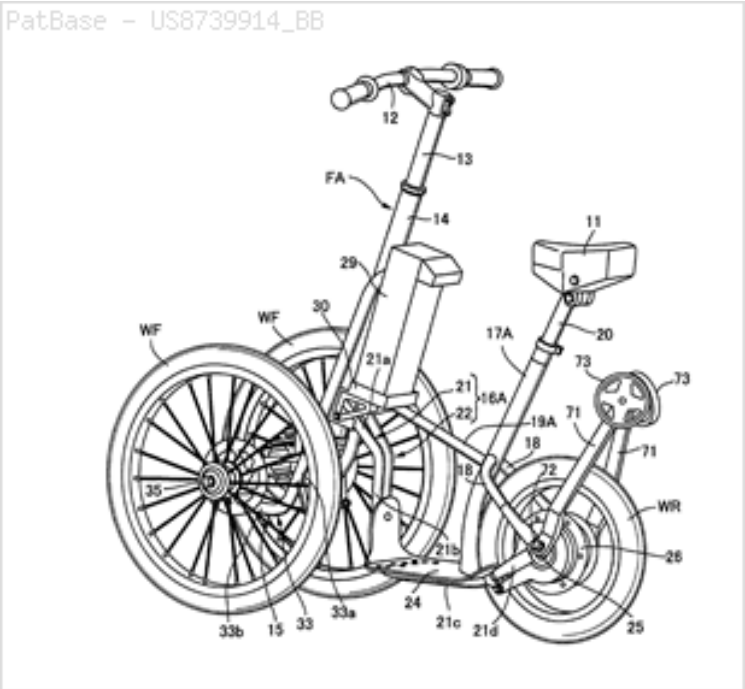
US class: 180/210 280/124.103 280/5.509 280/62

Classification Explorer

Cited documents: WO9925602 A1, WO10029949 A1, US8602421 BB, US8235398 BB, US7487985 BA, US2011248463 AA, US2010194068 AA, US2010007109 AA, US2008258416 AA, US2008238005 AA, US2008164085 AA, JP64063485 A2, JP2012162103 A2, JP2010064560 A2, JP2006062573 A2, JP2005162179 A2, CN201338661 Y, CN1323717 A,

Forward Citations: US9238497, US2014367184,

Abstract:
Source: US2014060951A A three−wheeled vehicle having two steerable front wheels is provided with steering structure configured to enhance turning performance during banking of a vehicle body. A bushing is secured to the vehicle body, and includes an inner cylinder and an outer cylinder connected by an elastic member. Knuckles, for pivotally supporting the front wheels, are supported by knuckle supports installed on steering arms secured to the outer cylinder. A first lever mounted on a steering shaft is connected via a connecting rod to a second lever mounted on a sub−steering shaft pivotally passing through the inner cylinder. A third lever installed on the sub−steering shaft is connected to the knuckles via corresponding tie rods. A rigid rod has a first end connected to a fourth lever secured to the outer cylinder via a first universal joint and a second end connected to the body frame via a second universal joint.



0) US2007273177A – CROSSOVER MOTOR VEHICLE WITH A CARGO BED

11) Family number: 40843597 (US2007273177A) © PatBase

Title: CROSSOVER MOTOR VEHICLE WITH A CARGO BED

Priority: US20060440394 20060525

Family:

Publication number	Publication date	Application number	Application date
US2007273177 AA	20071129	US20060440394	20060525
US7431366 BB	20081007	US20060440394	20060525

Probable Assignee: RSV INV ENTPR

Assignee(s):(std)**:** RSV INV ENTPR

Assignee(s): RSV INVENTION ENTERPRISES

Inventor(s):(std)**:** SANKRITHI MITHRA M K V ; SANKRITHI SIVA USHA MITHRA

Inventor(s): SANKRITHI MITHRA MKV

Agent(s): MITHRA SANKRITHI

International class (IPC 8–9): B62D33/00 B62D39/00 (Advanced/Invention); B62D33/00 B62D39/00 (Core/Invention)

CPC: B60P3/423 B62D33/04 B62D47/003

European class: B60P3/42B B62D33/04 B62D47/00B

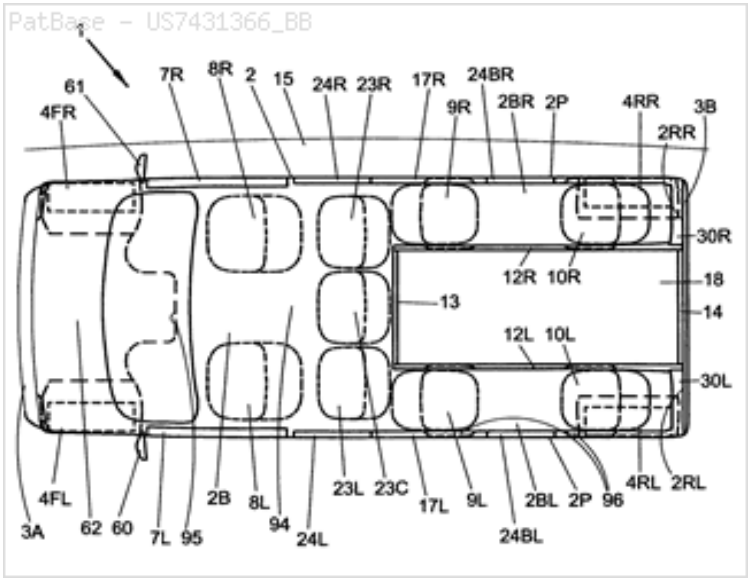
US class: 296/181.1 296/26.01 296/26.03 296/26.08 296/26.09 296/26.12 296/26.13 296/64 296/67

Classification Explorer

Cited documents: US6669261 BB, US2007102947 AA, US2004245794 AA,

Forward Citations: WO14165819, US9403472, US9254766, US8894031, US2012235006, US2011204676, US2009218849, JP2016519628, EP2981459,

Abstract:
Source: US2007273177A The invention provides an innovative and practical new class of crossover motor vehicles for carrying passengers and for carrying cargo in a cargo or pickup bed, while still being of sufficiently small dimensions as to be garage–able in many home garages. Representative embodiments can carry 6 or 7 or 9 persons in comfortable seats all with adjacent or facing seats for companions; plus substantial varied cargos, which can potentially include sporting or recreational equipment such as bicycles or a powered waterscooter or snowmobile or motorcycle; camping gear including a 9–person tent; furniture such as a Queen bed set; appliances such as a washer and dryer; utility equipment such as a snowblower or riding lawnmower; or substantial quantities of items such as lumber, bark or fertilizer.



0) US2016272264A – TILTING MECHANISM FOR A WHEELED VEHICLE

12) Family number: 59232109 (US2016272264A) © PatBase

Title: TILTING MECHANISM FOR A WHEELED VEHICLE

Priority: DK20130000640 20131108 EP20140799704 20141107 WO2014EP74050 20141107

Family:

Publication number	Publication date	Application number	Application date
AU2014345540 AA	20150514	AU20140345540	20141107
CA2929109 AA	20160428	CA20142929109	20141107
CN105829201 A	20160803	CN201480061149	20141107
DE202014010970 U1	20170323	DE201420010970U	20141107
EP3066001 A1	20160914	EP20140799704	20141107
US2016272264 AA	20160922	US20140033914	20141107
WO15067760 A1	20150514	WO2014EP74050	20141107

Probable Assignee: BUTCHERS AND BICYCLES APS

Assignee(s):(std)**:** BUTCHERS AND BICYCLES APS ; MICRO MOBILITY SYSTEMS AG

Assignee(s): MOGENSEN MORTEN ; WAGENER MORTEN

Inventor(s):(std)**:** MOGENSEN MORTEN ; WAGENER MORTEN

Agent(s): WRAYS PTY LTD; SMART AND BIGGAR; AWAPATENT A S; ROHDE VIBEKE ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G21/00 B60K5/10 B62D9/02 B62K5/05 B62K5/08 B62K5/10 B62K7/04 B62M6/40 (Advanced/Invention)

CPC: B60G21/007 B60G3/20 B60G2200/144 B60G2300/45 B62K5/05 B62M6/40 B62K5/10 B62K5/08 B62K7/04

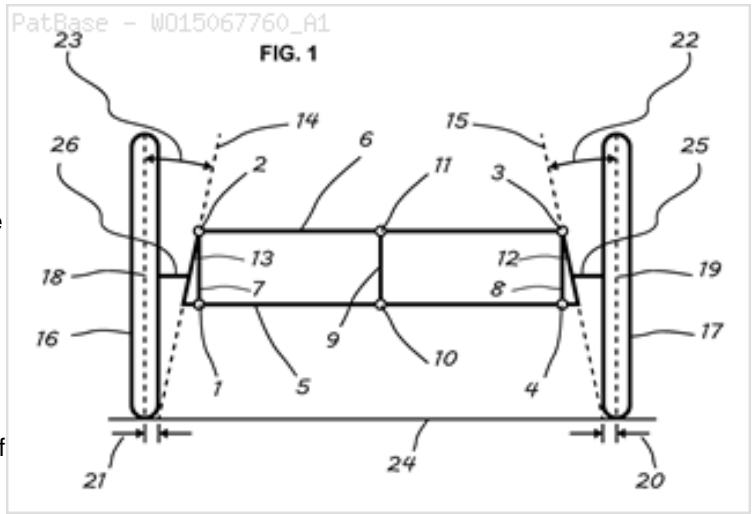
US class: 180/206.1

Classification Explorer

Cited documents: US7487985 BA, US2008258416 AA,

Forward Citations: WO17021905, US2016229480,

Abstract:
Source: US2016272264A This invention relates to a tilting mechanism for wheeled vehicles such as bicycles both electrical and manually powered, motorcycles, mopeds, scooters and the like. The wheeled vehicle, preferably with three wheels or more, driving like a 2–in–line vehicle and handles the same way in the turns and when driving straight. The tilting mechanism for a multiple wheeled vehicle, comprising a tilting mechanism that allows for leaning body and wheels into a turn and independent adjustment of the turning radius, while inducing an effect to the two front wheels similar to Ackerman steering compensation. The principle of the tilting mechanism is a parallelogram structure, which comprises a top rod, a bottom rod and a pair of connecting rods, pivotally connected to each other. To each of the connecting rods a pair of steering elements is pivotally connected and



on two steering elements a pair of wheels is connected.

13) Family number: 44940808 (US2010194068A) © PatBase

Title: VEHICLE WITH IMPROVED INTEGRATED STEERING AND SUSPENSION SYSTEM

Priority: US20090322533 20090203 US20090576192 20091008 US20120532989 20120626

Family:

Publication number	Publication date	Application number	Application date
CN101792002 A	20100804	CN201010104265	20100202
CN101792002 B	20120704	CN201010104265	20100202
US2010194068 AA	20100805	US20090576192	20091008
US7708291 BA	20100504	US20090322533	20090203
US7909340 BB	20110322	US20090576192	20091008
USRE44854 E	20140422	US20120532989	20120626

Probable Assignee: HENDERSON LADDIE GENE

Assignee(s):(std)**:** GENE HENDERSON LADDIE ; HENDERSON LADDIE GENE

Inventor(s):(std)**:** GENE HENDERSON LADDIE ; HENDERSON LADDIE GENE

Agent(s): MARK S HUBERT PC; MARK S

International class (IPC 8–9)**:** B60G21/04 B62D9/04 B62K21/00 B62K25/04 (Advanced/Invention); B60G21/00 (Core/Invention)

CPC: B62D9/02 B62K5/05 B62K5/08 B62K5/10 B60G2300/45

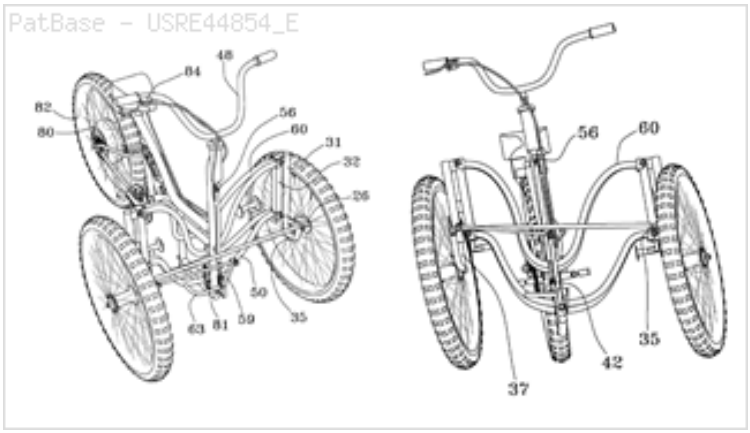
European class: B62D9/02 B62K5/05 B62K5/08 B62K5/10 L60G300/45

US class: 280/124.103 280/124.103P 280/62 280/771 280/778 280/87.1

Classification Explorer

Cited documents: US8070172 BA, US8016302 BA, US7967306 BB, US7722063 BB, US7708291 BA, US7568541 BB, US7487985 BA, US7097187 BB, US6953203 BB, US6817617 BB, US5501478 A, US4740004 A, US4088199 A, US3746118 A, US2011248463 AA, US2009194961 AA, US2008258416 AA, US2008258415 AA, US2008209880 AA, US2008197597 AA, US2008115994 AA, US2007262549 AA, US2007262548 AA, US2007246903 AA, US2007075517 AA, US2005206101 AA, US2005012291 AA, US2004051269 AA, US2003102176 AA,

Forward Citations: USRE44854, USD753553, USD668186, US9517807, US9475535, US9394027, US9359034, US9278711, US9238494, US9174693, US9114844, US8762003, US8641064, US8632088, US7921955, US7909340, US2016137253, US2016129964, US2016031518, US2015329165, US2015307149, US2015291241, US2015210338, US2015076797, US2015042063, US2014346752, US2012258840, US2012232758, US2010194068, US2010096822, US2009160141, JP2014061870, JP2013256237, FR3027583, EP2923930, EP2913256, EP2899109, EP2899107,



Abstract:
Source: US2010194068A A three wheeled vehicle that has an improved dual front wheel integrated steering and suspension system that allows the vehicle to be maneuvered by a combination of arm and leg steering movements coupled with front end leaning that shifts the center of mass of the vehicle down and toward the inside wheel. This transfer of mass counteracts a conventional cornering vehicle's tendency to fling its mass to the outside wheel and lift the inner wheel off the ground as well as changing the angle of the line of force exerted through the tires, and enhancing the vehicles's grip on the ground. The vehicle has a reduced amount of sliding and potential of flipping when turning sharply. The steering system is compatible with traditional ACKERMAN steering geometry wherein the inner wheel turns in a smaller diameter circle than the outer wheel.

0) US2002020570A – ELECTRIC MOTOR VEHICLE

14) Family number: 30003394 (US2002020570A) © PatBase

Title: ELECTRIC MOTOR VEHICLE

Priority: JP20000230250 20000731

Family:

Publication number	Publication date	Application number	Application date
CN1277525 C	20061004	CN20011024466	20010731
CN1336164 A	20020220	CN20011024466	20010731
DE60118065 D1	20060511	DE20016018065	20010728
DE60118065 T2	20060914	DE20016018065T	20010728
EP1177972 A2	20020206	EP20010118207	20010728
EP1177972 A3	20040609	EP20010118207	20010728
EP1177972 B1	20060322	EP20010118207	20010728
JP2002035048 A2	20020205	JP20000230250	20000731
JP4045725 B2	20080213	JP20000230250	20000731
TW592683 B	20040621	TW20010116056	20010629
US2002020570 AA	20020221	US20010897147	20010629
US6655483 BB	20031202	US20010897147	20010629

Probable Assignee: SUZUKI MOTOR CORP

Assignee(s):(std)**:** SUZUKI CO LTD ; SUZUKI K K ; SUZUKI MOTOR CO ; SUZUKI MOTOR CORP

Assignee(s): SUZUKI MOTOR CORP HAMAMATSU ; SUZUKI KK

Inventor(s):(std)**:** HAYASHI KUNHIRO ; HAYASHI KUNIHIRO ; KUNHIRO HAYASHI

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

International class (IPC 8–9)**:** A61G5/04 B60K1/00 B60K1/04 B62J1/00 B62J99/00 B62K5/00 B62K5/04 B62M23/02 B62M7/00 (Advanced/Invention) ; A61G5/00 B60K1/00 B60K1/04 B62J1/00 B62J99/00 B62K5/00 B62M23/02 B62M7/00 (Core/Invention)

International class (IPC 1–7)**:** A61G5/04 B60K1/00 B60K1/04 B60K11/00 B62J1/00 B62J39/00 B62K5/04 B62M23/02

CPC: B62M7/00 B62K5/007 B62K2204/00

European class: B62K5/007 B62M23/02B B62M7/00 L62K204/00

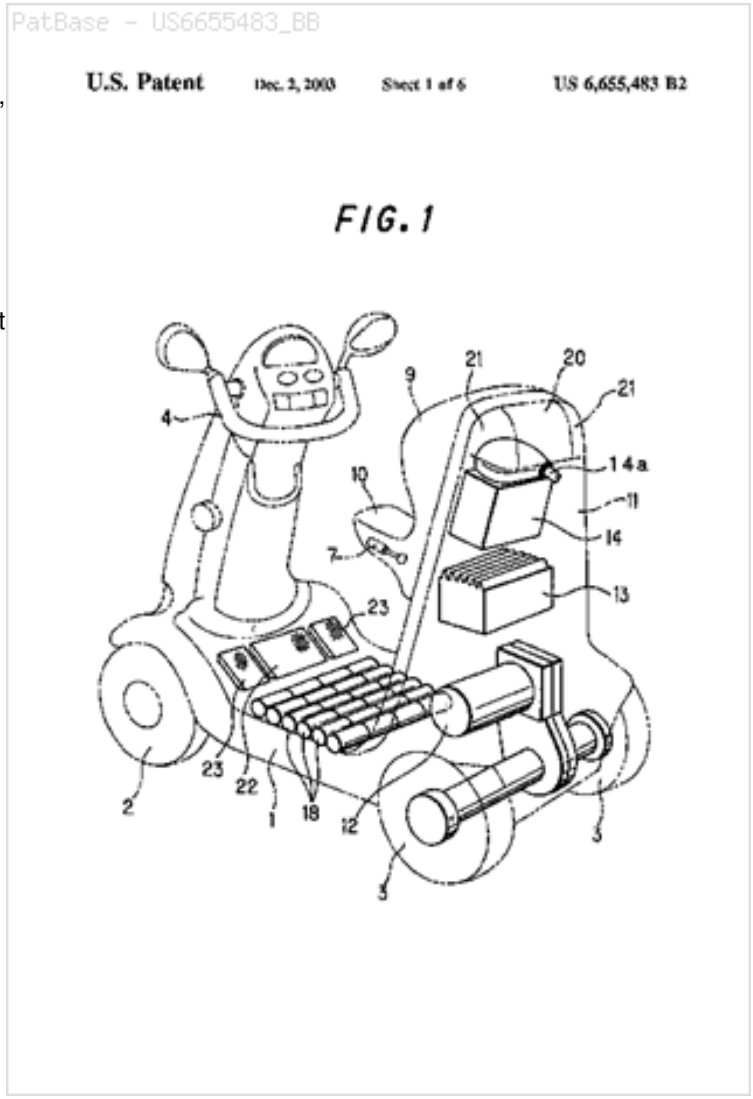
US class: 180/65.1 180/65.100P 180/68.1 180/68.100S 297/344.18

Classification Explorer

Cited documents: USRE34822 E, US6345676 BA, US6313394 BA, US6293610 BA, US6276480 BA, US6189636 BA, US6042170 A, US5960901 A, US5950751 A, US5947222 A, US5921341 A, US5918692 A, US5868573 A, US5647450 A, US5518081 A, US5341894 A, US5033564 A, US4577722 A, US4332415 A, US4042055 A, US3305264 A, US3168156 A, US3166282 A, US3043389 A, JP9309343 A2, JP1997309343, JP10057425, GB1147200 A, CA2222434 AA,

Forward Citations: WO13094597, USD687741, US9339431, US8950529, US8678123, US8340869, US8056658, US7865275, US7699130, US7261172, US2014091543, US2013075177, US2012283929, US2009071740, US2009020348, US2006027407, US2005093357, US2005085962, US2004084239, NL2005526, JP5840846, JP2015074435, JP2012176697, GB2385038, GB2385038, CN104602936,

Abstract:
Source: US2002020570A An electric motor vehicle includes: a floor frame with the front and rear portions raised; four wheels arranged, two at the front and two at the rear of the floor frame; a steering handle projected upward in the front portion for steering the front two wheels; an electric motor for driving the two rear wheels; an inverted U–shaped seat frame projected upward in the rear portion; and a seat with a backrest, adjustable in height and mounted on the seat frame. A rear–side housing is attached on the rear side of the seat frame. In this housing the electric motor, a controller and a charger are arranged in this order from the bottom while a cooling fan with a louver is arranged in the upper portion of the housing.



0) US2017008591A – MOTORCYCLE HAVING INTERACTIVE LEAN CONTROL

15) Family number: 64626787 (US2017008591A) © PatBase

Title: MOTORCYCLE HAVING INTERACTIVE LEAN CONTROL

Priority: US20150797139 20150712

Family:

Publication number	Publication date	Application number	Application date
US2017008591 AA	20170112	US20150797139	20150712
US9555849 BA	20170131	US20150797139	20150712

Probable Assignee: TERRACRAFT MOTORS INC

Assignee(s):(std)**:** ABBOTT JAMES WESLEY ; JONES BAILEY H ; TERRACRAFT MOTORS INC

Inventor(s):(std)**:** ABBOTT JAMES WESLEY ; JONES BAILEY H

Agent(s): MICHAEL G

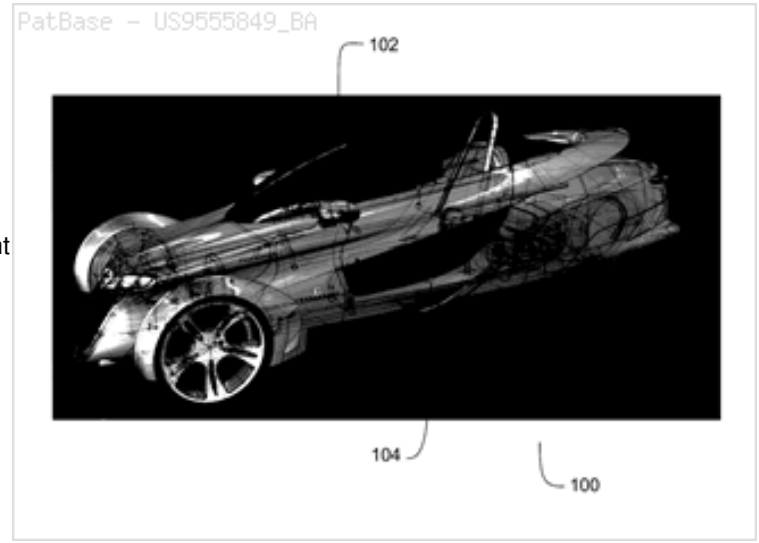
International class (IPC 8–9)**:** B62K5/027 B62K5/10 G05D1/08 G06F17/10 G06G7/48 (Advanced/Invention)

CPC: B62K5/10 B62K5/027 G05D1/0891

Classification Explorer

Cited documents: US8504248 BB,

Abstract:
Source: US2017008591A Systems, methods and apparatus are provided through which in some implementations a motorized tricycle includes a lean mechanism and an active system that is operably coupled to the lean mechanism that receives an signal indicative of an interaction with human, that is operable to detect a lean of the body of the human and that is operable to receive a sensed movement on the seat via multisensory devices, and to generate and send a signal to the lean mechanism from the signal, the lean and the sensed movement.



0) WO12160323A2 – FRONT SUSPENSION SYSTEM SYSTEME DE SUSPENSION ...

