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(72) Inventor; and

(71) Applicant: **BURGER, Henri Louis** [ZA/ZA]; 108 Platinum Junction, School Road, Milnerton, Cape Town 7441 (ZA).

(74) Agent: **SIBANDA & ZANTWIJK**; PO Box 1615, Houghton, 2041, Johannesburg, Gauteng (ZA).

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Declarations under Rule 4.17:

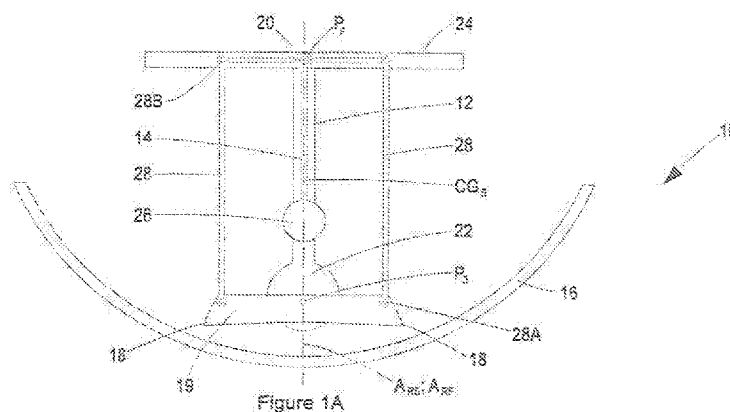
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- of inventorship (Rule 4.17(iv))

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[Continued on next page]

(54) Title: A LOCKING GIMBAL



(57) Abstract: This invention relates to a locking gimbal (10). More specifically, the invention relates to a locking gimbal (10) for automatically locking a gimballed object against motion arising from an external force (F_E) applied thereto; and automatically releasing the gimballed object on removal of the external force (F_E). The locking gimbal (10) includes a first object (12) pivotable about a first pivot axis (P_F), a second object (14) movable along an arc centered substantially at a second axis, a locking member (16) and a locking formation (18). The first object (12) defines a first reference axis (A_{RF}) passing through the first pivot axis (P_F) and a centre of gravity (CG_F) of the first object (12), whereas the second object (14) defines a second reference axis (A_{RS}) passing through the second axis and a centre of gravity (CG_S) of the second object (14). The first and second objects (12, 14) are movable relative to one other between a first aligned condition, wherein the first and second reference axes (A_{RF} , A_{RS}) are substantially aligned, and a second displaced condition, wherein the first and second reference axes (A_{RF} , A_{RS}) are angularly displaced relative to one other. The locking formation (18), actuated by displacement between the first and second objects (12, 14) is radially movable relative to the first pivot axis (P_F) between engaged and disengaged position, wherein: (i) in the first aligned condition, the locking formation (18) is in a disengaged position and spaced from the locking member (16), permitting rotation of the first object (12) about the first pivot axis (P_F); and (ii) in the second displaced condition, the locking formation (18) is in an engaged position and in contact with the locking member (16) thereby preventing rotation of the first object (12) about the first pivot axis (P_F).



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC: G01C 19/00 (2013.01); G01C 19/26 (2006.01); G01C 19/44 (2006.01); F16M 11/02 (2006.01); B63B 29/12 (2006.01) 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) B63B, F16M, G01C 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) EPODOC; WPIAP; TXTnn		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2012273537 A1 (NEWMAN ALFRED THOMAS) 01 November 2012 (01.11.2012) Figure 1 and 3; figure description	1-34
A	US 6257125 B1 (PATE J. R.) 10 July 2001 (10.07.2001) Figure 1 and 2; figure description	1-34
A	WO 2004067373 A1 (CONSTANTINIDES IAKOVOS) 12 August 2004 (12.08.2004) Figure 1 and 2; figure description	1-34
☐ 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 19 October 2015 (19.10.2015)		Date of mailing of the international search report 03 November 2015 (03.11.2015)
Name and mailing address of the ISA/AT Austrian Patent Office Dresdner Straße 87, A-1200 Vienna Facsimile No. +43 / 1 / 534 24-535		Authorized officer AKBARZADEH MOGHADAM J. Telephone No. +43 / 1 / 534 24-385

INTERNATIONAL SEARCH REPORT

International application No.

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Box No. II	Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)
This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons: 1. ☐ Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely: 2. ☒ Claims Nos.: 35, 36 because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically: Claims 35 and 36 do not meet the requirements of Rule 6.2 (a) PCT. Claims shall not, except where absolutely necessary, rely, in respect of the technical features of the invention, on references to the description or drawings. In particular, they shall not rely on such references as: "... substantially as herein described and illustrated". 3. ☐ Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).	
Box No. III	Observations where unity of invention is lacking (Continuation of item 3 of first sheet)
This International Searching Authority found multiple inventions in this international application, as follows: 1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims. 2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees. 3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.: 4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee. ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation. ☐ No protest accompanied the payment of additional search fees.	

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT / ZA 2015/000016

Patent document cited in search report			Patent family member(s)			Publication date
US	A1	2012273537	US	A1	2012273537	2012-11-01
US	B1	6257125	US	B1	6257125	2001-07-10
WO	A1	2004067373	WO	A1	2004067373	2004-08-12
			GR	B	1004374	2003-10-23