

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 March 2005 (03.03.2005)

PCT

(10) International Publication Number
WO 2005/018707 A3

(51) International Patent Classification⁷: **A61M 5/32**

F. [US/US]; 5621 Selkirk Drive, Huntington Beach, CA 92649 (US). **KANNER, Rowland, W.** [US/US]; 3600 Wyeth Drive, Guntersville, AL 35976 (US).

(21) International Application Number:
PCT/US2004/026695

(74) **Agent: HACKLER, Walter, A.**; Patent Law Office, 2372 S.E. Bristol Street, Suite B, Newport Beach, CA 92660-0755 (US).

(22) International Filing Date: 17 August 2004 (17.08.2004)

(25) Filing Language: English

(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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(26) Publication Language: English

(30) **Priority Data:**
10/643,453 19 August 2003 (19.08.2003) US

(71) **Applicant** (*for all designated States except US*): **SAFETY 1ST MEDICAL, INC.** [US/US]; 1740 East Gary Avenue, Suite 109, Santa Ana, CA 92705-5842 (US).

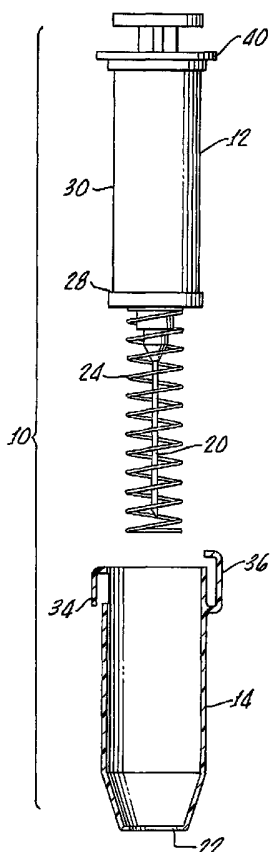
(72) **Inventors; and**

(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH,

(75) **Inventors/Applicants** (*for US only*): **GREMEL, Robert,**

[Continued on next page]

(54) **Title:** APPARATUS FOR RETAINING CONCENTRIC PARTS WITHIN ONE ANOTHER



(57) **Abstract:** Apparatus for retaining concentric parts within one another and enabling limited axial movement there between, includes an inner component (12) having a shoulder (28) disposed in an external perimeter thereof and an outer tubular component (14) having a wall (42) and an open end (44) for receiving the inner component (12) and an inner surface (46) for abutting the shoulder (28) and enabling a sliding interface there between. A retaining tab (34) is provided and disposed in the wall (42) proximate the open end (44) for depression of a free end (54) toward the wall (42) and a slot formed in the wall (42) beneath the tab (34) enables the free end (54) to be forced there past for retaining the free end (54) inside the wall (42) for engagement with the shoulder (28), thus preventing separation of the inner component (12) from the outer component (14).



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, IT, LU, 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

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:

22 December 2005

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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/26695

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61M 5/32

US CL : 604/192

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)

U.S. : 604/192, 198, 110, 263, 164.08

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,813,426 A (HABER et al) 21 March 1989 (21.03.1989), figure 8, entire document.	1-18
A	US 4,639,249 A (LARSON) 27 January 1987 (27.01.1987), figure 1, entire document.	1-18
A	US 5,527,294 A (WEATHERFORD et al) 18 June 1996 (18.06.1996), figures, abstract.	1-18
A	US 4,737,144 A (CHOKSI) 12 April 1988 (12.04.1988), abstract, figures.	1-18
A	US 4,767,413 A (HABER et al) 30 August 1988 (30.08.1988), figure 9, abstract.	1-18
A	US 5,433,712 A (STILES et al) 18 July 1995 (18.07.1995), figures, abstract.	1-18



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	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"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
"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	"&" document member of the same patent family

Date of the actual completion of the international search

28 September 2005 (28.09.2005)

Date of mailing of the international search report

26 OCT 2005

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. (703) 305-3230

Authorized officer

Sharon Kennedy

Telephone No. (571) 272-4948