16) Family number: 49373453 (WO12160323A2) © PatBase

Title: FRONT SUSPENSION SYSTEM

Priority: GB20110008598 20110520 WO2012GB00418 20120508

Family:

Publication number	Publication date	Application number	Application date
EP2709862 A2	20140326	EP20120726822	20120508
GB201108598 A0	20110706	GB20110008598	20110520
WO12160323 A2	20121129	WO2012GB00418	20120508
WO12160323 A3	20131227	WO2012GB00418	20120508

Probable Assignee: SHOTTER NICHOLAS R

Assignee(s):(std)**:** SHOTTER NICHOLAS R ; SHOTTER NICHOLAS RICHARD

Inventor(s):(std)**:** SHOTTER NICHOLAS RICHARD

Inventor(s): NICHOLAS RICHARD SHOTTER

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): B60G21/00 B60G21/02 B60G21/05 B62D9/02 B62K25/00 B62K25/04 B62K5/00 B62K5/08 (Advanced/Invention)

CPC: B60G21/05 B60G21/007 B60G21/02 B60G2200/13 B60G2204/30 B60G2204/80 B60G2204/82 B60G2206/50 B60G2300/122 B60G2300/124 B62D9/02 B62K25/08 B60G3/01 B60G2300/45

Classification Explorer

Cited documents: WO10015986 A1, WO03018390 A1, WO0244008 A2, US2010147615 AA, US2009108555 AA, US2004160030 AA, GB2436672 A1, GB2435021 A1, EP1998472 A1, EP1918187 A1, EP1884457 A1, EP1694555 B1, EP1561612 A1, EP1025039 A1, EP10003570, EP1000357 A1, EP0782478 A1, EP0606191 A1, EP0469475 A1, EP03253106, EP0325310 A1, EP0294866 A1, EP01998472, EP0199847 A2, DE808191 A,

Abstract:
The invention is a new suspension system for the paired front wheels of motorcycle type vehicles employing a transversely pivoted swing arm for each wheel of the said pair where the invention improves road holding by comparison to the prior art for an equivalent vehicle mass. The invention can also provide a much better suspension deflection than the prior art can deliver without compromising the associated motorcycle type vehicle's angle of lean.

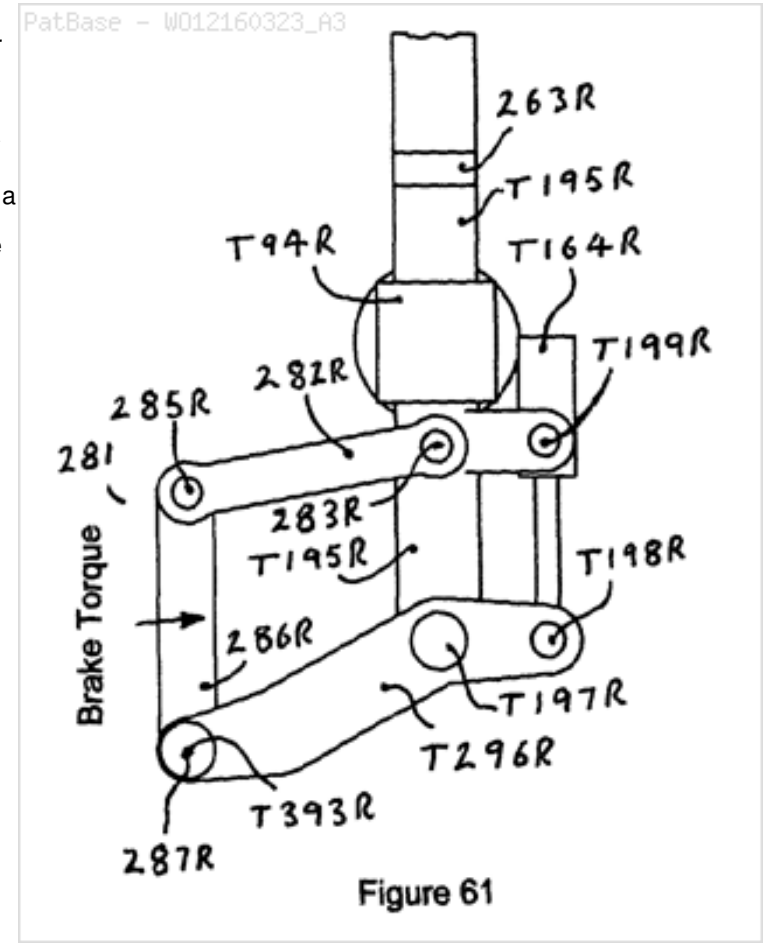


Figure 61

0) US2005236803A – THREE WHEELED VEHICLE

17) Family number: 32361118 (US2005236803A) © PatBase

Title: THREE WHEELED VEHICLE

Priority: US20040802559 20040317

Family:

Publication number	Publication date	Application number	Application date
US2005236803 AA	20051027	US20040802559	20040317

Probable Assignee: SALTON INC

Assignee(s):(std)**:** DALTON COLE ; SUMMERS JEFF

Assignee(s): SALTON INC

Inventor(s):(std)**:** DALTON COLE ; SUMMERS JEFF

Agent(s): SONNENSCHEIN NATH AND ROSENTHAL LLP

International class (IPC 8–9)**:** B62K5/00 B62K5/04 (Advanced/Invention); B62K5/00 (Core/Invention)

International class (IPC 1–7)**:** B62K5/00

CPC: B62K5/05

European class: B62K5/05

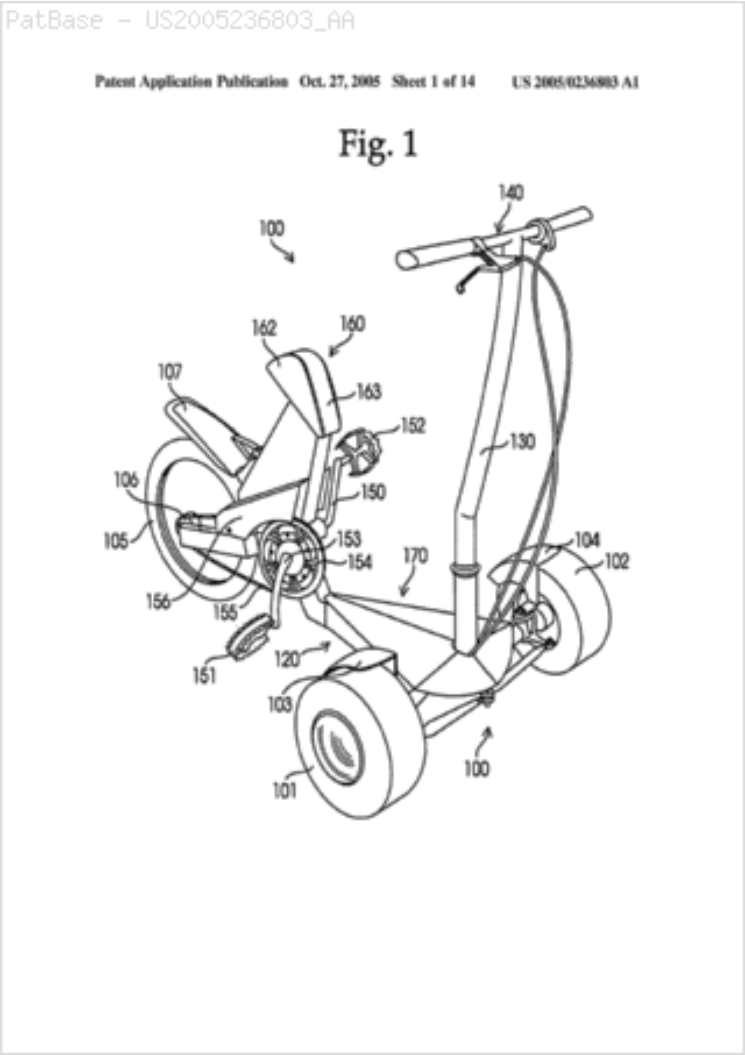
US class: 280/282 280/282P

Classification Explorer

Cited documents: USD357215 S1, USD328266 S1, US6932370 BB, US6367824 BA, US6161860 A, US5762351 A, US5388847 A, US5209506 A, US4763913 A, US4697663 A, US4469344 A, US4132435 A, US3836177 A, US2493817 A, US2468933 A,

Forward Citations: US9174693, US7591337, US7571787, US2006232040, US2006175109, NL2005526,

Abstract:
Source: US2005236803A A vehicle includes two front wheels, a rear wheel having a rear axle assembly, a front axle assembly operably connected to each of the two front wheels, and a frame. The frame has a front end and a rear end. The rear end of the frame is formed as a fixed fork, which is supported by the rear axle assembly. The front end of the frame is supported by the front axle assembly. The vehicle also includes a stem, a handlebar, and a deck. The lower portion of the stem is operably connected to the front axle assembly and the handlebar is connected to the upper portion of the stem. The deck is supported by the frame rearward of the front axle assembly and has sufficient surface area to allow a rider to stand thereon during operation of the vehicle.



0) US2007107954A – ELECTRIC VEHICLE

18) Family number: 31166642 (US2007107954A) © PatBase

Title: ELECTRIC VEHICLE

Priority: CN20032030103U 20030403 CN20032030312U 20030409 WO2004CN00310 20041014 WO2004CN00310 20040405 CN200480006047 20040405

Family:

Publication number	Publication date	Application number	Application date
CN100364805 C	20080130	CN200480006047	20040405
CN1756676 A	20060405	CN200480006047	20040405
CN2611281 Y	20040414	CN20032030312U	20030409
CN2617621 Y	20040526	CN20032030103U	20030403
HK1086533 A1	20080808	HK20060106373	20060602
HK1086533 A3	20060922	HK20060106373	20060602
US2007107954 AA	20070517	US20040552365	20041014
US7874388 BB	20110125	US20040552365	20041014
WO04087457 A1	20041014	WO2004CN00310	20040405

Probable Assignee: LEXTRIX POWER HANGZHOU PTY LTD

Assignee(s):(std)**:** LAIQIEKESI SMALL ELECTRIC VEHI ; LETRIX POWER HANGZHOU PTY LTD ; RANGER SCOTT ; LAIQIEKES SMALL ELECTRIC CYCLE

Assignee(s): LAIQIEKES SMALL ELECTRIC CYCLE CO LTD HANGZHOU ; RANGER SCOTT LETRIX POWER HANGZHOU PTY LTD ; LEXTRIX POWER HANGZHOU PTY LTD ; LAIQIEKESI SMALL ELECTRIC VEHICLES CO LTD HANGZHOU CITY ; LAIQIEKESI SMALL ELECTRIC VEHICLES CO ; LAIQIEKESI SMALL ELECTRIC VEHICLES CO LTD ; LAIQIEKESI SMALL ELECTRIC VEHICLES CO LTD HANGZHOU

Inventor(s):(std)**:** RANGER SCOTT ; SICOT ; SI KAOTE ; SCOTT RANGER

Inventor(s): KAOTE SI

Agent(s): BUTZEL LONG

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8–9): B60G7/00 B60K1/00 B60K1/04 B60L11/00 B60L11/18 B62D3/02 B62K25/04 B62K5/00 B62K5/007 B62M7/06 (Advanced/Invention);
B62K5/00 (Advanced/Non–invention);
B62K25/04 (Core/Invention);
B60L (Subclass/Invention)

International class (IPC 1–7): B60L11/00 B60L11/18 B62K25/04

CPC: Y02T10/7005 B60G7/001 B60G2200/144 B60G2200/44 B60G2204/143 B60G2204/148 B60G2206/124 B60G2300/13 B60G2300/24 B60G2300/26 B60G2300/50 B60K1/04 B60L11/18 B60L11/1877 B60L2200/22 B60L2200/34 B62D3/02 B62K5/007 B62K2005/001 B62M7/06 Y02T10/705 Y10S180/907

European class: B60G7/00A B60K1/04 B60L11/18 B60L11/18M36 B62D3/02 B62K5/007 B62M7/06 L60G200/144 L60G200/440 L60G204/143 L60G204/148 L60G206/124 L60G300/13 L60G300/24 L60G300/26 L60G300/50 L60L200/22 L60L200/34 L62K5/00B Y02T10/70B Y02T10/70H4

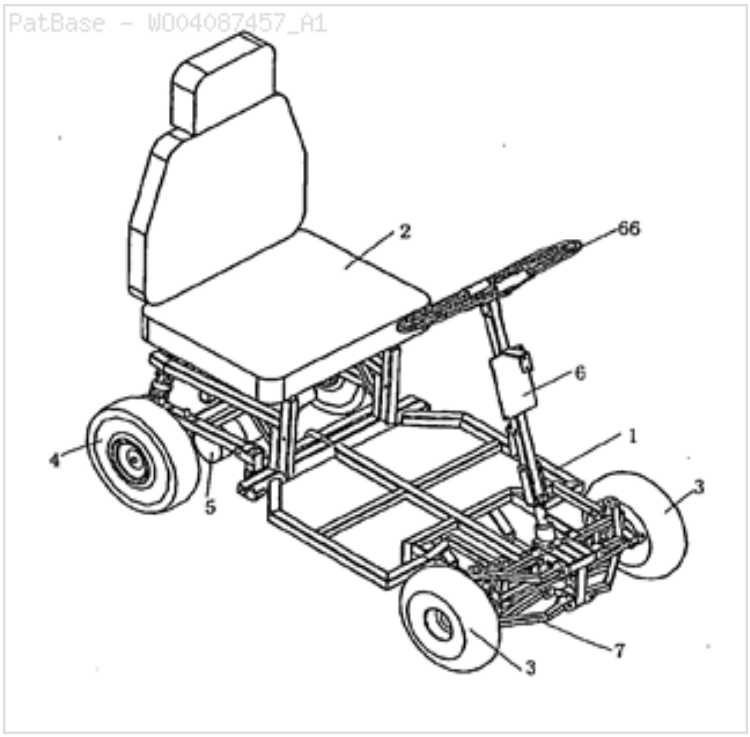
US class: 180/65.1 180/65.100P 180/907

Classification Explorer

Cited documents: US7264272 BB, US7077229 BB, US6851498 BA, US5921338 A, US5911426 A, US5772237 A, US5697465 A, US4573549 A, US3566985 A, US3213957 A, US2003141121 AA, US2002060100 AA, DE19732468 A1,

Forward Citations: WO14111848, US8371404, US2011000731, ITGO20130001, EP2368727, CN102233930,

Abstract:
Source: US2007107954A This invention relates to a mini–type electric vehicle, which is mainly used for individual person or traffic in a certain field. It includes frame, seat, front and rear wheel, driving device, battery, steering system and front wheel suspension device. A casing, where the battery is placed on, protrudes forward at the middle position of the front end of the frame; the suspension device for front wheel appears "Front convex and rear concave" shape and covers the front end of that casing, and pivots to the middle of the front end of the casing. Two front wheels are installed on the front wheel suspension device. The rear edge line of the two front wheels is located at the rear of the battery front edge; Steering system is connected to the front end of the frame and interlocks with the front wheel. Battery is installed at the front so as to balance the weight distribution, improve the driving safety, comfort and steering performance for electric vehicle.



0) US2007075514A – HEADLIGHT MOUNTING ARRANGEMENT

19) Family number: 34363303 (US2007075514A) © PatBase

Title: HEADLIGHT MOUNTING ARRANGEMENT

Priority: US20050722115P 20050930 US20060535257 20060926

Family:

Publication number	Publication date	Application number	Application date
DE102006046145 A1	20070426	DE200610046145	20060928
ITMI20061873 A1	20070401	IT2006MI01873	20060929
JP2007099264 A2	20070419	JP20060267357	20060929
US2007075514 AA	20070405	US20060535257	20060926
US7571787 BB	20090811	US20060535257	20060926

Probable Assignee: HARLEY DAVIDSON MOTOR CO GROUP INC

Assignee(s):(std)**:** HARLEY DAVIDSON MOTOR CO GROUP ; HARLEY DAVIDSON MOTOR CO INC

Assignee(s): HARLEY DAVIDSON MOTOR COMPANY GROUP INC ; HARLEY DAVIDSON MOTOR COMPANY GROUP LLC ; HARLEY DAVIDSON MOTOR CO GROUP INC ; HARLEY DAVIDSON MOTOR CO GROUP LLC

Inventor(s):(std)**:** SAIKI SCOTT J

Inventor(s): SAIKI SCOTT

Agent(s): MICHAEL BEST AND FRIEDRICH LLP

International class (IPC 8–9)**:** B60G17/015 B60G21/00 B60G21/05 B60G21/10 B60G3/20 B60Q1/04 B62D61/06 B62J6/00 B62J6/02 B62K25/04 (Advanced/Invention); B62K5/00 (Advanced/Non–invention)

CPC: B60Q1/0483 B60G7/00 B60G21/007 B60G21/05 B60G2200/144 B60G2202/312 B60G2204/128 B60G2204/129 B60G2204/143 B60G2204/148 B60G2204/414 B60G2300/122 B60G2300/45 B60Q1/0035 B60Q1/124 B62K5/027 B62K5/05 B62K5/10 B62K2005/001 Y10S180/908

European class: B60G21/00D B60G21/05 B60G7/00 B60Q1/00G1 B60Q1/04C B60Q1/124 B62K5/027 B62K5/05 B62K5/10 L60G200/144 L60G202/312 L60G204/128 L60G204/129 L60G204/143 L60G204/148 L60G204/414 L60G300/122 L60G300/45 L62K5/00B

US class: 180/210 180/908 280/124.103 280/124.103P 280/124.134 280/124.134S 362/476 362/476S

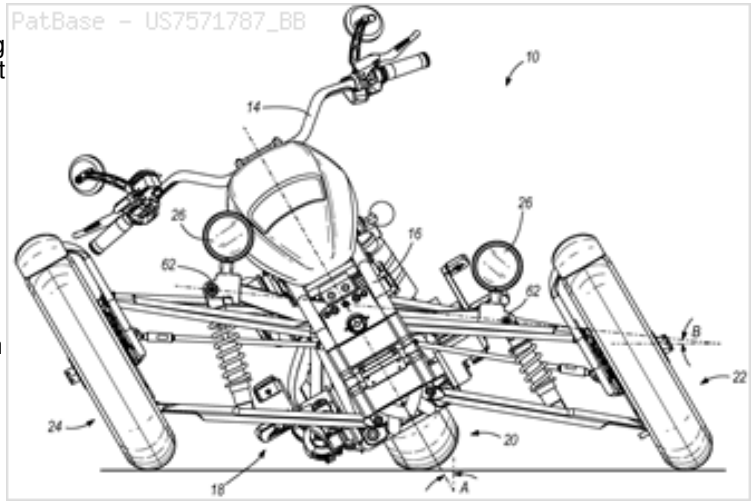
Classification Explorer

Cited documents: WO05002957 A1, USRE32031 E, USD528475 S1, USD502895 S1, USD502894 S1, USD502893 S1, USD502431 S1, USD485788 S1, USD485514 S1, USD479160 S1, USD474431 S1, USD461438 S1, USD446760 S1, USD433656 S1, USD427943 S1, USD424979 S1, USD404688 S1, USD386469 S1, USD384626 S1, USD344914 S1, USD305745 S1, USD295395 S1, USD294686 S1, USD292565 S1, USD278044 S1, USD263693 S1, USD242849 S1, US7485984 BB, US7416046 BB, US7343997 BA, US7143853 BA, US7131650 BB, US7100727 BB, US7090234 BB, US7073806 BB, US7055993 BB, US7029014 BB, US7017685 BB, US7007761 BA, US6976687 BB, US6948581 BB, US6945832 BB, US6908092 BB, US6908091 BB, US6908090 BB, US6886842 BB, US6883814 BB, US6880840 BB, US6874793 BB, US6871718 BB, US6866110 BB, US6863288 BB, US6851691 BB, US6827358 BB, US6817617 BB, US6805362 BA, US6793033 BB, US6783158 BB, US6766876 BB, US6764099 BB, US6763905 BB, US6761241 BB, US6742797 BB, US6739616 BB, US6734645 BB, US6732830 BB, US6719319 BB, US6708579 BB, US6705674 BA, US6688620 BB, US6676146 BB, US6672602 BB, US6659488 BA, US6655705 BB, US6626260 BB, US6622806 BA, US6612389 BA, US6607201 BB, US6601862 BB, US6595531 BB, US6588785 BB, US6575260 BB, US6572130 BB, US6556907 BA, US6554302 BA, US6550797 BB, US6547260 BB, US6547027 BA, US6540243 BB, US6533309 BB, US6523634 BA, US6511078 BB, US6499751 BA, US6498967 BA, US6491122 BB, US6488111 BA, US6478098 BB, US6467561 BA, US6464030 BA, US6435522 BA, US6406036 BA, US6390219 BA, US6328125 BA, US6276480 BA, US6273003 BA, US6257362 BA, US6250649 BA, US6206124 BA, US6170838 B1, US6169939 B1, US6164675 A, US6158279 A, US6062581 A, US6003880 A, US5975225 A, US5960901 A, US5941548 A, US5927424 A, US5899291 A, US5884717 A, US5810383 A,

US5806622 A, US5785141 A, US5765846 A, US5762351 A, US5727864 A, US5692577 A, US5611555 A, US5591282 A, US5580089 A, US5529141 A, US5499689 A, US5487443 A, US5383683 A, US5360078 A, US5343974 A, US5257671 A, US5244190 A, US5240267 A, US5238261 A, US5209506 A, US5169166 A, US5116069 A, US5040812 A, US5039121 A, US5005859 A, US4998596 A, US4974863 A, US4921263 A, US4913255 A, US4903857 A, US4887829 A, US4886149 A, US4811810 A, US4796720 A, US4787470 A, US4744434 A, US4697663 A, US4691799 A, US4690235 A, US4678053 A, US4660853 A, US4639008 A, US4632210 A, US4624469 A, US4600216 A, US4592441 A, US4588196 A, US4583613 A, US4582157 A, US4573702 A, US4546997 A, US4540061 A, US4531606 A, US4526390 A, US4497503 A, US4484648 A, US4478305 A, US4465156 A, US4463824 A, US4453763 A, US4453616 A, US4451065 A, US4437535 A, US4433851 A, US4431205 A, US4431204 A, US4423795 A, US4412595 A, US4373600 A, US4360224 A, US4351410 A, US4325565 A, US4325448 A, US4313517 A, US4287960 A, US4277076 A, US4237995 A, US4165093 A, US4162605 A, US4159128 A, US4133551 A, US4123079 A, US4119170 A, US4114713 A, US4088338 A, US4088199 A, US4087108 A, US4087107 A, US4087106 A, US4087104 A, US4076270 A, US4072325 A, US4071261 A, US4065146 A, US4065144 A, US4064957 A, US4054300 A, US4050713 A, US4050712 A, US4050711 A, US4049287 A, US4047732 A, US4045048 A, US4020914 A, US3977694 A, US3966006 A, US3938609 A, US3826326 A, US3776353 A, US3610358 A, US3572456 A, US3008729 A, US2961254 A, US2788986 A, US2689747 A, US2641480 A, US2279120 A, US2006273655 AA, US2006255550 AA, US2006254842 AA, US2006249921 AA, US2006180372 AA, US2006151232 AA, US2006097471 AA, US2006086555 AA, US2006065464 AA, US2006065463 AA, US2006054370 AA, US2005279244 AA, US2005236803 AA, US2005236791 AA, US2005217909 AA, US2005205322 AA, US2005205321 AA, US2005205320 AA, US2005109552 AA, US2005099818 AA, US2005072613 AA, US2005039967 AA, US2005012291 AA, US2004227321 AA, US2004227318 AA, US2004173981 AA, US2004140644 AA, US2004129473 AA, US2004100059 AA, US2004094350 AA, US2004072479 AA, US2004036250 AA, US2004035625 AA, US2004035624 AA, US2004035623 AA, US2003188906 AA, US2003174493 AA, US2003102176 AA, US1975117 A, JPS6231574, JPS59114183, JPS5326044, JPS53104938, JP62031574 A2, JP59114183 A2, JP53104938 A2, JP53026044 A2, JP5139357 A2, JP2000313382 A2,

Forward Citations: USD761692, USD710274, USD689794, USD682158, USD678124, USD656435, USD598328, USD596081, USD593908, USD593455, USD581846, USD581320, USD581319, US9527543, US9521307, US9188198, US9131135, US9114844, US9004214, US8925940, US8887853, US8762003, US8695746, US8544587, US8540045, US8181981, US8070172, US8016462, US7963361, US7934735, US2016137251, US2014204598, US2012232758, US2010320023, US2010309369, US2010195339, US2010075727, US2010059945, US2009289437, US2009212529, TWI554426, JP6086911, JP5331808, JP2014526996, JP2011524836, JP2010536660, JP2010155486, DE102010052716, CN103552440, CN102233930,

Abstract:
Source: US2007075514A A vehicle comprising a frame, at least one wheel operable to contact a substantially horizontal support surface, a prime mover supported by the frame and in driving engagement with the at least one wheel, a suspension system operable to maintain the frame in an upright position while driving along a straight path and to permit the frame to lean relative to the support surface while cornering, and at least two headlights coupled to the suspension system and arranged in a substantially horizontal configuration, wherein the headlights remain in the substantially horizontal configuration when the frame is in the upright position and when the frame is leaning.



