



(51) International Patent Classification:  
*B62D 49/08* (2006.01)

(21) International Application Number:  
PCT/IB2014/064134

(22) International Filing Date:  
28 August 2014 (28.08.2014)

(25) Filing Language: Italian

(26) Publication Language: English

(30) Priority Data:  
PI2013A000076 28 August 2013 (28.08.2013) IT

(72) Inventor; and

(71) Applicant: VILLA, Pasquale [IT/IT]; Via Fratelli Cervi,  
46, I-29013 Carpaneto Piacentino (PC) (IT).

(74) Agent: CELESTINO, Marco; Viale Giovanni Pisano, 31,  
I-56123 Pisa (IT).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,  
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,  
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,

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

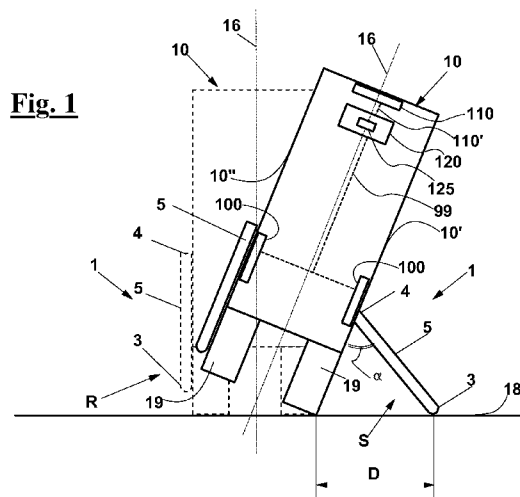
(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ,  
TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU,  
TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE,  
DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,  
LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,  
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(88) Date of publication of the international search report:  
2 July 2015

(54) Title: ANTI-ROLLOVER DEVICE FOR VEHICLES



(57) Abstract: An anti-rollover device (50) for a vehicle (10) having at least three wheels (19), in particular for a narrow vehicle and/or for a high-barycentre vehicle such as a forklift, wherein at least two right and left safety legs (5) are provided, each arranged at a respective side (10', 10'') of the vehicle, and having a free end portion (59) and an opposite end portion (54', 54'') constrained to the vehicle (10), through which the safety legs are connected to the vehicle (10) movably between a rest position (R), of minimum encumbrance with respect to the vehicle, and a support safety position (S) in which the free end portion (59) is located at a safety distance (D) from a respective side of the vehicle (10) in order to stop a lateral rollover of the vehicle thanks to the leg. The device also comprises an actuator means (100) for moving each leg (5) from the rest position (R) to the support safety position (S); a sensor means (110) for measuring a quantity related to an early rollover condition of the vehicle (10), the sensor means configured for producing a measurement signal (110') of such quantity; an automatic control means (120) for receiving the measurement signal and for sending the control signal to the actuator means (100) according to the measurement signal(s) (110'), so that in the case of an early rollover condition at least one of the legs (5, 51', 51'') moves from the rest position to the support safety position, resisting the lateral overturning of the vehicle.



INTERNATIONAL SEARCH REPORT

International application No  
PCT/IB2014/064134

A. CLASSIFICATION OF SUBJECT MATTER  
INV. B62D49/08  
ADD.  
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED  
Minimum documentation searched (classification system followed by classification symbols)  
B62D

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 01/56866 A1 (RITE HITE HOLDING CORP [US]) 9 August 2001 (2001-08-09) pages 3-9; claims 1,16; figures 1-8 -----	1-26
A	US 2008/122209 A1 (JAYASURIYA A MANGALA M [US]) 29 May 2008 (2008-05-29) paragraphs [0050] - [0068]; figures 1-16 -----	1-26
A	NL 1 014 496 C1 (JANSEN CHRISTIAAN JOHAN [NL]) 30 March 2000 (2000-03-30) pages 5-8; claims 1-6; figures 4-7 -----	1-26
A	WO 2010/043233 A1 (GAD ELKARIEM MOHAMED AHMED [EG]) 22 April 2010 (2010-04-22) claims 1-2; figures 1-2 -----	1-26
	-/--	

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search  6 March 2015	Date of mailing of the international search report  16/03/2015
---	--

Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer  Szaip, András
--	---

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/IB2014/064134

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 588 799 B1 (SANCHEZ ANGELO [US]) 8 July 2003 (2003-07-08) columns 2-3; claims 1-3; figures 1-4 -----	1-26
A	DE 90 16 969 U1 (NEWIG KURT) 11 April 1991 (1991-04-11) pages 1-3; figures 1-2 -----	1-26
A	DE 12 97 485 B (HUEGELSCHAEFER JOHANN) 12 June 1969 (1969-06-12) columns 1-2; figures 1-4 -----	1-26

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2014/064134

Patent document cited in search report	Publication date	Publication date	Patent family member(s)	Publication date
WO 0156866	A1	09-08-2001	AU 3323301 A	14-08-2001
			US 6394738 B1	28-05-2002
			WO 0156866 A1	09-08-2001
-----				
US 2008122209	A1	29-05-2008	NONE	
-----				
NL 1014496	C1	30-03-2000	AU 7323400 A	03-09-2001
			EP 1180089 A1	20-02-2002
			NL 1014496 C1	30-03-2000
			WO 0162658 A1	30-08-2001
-----				
WO 2010043233	A1	22-04-2010	US 2011204609 A1	25-08-2011
			WO 2010043233 A1	22-04-2010
-----				
US 6588799	B1	08-07-2003	NONE	
-----				
DE 9016969	U1	11-04-1991	NONE	
-----				
DE 1297485	B	12-06-1969	NONE	
-----				