

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
26 October 2006 (26.10.2006)

PCT

(10) International Publication Number  
**WO 2006/113760 A3**

(51) International Patent Classification:  
*F16L 15/08* (2006.01)

(21) International Application Number:

PCT/US2006/014645

(22) International Filing Date: 19 April 2006 (19.04.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/673,090 20 April 2005 (20.04.2005) US

(71) Applicant: TOMM, Erwin [US/US]; 3320 West 130th Street, Cleveland, Ohio 44111 (US).

(74) Agent: HAAS, Steven; FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP, 1100 Superior Avenue, 7th Floor, Cleveland, Ohio 44114-2579 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

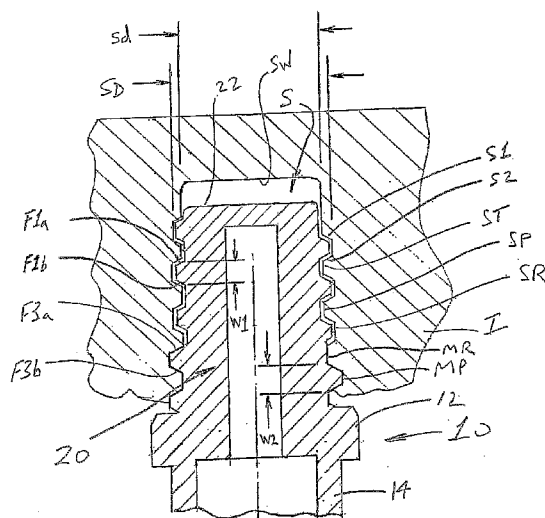
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:  
— with international search report

(88) Date of publication of the international search report:  
31 January 2008

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: THREADED CONNECTOR WITH INTERLOCK



(57) Abstract: A threaded connector includes a base and a threaded male portion projecting axially outward from the base. The threaded male portion is adapted to mate with an associated threaded female socket. The threaded male portion includes a helical thread comprising three sections: (I) a lead-in section; (N) a transitional cam-locking section; and, (Hi) a friction-locking section. The friction-locking section is located adjacent the base, the lead-in section is spaced from the base, and the transitional cam-locking section connects the lead-in section to the friction-locking section. The helical thread includes a tip and a root. The lead-in section is defined by a first major diameter at the tip of said thread and the friction-locking section is defined by a second major diameter at the tip of the thread. The second major diameter is greater than the first major diameter.

WO 2006/113760 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/14645

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - F16L 15/08 (2007.01)

USPC - 285/390

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)

IPC(8) -F16L 15/04, 15/06, 15/08 (2007.01)

USPC -285/291, 390, 403, 411; 411/411

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)

MicroPatent

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 1,764,876 A (LAUBER) 17 June 1930 (17.06.1930) entire document	1-3, 7-14, 17-18
Y		4-6, 15-16, 19
Y	US 3,426,642 A (PHIPARD) 11 February 1969 (11.02.1969) entire document	4-6, 15
Y	US 4,231,574 A (WILLIAMS) 04 November 1980 (04.11.1980) entire document	16
Y	US 6,709,189 B1 (SPOONER) 23 March 2004 (23.03.2004) entire document	19

Further documents are listed in the continuation of Box C.

\* 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

26 August 2007

Date of mailing of the international search report

16 OCT 2007

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents

P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Blaine R. Copenhaver

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774