0) US2002023420A – LAWN MOWER SUSPENSION AND ASSEMBLY METHOD

20) Family number: 30083091 (US2002023420A) © PatBase

Title: LAWN MOWER SUSPENSION AND ASSEMBLY METHOD

Priority:

US19960022865P 19960726 US19960022865P 19960727 US19970022868P 19970726
US19970359537 19970722 US19980144499 19980831 US19980119818 19980721
US19970898801 19970723 US19970063362P 19971028 US19970053403P 19970722
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Family:

Publication number	Publication date	Application number	Application date
AU199912045 A1	19990517	AU19990012045	19981028
CA2273790 AA	19990601	CA19982273790	19981028
EP0964612 A1	19991222	EP19980955178	19981028
EP0964612 A4	20010117	EP19980955178	19981028
JP2001507242 T2	20010605	JP19990511415T	19981028
US2002023420 AA	20020228	US20010978946	20011016
US2002035824 AA	20020328	US20010879800	20010612
US2003106297 AA	20030612	US20020285350	20021031
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US2007012015 AA	20070118	US20060523107	20060919
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US2008289168 AA	20081127	US20080154220	20080520
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US2011197419 AA	20110818	US20110048742	20110315
US5946893 A	19990907	US19980144499	19980831
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US8065864 BB	20111129	US20090475235	20090529
US8397367 BB	20130319	US20110048742	20110315
WO9921406 A1	19990506	WO1998US22862	19981028

Probable Assignee: BRIGGS AND STRATTON CORP

Assignee(s):(std)**:** BRIGGS AND STRATTON CORP ; CROSSWAY BRIAN ; DECKER WILLIAM ; FERRIS A DIVISION OF SIMPLICIT ; FERRIS IND INC ; FERRIS IND A DIVISION OF SIMPL ; MELONE MARK J ; MARSHALL JAMES F ; LAUREN ROBERT S ; MARSHALL JAMES ; MARSHALL FRANK

Assignee(s):

FERRIS IND ; FERRIS A DIVISION OF SIMPLICITY MFG INC ; FERRIS A DIVISION OF SIMPLICITY MFG ; FERRIS IND A DIVISION OF SIMPLICITY MANUFAC ; GORDON TODD B ; FERRIS IND A DIVISION OF SIMPLICITY MFG INC

Inventor(s):(std)**:** CROSSWAY BRIAN ; DECKER WILLIAM ; FERRIS DAVID ; GORDON TODD B ; LAUREN ROBERT S ; MARSHALL FRANK ; MARSHALL JAMES ; MARSHALL JAMES F ; MELONE MARK J ; NORDBERG HENRY ; SHEA WILLIAM ; TODD B GORDON

Inventor(s): MELONE MARK ; LAUREN ROBERT

Agent(s): CULLENS PATENT AND TRADE MARK ATTORNEYS; CULLENS PTY LTD; BORDEN LADNER GERVAIS LLP; MICHAEL BEST AND FRIEDRICH LLP; GREENBERG TRAURIG (PHX); GREENBERG TRAURIG PHX; GREENBERG TRAURIG LLP

Designated states: AT AU BE CA CH CY DE DK ES FI FR GB GR IE IT JP LU MC NL PT SE

International class (IPC 8–9)**:** A01D34/00 A01D34/03 A01D34/43 A01D34/63 A01D34/64 B23P11/00 B60B33/00 B60G1/02 B60G11/16 B60G21/00 B60G23/00 B60G3/01 B60G3/18 B60G3/20 B60G9/00 B60K7/00 B60P1/02 B62D21/00 (Advanced/Invention); B60G23/00 B60G9/00 B60K7/00 B60P1/02 B62D21/00 (Advanced/Non–invention); A01D34/63 B60B33/00 B60G11/00 B60G3/00 B60G3/18 (Core/Invention)

International class (IPC 1–7)**:** A01D34/03 A01D34/43 A01D34/64 B60G1/00 B60G1/02 B60G21/00 B60G3/20 B60G9/00 B60G9/02 B60K7/00 B62D21/02 B62D49/00

CPC: Y10S56/10 Y10S56/03 B60B33/0015 Y10T29/49826 B60B33/00 B60G3/20 B60G11/54 B60G2200/10 B60G2204/143 B60G2204/43 F16F3/12 Y10T29/49622 Y10T29/49904 A01D34/661 B60B33/0005 B60B33/0021 B60B33/0039 B60B33/0049 B60B33/0057 B60B33/0068 B60B33/0073 B60G3/18 B60G11/16 A01D34/74 B60G3/01 A01D2101/00 B60G2200/144 B60G2204/124 B60G2204/148 B60G2204/4232 B60G2206/50 B60G2300/084 A01D34/64

European class: A01D34/64 A01D34/66A B60B33/00 B60B33/00B2 B60B33/00B4 B60B33/00B4B B60B33/00E2 B60B33/00F2 B60B33/00F8 B60B33/00G4A B60B33/00G4C B60G11/16 B60G11/54 B60G3/01 B60G3/18 B60G3/20 F16F3/12 K01D101/00 L60G200/100 L60G200/144 L60G204/124 L60G204/143 L60G204/148 L60G204/4232 L60G204/43 L60G206/50 L60G300/084

US class: 180/311 280/124.1 280/124.111 280/124.111S 280/124.113 280/124.135 280/124.135S 280/124.141 280/781 29/428 29/428P 29/428S 29/469 29/897.2 56/14.7 56/14.700P 56/14.700S 56/15.7 56/15.8 56/15.800P 56/15.800S 56/15.9 56/15.900S 56/DIG.1 56/DIG.10 56/DIG.3

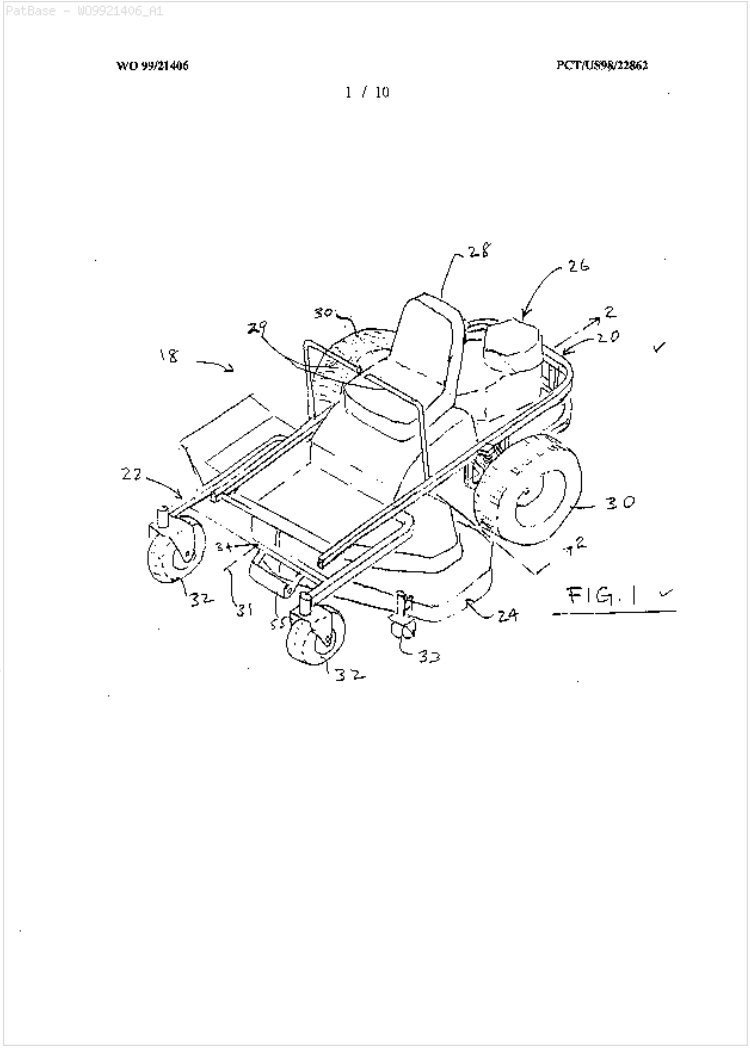
Classification Explorer

Cited documents: US8065864 BB, US7930813 BB, US7722063 BB, US7587886 BA, US7546723 BB, US7503161 BA, US7448191 BB, US7441392 BB, US7374187 BB, US7325387 BB, US7197863 BA, US7152389 BB, US7107746 BB, US7089722 BB, US6988351 BB, US6868658 BB, US6857254 BB, US6857254 BA, US6729116 BA, US6711885 BB, US6698172 BB, US6688091 BB, US6588188 BB, US6510678 BB, US6510678 BA, US6460318 BA, US6454041 BB, US6449933 BA, US6394216 BA, US6276119 BA, US6244025 BA, US6170242 BA, US6170242 B1, US6159959 A, US6101794 A, US6085508 A, US6062333 A, US6044633 A, US5947495 A, US5946893 A, US5887671 A, US5873224 A, US5865020 A, US5806291 A, US5799475 A, US5797252 A, US5765858 A, US5623996 A, US5570570 A, US5531466 A, US5507138 A, US5474315 A, US5435591 A, US5433066 A, US5431243 A, US5388850 A, US5381648 A, US5367864 A, US5367641 A, US5355664 A, US5337544 A, US5322143 A, US5305588 A, US5288091 A, US5197755 A, US5129218 A, US5065568 A, US5048853 A, US5042238 A, US4986064 A, US4978131 A, US4957307 A, US4942726 A, US4911466 A, US4869057 A, US4843804 A, US4809796 A, US4787646 A, US4724661 A, US4724461 A, US4719742 A, US4657271 A, US4621699 A, US4416109 A, US4321699 A, US4320616 A, US4301881 A, US4159613 A, US4159128 A, US4106269 A, US4077191 A, US3970162 A, US3940161 A, US3913696 A, US3792748 A, US3758130 A, US3719371 A, US3696594 A, US3686840 A, US3527033 A, US3472005 A, US3408798 A, US3408089 A, US3292945 A, US3250064 A, US3243007 A, US3226853 A, US3187821 A, US3175343 A, US3159959 A, US3024041 A, US2978857 A, US2902290 A, US2874972 A, US2859578 A, US2805079 A, US2709881 A, US2699954 A, US2504259 A, US2482216 A, US2209804 A, US2063704 A, US2032657 A, US2012047862 AA, US2010011732 AA, US2009100817 AA, US2008289168 AA, US2008258418 AA, US2003140610 AA, US2002088217 AA, US1826113 A, JP6178605 A2, JP6178605, GB1176847 A, FR2627660 A1, EP0262285 B1, EP0262285 A1, AT330491 B, AT330491, AT330491, AT260596 B, AT260596, AT260596,

Forward Citations: WO17017507, WO07084524, WO02054929, USD719980, USD590844, USD528562, US9597957, US9591803, US9499204, US9481242, US9445543, US9327553, US9161490, US9020659, US8955832, US8930024, US8813780, US8727062,

US8578687, US8480106, US8444156, US8397367, US8262101, US8234784, US8220557, US8210552, US8196936, US8186475, US8167324, US8132822, US8132456, US8079422, US8077212, US8065864, US8056653, US8006796, US7931282, US7930813, US7926582, US7896095, US7882914, US7866671, US7784557, US7779929, US7717188, US7712751, US7708292, US7640994, US7614467, US7614207, US7587886, US7575064, US7575063, US7520114, US7448191, US7441392, US7416188, US7374187, US7341115, US7337600, US7325387, US7197863, US7107746, US7089722, US7076348, US7070005, US7055835, US7024845, US6988351, US6868658, US6857254, US6854252, US6748729, US6711885, US6688091, US6594980, US6588188, US6550705, US6543798, US6513881, US6510678, US6494028, US6460318, US6382646, US6276119, US6244025, US2017028844, US2016212934, US2015314643, US2015040531, US2015006005, US2014343570, US2013338849, US2013291509, US2013291508, US2012111655, US2011284306, US2011277433, US2011272900, US2011234153, US2011197419, US2011193309, US2011192128, US2011084457, US2010320704, US2010281973, US2010263887, US2010199622, US2010192532, US2010176563, US2010011732, US2009308040, US2009231451, US2009199403, US2009096178, US2009078511, US2009038814, US2009033054, US2009031687, US2008289168, US2008202874, US2008190087, US2008099215, US2008041600, US2007169972, US2007151221, US2007051082, US2007012015, US2006225899, US2006144029, US2006090437, US2006070366, US2006070365, US2006042938, US2006032205, US2005268586, US2005257965, US2005173133, US2005144923, US2005053447, US2004251649, US2004244348, US2004093840, US2004011013, US2003106297, US2003005677, US2002194826, US2002134869, JP2012120448, EP1958492, DE102016207400, AU773976, AU2007207589,

Abstract:
Source: US2002023420A A lawn mower includes a front wheel suspension system as well as a rear wheel suspension system. The front wheel suspension system includes upper and lower suspension struts that are pivotably connected between a main frame of the lawn mower and a longitudinal suspension strut that is connected to a front wheel. A spring is connected between an extension of the upper suspension strut and a front transverse member of the main frame. The rear wheel suspension system includes upper and lower links that are pivotably connected between vertical struts that are connected between upper and lower frame members of the main frame and a motor mount. A spring is connected between a spring bracket extending from the upper frame member and either the motor mount or a motor mounted in the motor mount. In order to prevent scalping while turning, a floating cutter deck is suspended from the front and rear wheel suspension systems rather than from the main frame or chassis of the mower. An alternative embodiment includes a hinged pivoting subframe with springs between the main frame and the left and right halves of the subframe. In this alternative embodiment, the front of the cutter deck is suspended from the main frame while the rear of the cutter deck is suspended from the rear wheel suspension system.



0) US4903857A – LEANING VEHICLE WITH CENTRIFUGAL FORCE COMPENSA...

21) Family number: 3349660 (US4903857A) © PatBase

Title: LEANING VEHICLE WITH CENTRIFUGAL FORCE COMPENSATION

Priority: US19880259333 19881018

Family:

Publication number	Publication date	Application number	Application date
US4903857 A	19900227	US19880259333	19881018

Probable Assignee: KLOPFENSTEIN KING L

Assignee(s):(std)**:** KLOPFENSTEIN KING L

Inventor(s):(std)**:** KLOPFENSTEIN KING L

International class (IPC 8–9): B62K5/08 (Advanced/Invention); B62K5/00 (Core/Invention)

International class (IPC 1–7): B62D9/02 B62K5/08

CPC: B62K5/05 B62K5/06 B62K5/08 B62K5/10

European class: B62K5/05 B62K5/06 B62K5/08 B62K5/10

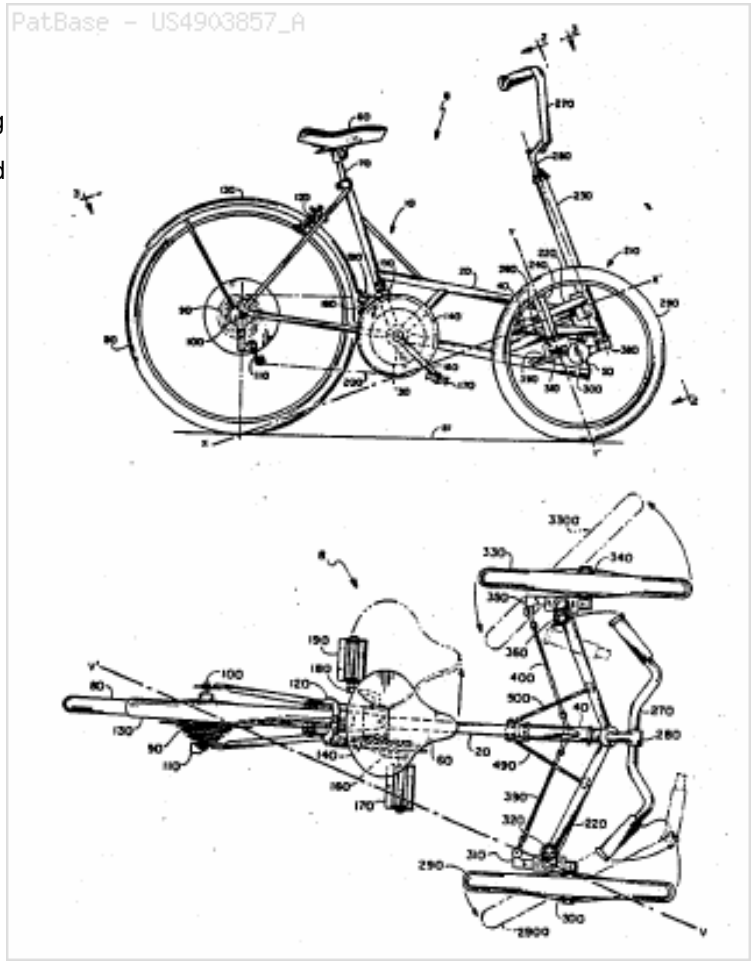
US class: 280/112.2 280/267 280/269 280/772

Classification Explorer

Cited documents: US4740004 A, US4660853 A, US4650213 A, US4634137 A, US4632413 A, US4624469 A, US4469344 A, US4360224 A, US4351410 A, US4088199 A, US4072325 A, US4020914 A, US3746118 A, US3645558 A, US3447623 A, US3237961 A, JP60000025, CA981717 A1,

Forward Citations: WO12059902, WO11008826, WO11008826, WO07078383, WO06121333, US9114844, US8973930, US8911332, US8662228, US8535206, US8430713, US8210555, US7976046, US7887070, US7845666, US7694986, US7641207, US7591337, US7571787, US7543829, US7481443, US7281725, US7006901, US6902177, US6763905, US6402174, US6086078, US5762351, US5145196, US2016096574, US2014125027, US2013313802, US2012258840, US2012181765, US2010237582, US2010230924, US2009315282, US2009280718, US2009224524, US2009200766, US2008174087, US2007290470, US2007205576, US2007007745, US2005074316, US2004251655, US2004098185, US2002190494, NL1028250, JP2009526681, FR2667041, FR2664557, EP3112245, EP2399811, EP1563716, EP1391374, EP0466624, DE202015105238, CN102596698, CN102596698, AT412151,

Abstract:
Source: US4903857A A three wheeled vehicle, with two steerable front wheels and a driven rear wheel which may be either rider– or motor–powdered, includes steering/coupling linkage disposed adjacent to the lower end of a steering column having a handlebar attached to its upper end. The steering/coupling linkage pivotally couples a forward frame to a rear frame which supports the rider and includes the rear wheel and its means for propulsion. The steering/coupling linakge includes a pivot shaft, a bearing housing and a mechanical connection for leaning the rear frame in the direction of a turn so as to compensate for centrifugal force encountered in turning the vehicle. The mechanical connection causes the rear frame to lean in a controlled relationship to the amount of rotation of the steering shaft, within rotational limits, to emulate the leaning action of a conventional bicycle when making a turn.



0) US6547027B – ALL TERRAIN VEHICLE

22) Family number: 28467923 (US6547027B) © PatBase

Title: ALL TERRAIN VEHICLE

Priority: US20000574234 20000519

Family:

Publication number	Publication date	Application number	Application date
US6547027 BA	20030415	US20000574234	20000519

Probable Assignee: BOMBARDIER RECREATIONAL PRODUCTS INC

Assignee(s):(std)**:** BOMBARDIER INC

Assignee(s): BOMBARDIER RECREATIONAL PRODUCTS INC

Inventor(s):(std)**:** KALHOK DAVID ; PORTELANCE MARTIN ; RONDEAU PIERRE

International class (IPC 8–9)**:** B62J1/12 B62K5/00 (Advanced/Invention); B62K5/00 (Advanced/Non–invention)

International class (IPC 1–7)**:** B62D21/00

CPC: B62K5/01 B62J1/12 B62K2005/001

European class: B62J1/12 B62K5/01 L62K5/00B

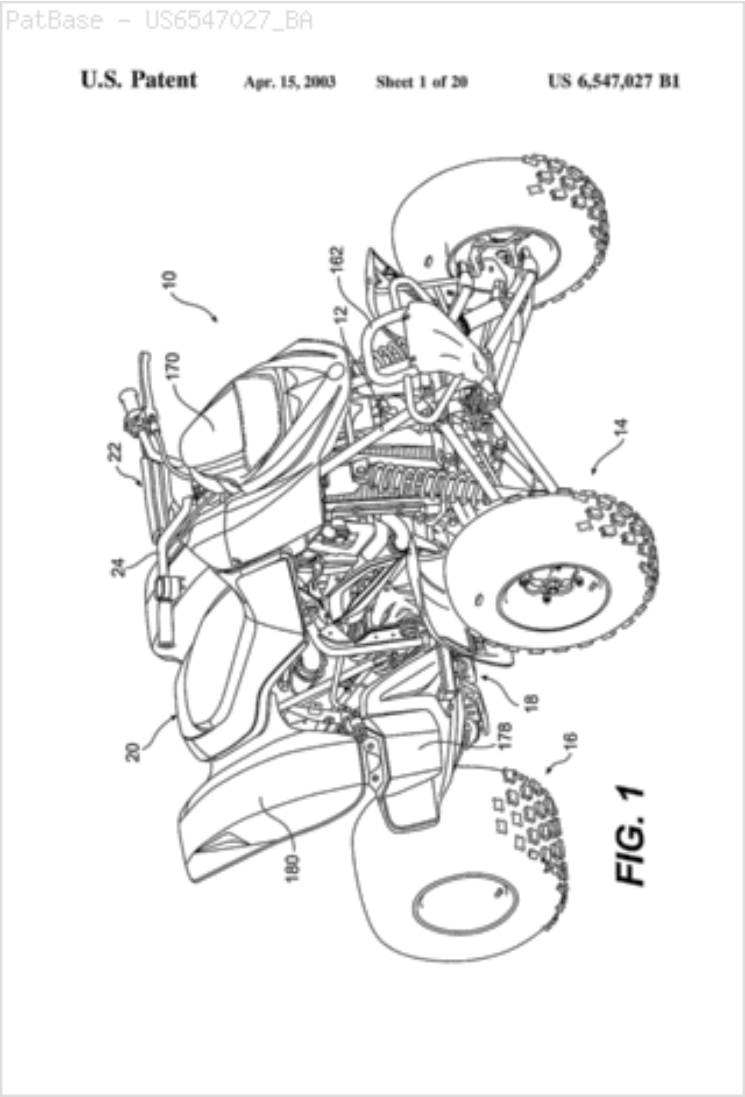
US class: 180/210 180/215 180/312 280/156 280/157 297/195.1

Classification Explorer

Cited documents: US6109621 A, US5353734 A, US5074573 A, US4836324 A, US4744432 A, US4457524 A, US4413700 A, US4325562 A, US1910635 A, JP60124581 A2,

Forward Citations: WO09008779, WO08143836, WO08143836, USD592116, US9266580, US9050869, US9045191, US9004214, US8973696, US8783720, US8622428, US8596398, US8430444, US8191930, US8191929, US8191677, US8091657, US8075007, US7954853, US7950736, US7942447, US7845452, US7806217, US7802816, US7757799, US7708105, US7669678, US7658411, US7644791, US7641207, US7624835, US7624829, US7618063, US7604562, US7591337, US7571787, US7537499, US7530419, US7461851, US7448664, US7367573, US7306069, US7231996, US7228930, US7168998, US7086691, US7055642, US7055642, US6964314, US6702058, US2013015634, US2012241237, US2012186895, US2011198831, US2011198830, US2011012334, US2010194088, US2010108428, US2009294199, US2009255747, US2009200766, US2009071738, US2008284124, US2008283327, US2008283326, US2008236923, US2008203795, US2008115991, US2007257516, US2007257479, US2007176384, US2007169975, US2007075517, US2007075514, US2007066438, US2006197331, US2006192375, US2006186699, US2006131827, US2006090950, US2006048987, US2005253353, US2005217912, US2005205315, US2005178603, US2005140178, US2004195035, US2004188156, US2004035624, US2003001377, EP1541465, EP1516809, CN102126522, CN102126521, AU2005205848,

Abstract:
Source: US6547027B An all terrain vehicle, also known as an ATV, has a seat designed to comfortably accommodate a rider over a wide variety of rugged terrain. The seat is profiled so that the rider may easily shift body weight and lean with the vehicle while traversing steep and uneven terrain. The seat has a dip and taper positioned beneath a riders' knee and lower thigh to provide the profile. The ATV is also provided with front fenders and mud flaps to protect the rider from debris. The fenders rotate with the wheel to provide the rider with maximum wheel visibility and access. The fenders can also be releasable, thereby rotating around the axis of rotation of the front wheels to break free from obstacles and provide easy access to the wheels beneath the fender. The ATV provides exceptional rider comfort and control.



