

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
1 November 2007 (01.11.2007)

PCT

(10) International Publication Number
WO 2007/123826 A3

- (51) International Patent Classification:
A61M 5/00 (2006.01) A61M 31/00 (2006.01)
- (21) International Application Number:
PCT/US2007/008768
- (22) International Filing Date: 11 April 2007 (11.04.2007)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/793,383 20 April 2006 (20.04.2006) US
11/784,796 10 April 2007 (10.04.2007) US
- (71) Applicant (for all designated States except US):
SAFESHOT TECHNOLOGIES, LLC [US/US]; 25909
Pala, Suite 300, Mission Viejo, California 92691 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): SMITH, Jef-
frey [US/US]; 175 Giotto, Irvine, California 92614
(US). BARE, Rex O. [US/US]; 22467 Overlake Drive,
Lake Forest, California 92630 (US). THAYER, Daniel
[US/US]; 25909 Pala, Suite 300, Mission Viejo, California
92691 (US).
- (74) Agent: STETINA BRUNDA GARRED & BRUCKER;
75 Enterprise, Suite 250, Aliso Viejo, California 92656
(US).

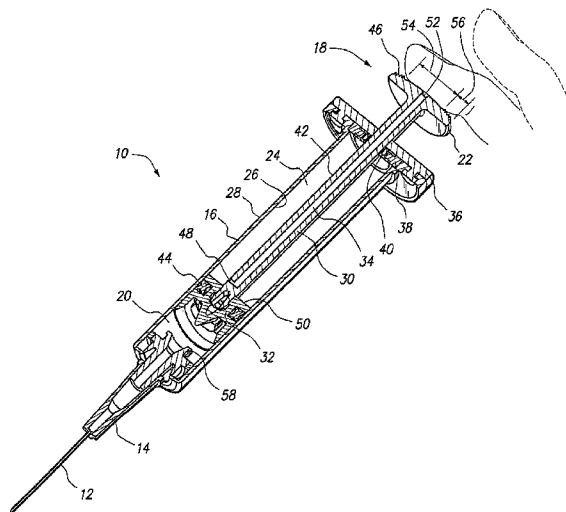
- (81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES,
FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN,
IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR,
LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY,
MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS,
RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, 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, MT, 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

[Continued on next page]

(54) Title: PLUNGER ACTIVATED VACUUM RELEASE MECHANISM FOR A SYRINGE



(57) Abstract: A retractable safety syringe may comprise a needle, needle holder, syringe body, and a plunger. A proximal portion of the body and a piston of the plunger may define a variable vacuum compartment. A through hole pneumatically connecting ambient air and the variable vacuum compartment may be formed through a thumb platform and rigid shaft of the plunger for allowing air to escape out of the variable vacuum compartment when a piston of the plunger is traversed toward the retracted position and allow air to be introduced into the variable vacuum compartment when the piston is traversed toward the engaged position. A retraction force may be created by the variable vacuum compartment by covering an entrance of the through hole and traversing the piston to the engaged position. At the engaged position, the piston may engage the needle holder and the retraction force may retract the piston, needle holder and needle into the syringe body to prevent accidental needle pricking and needle reuse.

WO 2007/123826 A3



(88) Date of publication of the international search report:
25 September 2008

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/08768

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: **A61M 5/00(2006.01);A61M 31/00(2006.01)**

USPC: **604/110,500**
 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. : 604/110,195,187,192,195,198,210,218,263,500

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.
X --- Y	US 6,458,105 B1 (RIPPSTEIN, JR. et al) 01 October 2002 (01.10.2002), Figures 1-7, Column 2, Line 30 - Column 3, Line 49, Column 6, Line 62- Column 8, Line 18.	1-3, 6-8 ----- 4-5, 9-12
X	US 5,000,736 (KAUFHOLD, JR. et al) 19 March 1991 (19.03.1991), Figures 2 and 3, Column 3, Line 18 - Column 4, Line 23.	1, 3, 8
Y	US 6,193,695 (RIPPSTEIN, JR.) 27 February 2001 (27.02.2001), Figures 2 and 2a, Column 5; Line 1 - Column 8, Line 59.	1-12
Y	US 5,049,133 (VILLEN PASCUAL) 17 September 1991 (17.09.1991), Figures 1 and 2, Column 1, Line 24 - Column 2, Line 57.	1-12

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	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 03 June 2008 (03.06.2008)	Date of mailing of the international search report 14 JUL 2008
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 WILLIAM CARPENTER <i>Arnie Heath</i> Telephone No. (571) 282-3700 <i>ser</i>