

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
2 September 2004 (02.09.2004)

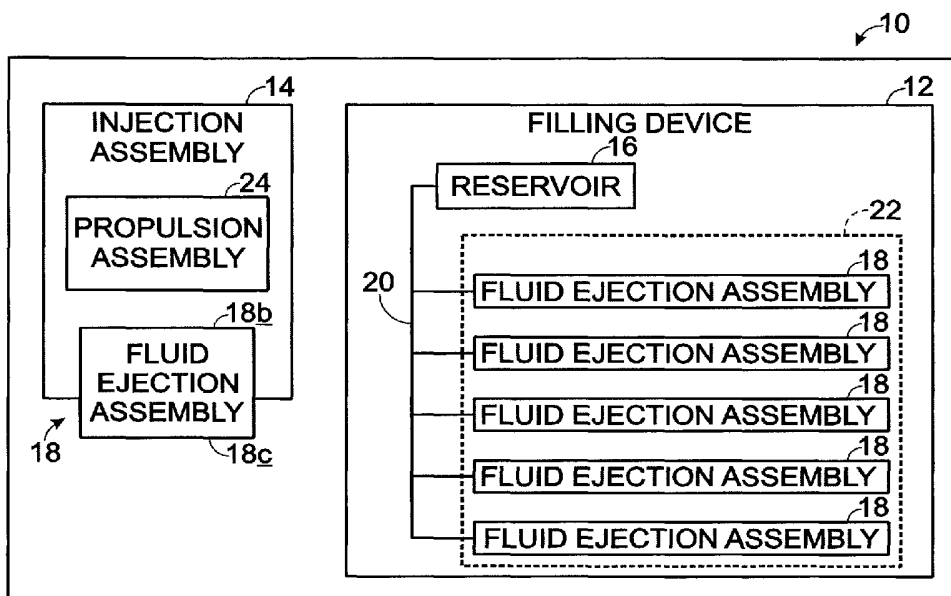
PCT

(10) International Publication Number
WO 2004/073554 A3

- (51) International Patent Classification⁷: **B65B 1/04**
- (21) International Application Number: PCT/US2004/005176
- (22) International Filing Date: 19 February 2004 (19.02.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 10/370,029 19 February 2003 (19.02.2003) US
- (71) Applicant (for all designated States except US): **BIOJECT, INC.** [US/US]; 7620 S.W. Bridgeport Road, Portland, OR 97224 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **LANDAU, Sergio** [US/US]; 49 South Peak Drive, Laguna Niguel, CA 92677 (US). **MARSHALL, John, R.** [US/US]; 16693 NW Meadowgrass Court, Beaverton, OR 97006 (US).
- (74) Agents: **HEUSER, Peter, E.** et al.; Kolisch Hartwell, P.C., Suite 200, 520 S.W. Yamhill St., Portland, OR 97204-1324 (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, 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.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, 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, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: NEEDLE-FREE INJECTION SYSTEM



(57) Abstract: The present invention provides method and apparatus for providing high throughput injections. In one embodiment the invention provides a filling device adapted to deliver injectate from a common reservoir to a plurality of disposable fluid injection assemblies and a reusable propulsion assembly adapted to receive a filled disposable fluid injection assembly and deliver an injection to a patient.

WO 2004/073554 A3



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*

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.

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

25 November 2004

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/05176

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : B65B 1/04 US CL : 141/2 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. : 141/28,18,27,100,129,258,312,319,357,383,384; 604/614,82,201,244 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) Please See Continuation Sheet		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y Y	US 6,506,177 B2 (LANDAU) 14 January 2003(14.01.2003), See whole document. US 4,335,760 A (KABADI et al.) 22 June 1982 (22.06.1982), See whole document.	31-34 ----- 1-30 1-30
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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 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 07 September 2004 (07.09.2004)		Date of mailing of the international search report 28 SEP 2004
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 <i>Sharon A. Greene for</i> Gregory Huson Telephone No. (703) 308-1113

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/05176

Continuation of B. FIELDS SEARCHED Item 3:

EAST BRS TEXT

search terms: ampule, ampoule, cartridge, filling, needleless, needle-less, needfree, needle-free