0) GB2508709A – PASSENGER CARRYING VEHICLE

23) Family number: 52584734 (GB2508709A) © PatBase

Title: PASSENGER CARRYING VEHICLE

Priority: GB20120017962 20121008

Family:

Publication number	Publication date	Application number	Application date
GB201217962 A0	20121121	GB20120017962	20121008
GB201317807 A0	20131120	GB20130017807	20131008
GB2508709 A1	20140611	GB20130017807	20131008

Probable Assignee: HENTY CAPITAL LTD

Assignee(s):(std)**:** HENTY CAPITAL LTD

Assignee(s): HENTY CAPITAL LIMITED

Inventor(s):(std)**:** HENTY PAUL

Inventor(s): PAUL HENTY

International class (IPC 8–9)**:** B62J1/14 B62K5/05 B62K7/00 (Advanced/Invention)

CPC: B62J1/14 B62K5/05 B62K7/00 B62K5/02

Classification Explorer

Cited documents: KR200432629 Y1, JP5064854 A2, JP2010285101 A2, JP2009234577 A2, GB1061624 A,

Forward Citations: WO17012869,

Abstract:
Source: GB2508709A A passenger−carrying vehicle 700 comprising a motor−powered scooter and a passenger−carrying section 712, the motor scooter comprising a rider or driver seat 703 and the passenger−carrying section 712 comprising a passenger seat. The passenger−carrying section 712 comprises a module mounted on or integral with a rear portion of the scooter, said module712 and said passenger seat being aligned with a longitudinal vehicular axis and wherein the passenger seat is arranged to be rearward−facing in the module and the scooter comprises a step−through frame. Also claimed is a passenger−carrying module for use with a motor powered bike or motor scooter, wherein the passenger−carrying module comprises a passenger seat, the passenger−carrying module being adapted for mounting on a rear portion of said scooter such that said module and said passenger seat therein are aligned with a longitudinal vehicular axis and wherein the passenger seat is arranged to be rearward−facing in the module. The scooter may be three−wheeled with two front wheels 704 and a single rear wheel 705, the scooter being adapted to lean when steering around bends.

PatBase - GB2508709_A1

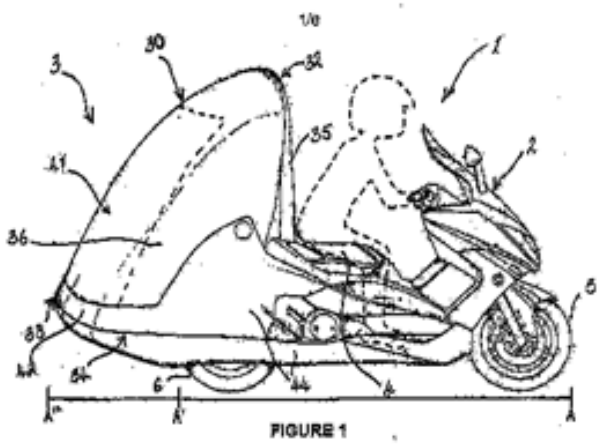


FIGURE 1

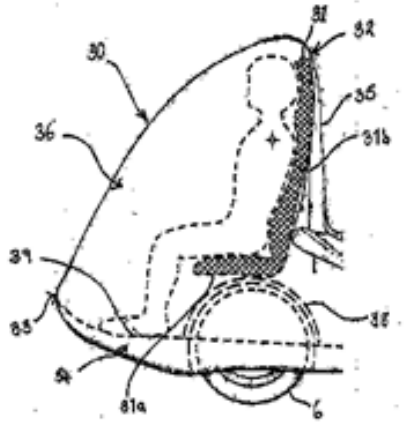


FIGURE 2

0) CA2308987A – ALL TERRAIN VEHICLE VEHICULE TOUT TERRAIN

24) Family number: 28071554 (CA2308987A) © PatBase

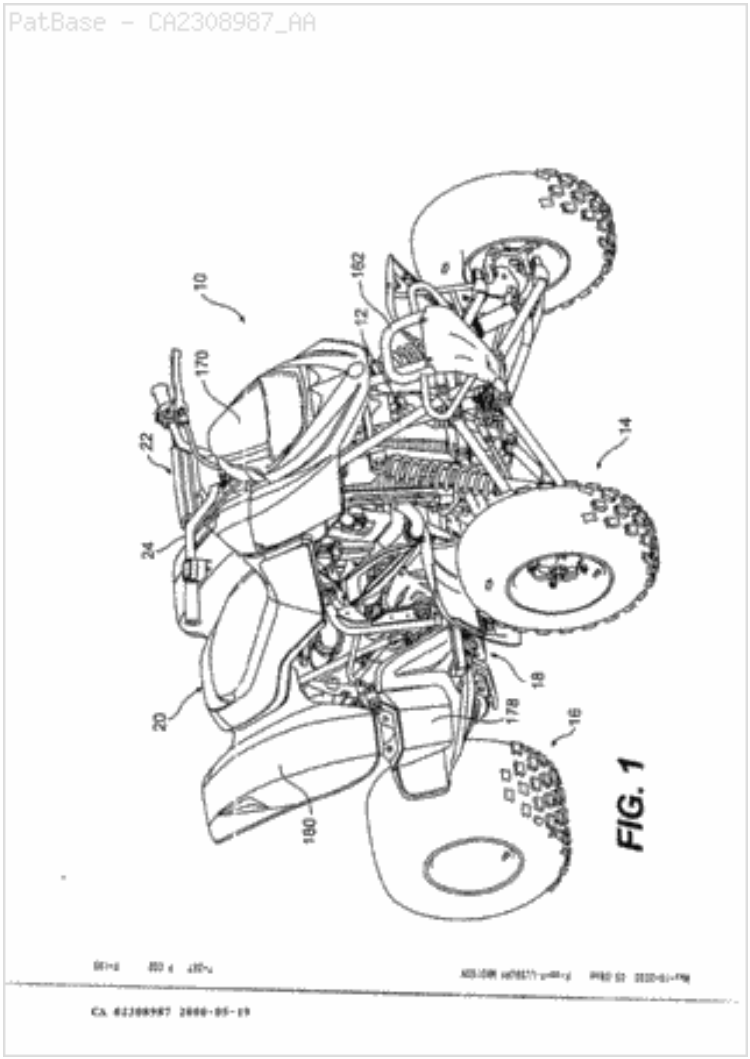
Title:	ALL TERRAIN VEHICLE
Priority:	CA20002308987 20000519

Family:

Publication number	Publication date	Application number	Application date
CA2308987 AA	20011119	CA20002308987	20000519

Probable Assignee:	BOMBARDIER INC
Assignee(s):(std)**:**	BOMBARDIER INC
Assignee(s):	BOMBARDIER RECREATIONAL PRODUCTS INC ; KALHOK DAVID ; PORTELANCE MARTIN ; RONDEAU PIERRE
Inventor(s):(std)**:**	RONDEAU PIERRE ; PORTELANCE MARTIN ; KALHOK DAVID
International class (IPC 8–9)**:**	B60N2/24 B62D25/18 B62D63/02 B62J1/12 B62J15/00 B62K5/00 (Advanced/Invention); B60N2/24 B62J1/00 B62J15/00 B62K5/00 (Core/Invention)
International class (IPC 1–7)**:**	B60N2/24 B62D25/18 B62D63/02
CPC:	B60N2/24 B62J1/12 B62J15/00 B62K5/01
European class:	B60N2/24 B62J1/12 B62J15/00 B62K5/01
Classification Explorer	
Forward Citations:	US8007005, AU2008200563,

Abstract:
Source: CA2308987A An all terrain vehicle, also know. as an ATV, has a seat designed to comfortably accommodate a rider over a wide variety of rugged terrain. The seat is profiled so that the rider may easily shift body weight and lean with the vehicle while traversing steep and uneven terrain. The seat has a dip and taper positioned beneath a riders' knee and lower thigh to provide the profile. The ATV is also provided with front fenders and mud flaps to protect the rider from debris. The fenders rotate with the wheel to provide the rider with maximum wheel visibility and access. The fenders can also be releasable, thereby rotating around the axis of rotation of the front wheels to break free from obstacles and provide easy access to the wheels beneath the fender. The ATV provides exceptional rider comfort and control.



0) US4020914A – STABILIZED THREE–WHEELED VEHICLE

25) Family number: 1390830 (US4020914A) © PatBase

Title: STABILIZED THREE–WHEELED VEHICLE

Priority: US19760660729 19760223 US19770769946 19770218

Family:

Publication number	Publication date	Application number	Application date
CA1056313 A1	19790612	CA19770272359	19770222
DE2707562 A1	19770922	DE19772707562	19770222
DE2707562 C2	19880107	DE19772707562	19770222
IT1115833 A	19860210	IT19770048171	19770222
US4020914 A	19770503	US19760660729	19760223
US4088199 A	19780509	US19770769946	19770218

Probable Assignee: TRAUTWEIN WOLFGANG DR ING 7758 MEERSBURG DE

Assignee(s):(std)**:** TAUTWEIN WOLFGANG ; TRAUTWEIN WOLFGANG ; TRAUTWEIN WOLFGANG DR ING

Assignee(s): TRAUTWEIN WOLFGANG DR ING 7758 MEERSBURG DE

Inventor(s):(std)**:** TAUTWEIN WOLFGANG ; TRAUTWEIN WOLFGANG ; TRAUTWEIN WOLFGANG DR ING

International class (IPC 8–9)**:** B60G21/00 B62D37/00 B62D61/06 B62D61/08 B62K11/00 B62K13/04 (Advanced/Invention); B60G21/00 B62D37/00 B62D61/00 B62K13/00 (Core/Invention)

International class (IPC 1–7)**:** B60R B62D61/06 B62K13/08 B62K5/02 B62K5/04

CPC: B62K5/10 B62K11/00 B62K5/027 B62K5/05 B62K21/00 B62D61/065 B60G21/007 B60G2300/122 B62D37/00 B62K13/04

European class: L60G300/122

US class: 180/15 180/209 180/210 180/25R 180/271 180/41 280/124.103 280/267 280/269

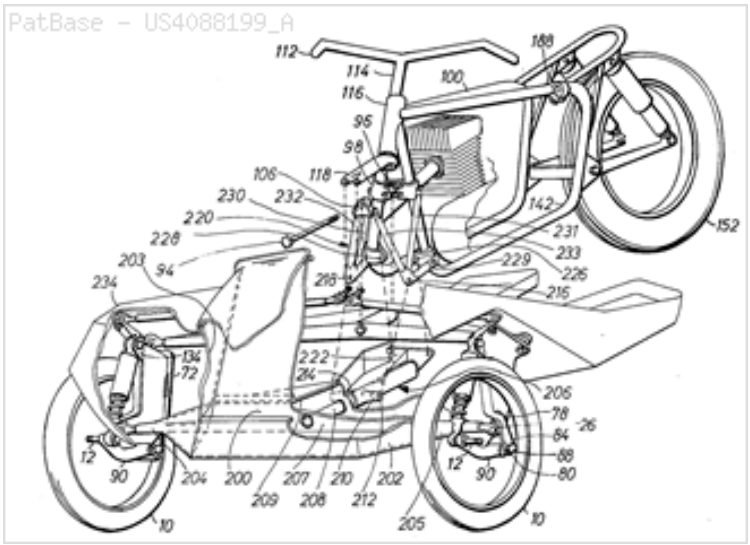
Classification Explorer

Cited documents: US4020914 A, US3964563 A, US3746118 A, US3610358 A, US3583507 A, US3572456 A, US3561778 A, US3447623 A, US2920636 A, IT599680 A, IT543232 A, IT528441 A, IT517430 A, FR544720 A, FR1158922 A, DE1063473 B, CH97196 A,

Forward Citations: WO8100088, WO17012869, WO16023689, WO06108997, WO05077683, WO04011324, WO03057549, WO0244008, WO0142077, USRE44854, USRE32031, USD689794, USD485788, USD449018, US9604683, US9545963, US9529365, US9477228, US9475535, US9459627, US9442492, US9442491, US9442486, US9429955, US9428236, US9411339, US9411336, US9400502, US9387902, US9268333, US9227662, US9188984, US9168966, US9126497, US9114844, US9004214, US8991542, US8973695, US8925940, US8882145, US8781684, US8777242, US8695746, US8544587, US8490723, US8467941, US8453768, US8419027, US8322477, US8262111, US8261685, US8177011, US8170780, US8061465, US8028777, US7970530, US7967306, US7958956, US7946371, US7909340, US7900725, US7850180, US7757794, US7739030, US7731210, US7722063, US7708291, US7690452, US7690447, US7665749, US7600596, US7591337, US7588110, US7571787, US7552790, US7546889, US7543829, US7530419, US7497525, US7487985, US7479872, US7467802, US7407175, US7370713, US7275607, US7264251, US7210544, US7182166, US7174976, US7172045, US7157875, US7152868, US7143853, US7090040, US7073806, US7023330, US7004271, US7000933, US6969079, US6965206, US6953203, US6948581, US6938907, US6929080, US6915878, US6886842, US6883629, US6874591, US6868931, US6866107, US6827163, US6815919, US6799649, US6796396, US6789640, US6779621, US6663122, US6651766, US6615938, US6581714, US6543564, US6538411, US6464030, US6443251, US6443250, US6435535, US6378882, US6367817, US6343664, US6311794, US6302230, US5794305, US5762351, US5611555, US5513865, US5431243, US5330214, US5248011, US5236060, US5232235, US5169166, US4998596, US4944360, US4919225, US4909538, US4903857, US4863183, US4740004, US4714126, US4699234, US4697663, US4662468, US4634137, US4624469, US4600216, US4546997,

US4484648, US4477097, US4469344, US4437535, US4423795, US4368795, US4360224, US4351410, US4336964, US4325565, US4313517, US4277078, US4088199, US2017043805, US2016129964, US2016023709, US2015329165, US2015210338, US2015203154, US2015197304, US2015123389, US2014375015, US2012161410, US2012126565, US2011304117, US2011209929, US2011193308, US2011168473, US2010320023, US2010263956, US2010194068, US2010193274, US2010114468, US2010101482, US2010007109, US2009321169, US2009277708, US2009194961, US2009125160, US2009108555, US2009099762, US2009032323, US2008258416, US2008100018, US2008035395, US2008001377, US2007256882, US2007187166, US2007176384, US2007126199, US2007075517, US2007075514, US2007045020, US2007007739, US2006273655, US2006260857, US2006249313, US2006175109, US2006170171, US2006151232, US2006125433, US2006108165, US2006108156, US2006097471, US2006086555, US2006061460, US2006054370, US2006049597, US2006011398, US2005236215, US2005211477, US2005167174, US2005126832, US2005121866, US2005093270, US2005012291, US2004178597, US2004129483, US2004129473, US2004118622, US2004094346, US2004069543, US2004055804, US2004055796, US2004054634, US2004050605, US2004035628, US2004035626, US2004035625, US2004035623, US2004032120, US2004024207, US2004011573, US2004007425, US2004007399, US2004007398, US2003221891, US2003221890, US2003205419, US2003141689, US2003102176, US2003057006, NL1021195, GB2374327, FR2884217, FR2559103, FR2534869, FR2522590, EP2923931, EP1378428, EP0020835, DE4444115, DE3128371, DE3040740, DE29702541, DE19524802, DE10224289, DE10224289, CN103863487, CN103863487,

Abstract:
Source: US4020914A A three−wheeled motorcycle in which two front wheels are interconnected with a conventional motorcycle frame by a parallelogram configured coupling assembly utilizing a pair of cross members pivotally connecting hubs of the front wheels and pivotally connected to the frame. Foot resting platforms are positioned on either side of the motorcycle, being fixedly connected to one of the cross members in the front and pivotally connected to the motorcycle frame at the rear.



0) GB1412704A – LIGHTWEIGHT HIGH PERFORMANCE HIGH SECURITY VEHI...

26) Family number: 3890367 (GB1412704A) © PatBase

Title: LIGHTWEIGHT HIGH PERFORMANCE HIGH SECURITY VEHICLE

Priority: GB19730053743 19731120

Family:

Publication number	Publication date	Application number	Application date
GB1412704 A	19751105	GB19730053743	19731120

Probable Assignee: GERIN J J M J

Assignee(s):(std)**:** GERIN J J M J

International class (IPC 8–9)**:** B62D35/00 (Advanced/Invention); B62D35/00 (Core/Invention)

International class (IPC 1–7)**:** B60T1/16 B62D29/02 B62D29/04 B62D35/02 B62D37/02 B62D43/02 B62D47/00

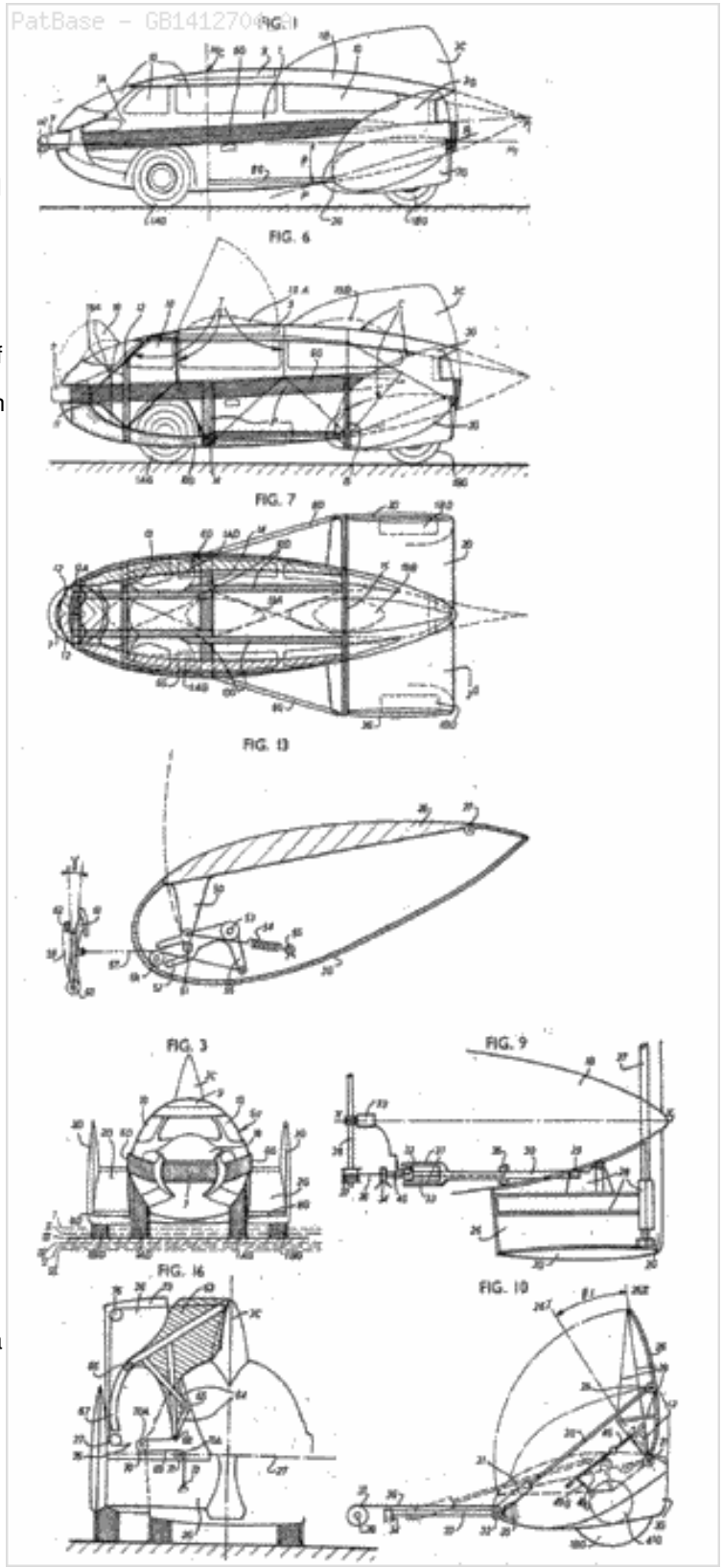
CPC: B62D35/00

European class: B62D35/00

Classification Explorer

Forward Citations: WO9954188, WO12006734, US2013206491, GB2341355, GB2341355, GB2212117, EP1077865,

Abstract:
Source: GB1412704A 1412704 High speed cars; Safety vehicles J J M J GERIN 20 Nov 1973 53743/73 Heading B7B [Also in Division F2] A high speed vehicle has, a tapered cockpit whose forward portion 1A is well rounded, a transverse horizontal stabilizer 2D, 2G, extending on either side of the cockpit and housing two rear wheels 1BD, 1BG, three vertical stabilizer fins 3C, 3D, 3G disposed above the cockpit and at the two extremities of the transverse stabilizer respectively, two tandem seats 5A, 5B, and an aerodynamic brake constituted by flaps 26, Fig. 10, capable of pivoting on a transverse pin 27 at the rear of the stabilizer under control of the driver. As seen in Fig. 6 a pivoting hatch 9 is disposed on the cockpit roof. The vehicle advantageously has an adjustable suspension and provision may be made to cause the vehicle to lean into bends by providing pressure actuated control buttons on the steering wheel rim, wherein resetting is obtained automatically by the return of the steering wheel to neutral position. The vehicle is constructed generally by a wooden truss girder P 1 a truss of light alloy T anchored to the girder, and a light alloy or plastics bodywork C, cladding the girder and the truss. The girder P has a front shield 11 in which is anchored a housing 12 receiving impact–deflecting spare wheel 7. A resistant sheet metal shield 18 is articulated at 18A and affords protection to the cockpit. The batch 9 and the portion of the cockpit under central fin 3C may have bulbs 19A, 19B resspectively to allow greater ease of movement. The girder P includes lateral shields 6G, 6D, Fig. 7, which may be formed from a number of low density wood strips (20 A –20 B) Fig. 8 (not shown) with a soft rubber cushion (22) provided in a recess (21) on outer strip (20 E). The aerodynamic brake flaps 26 are cut out of the upper surface wall of rear stabilizer 2G, 2D and articulated on a rear transverse pivot 27, Fig. 10. A locking system is provided wherein depression of the driver brake pedal 61, Fig. 13, causes a lever 59 to rotate and pull on cable 57 so that lever assembly 56 pivots about pin 53 and when spring 54 arrives at the level of pin 53 it biasses the lever assembly to slightly open flap 26 which is then open to its maximum position by wind pressure. The flaps are closed by a control rod, 30, Fig. 9, having a yoke 31 slidable on a guide rod 33 anchored to the box girder P. An electric drive motor 38 rotates a reel drum 37 which is connected by a cable to slide 32 to return it to its forward position and hence return the brake flap 26 to its closed position. An electric limit switch 40 stops motor 39 when slide 32 reaches its forward end position. Also, drum 37 has an internal breaking system which brakes the movement of slide 32 during the opening phase of flap 36. Use can be made of the opening of flaps 26 to act automatically on the conventional drum brakes (41G, 41D), Fig. 12 (not shown). As each main flap 26G, 26D pivots an additional flap 63, Fig. 16, moves from a retracted position inside the main flap to a fully extended position by means of a simple cable system 69, 70, 71. A spring return system including an elastic cable 73 is used to return additional flap 63 to its retracted position inside flap 26.



0) US5489001A – DIFFERENTIAL COUPLING AND COMPOUND POWER SYSTEM...

27) Family number: 30821695 (US5489001A) © PatBase

Title: DIFFERENTIAL COUPLING AND COMPOUND POWER SYSTEM FOR A VEHICLE

Priority: AU19940055032 19940209 BR19940001023 19940429 CA19942115005 19940204
EP19940300823 19940204 BR1994PI01023 19940429 CN19941003825 19940324
GB19930003513 19930222 US19930087269 19930708

Family:

Publication number	Publication date	Application number	Application date
AU199455032 A1	19950824	AU19940055032	19940209
AU676522 B2	19970313	AU19940055032	19940209
BRPI9401023 A	19951121	BR1994PI01023	19940429
CA2115005 AA	19950805	CA19942115005	19940204
CA2115005 C	20050412	CA19942115005	19940204
CN1077952 C	20020116	CN19941003825	19940324
CN1109152 A	19950927	CN19941003825	19940324
DE69418023 D1	19990527	DE19946018023	19940204
DE69418023 T2	19990812	DE19946018023T	19940204
EP0666192 A1	19950809	EP19940300823	19940204
EP0666192 B1	19990421	EP19940300823	19940204
ES2131157 T3	19990716	ES19940300823T	19940204
GB2275309 A1	19940824	GB19930003513	19930222
GB2275309 B2	19971029	GB19930003513	19930222
GB9303513 A0	19930407	GB19930003513	19930222
TH17815 A	19960221	TH19941000291	19940217
TH20408 B	20060824	TH19941000291	19940217
US5489001 A	19960206	US19930087269	19930708

Probable Assignee: Tai – Her

Assignee(s):(std)**:** YANG TAI HER ; YANG TAIHE

Assignee(s): YANG TAI HER SI HU TOWN DZAN HWA TW ; Tai – Her ; TAI HER YANG ; Yang

Inventor(s):(std)**:** TAI HER YANG ; YANG TAIHE ; YANG TAI HER ; TAIHE YANG

Inventor(s): Tai – Her ; NAME NOT GIVEN ; Yang ; YANG TAI HER SI HU TOWN DZAN HWA TW

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; GOWLING LAFLEUR HENDERSON LLP

Designated states: CH DE ES FR IT LI SE

International class (IPC 8–9)**:** B60K17/35 B60K17/356 B60K3/04 B60K6/26 B60K6/36 B60K6/365 B60K6/405 B60K6/52 B60L11/14 F16H37/08 (Advanced/Invention);
B60K17/35 B60K17/356 B60K6/26 B60K6/36 B60K6/365 B60K6/405 (Advanced/Non–invention);
B60K1/00 B60K3/00 B60K6/00 B60L11/14 (Core/Invention);
B60K17/34 B60K17/35 (Core/Non–invention)

International class (IPC 1–7)**:** B60K 1/00 B60K1/00 B60K41/18 B60K6/02 B60K6/04 B60K6/04 B60L11/14 F01K27/00 F02B61/00 F02B61/06 F16H1/38 F16H1/445 F16H3/72 F16H37/08 H02J7/14

CPC: Y02T10/6265 B60K6/26 B60K3/04 B60K6/36 B60K6/365 B60K6/405 B60K6/52 B60K17/3515 B60K17/356 B60K2006/262 Y10S903/903 Y10S903/906 Y10S903/909 Y10S903/91 Y10S903/916 Y10S903/952

European class: B60K3/04 B60K6/04 B60K6/04B10 B60K6/04B10B B60K6/04B14B B60K6/04B4 B60K6/04T2 B60K6/26 B60K6/36 B60K6/365 B60K6/405 B60K6/52 L60K17/356 L60K17/35C L60K6/04 L60K6/26C Y02T10/62F10

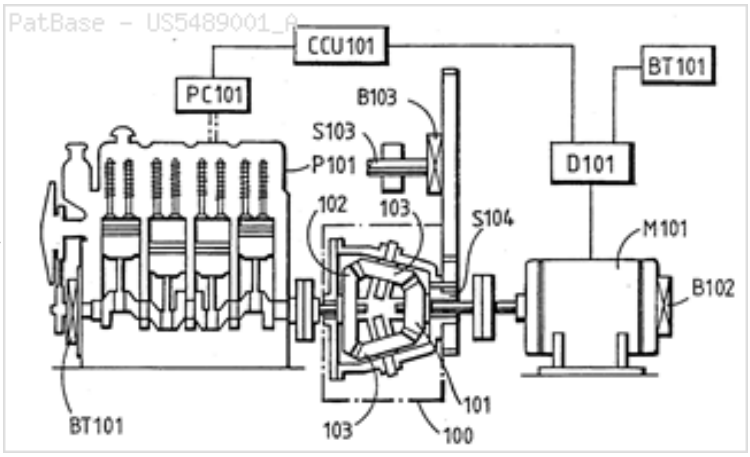
US class: 180/65.2 180/65.21 180/65.4 318/587 903/903 903/906 903/909 903/910 903/916 903/952

Classification Explorer

Cited documents: WO9221529 A1, WO9220544 A1, WO9108919 A1, WO8200928 A1, US5327987 A, US5301764 A, US5120282 A, US5117931 A, US4923025 A, US4677365 A, US4562894 A, US4470476 A, US4411171 A, US4346303 A, US4318449 A, US3861484 A, GB993185 A, GB644096 A, GB476729 A, GB2235952 A1, GB1440484 A, GB1280870 A, EP0233079 A2, DE3140492 A1,

Forward Citations: WO10135486, WO10135486, US9605591, US9550412, US9481256, US9350818, US9232013, US9232012, US9165139, US9135418, US9122885, US9106538, US9100390, US9077796, US8938547, US8925660, US8856959, US8856322, US8795008, US8788655, US8776928, US8745213, US8713173, US8695060, US8650658, US8650290, US8633665, US8615581, US8612582, US8556006, US8490726, US8167062, US7832297, US7694773, US7597164, US7520353, US7455134, US7392871, US7237634, US7202625, US7104347, US7042111, US7008342, US6692405, US6554088, US6502472, US6464028, US6440036, US6435296, US6387007, US6338391, US6328670, US6327922, US6278196, US6209672, US6155364, US6127754, US5971088, US5903061, US5847470, US5823281, US5722502, US5577973, US5558588, US2015210152, US2014096988, US2011304292, US2010159898, US2010157990, US2010157989, US2010154449, US2008245595, US2006230847, US2006192518, US2006118345, US2006041798, US2005116473, US2003217876, US2003116369, GB2435869, GB2435869, GB2335404, FR2832356, EP2636290, EP2502477, EP2374647, EP1927497, EP1927496, EP1626190, EP1325828, EP0806316, EP0806315, EP0806314, EP0744314, DE102010060340, DE10160267, DE10058020, CN103270329, CN102837601, CN102616126, CN102343813, CN101628543, CN101618678, CN101450619, AU728010, AU722966,

Abstract:
Source: US5489001A The present invention is directed to a differential coupling and compounding power system for use in a hybrid driven vehicle. The system includes a primary power source that includes an output shaft connected to a magnetic coupling and driving device. A magnetic coupling driving device can be driven by the output shaft of the engine so as to act as an alternator for charging a battery unit of the vehicle, can function as a motor to drive the vehicle while receiving power from the battery unit and can drive the vehicle in unison with the engine such that a compound power system is provided. The magnetic coupling and driving device can also function to develop a load on the engine in order to act as a vehicle brake.



0) US2009224524A – LEAN TO STEER RECUMBENT VEHICLE

28) Family number: 43707558 (US2009224524A) © PatBase

Title: LEAN TO STEER RECUMBENT VEHICLE

Priority: US20080074660 20080305

Family:

Publication number	Publication date	Application number	Application date
US2009224524 AA	20090910	US20080074660	20080305
US7976046 BB	20110712	US20080074660	20080305

Probable Assignee: RATHSACK LAWRENCE

Assignee(s):(std)**:** RATHSACK LAWRENCE

Inventor(s):(std)**:** RATHSACK LAWRENCE

Agent(s): ROGER L BELFAY; ROGER

International class (IPC 8–9): B62D7/16 B62K5/04 (Advanced/Invention); B62D7/00 (Core/Invention)

CPC: B60G2300/122 B60G2300/45 B62K3/005 B62K5/05 B62K5/10

European class: B62K3/00C B62K5/05 B62K5/10 L60G300/122 L60G300/45

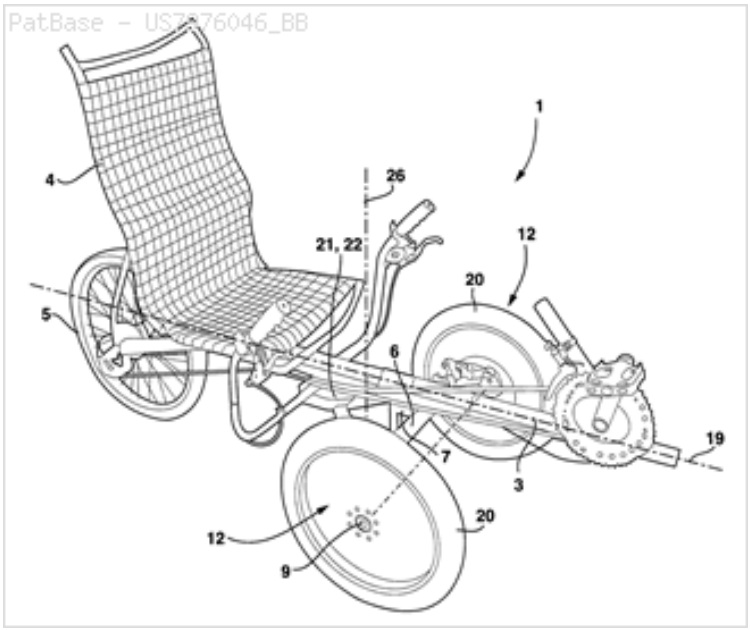
US class: 280/267 280/282 280/288.1 280/778 280/778P 280/93.51 280/93.510S

Classification Explorer

Cited documents: US7487985 BA, US7467802 BB, US7467802 B1, US7234718 BA, US6938907 BB, US6938907 B1, US6572130 BB, US6572130 B1, US6402174 BA, US6367824 BA, US6203043 BA, US6105986 A, US5762351 A, US5730453 A, US5630774 A, US5568935 A, US5544906 A, US5484152 A, US5419574 A, US5263732 A, US5240267 A, US5145196 A, US5069469 A, US4903857 A, US4548421 A, US4360224 A, US2006035760 AA, US2005253355 AA,

Forward Citations: WO16200278, WO15143523, US9545963, US9529365, US9459627, US9442492, US9442491, US9442486, US9429955, US9411340, US9411339, US9411336, US9400502, US9321507, US9268333, US9227685, US9188984, US9067632, US8911332, US8535206, US2017001676, US2015168952, US2015160656, US2015158541, US2015151807, US2015151806, US2015137472, US2014265209, US2014224556, US2013313802, US2012258840, US2010230924,

Abstract:
Source: US2009224524A Two versions of recumbent human powered three wheeled vehicles are disclosed. Both are of the tadpole type with two front wheels and one rear drive wheel. Both versions lean into turns causing weight transfer toward the inside of turns to prevent rollover during turns at speed.



0) FR2865706A – MOTOR VEHICLE FOR USE IN URBAN AREA, HAS SEAT A...

29) Family number: 32156764 (FR2865706A) © PatBase

Title: MOTOR VEHICLE FOR USE IN URBAN AREA, HAS SEAT ARRANGED SUCH THAT CENTER OF GRAVITY OF DRIVER IS CLOSE TO AXIS PASSING VIA CENTER OF TWO FRONT WHEELS, WHERE LEGS OF DRIVER ARE STRETCHED ACROSS AXIS AT LEVEL OF OR PROXIMITY TO KNEE

Priority: FR20040001034 20040202

Family:

Publication number	Publication date	Application number	Application date
FR2865706 A1	20050805	FR20040001034	20040202

Probable Assignee: BELLER JEAN MARC

Assignee(s):(std)**:** BELLER JEAN MARC

Inventor(s):(std)**:** BELLER JEAN MARC

International class (IPC 8–9)**:** B62D21/18 B62D31/00 B62D61/08 (Advanced/Invention); B62D21/18 B62D31/00 B62D61/00 (Core/Invention)

International class (IPC 1–7)**:** B62D21/18 B62D25/00 B62D9/04

CPC: B62D21/18 B62D31/003 B62D61/065

Classification Explorer

Cited documents: US4717164 A, FR2559119 A1, FR2559103 A1, EP0672575 A1, EP0097622 A1, DE3128905 A1, CH312799 A,

Forward Citations: WO13076425, FR2983163,

Abstract:
The vehicle has a rear wheel (1) and two front wheels (3) oriented by a steering system (4). A seat (7) is arranged, such that the center of gravity of a driver, in his seated position, is close to an axis passing via the center of the two front wheels. Legs of the driver are stretched across the axis at the level of or proximity to the knee for providing a place to install mechanical parts connecting the front wheels to a chassis (5).

PatBase - FR2865706_A1

1/2

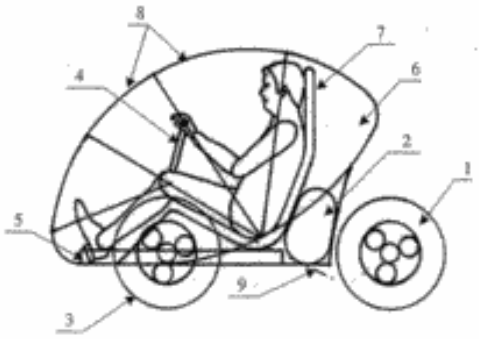


Fig.1

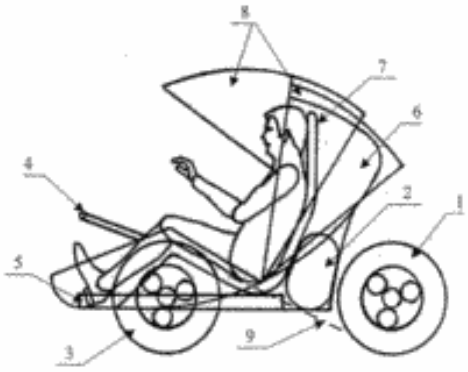


Fig.2

0) US3958814A – THREE WHEELED VEHICLE

30) Family number: 1286437 (US3958814A) © PatBase

Title: Three wheeled vehicle

Priority: CA19740209172 19740913

Family:

Publication number	Publication date	Application number	Application date
CA981717 A1	19760113	CA19740209172	19740913
DE2539817 A1	19760401	DE19752539817	19750908
FR2284510 A1	19760409	FR19750027831	19750911
GB1483420 A	19770817	GB19750036287	19750903
JP51076748 A2	19760702	JP19750109536	19750911
NL7510587 A	19760316	NL19750010587	19750909
US3958814 A	19760525	US19740533986	19741218

Probable Assignee: SMITH D

Assignee(s):(std)**:** DEIBITSUDO UIRIAMU SUMISU ; HUBER HANS PETER DIPL ING ; SMITH D ; SMITH DAVID ; SMITH DAVID W ; SMITH DAVID WM ; DAVID WILLIAM SMITH

Assignee(s): DAVID WILLIAM SMITH TE CALGARY CANADA

Inventor(s):(std)**:** DEIBITSUDO UIRIAMU SUMISU ; SMITH DAVID W ; SMITH DAVID WM

Inventor(s): WM SMITH DAVID

International class(IPC 8–9)**:** B62K5/04 B62K5/08 (Advanced/Invention); B62K5/00 (Core/Invention)

International class(IPC 1–7)**:** B62K21/00 B62K3/00 B62K5/02 B62K5/04 B62K5/06 B62K5/08

CPC: B62K5/05 B62K5/08 B62K5/10

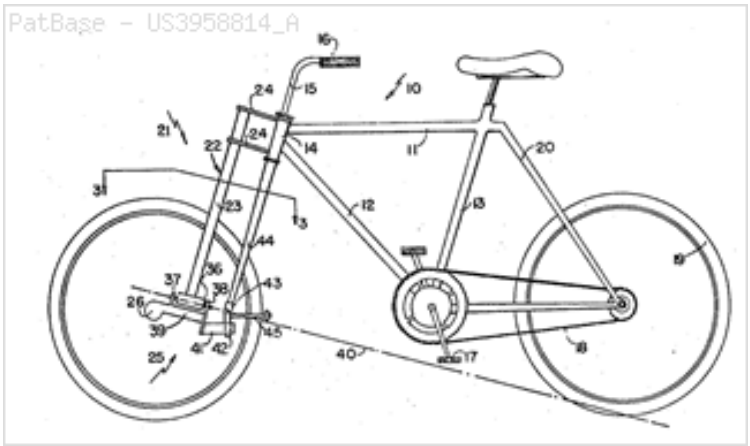
European class: B62K5/05 B62K5/08 B62K5/10

US class: 280/269 280/282

Classification Explorer

Cited documents: US3836177 A, US3746118 A, US3447623 A,

Forward Citations: WO9925602, WO8403074, WO8100088, USD668186, US8430713, US7845666, US7731213, US6953203, US6902177, US6557873, US4903857, US4650203, US4469344, US4360224, US4351410, US2009280718, US2007278763, US2007205576, US2005093270, US2004251655, FR2759054, FR2486899, EP1982908, EP0020835, DE4307269, DE3214930, DE3128371, DE19513649, DE10313539, DE102008011384,



Abstract:
Source: US3958814A Conventional vehicles such as tricycles have two wheels at the back and a single wheel at the front. Alternatively, they may be constructed with two wheels at the front and one at the rear. In all cases, however, they are of a rigid construction and cannot "lean" on corners in a manner similar to a bicycle. Because of this, turning speed is limited and riding and manoeuvering awkward. The present device has a single rear wheel and a conventional frame and propulsion means. Two front wheels are mounted on an axle and the main frame on which the rider sits is journalled on a bearing secured to the axle so that the rider may lean into the turns. This arrangement also allows the frame and the rider to remain vertical when riding on a side slope and, in addition, provides a smoother ride than does a rigid vehicle. Means are provided, operated by the rider, to lock the device solidly so that no lean is possible, to set the device so that the limited lean is available, and to set the device so that free lean is possible.

0) US3083033A – EQUALIZATION SPRING SYSTEM FOR VEHICLES

31) Family number: 20380672 (US3083033A) © PatBase

Title: EQUALIZATION SPRING SYSTEM FOR VEHICLES

Priority: DE1957D025956 19570710

Family:

Publication number	Publication date	Application number	Application date
DE1049246 B	19590122	DE1957D025956	19570710
FR1204706 A	19600127		19580613
GB845621 A	19600824	GB19580021884	19570710
US3083033 A	19630326	US19580746313	19580701

Probable Assignee: DAIMLER BENZ AG

Assignee(s):(std)**:** DAIMLER BENZ AG

Assignee(s): DAIMLER BENZ AKTIENGESELLSCHAFT

Inventor(s):(std)**:** FIALA DR ING ERNST ; FIALA ERNST ; FIALA ERNST J H

International class (IPC 8–9)**:** B60G17/033 B60G21/02 B60G21/06 (Advanced/Invention); B60G17/02 B60G21/00 (Core/Invention)

International class (IPC 1–7)**:** B60G19/06 B60G19/10 B60G21/06

CPC: B60G17/033 B60G21/02 B60G21/06 B60G2202/416 B60G2500/02

European class: B60G17/033 B60G21/02 B60G21/06 L60G202/416 L60G500/02

US class: 280/104 280/124.159 280/5.507

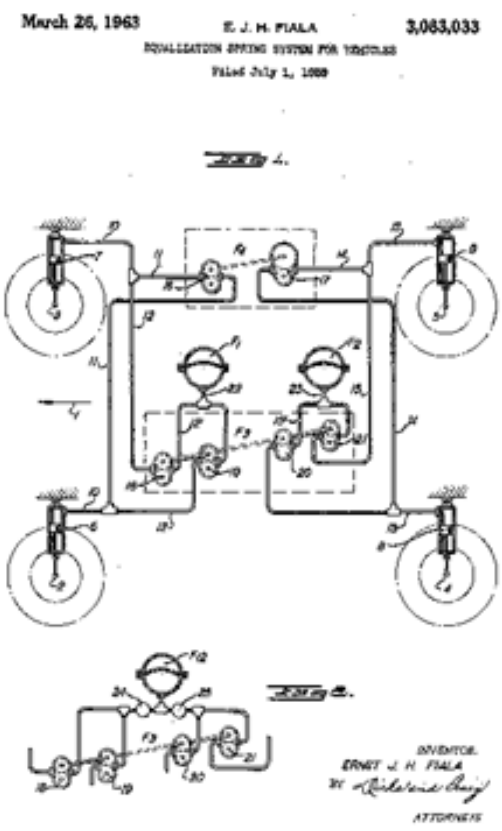
Classification Explorer

Cited documents: US2843396 A, US2828138 A, US2593040 A, US2466833 A, FR741583 A, FR1122404 A, FR1110721 A,

Forward Citations: US4270718, US3643970, US3623745, US3298709, FR2671764, DE1214553, DE1125293,

Abstract:
Source: US3083033A 845,621. Road vehicle spring suspensions. DAIMLER–BENZ A.G. July 8, 1958 [July 10, 1957], No. 21884/58. Class 108(2). A vehicle suspension system comprises hydraulic levelling cylinders 6–9 associated with the road wheels, reversible action hydraulic gear pump/motors 16–21 connected to the cylinders by pipes 10–15, rigid connections A, B between the driven gears of pump motors 18, 19 and 20, 21 respectively, torsion bar springs F3, F4 connected between the driven gears of pump/motors 19, 20 and 16, 17 respectively and hydro–pneumatic springs F1, F2. The above system, in addition to effecting levelling of the vehicle, automatically renders' operative one or a combination of springs F1–F4, which are of different degrees of softness, in accordance with differing road and driving conditions. During braking and accelerating, or when one pair of wheels passes over a bump, spring FI–F3 operate together, whilst when cornering, or when diagonally disposed wheels are moved in the same direction, spring F4 alone is operative. The system may incorporate damping valves (not shown) each having a different resistance for different direction of flow. In a modification (Fig. 2 not shown) springs F1, F2 are replaced by a single hydro–pneumatic spring.

PatBase - US3083033_A



0) DE102010052716B4 – DREIRAEDRIGES FAHRZEUG

32) Family number: 48985994 (DE102010052716B4) © PatBase

Title: DREIRAEDRIGES FAHRZEUG

Priority: TW20090140605 20091127

Family:

Publication number	Publication date	Application number	Application date
DE102010052716 A1	20110609	DE201010052716	20101126
DE102010052716 B4	20120906	DE201010052716	20101126
FR2953184 A1	20110603	FR20100059811	20101126
FR2953184 B1	20170324	FR20100059811	20101126
IT1402764 B1	20130918	IT2010MI02184	20101125
ITMI20102184 A1	20110528	IT2010MI02184	20101125
TW201117997 A	20110601	TW20090140605	20091127
TWI378056 B	20121201	TW20090140605	20091127

Probable Assignee: KWANG YANG MOTOR CO

Assignee(s):(std)**:** KWANG YANG MOTOR CO

Assignee(s): KWANG YANG MOTOR CO LTD

Inventor(s):(std)**:** DING XIN ZHI ; HUANG JUN HAO ; LI YAN XIU ; TING HSIN CHIH ; LEE YEN HSIU ; HUANG CHUN HAO

Inventor(s): CHUN HAO HUANG ; YEN HSIU LEE ; HSIN CHIH TING

Agent(s): CABINET REGIMBEAU

International class (IPC 8–9)**:** B62D61/06 B62K11/02 B62K19/32 B62K21/00 B62K5/02 B62K5/027 B62K5/04 B62K5/05 B62K5/08 (Advanced/Invention); B62K11/02 B62K19/32 (Core/Non–invention)

CPC: B62K5/027 B62K5/05 B62K5/08 B62K5/10

European class: B62K5/027 B62K5/05 B62K5/08 B62K5/10

Classification Explorer

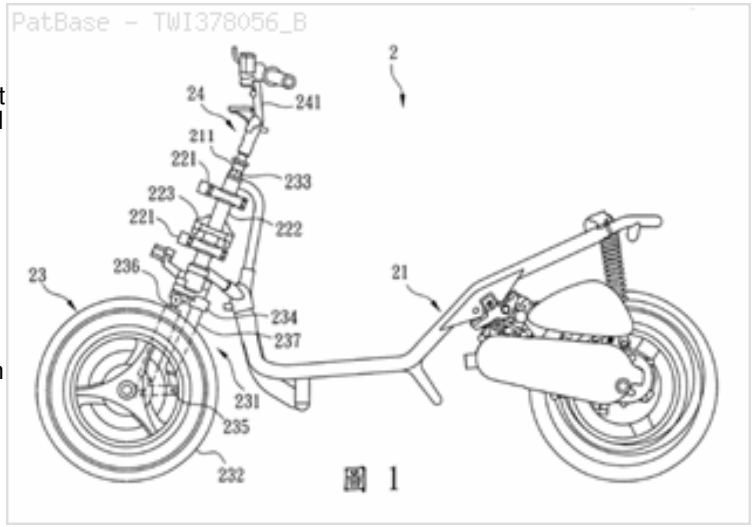
Cited documents: US2007075514 AA, TW469239 B, TW331973 B, TW200817230, TW200815231, TW200530057 A, EP1180476,

DE602005005423 T2

DE60012319 T2, CN201151444,

Forward Citations: WO15115110, WO15115109, WO15002173, WO14065385, WO14065381, WO14046287, WO14046280, WO13104335, WO12007819, US9493208, US9452806, US9452803, US9296420, US9278711, US9238494, US9227662, US9216790, US9211773, US8991542, TWI558600, TWI555666, TWI523790, TWI523789, TWI523788, TWI523787, JP5797367, JP5797366, JP5536967, JP2015115110, JP2015115109, JP2014046287, EP2998209, EP2937270, EP2923931, EP2923930, EP2921388, EP2921387, EP2921384, EP2913255, EP2899107, EP2899105, EP2810861, EP2593352, CN105339252, CN104487333, CN104487322, CN104487322,

Abstract:
Source: DE102010052716B4 Dreiraedriges Fahrzeug (2), mit: – einem Hauptrahmen (21) mit einem hohlen, zentralen Positionierelement (211), – einer Anti–Kippeinheit (20) umfassend – eine Gelenkstangeneinheit (22), die schwenkbar mit dem zentralen Positionierelement (211) verbunden ist und aufweist – ein Paar voneinander beabstandeter Gelenkstangen (221), die in einer horizontalen Richtung verlaufen, wobei jede der Gelenkstangen (221) einen schwenkbar mit dem zentralen Positionierelement (211) verbundenen mittleren Teil hat, – ein Paar seitlicher Stangen (222), von denen eine der seitlichen Stangen (222) schwenkbar mit linken Enden der Gelenkstangen (221) verbunden ist und die andere der seitlichen Stangen (222) schwenkbar mit rechten Enden der Gelenkstangen (221) verbunden ist, wobei jede der Gelenkstangen (221) ein Paar Stabsegmente (224) umfasst, von denen jedes das zentrale Positionierelement (211) schwenkbar mit einer zugehoerigen der seitlichen Stangen (222) verbindet, und jede der seitlichen Stangen (222) mit einem Eingriffsblock (2221) ausgebildet ist, – eine starre Kupplungsstange...



0) US2014091551A – BICYCLE CONVERSION KIT AND TRICYCLE APPARATUS

33) Family number: 56138702 (US2014091551A) © PatBase

Title: BICYCLE CONVERSION KIT AND TRICYCLE APPARATUS

Priority: US20120709336P 20121003 US20130044216 20131002

Family:

Publication number	Publication date	Application number	Application date
US2014091551 AA	20140403	US20130044216	20131002
US9114844 BB	20150825	US20130044216	20131002

Probable Assignee: HAULER CYCLES LLC

Assignee(s):(std)**:** HAULER CYCLES LLC

Inventor(s):(std)**:** WALTER CHRISTOPHER J

Agent(s): PRICE HENEVELD LLP

International class (IPC 8–9)**:** B62K13/04 B62K5/05 B62K5/08 B62K7/04 (Advanced/Invention)

CPC: B62K5/08 B62K13/04 B62K5/05 B62K7/04 B62K2710/12 Y10T29/49716

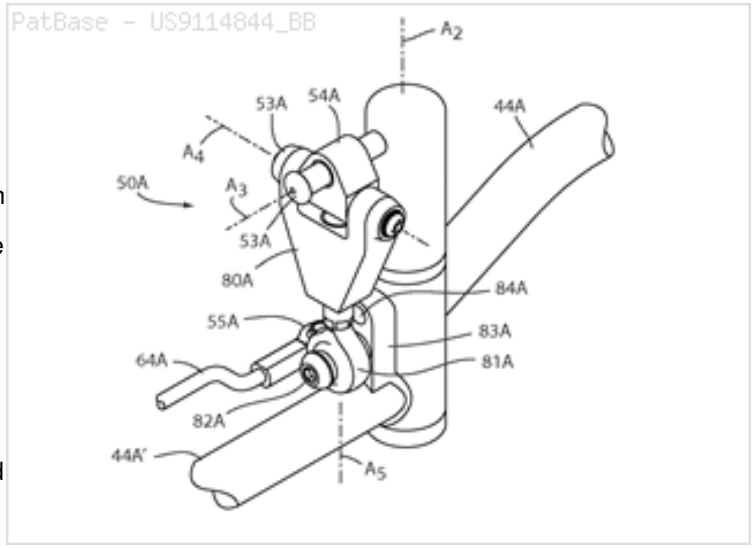
US class: 1/1 280/267 280/279 29/401.1

Classification Explorer

Cited documents: WO08043870, USD576903 S1, USD549074 S1, USD485788 S1, USD449018 S1, USD419123 S1, USD397965 S1, USD396835 S1, USD353963 S1, USD345534 S1, USD332768 S1, USD331902 S1, USD316389 S1, USD315888 S1, USD315328 S1, USD305628 S1, USD291506 S1, USD289630 S1, USD280336 S1, USD263293 S1, US8066295 BA, US8061465 BB, US8028777 BB, US7970530 BB, US7958956 BB, US7909340 BB, US7896207 BA, US7850180 BB, US7739030 BB, US7731213 BB, US7731210 BB, US7722063 BB, US7708291 BA, US7669868 BB, US7591337 BB, US7571787 BB, US7552790 BB, US7543829 BA, US7530419 BB, US7347596 BB, US7273221 BB, US7264251 BB, US7174852 BB, US7172045 BB, US7152868 BA, US7144029 BA, US7137671 BB, US7073806 BB, US6994368 BB, US6981749 BB, US6976690 BB, US6953203 BB, US6948581 BB, US6929080 BB, US6883629 BB, US6763740 BA, US6736618 BB, US6708582 BA, US6663122 BA, US6543564 BA, US6506026 BB, US6491316 BA, US6464030 BA, US6446922 BB, US6398248 BA, US6382485 BA, US6378882 BA, US6367824 BA, US6328268 BA, US6036069 A, US6029874 A, US5961015 A, US5881606 A, US5762351 A, US5641108 A, US5618052 A, US5564726 A, US5513865 A, US5482304 A, US5431243 A, US5330214 A, US5319994 A, US5292143 A, US5265496 A, US5248011 A, US5236060 A, US5232235 A, US5228606 A, US5226340 A, US5199619 A, US5169166 A, US5156031 A, US5141067 A, US5112071 A, US5102153 A, US5025977 A, US4976348 A, US4953425 A, US4944360 A, US4919225 A, US4910053 A, US4909538 A, US4909522 A, US4903975 A, US4903857 A, US4840298 A, US4794815 A, US4715681 A, US4697663 A, US4688749 A, US4671438 A, US4662468 A, US4648694 A, US4629104 A, US4624469 A, US4613129 A, US4600216 A, US4546997 A, US4527811 A, US4484648 A, US4461365 A, US4458556 A, US4437535 A, US4423795 A, US4360224 A, US4351410 A, US4336964 A, US4313517 A, US4301951 A, US4285674 A, US4262829 A, US4258870 A, US4191393 A, US4174120 A, US4088199 A, US4045049 A, US4037924 A, US4020914 A, US3960027 A, US3955730 A, US3955729 A, US2012320943 AA, US2007278763 AA, US2006273544 AA, US2006097476 AA, EP2077223,

Forward Citations: USD746177, US9510983, US9067632, US2017043805, US2016200388, US2015329165, US2014224556, CN104973183,

Abstract:
Source: US2014091551A An apparatus is provided for bicycles to make them more utilitarian and functional. The attachment is easily attached, and potentially attached without damage or significant modification to the bicycle. The apparatus includes a frame member attached to the bottom bracket portion of the existing bicycle, and a gimbal attached to the fork of the existing bicycle in place of the original front tire. The apparatus is steerable using the handle bars and fork on the existing bicycle frame, and is configured for stability when cornering. The apparatus includes a cargo carrier located in front of the cycler where it is easy to see, while maintaining a stable center of gravity and also an ability to lean into corners for cornering stability. Variations include one or two front wheels, and one or two steering drive links. Also, the apparatus is a flexible design providing multiple potential utilitarian uses.



0) US2009273150A – TRANSPORTATION DEVICE WITH PIVOTING AXLE

34) Family number: 43710446 (US2009273150A) © PatBase

Title: TRANSPORTATION DEVICE WITH PIVOTING AXLE

Priority: EP20090717559 20090306 US20080064458 20080306 US20130762895 20130208
US20090399893 20090306 US20080064458P 20080306 US20120481636 20120525
WO2009US36428 20090306 US20140251340 20140411 US20160154486 20160513

Family:

Publication number	Publication date	Application number	Application date
AU2009221691 AA	20090911	AU20090221691	20090306
AU2009221691 BB	20111124	AU20090221691	20090306
CA2719096 AA	20090911	CA20092719096	20090306
CA2719096 C	20130514	CA20092719096	20090306
CN201482128 U	20100526	CN200920150844U	20090306
DE212009000030 U1	20110210	DE200921000030U	20090306
DE602009027068 D1	20141120	DE200960027068T	20090306
EP2265347 A2	20101229	EP20090717559	20090306
EP2265347 B1	20141008	EP20090717559	20090306
JP2011513007 A2	20110428	JP20100549928	20090306
JP2011513007 T2	20110428	JP20100549928T	20090306
JP5390542 B2	20140115	JP20100549928T	20090306
KR101228632 B1	20130131	KR20107021313	20090306
KR20110039211 A	20110415	KR20107021313	20090306
MX2010009667 A1	20110426	MX20100009667	20090306
NZ587695 A	20120727	NZ20090587695	20090306
US2009273150 AA	20091105	US20090399893	20090306
US2012235368 AA	20120920	US20120481636	20120525
US2013147138 AA	20130613	US20130762895	20130208
US2015069725 AA	20150312	US20140251340	20140411
US2016332061 AA	20161117	US20160154486	20160513
US8186693 BB	20120529	US20090399893	20090306
US8371590 BB	20130212	US20120481636	20120525
US8695993 BB	20140415	US20130762895	20130208
US9339720 BB	20160517	US20140251340	20140411
WO09111761 A2	20090911	WO2009US36428	20090306
WO09111761 A3	20091203	WO2009US36428	20090306

Probable Assignee: LEVERAGE DESIGN LTD

Assignee(s):(std)**:** KORTSCHOT MARK T ; KORTSCHOT MARK TIMOTHY ; LEVER DESIGN CO LTD ; LEVERAGE DESIGN LTD

Assignee(s): LEVERAGE DESIGN LTD UNIONVILLE ; LEVER DESIGN CO

Inventor(s):(std)**:** KORTSCHOT M T ; KORTSCHOT MARK T ; KORTSCHOT MARK TIMOTHY ; TIMOTHY KORTSCHOT MARK

Inventor(s): M T KORTSCHOT ; MARK TIMOTHY KORTSCHOT ; MTKORTSCHOT

Agent(s): HALFORDS IP; SIM AND MCBURNEY; HOFFMANN EITLE PATENT U RECHTSANWAELTE PARTMBB; HOFFMANN EITLE; KNOBBE MARTENS OLSON AND BEAR LLP; SIMPSON ANDREW A

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV

SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8–9): A63C17/00 A63C17/01 A63C17/02 A63C17/04 A63C17/14 B62K17/00 (Advanced/Invention); A63C17/00 A63C17/04 (Core/Invention)

CPC: A63C17/0073 A63C17/00 A63C17/0093 A63C17/012 A63C17/014 A63C17/04 A63C17/1418 A63C2017/1463

European class: A63C17/00U A63C17/01 A63C17/01B2 A63C17/01H A63C17/04 A63C17/14B A63C17/14B2

US class: 1/1 280/11.19 280/11.204 280/11.214 280/11.214S 280/11.215 280/11.223 280/11.223P 280/11.27 280/11.28 280/204

Classification Explorer

Cited documents: WO08019482 A1, USD473905 S1, USD472596 S1, USD226440 S1, US8186693 BB, US7232139 BB, US7226063 BB, US7150461 BB, US7007977 BA, US6981711 BB, US6820881 BA, US6679505 BB, US6676138 BA, US6557861 BB, US6481728 BB, US6467560 BA, US6416063 BA, US6406039 BA, US6386330 BA, US6352270 BA, US6302415 BA, US6298952 BA, US6296082 BA, US6286843 BA, US6241264 BA, US6206388 BA, US6158752 A, US6139035 A, US5997018 A, US5971411 A, US5860657 A, US5513865 A, US5347681 A, US5263725 A, US5232235 A, US5143388 A, US5062630 A, US4955626 A, US4930794 A, US4844491 A, US4738456 A, US4681333 A, US4645223 A, US4523767 A, US4403784 A, US4402521 A, US4398735 A, US4185847 A, US4180278 A, US4168076 A, US4167225 A, US4152001 A, US4099734 A, US4088334 A, US4061350 A, US4054296 A, US4043566 A, US4037852 A, US4027890 A, US4003582 A, US3331612 A, US329927 A, US3288251 A, US321466 A, US321434 A, US319839 A, US311936 A, US3087739 A, US304949 A, US253735 A, US252970 A, US2509324 A, US2474082 A, US2430037 A, US2413530 A, US2216359 A, US215081 A, US213546 A, US2126359 A, US2051762 A, US2015122566 AA, US2014332297 AA, US2014042717 AA, US2007126191 AA, US2006279055 AA, US2006125200 AA, US2006049595 AA, US2005127629 AA, US2005116430 AA, US2005012290 AA, US2003127816 AA, US2003020244 AA, US2002167146 AA, US1935187 A, US1854188 A, US1728063 A, US1632997 A, US1603529 A, US1550985 A, US1387091 A, US1194102 A, US1075250 A, US1018512 A, JPS5685381, JP7096047 B4, JP7096047 B2, JP56085381 A2, JP2002529166 A2, DE4424297 A1,

Forward Citations: WO16054439, WO14081445, WO14055550, WO13028087, USD756465, USD736861, USD700937, US9492732, US9339720, US8882114, US8801002, US8695993, US8690165, US8641054, US8544854, US8540284, US8459670, US8025300, US2016206949, US2015069725,

Abstract:
Source: US2009273150A Devices and methods of transport are disclosed. Various embodiments include structural aspects related to steering and changing the direction of conveyances including features which utilize leaning or shifting of weight as part of turning.

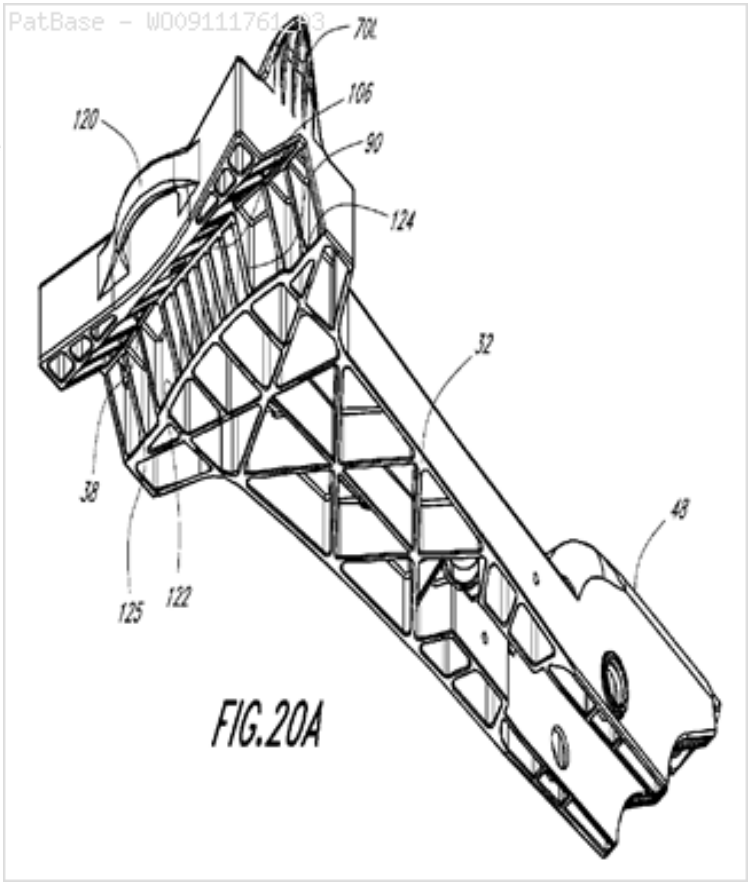


FIG.20A

0) CN101469983A – METHOD AND DEVICE FOR DETECTING VEHICLE FRONT W...

35) Family number: 43527442 (CN101469983A)

© PatBase

Title: Method and device for detecting vehicle front wheel angle

Priority: CN200710173639 20071228

Family:

Publication number	Publication date	Application number	Application date
CN101469983 A	20090701	CN200710173639	20071228

Probable Assignee: SHANGHAI TONGYUN AUTOMOBILE TE

Assignee(s):(std)**:** SHANGHAI TONGYUN AUTOMOBILE TE

Assignee(s): SHANGHAI TONGYUN AUTOMOBILE TECHNOLOGY CO

Inventor(s):(std)**:** MIAOFAN JIANG ; JIANXUN SONG

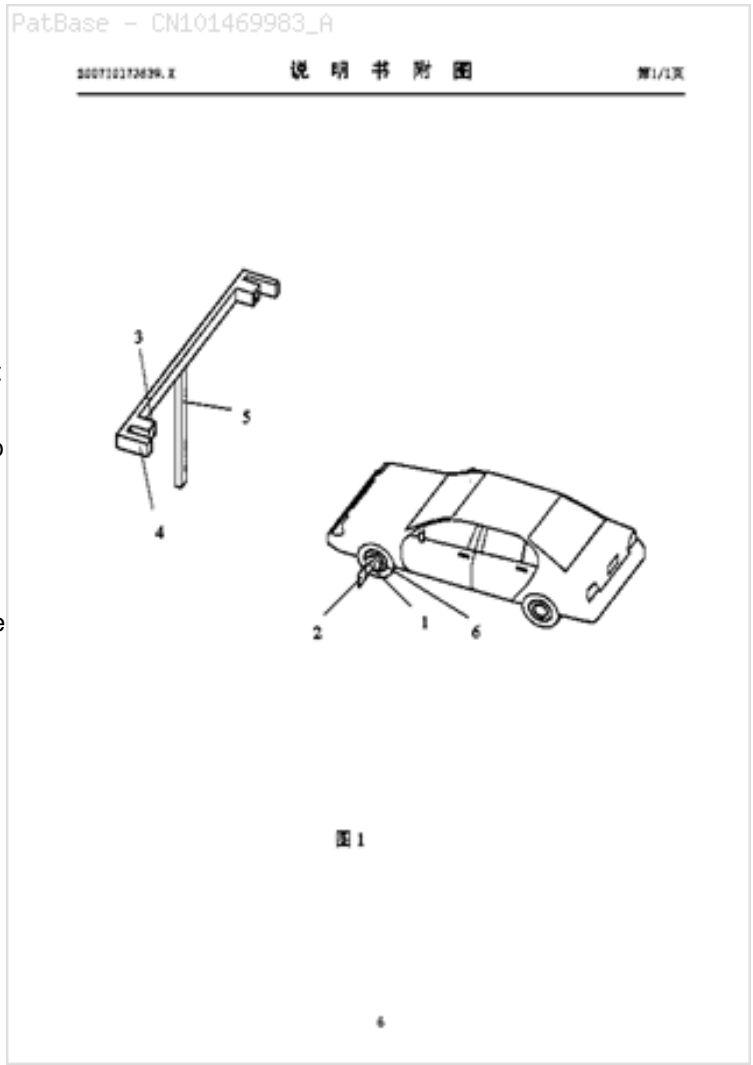
Inventor(s): JIANG MIAOFAN ; SONG JIANXUN

International class (IPC 8–9): G01B11/26 G01B21/22 G01M17/007 (Advanced/Invention); G01B21/22 (Core/Invention)

Classification Explorer

Forward Citations: CN103693102, CN103693102, CN103499311, CN103499311, CN101813466,

Abstract:
Source: CN101469983A An automobile front wheel angle test method comprises: respectively fixing a connecting rod on the outer end faces of two front wheels of an automobile; respectively and fixedly connecting a flat plate with the outer end of each connecting rod; connecting the connecting rods with the flat plates axially; respectively arranging a camera at the front of two front wheels and on the flat plates; respectively arranging a laser indicator at the front of the two front wheels, while the laser beams of the laser indicators have cross–type sections; projecting the laser beams on the flat plates; driving the vehicle forward; using cameras to record the projection positions of the laser beams on the flat plates; according to the projection positions of the laser beams on the flat plates, using mathematical method to respectively calculate main pin trim angle, main pin leaning angle, front wheel lateral obliquity angle and front wheel front beam of the two front wheels. The invention further provides a device for realizing the method. The invention can accurately reflect grounding deviation of wheels, having simple structure and operation.



36) Family number: 43178520 (BRMU8700864U)

© PatBase

Title: DISPOSICOES INTRODUZIDAS EM TRICICLO COM DUAS RODAS DIANTEIRAS E UMA TRASEIRA LEGISLATION INTRODUCED IN TRICYCLE WITH TWO FRONT WHEELS AND A REAR (Machine translation)

Priority: BR2007MU00864U 20070405

Family:

Publication number	Publication date	Application number	Application date
BRMU8700864 U2	20081118	BR2007MU00864U	20070405

Probable Assignee: CROVADOR RUI LEOPOLDO

Assignee(s):(std)**:** CROVADOR RUI LEOPOLDO

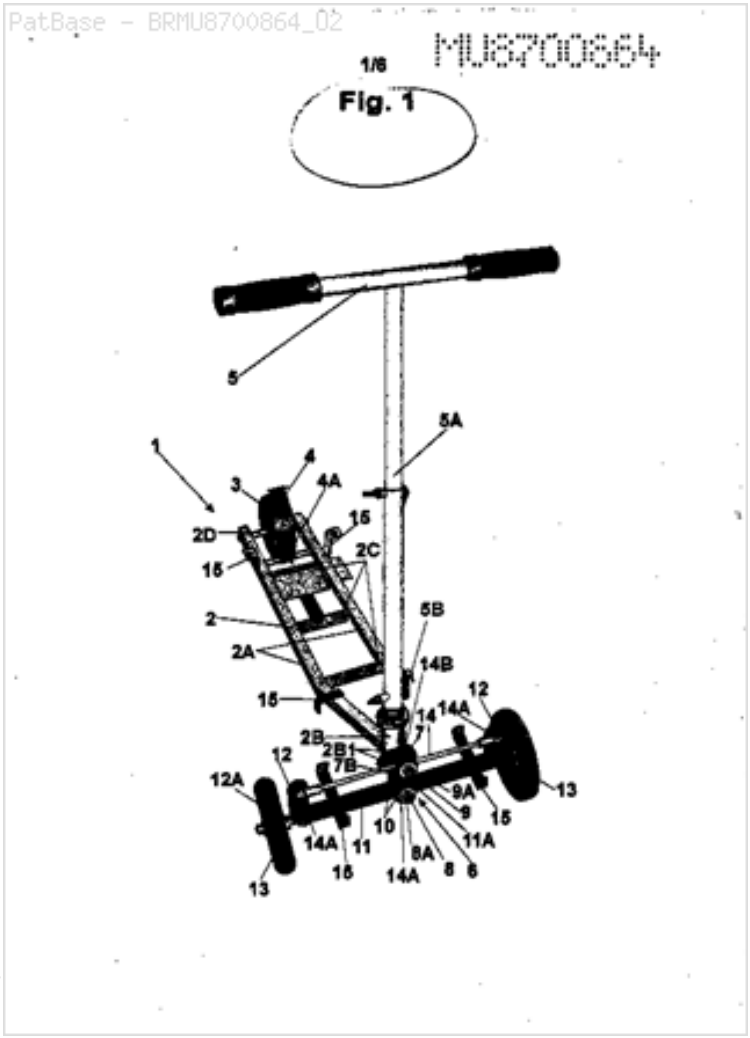
Inventor(s):(std)**:** CROVADOR RUI LEOPOLDO

Inventor(s): RUI LEOPOLDO CROVADOR

International class (IPC 8–9): B62K5/04 B62K5/10 (Advanced/Invention); B62K5/00 (Core/Invention)

Classification Explorer

Abstract:
Source: BRMU8700864U 1 • • • •• •••• # # •• •• •• • • ••• e • • • • ? • • • e # • ••••• ••••••• ••• # # • • # # t • # # # • • •• ##### i » •• • •• # • • • • # # # # RESUMO "DISPOSICOES INTRODUZIDAS EM TRICICLO COM DUAS RODAS DIANTEIRAS E UMA TRASEIRA", refere−se o presente relatorio de modelo de utilidade a um triciclo com duas rodas dianteiras e uma traseira que tem como 5 principio basico a formacao de um triciclo (1) com movimentos pendulares no eixo dianteiro (6) no sentido transversal ao triciclo (1), esse movimento conjugado ao de rotacao, promove a inclinacao do eixo dianteiro (6) simultaneo a inclinacao da base (2), e independendo da velocidade, faz com que o triciclo venca a forca centrifuga. Agregando assim mais estabilidade e seguranca ao piloto, principalmente quando 10 este executar curvas no uso convencional como brinquedo ou manobras mais radicais como esporte e lazer. 1 and • • • •? • • • and • ••••• ••••••• ••• # # # • • # # # # # t • • • •• ##### i »•• • •• • # • • • # # # # SUMMARY "PROVISIONS INTRODUCED IN TRICYCLE WITH TWO FRONT WHEELS AND A BACK" refers to the present report of utility model to a tricycle with two front wheels and one rear that has the fifth principle basic to the formation a tricycle (1) with commuting on the front axle (6) in transverse to the tricycle direction (1), this movement coupled to the rotation, promotes the inclination of the front axle (6) simultaneously the inclination of the base (2), and irrespective of speed, makes the tricycle venca the force centrifuge. So Adding more stability and security to the pilot, especially when 10 this run curves in conventional use as a toy or most radical maneuvers such as sports and leisure.



0) NL2005526C – SCOOTER, IN PARTICULAR A MOBILITY SCOOTER, FOR ...

37) Family number: 51326224 (NL2005526C) © PatBase

Title: SCOOTER, IN PARTICULAR A MOBILITY SCOOTER, FOR DRIVING WHILE STANDING OR SEMI–STANDING, HAVING TWO FRONT WHEELS AND A SINGLE REAR WHEEL.

Priority: NL20102005526 20101015

Family:

Publication number	Publication date	Application number	Application date
NL2005526 C	20120417	NL20102005526	20101015

Probable Assignee: SCHMIDT RUDOLF WILHELM JOHANNES

Assignee(s):(std)**:** SCHMIDT RUDOLF WILHELM JOHANNES

Inventor(s):(std)**:** SCHMIDT RUDOLF WILHELM JOHANNES

International class (IPC 8–9): B62K5/04 (Advanced/Invention)

CPC: B62K5/05

Classification Explorer

Cited documents: WO04011324 A1, US2005236803 AA, EP1527944 A1, EP1177972 A2,

Abstract:
Source: NL2005526C A SCOOTER, N PARTICULAR A MOBILITY SCOOTER, FOR AN OPERATOR TO RIDE IN A STANDING OR SEMI–STANDING POSITION, COMPRISING A STEP–THROUGH FRAME WITH A FOOTBOARD 5 FOR THE OPERATOR'S FEET TO REST UPON IN SAID STANDING OR SEMI–STANDING POSITION, FRONT AND REAR WHEELS 3, 2, A POWER UNIT FOR DRIVING AT LEAST ONE OF THE WHEELS, A SUPPORT 6 FOR THE OPERATOR TO LEAN AGAINST IN SAID STANDING OR SEMI–STANDING POSITION, STEERING HANDLE–BARS 8 FOR THE OPERATOR TO GRIP IN SAID STANDING OR SEMI–STANDING POSITION. ACCORDING TO THE INVENTION TWO FRONT WHEELS 3 AND A SINGLE REAR WHEEL 2 ARE PROVIDED. DIT OCTROOI IS VERLEEND ONGEACHT HET BIJGEVOEGDE RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK EN SCHRIFTELIJKE OPINIE. HET OCTROOISCHRIFT KOMT OVEREEN MET DE OORSPRONKELIJK INGEDIENDE STUKKEN.

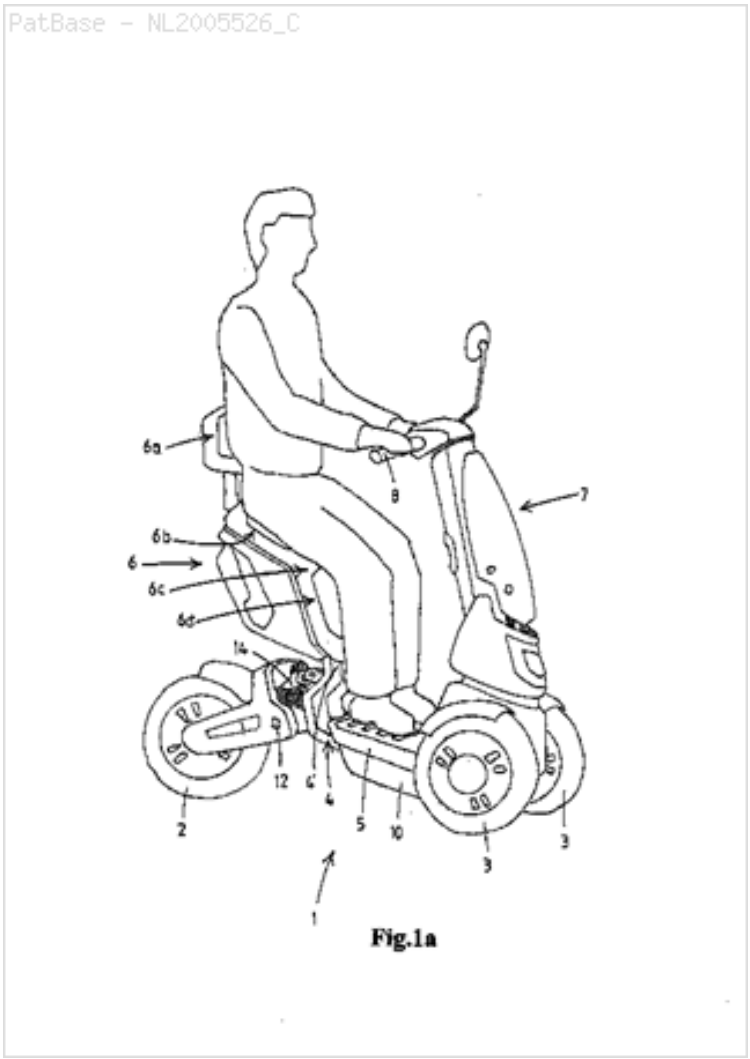


Fig.1a

0) DE19513649A1 – THREE–WHEELED VEHICLE FOR USE LIKE BICYCLE OR M...

38) Family number: 12213264 (DE19513649A1) © PatBase

Title: Three–wheeled vehicle for use like bicycle or motorcycle

Priority: DE19951013649 19950411

Family:

Publication number	Publication date	Application number	Application date
DE19513649 A1	19961017	DE19951013649	19950411

Probable Assignee: HOPPE HANS MARTIN

Assignee(s):(std)**:** HOPPE HANS MARTIN ; HOPPE KURT DR MED

Assignee(s): HOPPE KURT DR MED 23566 LUEBECK DE ; HOPPE HANS MARTIN 23566 LUEBECK DE

Inventor(s):(std)**:** HOPPE KURT DR MED ; HOPPE HANS MARTIN

Inventor(s): HOPPE HANS MARTIN 23566 LUEBECK DE ; HOPPE KURT DR MED 23566 LUEBECK DE

International class (IPC 8–9): B62K3/00 B62K5/02 (Advanced/Invention)

International class (IPC 1–7): B62K5/02

CPC: B62K3/005 B62K5/02 B62K5/027 B62K5/10

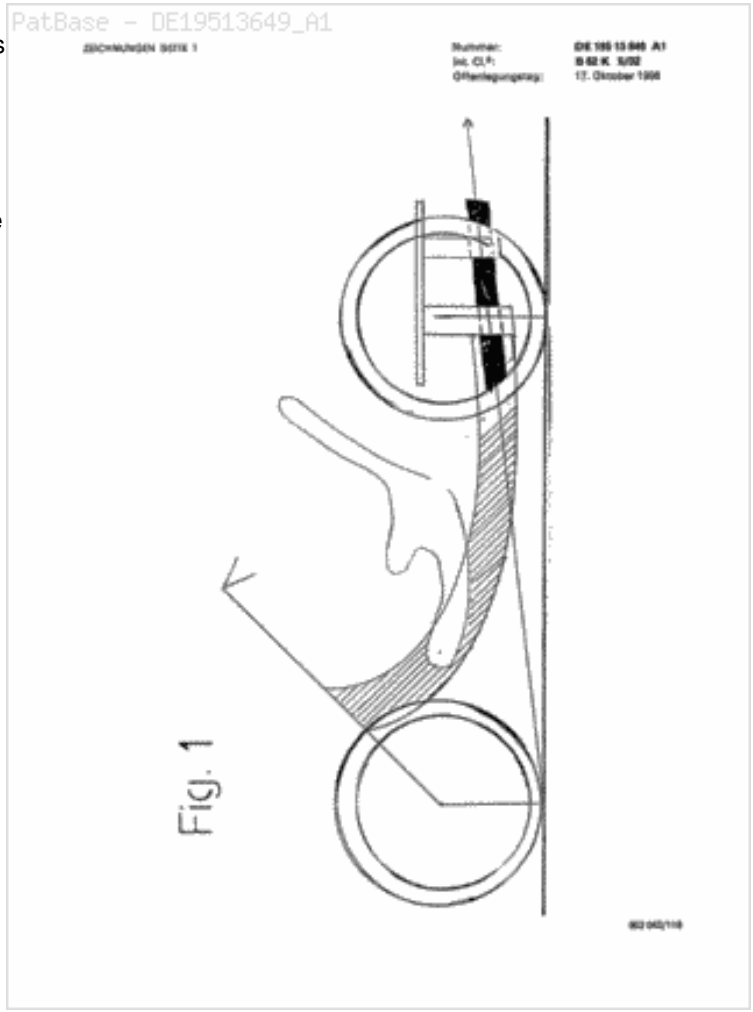
European class: B62K3/00C B62K5/02 B62K5/027 B62K5/10

Classification Explorer

Cited documents: US5040812, US4072325, US3995875, US3958814,

Forward Citations: WO11109851, WO05077683, US8430713, EP2393704, EP1713651, DE202012003848, DE19716506, DE102011017359, DE102011017358,

Abstract:
Source: DE19513649A1 The vehicle chassis is carried on a single wheel at the front and two wheels in a bogie at the rear. In the first version of the vehicle the chassis can be turned w.r.t. the almost horizontal bogie at the back. The driver sits on the chassis in front of the bogie. When driving around curves the driver can lean himself and the front part of the frame towards the centre of the curved path. The combined centre of gravity of the vehicle and rider is moved towards the centre of the curve and lowered. In the second form levers and joints in the bogie (1) allow the rear wheels to lean and the bogie to lower.



0) CN201061987Y – AIR INTERCONNECTING APPARATUS FOR VEHICLE TYRES...

39) Family number: 41893339 (CN201061987Y) © PatBase

Title:	Air interconnecting apparatus for vehicle tyres
Priority:	CN200720124970U 20070814

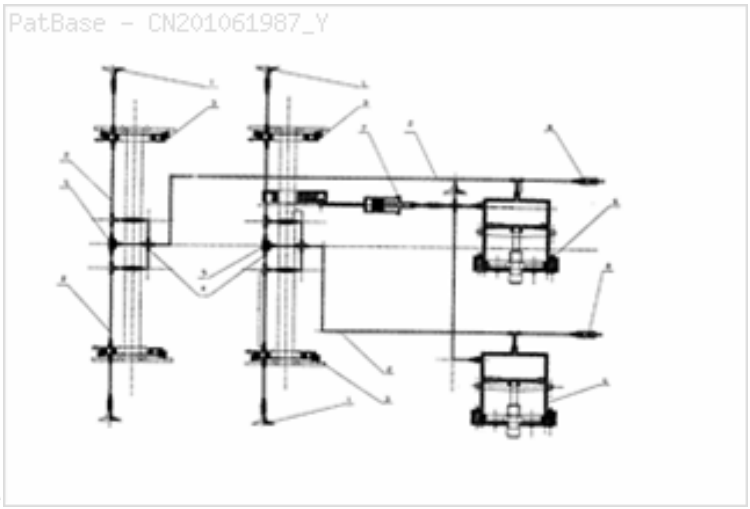
Family:

Publication number	Publication date	Application number	Application date
CN201061987 Y	20080521	CN200720124970U	20070814

Probable Assignee:	CHONGQING INST OF TECHNOLOGY
Assignee(s):(std):	CHONGQING INST OF TECHNOLOGY
Assignee(s):	CHONGQING INSTITUTE OF TECHNOLOGY
Inventor(s):(std):	JINXI ZHANG ; WENZHAO CHEN
Inventor(s):	ZHANG JINXI ; CHEN WENZHAO
International class (IPC 8–9):	B60C23/00 (Advanced/Invention); B60C23/00 (Core/Invention)

Classification Explorer

Abstract:
Source: CN201061987Y The utility model discloses a gas communicating device for a vehicle tire, which comprises a wheel and a gas guiding tube, wherein a connecting device is arranged on the wheel, the connecting device is communicated with a gas communicating and controlling device through the gas guiding tube. A valve of the gas communicating and controlling device is connected respectively with a right and a left front wheels and a right and a left rear wheels. The gas communicating and controlling device is connected with a gas storage tank through the gas guiding tube. An automatic inflating device is arranged on the gas storage tank, wherein the automatic inflating device is connected with a running axle shaft, when the axle shaft runs, the axle shaft drives the automatic inflating device to inflate gas into the gas storage tank. The gas communicating device for a vehicle tire of the utility model is capable of communicating gas between the two front wheels or between the two rear wheels of automobiles, and once a tire is punctured, two tires and the gas storage tank deflate simultaneously, deflating time can be prolonged, and thereby the aim of preventing an automobile driving leanly in the process of driving in high speed can be achieved. Tire burst accidents in the process of driving in high speed can be effectively avoided through the utility model and the safety of drivers, passengers and the automobiles can be guaranteed.



0) BRPI8705851A – IMPLEMENTO AGRICOLA PARA COLHEITA DE CAFE E FRU...

40) Family number: 202389 (BRPI8705851A) © PatBase

Title: IMPLEMENTO AGRICOLA PARA COLHEITA DE CAFE E FRUTOS SIMILARES AGRICULTURAL MACHINERY FOR CROP OF CAFE AND SIMILAR FRUITS (Machine translation)

Priority: BR1987PI05851 19871103

Family:

Publication number	Publication date	Application number	Application date
BRPI8705851 A	19890523	BR1987PI05851	19871103

Probable Assignee: BELLANDI FERDINANDO L

Assignee(s):(std)**:** BELLANDI FERDINANDO L

Assignee(s): FERDINANDO LEOPOLDO BELLANDI

Inventor(s):(std)**:** BELLANDI FERDINANDO LEOPOLDO

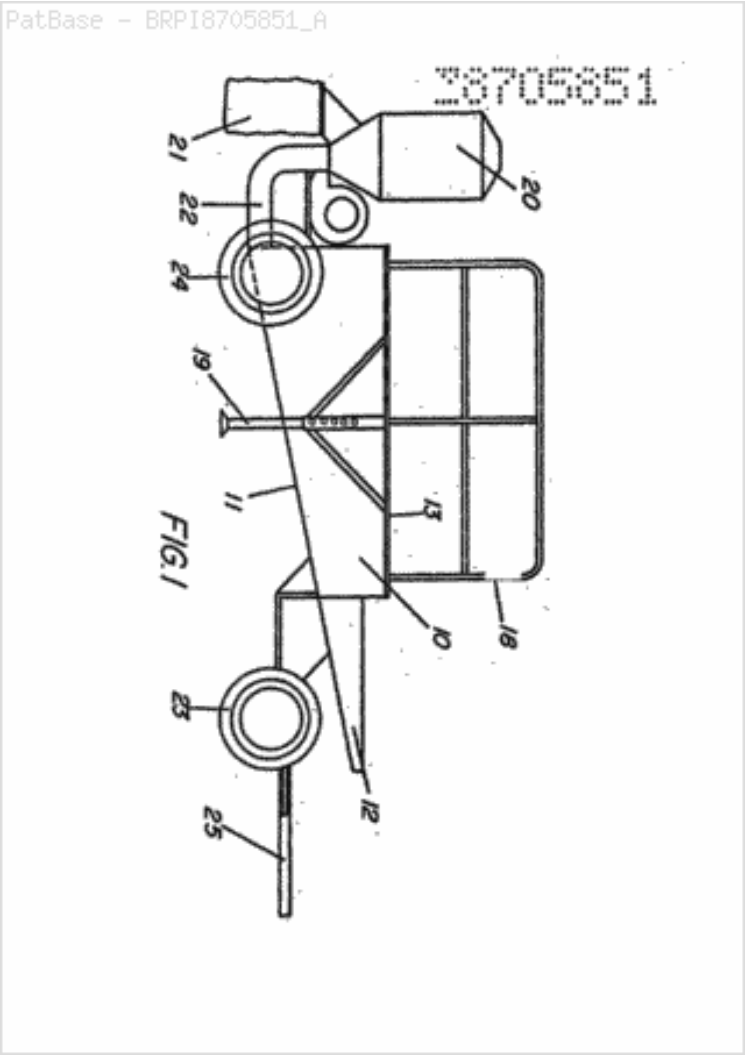
Inventor(s): FERDINANDO LEOPOLDO BELLANDI

International class (IPC 8–9): A01D46/20 A01D46/22 (Advanced/Invention); A01D46/00 (Core/Invention)

International class (IPC 1–7): A01D46/20 A01D46/22

Classification Explorer

Abstract:
Source: BRPI8705851A [Source: Claim 1] 1. –IMPLEMENTO AGRICOLA PARA COLHEITA EG CAFE E FKUTOS–SIMILARES», para facilitar e melhorar a produtividade – da colheita, caracterizado pelo fato de compreender uma estrutura em forma de tanque (10) incorporando, ante – riormente, um cocho (12), superiormente uma plataforma– (13) e,– posteriormente, um abanador (20), sendo dita – '. ss..plataforma (13) constituida de asas laterais articula – veia (14) adaptadas a uma parte fixa (16) dotada de aberturas (17) e de uma estrutura, de apoio (18) dispos– ta central e longitudinalmente. [Source: Claim 1] 1. –AGRICULTURAL IMPLEMENT for HARVESTING EG CAFE and FKUTOS–similar», to facilitate and improve the productivity of a crop, characterized by the fact of a tank–like structure (10) incorporating, ante–older, a trough (12), superiorly–platform (13) and, later, a fan (20), being told–'. ss?. platform (13) consisting of side wings articulates–vein (14) adapted to a fixed part (16) equipped with openings (17) and of a structure, (18) biometric ta and central lengthwise.



- **search:** SS10 ft=vehicle and two front wheel and (damper or suspension) and handlebar and brake* (Results 0)
- **search:** SS11 ft=vehicle and two front wheel and (damper or suspension) and brake* (Results 5)
- List: SS11 1–50 (ft=vehicle and two front wheel and (damper or suspension) and brake*) (Results 5)

0) US2001028155A – GRAVITY DRIVENSTEERABLE VEHICLE

1) Family number: 29542396 (US2001028155A) © PatBase

Title: Gravity drivensteerable vehicle

Priority: CA19982238468 19980522 CA20012336288 20010301 US19970045490P 19970502 US20000186185P 20000301 US19990159465P 19991013 US20010797406 20010301 US19980071523 19980501 US20030659730 20030910 US20000686235 20001011

Family:

Publication number	Publication date	Application number	Application date
CA2238468 AA	19991122	CA19982238468	19980522
CA2238468 C	20070508	CA19982238468	19980522
CA2336288 AA	20010901	CA20012336288	20010301
CL2001002426 A1	20020830	CL20010002426	20011009
CL44117 B	20081202	CL20010002426	20011009
US2001028155 AA	20011011	US20010797406	20010301
US2004113378 AA	20040617	US20030659730	20030910
US6276700 BA	20010821	US19980071523	19980501
US6672602 BB	20040106	US20010797406	20010301

Probable Assignee: UNILEVER NV

Assignee(s):(std)**:** NEWTON DAVID L ; WALTON STEVEN K ; WAY FREDERIC L ; WAY FREDERIC L II

Assignee(s): WAY FREDERIC LATIMER ; WAY II FREDERIC L ; WALTON STEVEN KENDALL ; UNILEVER NV ; NEWTON DAVID

Inventor(s):(std)**:** NEWTON DAVID ; NEWTON DAVID L ; WALTON STEVEN K ; WALTON STEVEN KENDALL ; WAY FREDERIC L ; WAY FREDERIC L II ; WAY FREDERIC LATIMER ; WAY II FREDERIC L

Inventor(s): SASO CORINNE ; ALBRIGHT GEORGE ; GIBLIN EDWARD JOHN

Agent(s): OGILVY RENAULT LLP SENCRL SRL; SARGENT

International class(IPC 8–9)**:** A63C5/00 B62B11/00 B62B15/00 B65D47/06 B65D47/12 B65D47/40 (Advanced/Invention); A63C5/00 B62B11/00 (Core/Invention)

International class(IPC 1–7)**:** A63C5/00 B62B11/00 B62B13/18 B62K13/00

CPC: B62B15/008 A63C17/01 A63C17/28 A63C2203/06

European class: A63C17/28 B62B15/00W K63C17/01 K63C203/06

US class: 280/21.1 280/21.100S 280/267 280/7.12 280/7.120P 280/7.120S 280/8 280/87.01 280/87.010P 280/8S

Classification Explorer

Cited documents: US967423 A, US885977 A, US6276700 BA, US6116622 A, US6035976 A, US5997018 A, US5927732 A, US5868408 A, US5810376 A, US5673772 A, US5601296 A, US5573257 A, US5513865 A, US4909524 A, US4542908 A, US4413832 A, US4295547 A, US4244593 A, US4218098 A, US4134599 A, US4098519 A, US4076266 A, US4046392 A, US3870334 A, US3862766 A, US3799565 A, US3734523 A, US3718344 A, US3704897 A, US3580592 A, US3391947 A, US3374000 A, US3345080 A, US3104115 A, US3069182 A, US3035849 A, US2966364 A, US2965387 A, US2750198 A, US2738542 A, US2141509 A, US2103998 A, US2063627 A, US2043374 A, US2001647 A, US1938701 A, US1722574 A, US1524563 A, US1431826 A, US1115617 A,

Forward Citations: USD717377, USD690371, USD513353, USD500346, US9510885, US8899604, US8827981, US8562004, US8505931, US7970530, US7779944, US7591337, US7571787, US7530582, US7328765, US7213823, US7201386, US7172205, US7108270, US6926294, US6776427, US6672602, US6488296, US2010250107, US2010096823, US2009299596, US2009174159, US2007176382, US2005062242, US2005057007, US2005040707, US2004262871, US2004080130, US2003197341, FR2830770,

Abstract:
Source: US2001028155A A gravity driven steerable vehicle having wheels, or skis or a combination of wheels and skis for recreational use, most particularly on surfaces such as pavement, artificial hard–pack turf, mountain slopes, dirt roads, grass and hard–packed or non–packed snow. The vehicle has at least three (3) but preferably four (4) wheels, or skis or a combination of wheels and skis which may or may not be on independent axles one from the other and which may or may not be each independently shock suspended. There is also a steering mechanism for steering the vehicle and a driver compartment portion for containing a driver of the vehicle in a prone face–down and face–forward position. The vehicle is steerable by the driver from the prone face–down and face–forward position. The mechanism for suspension of the wheels and/or skis is configured to provide precise control in turns especially the carving of turns, by the skis, while descending on snow covered terrain. The attitude of the skis relative to the snow surface changes upon initiation of a turn and while in the turn to increase the edgeing of the skis thereby enhancing the turning characteristics of the vehicle. The vehicle may further have a braking system for slowing or stopping the vehicle and a harness apparatus for harnessing the driver onto and into the vehicle.

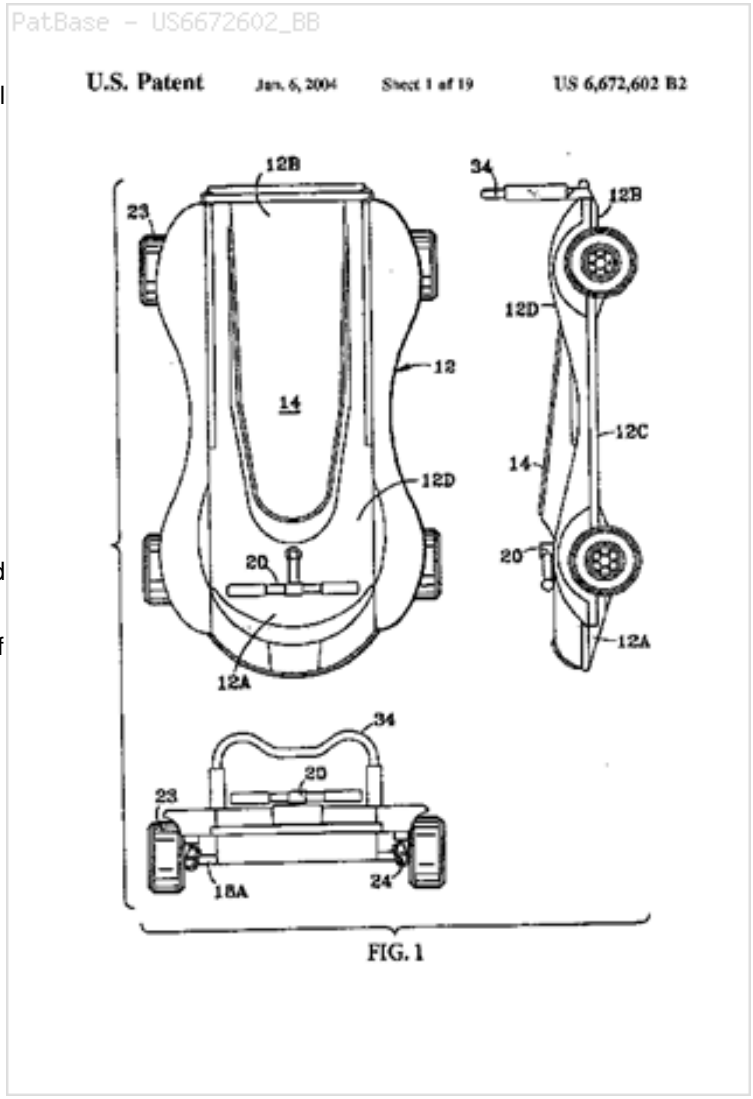


FIG. 1

0) US3137370A – VEHICLE BRAKE CONTROL AND BALANCING SYSTEM

2) Family number: 228078 (US3137370A) © PatBase

Title: VEHICLE BRAKE CONTROL AND BALANCING SYSTEM

Priority: FR19620889807 19620302

Family:

Publication number	Publication date	Application number	Application date
DE1455940 A1	19690130	DE19631455940	19630227
FR1325672 A	19630503	FR19620889807	19620302
GB1036443 A	19660720	GB19630008389	19630301
US3137370 A	19640616	US19620178292	19620308

Probable Assignee: FERODO SA

Assignee(s):(std)**:** FERODO SA

Assignee(s): SOCIETE ANONYME FRANCAISE DU FERODO ; ANONYME FRANCAISE DU FERODO SOC

Inventor(s):(std)**:** ANDRE LEPELLETIER PIERRE

Inventor(s): LEPELLETIER PIERRE ANDRE

International class (IPC 8–9)**:** B60G15/06 B60G21/00 B60G7/00 B60T11/24 B60T8/00 B60T8/52 F16D55/224 F16D65/14 (Advanced/Invention); F16D55/00 (Advanced/Non–invention); B60G15/00 B60G21/00 B60G7/00 B60T11/10 B60T8/00 B60T8/52 F16D55/22 F16D65/14 (Core/Invention); F16D55/00 (Core/Non–invention)

International class (IPC 1–7)**:** B60T11/24 B60T8/00 F16D65/16

CPC: F16D55/224 B60G7/006 B60G15/068 B60G21/007 B60G2200/46 B60G2202/312 B60G2204/128 B60G2204/41062 B60T8/00 B60T8/52 B60T11/24 F16D2055/0091 F16D2121/02 F16D2127/08

European class: B60G15/06F1 B60G21/00D B60G7/00D B60T11/24 B60T8/00 B60T8/52 F16D55/224 L60G200/15 L60G200/460 L60G202/312 L60G204/128 L60G204/41062 R16D121/02 R16D127/08 R16D55/00F8

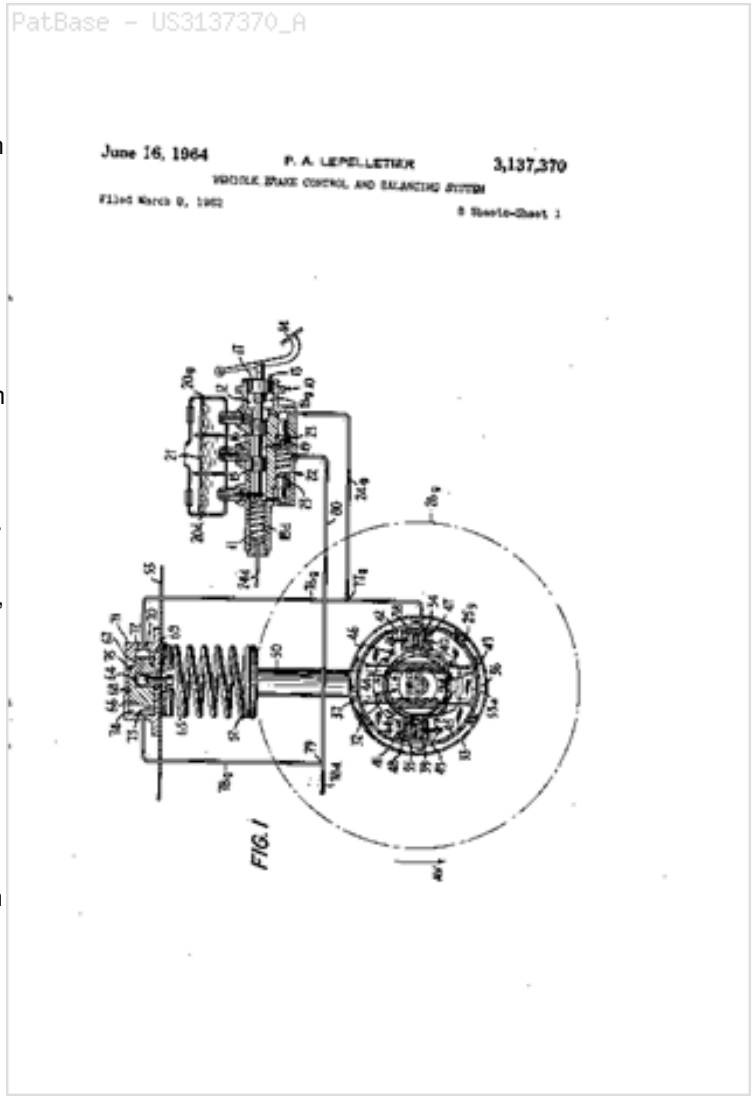
US class: 188/2.00R 188/2R 188/346 188/72.5

Classification Explorer

Cited documents: US3044581 A, US3033324 A, US2395072 A, US2289907 A,

Forward Citations: WO8804625, US4775196, US3923345, US3502181, US3455416, US3340968, US3338351, US3305051, US3291263, US3261432, US3259214, FR2648193, EP0402261,

Abstract:
Source: GB1036443A 1,036,443. Fluid−pressure brakes; hydraulic shock−absorbers. FRANCAISE DU FERUDO S.A. March 1, 1963 [March 2, 1962], No. 8389/63. Headings F2E, F2F and F2S. [Also in Division B7] A brake control system for two of the wheel brakes on a vehicle has the brakes movable relatively to the vehicle chassis on brake application to actuate a mechanical or fluid pressure control system which balances the retarding effects of the two brakes, each brake incorporating a fluid cylinder connected to a conduit and to an adjustable−capacity piston− and−cylinder device having one of its members fast with the brake and the other with the chassis to form an expansion chamber comprising a part of the balance control, the conduits being fed from a driver−operated master cylinder feeding equal volumes into each conduit on depression of the usual pedal. In one form, a master cylinder 10, Fig. 1, has two separate working spaces 11, 12 feeding two lines 24d, 24g connected to slave units 34, 35 in each of the two front wheel brakes 25d, 25g, Fig. 2 (not shown), of a motor vehicle. The master cylinder 10 is so proportioned that actuation of its control pedal 14 pumps equal volumes of liquid through the two lines 24d, 24g. The right and left−hand front wheel brakes 25d, 25g are each mounted at the end of a strut−type suspension unit 50 pivoting at its lower end 50a upon a bar 53a fast with the vehicle chassis, and permitted at its upper end a slight movement lengthwise of the vehicle chassis 53. The upper end of each suspension unit 50 is connected through a ball−and−socket 64 to a piston 66 slidable within a housing 71d, 71g fast with the vehicle chassis 53. A working space 74 at the front end of each piston 66 is connected through a pipe 78g, 78d to a common pipe 80 leading to a pressure space 22 separating two valves 23 in the master cylinder 10. An expansion chamber formed by a working space 72 at the rear end of each of the pistons 66 is connected through a line 76 to the independent main lines 24d, 24g of the associated brakes. When the brakes are disengaged, the two valves 23 are biased apart by a spring, but will be moved by any difference in pressure within the working spaces 11, 12 of the master cylinder 10 to balance the pressures in these two spaces. When the pedal 14 is depressed to engage the brakes, the master cylinder 10 supplies equal volumes of fluid through the two primary lines 24d, 24g to the respective wheel brakes 25d, 25g. The retardation of the brakes relative to the chassis causes the upper ends of the suspension units 50 to move forwardly relatively to the chassis 53, thus sliding both pistons 66 leftwards to increase the pressure in the working spaces 74, and thus increase the pressure in the line 80 and the space 22 between the two valves 23, which are thereby firmly closed. At the same time, the working spaces 72 at the rear ends of the two pistons 66 are increased in size, thus tending to disengage the brakes. If one brake is engaged more strongly than the other, the corresponding working space 72 becomes proportionally bigger than that on the other side of the vehicle, thus reducing the brake engaging force on that side of the vehicle, to balance the two brakes. In the form shown, the two slave units 34, 35 of each brake are connected by a pipe for simultaneous operation by the pressure in the associated pipe 24. In a modification, Fig. 1a (not shown), two oppositely−acting slave units in one cylinder are provided, one unit being connected directly to the primary line 24, and the other being connected to the pipe 80. Thus, one brake shoe is moved to the engaged position by actuation of the primary pressure, and movement of the upper end of the suspension strut 50 causes the associated piston 66 to slide, thus building up pressure in the pipe 80 to render the second slave unit operative and engage the second shoe. In a modification, a similar master cylinder 10, Fig. 4 (not shown), operates the four road wheel brakes of a motor vehicle. In this construction, the front wheel brakes 100d, 100g are of the disc type, while the rear brakes 123d, 123g are drum brakes. Each of the lines 24d, 24g feeding primary pressure to the disc brakes is connected to an expansion chamber 72 formed by a piston 120, Fig. 5 (not shown), fast with the vehicle chassis 53 and sliding within a cylinder 74 rigid with the disc brake housing 104, the disc brake housing moving lengthwise of the vehicle chassis when the brakes are applied. Each expansion chamber 72 is connected via a pipe 112 to slave−cylinders 110 in a brake plate 105 moved against the bias of springs 113 to engage a small friction lining 103 with a disc 101 fast with the associated vehicle wheel, the latter disc also engaging a friction lining 102 fast with the brake support 104. At its front end, each disc brake support 104 is provided with an axially extending spigot 114 slidable within a bracket 116 vertically movable upon a pin 118 upon the chassis 53. The



pistons 120 of the expansion chambers 72 mount the rear end of each disc brake support 104 upon the chassis 53 by means of cross–pins 121. Brake reaction between the support 104 and the chassis 53 is taken in part by a spring 122 within a working space 74 and in part by the pressure of liquid within this working space. Pipes 78d, 78g are connected together and through a pipe 80 to the two mastercylinder valves 23, as before, and also through pipes 125d, 125g to slave units 124d, 124g energized to apply the rear wheel brakes 123d, 123g. Thus, when the master cylinder pedal 14 is actuated, the front disc brakes 100d, 100g are engaged, and move the two disc brake supports 104 relatively lengthwise of the chassis 53. The two interconnected working spaces 74 co–ordinate the sliding movements of the two brake disc supports 104, and simultaneously control the expansion chambers 72, which increase in size the further the supports move relatively to the fixed pistons 120. Accordingly, the engaging force applied to each of the friction elements 103 is varied to obtain balanced braking between the two front wheel brakes. In a modification of this construction, Figs. 7, 8 (not shown), two separate slave units are provided for actuating each front disc brake. One slave unit is, as before, directly connected through the expansion chamber to the associated primary fluid pressure line, while the other slave unit is connected to the pipe 80 and to the working spaces 74. Thus, in this construction, after initial energization of the primary line slave unit, movement of the brake supports relatively to the vehicle chassis produces a pressure in the pipe 80 and c. which is then fed into the second slave unit to increase the brake engaging force. In another modification, a lever 130, Fig. 10 (not shown), pivoted at 131 upon the vehicle chassis 53, co–ordinates the sliding movements of the brake disc housings 100d, 100g lengthwise of the vehicle, to control the size of the expansion chambers 72 and hence the braking forces. A modified master cylinder 10 is used, in which two working spaces 11, 12 only are provided, and the valves 23 are omitted. Hydraulic shock – absorbers. –Each vehicle front–wheel 26d, 26g, Fig. 2 (not shown), is mounted upon the vehicle chassis 53 by a strut–type suspension unit comprising a cylinder 50, pivoted at 50a upon a bar 53a carried by the vehicle chassis, and fast at 32 with the back–plate of the associated drum brake. Within each tube 50 slides a damper 57 connected through a rod 56 and the ball–and–socket joint 64 to each piston 66, slidable within the cylinder 71 fast upon the chassis 53, as described above, a helical spring 52 surrounding the rod 56. Movement lengthwise of the upper end of the rod 56 relative to the chassis 53 is permitted by a slot in the chassis and by an oval–shaped washer 61, Fig. 3 (not shown), within a cup 55 secured to the chassis.

0) US5042884A – HYDRAULIC BRAKING SYSTEMS FOR VEHICLES

3) Family number: 4737490 (US5042884A) © PatBase

Title: Hydraulic braking systems for vehicles

Priority: GB19880027614 19881125 GB19880027615 19881125

Family:

Publication number	Publication date	Application number	Application date
EP0370756 A1	19900530	EP19890312053	19891121
GB8827614 A0	19881229	GB19880027614	19881125
GB8827615 A0	19881229	GB19880027615	19881125
JP2182562 A2	19900717	JP19890307376	19891127
US5042884 A	19910827	US19890438621	19891117

Probable Assignee: LUCAS IND PLC

Assignee(s):(std)**:** LUCAS IND PLC

Assignee(s): LUCAS IND PUBLIC CO LTD ; LUCAS INDUSTRIES PLC ; LUCAS INDUSTRIES PUBLIC LIMITED COMPANY ; LUCAS IND

Inventor(s):(std)**:** FARR GLYN P R ; GURIN FUIRITSUPU REJINARUDO FU ; FARR GLYN PHILLIP REGINALD

Inventor(s): GURIN FUIRITSUPU REJINARUDO FUAA

Designated states: DE GB

International class (IPC 8–9)**:** B60T11/20 B60T8/00 B60T8/1761 B60T8/26 B60T8/32 B60T8/34 B60T8/42 B60T8/44 B60T8/48 B60T8/58 B60T8/94 (Advanced/Invention)

International class (IPC 1–7)**:** B60T11/20 B60T8/26 B60T8/34 B60T8/36 B60T8/42 B60T8/44 B60T8/58

CPC: B60T8/00 B60T8/26 B60T8/3285 B60T8/344 B60T8/4241 B60T8/425 B60T8/4275 B60T8/448 B60T8/4845 B60T8/4854 B60T8/58 B60T8/94 B60T11/20

European class: B60T11/20 B60T8/00 B60T8/26 B60T8/32D16B B60T8/34D2 B60T8/42A4B B60T8/42A4B1 B60T8/42B B60T8/44V1 B60T8/48B4B B60T8/48B4B2 B60T8/58 B60T8/94

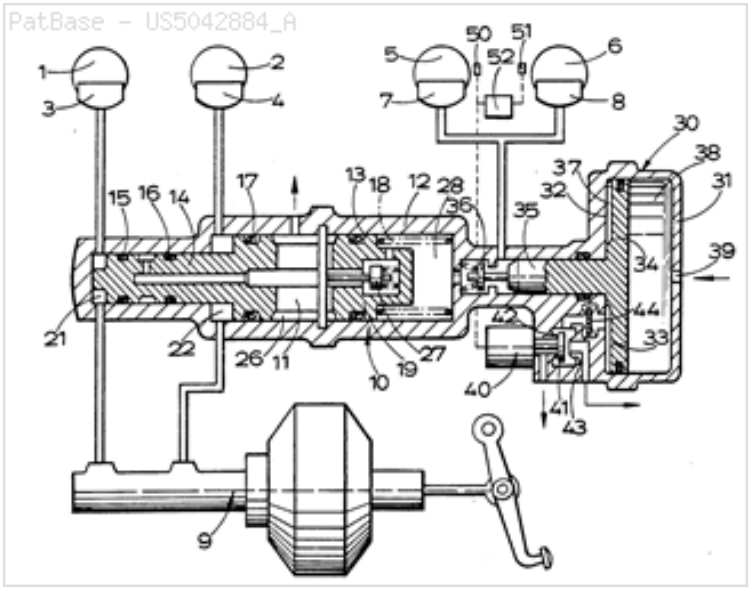
US class: 303/100 303/111 303/186 303/9.71

Classification Explorer

Cited documents: US4637664 A, US4511185 A, US4229049 A, US4071283 A, US3795423 A, JP59134040 A2, EP0260046 A2, EP0233486 A2, DE1951210 A1, DE1163695 B,

Forward Citations: US8781969, US8725646, US8719171, US8700535, US5281012, US2009114311,

Abstract:
Source: US5042884A In an hydraulic braking system for a vehicle the rear wheel brakes are adapted to be applied by a fluid pressure generated by, and dependent upon, the pressure applied to at least one of the front wheel brakes. Control of the rear wheel brakes may be achieved by a fluid power unit under the control of at least one solenoid–operative valve which, in turn, is responsive to signals from sensing means responsive to the behaviour of the rear wheels.



0) US4836325A – OFF–ROAD VEHICLE

4) Family number: 3275055 (US4836325A) © PatBase

Title: Off–road vehicle

Priority: JP19860253379 19861023 JP19860253380 19861023 US19870112817 19871023 JP19860253381 19861023

Family:

Publication number	Publication date	Application number	Application date
JP63106170 A2	19880511	JP19860253380	19861023
JP63106184 A2	19880511	JP19860253381	19861023
JP63106184 K1	19880511	JP19860253381	19861023
JP63106193 A2	19880511	JP19860253379	19861023
US4836325 A	19890606	US19870112817	19871023
US4887844 A	19891219	US19880268255	19881107

Probable Assignee: HONDA MOTOR CO LTD

Assignee(s):(std)**:** HONDA MOTOR CO LTD

Assignee(s): HONDA GIKEN KOGYO A CORP OF JAPAN KK ; HONDA GIKEN KOGYO KABUSHIKI KAISHA ; HONDA GIKEN KOGYO KK

Inventor(s):(std)**:** ENOKIMOTO AKITO ; ENOMOTO AKITO ; HANDA AKIO ; HOSOYA EIJI ; ISHIWATARI MAKOTO ; KASA KEIJI ; MIZUMOTO KIMINARI ; MIZUMOTO KOUSEI ; RYU KEIJI

International class (IPC 8–9): B60T11/16 B60T7/08 B62D1/04 B62D21/18 B62D23/00 B62D25/08 B62K5/08 B62L3/02 (Advanced/Invention) ; B60T11/16 B60T7/02 B62D1/04 B62D23/00 B62D25/08 B62K5/00 (Core/Invention)

International class (IPC 1–7): B60C3/20 B60K26/00 B60T11/16 B60T7/08 B62D1/04 B62D23/00 B62D25/08 B62K5/08

CPC: B60T11/16 B62D21/183 B62L3/023

European class: B60T11/16 B62D21/18B B62L3/02B

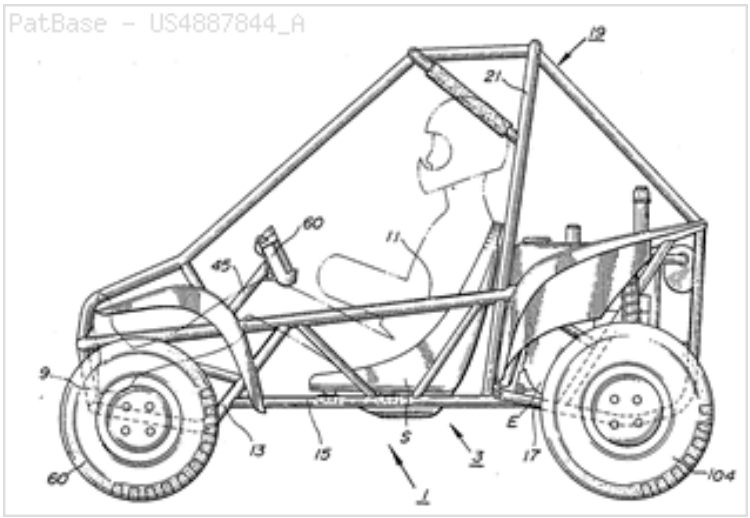
US class: 180/333 188/344 188/350 280/124.128 280/264 280/779

Classification Explorer

Cited documents: US532298 A, US4708361 A, US4641854 A, US4421359 A, JP61196809 A2, JP60134042 A2, JP60076586 B4, JP59160678 A2, JP59151882 B4, JP56056469 A2, JP5317532 A2, JP51109519 A2, JP51104532 A2, JP51104525 A2,

Forward Citations: WO09122178, USD682739, US9211914, US7165777, US6866277, US6446992, US6446742, US5327989, US5054842, US2005140111, US2003234529, KR100964348, JP3019794, JP2077381, JP2077370, JP2011516329, JP2008065179, DE19727315,

Abstract:
Source: US4836325A An off–road vehicle has a hydraulic brake operating assembly mounted on a steering handle. The steering handle has a base, a rectangular handle portion integral with the base, and a cover covering the base. The brake operating assembly has a brake oil reservoir, two brake levers pivotally supported on lateral sides of the handle portion for braking front and rear wheels, respectively, and two brake master cylinders communicating with the brake oil reservoir through hoses and responsive to operation of the brake levers for generating hydraulic pressure. The brake oil reservoir is centrally fixedly mounted on the rectangular handle portion. The brake master cylinders are fixedly mounted respectively on the lateral sides of the handle portion.



0) US6126176A – FALL SUPPRESSING DEVICE FOR A VEHICLE CONFIGURE...

5) Family number: 12573466 (US6126176A) © PatBase

Title: Fall suppressing device for a vehicle configured to ride on descending and ascending escalators

Priority: JP19970243084 19970908 JP19970243087 19970908 KR19980036941 19980908

Family:

Publication number	Publication date	Application number	Application date
DE19841013 A1	19990318	DE19981041013	19980908
JP11078903 A2	19990323	JP19970243084	19970908
JP11078904 A2	19990323	JP19970243087	19970908
KR100284254 B1	20010302	KR19980036941	19980908
KR19990029624 A	19990426	KR19980036941	19980908
US6126176 A	20001003	US19980144981	19980901

Probable Assignee: EXEDY CORP

Assignee(s):(std)**:** EXEDY CORP

Assignee(s): EXEDY CORP NEYAGAWA OSAKA JP ; EXEDY CORPORATION

Inventor(s):(std)**:** EGUCHI YASUHIKO ; FUKUTAKE HEIJI ; KAKEHI TORU ; EGUCHI YASHUHIKO

Inventor(s): EGUCHI YASHUHIKO NEYAGAWA OSAKA JP ; KAKEHI TORU NEYAGAWA OSAKA JP ; FUKUTAKE HEIJI TOYONAKA OSAKA JP

International class (IPC 8–9): B60B33/00 B62B5/02 (Advanced/Invention); B60B33/00 B62B5/02 (Advanced/Non–invention); B60B33/00 (Core/Non–invention)

International class (IPC 1–7): B60B33/00 B62B5/02 B62B5/04 B62B9/02

CPC: B62B5/021 B60B2200/43 B60B2200/432

European class: B62B5/02E L60B200/43 L60B200/432

US class: 280/33.994 280/47.34 280/5.2 280/5.26 280/52 280/526

Classification Explorer

Cited documents: US4326622 A, US4132423 A, US4061199 A, US3269478 A, FR2714007 A1, DE8133435 U, DE774398 A, DE6937384 U, DE6751057 U, DE2030594 A1, DE2030583 A1, DE19506847 A1,

Forward Citations: WO15159347, WO07025508, WO0194182, US8840125, US7199709, US6834869, US6224068, US2015090539, US2013062845, US2003102969,

Abstract:
Source: US6126176A A fall suppressing device 8 provided in a cart for moving up and down an escalator includes an engagement member 87 and an oil damper 81. The engagement member 87 is vertically movably coupled to the cart, and engages with an upper step when a wheel 5 falls from the upper step. The oil damper 81 damps a relative moving speed between a cart body and the engagement member 87.

