

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
27 September 2007 (27.09.2007)

PCT

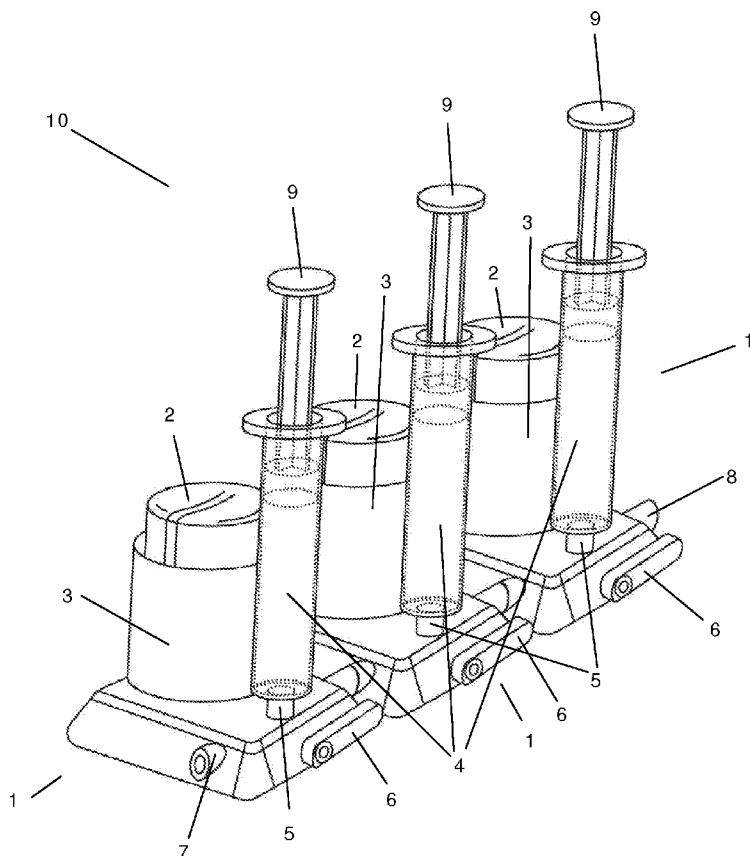
(10) International Publication Number  
WO 2007/107406 A3

- (51) International Patent Classification:  
A61M 5/14 (2006.01) A61M 39/22 (2006.01)  
A61M 5/19 (2006.01)
- (21) International Application Number:  
PCT/EP2007/051115
- (22) International Filing Date: 6 February 2007 (06.02.2007)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
06005478.0 17 March 2006 (17.03.2006) EP  
06119150.8 18 August 2006 (18.08.2006) EP
- (71) Applicant (for all designated States except US): Novo Nordisk A/S; Novo Allé, DK-2880 Bagsværd (DK).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): RADMER, Bo [DK/DK]; Åvang 40, DK-3400 Hillerød (DK).
- (74) Agent: Inspicos A/S; P.O. Box 45, Bøge Allé 5, DK-2970 Hørsholm (DK).

- (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, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, 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, 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

[Continued on next page]

(54) Title: A CONNECTABLE DEVICE AND A DEVICE ASSEMBLY FOR DELIVERING A LIQUID DRUG



(57) Abstract: A device (1) for delivering a liquid drug to a user. The device (1) comprises a reservoir (4, 20) adapted to contain a liquid, an outlet opening (7) for delivering liquid drug from the device (1), and means for connecting the device (1) to at least one other at least substantially identical device (1). The devices (1) are connected in such a manner that each of the devices (1) is in fluid communication with a common outlet (19), the common outlet (19) thereby being adapted to deliver liquid drug from each of the devices (1). In one embodiment the devices (1) may be connected to an external operating unit (14), and operational forces from the operating unit (14) may be transferred between the devices (1). Thereby the external operating unit (14) may operate all of the connected devices (1) simultaneously. The device (1) is further adapted to perform reconstitution of a dry drug, such as a lyophilized drug, contained in a vial (2). The device (1) may be used as a 'building block' for constructing a drug delivery device using an appropriate number of devices (1) in order to deliver a desired dose of drug. Furthermore, a device assembly (10) comprising at least two connected devices (1).

WO 2007/107406 A3



— *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:**

10 January 2008

INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2007/051115

<p>A. CLASSIFICATION OF SUBJECT MATTER INV. A61M5/14      A61M5/19      A61M39/22</p>		
<p>According to International Patent Classification (IPC) or to both national classification and IPC</p>		
<p>B. FIELDS SEARCHED</p>		
<p>Minimum documentation searched (classification system followed by classification symbols) A61M</p>		
<p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p>		
<p>Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ</p>		
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	FR 2 799 654 A1 (SOD CONSEILS RECH APPLIC [FR]) 20 April 2001 (2001-04-20) page 10, line 24 - page 20, line 32; figure 1	1, 2, 8, 9, 11, 12
Y	US 5 460 204 A (ROSSI ET AL) 24 October 1995 (1995-10-24) figures 1-7	1, 2, 8, 9, 11, 12
A	US 6 508 791 B1 (GUERRERO RAMON) 21 January 2003 (2003-01-21) the whole document	1-12
A	EP 0 268 700 A (BISCHOF, REINHARD) 1 June 1988 (1988-06-01) the whole document	1-12
	-/-	
<p><input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.      <input checked="" type="checkbox"/> See patent family annex.</p>		
<p>* Special categories of cited documents :</p>		
<p>*A* document defining the general state of the art which is not considered to be of particular relevance</p>		<p>*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</p>
<p>*E* earlier document but published on or after the international filing date</p>		<p>*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</p>
<p>*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)</p>		<p>*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.</p>
<p>*O* document referring to an oral disclosure, use, exhibition or other means</p>		<p>*G* document member of the same patent family</p>
<p>*P* document published prior to the international filing date but later than the priority date claimed</p>		
<p>Date of the actual completion of the international search  6 November 2007</p>		<p>Date of mailing of the international search report  21/11/2007</p>
<p>Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016</p>		<p>Authorized officer  Neiller, Frédéric</p>

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2007/051115

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 419 771 A (KRIESEL ET AL) 30 May 1995 (1995-05-30) the whole document -----	1-12

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2007/051115

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2799654	A1	20-04-2001	AT 327789 T 15-06-2006
			AU 7796400 A 23-04-2001
			CA 2386160 A1 19-04-2001
			CN 1378466 A 06-11-2002
			CZ 20021291 A3 16-04-2003
			DE 60028401 T2 24-05-2007
			EP 1223999 A1 24-07-2002
			ES 2261244 T3 16-11-2006
			WO 0126718 A1 19-04-2001
			HK 1050495 A1 02-12-2005
			HU 0203515 A2 28-03-2003
			JP 2003511159 T 25-03-2003
			NZ 518286 A 25-06-2004
			PL 355150 A1 05-04-2004
US 6902543 B1 07-06-2005			
US 5460204	A	24-10-1995	AT 155219 T 15-07-1997
			CA 2129304 A1 07-02-1995
			DE 69404096 D1 14-08-1997
			EP 0637712 A1 08-02-1995
			FR 2708702 A1 10-02-1995
			JP 7067968 A 14-03-1995
US 6508791	B1	21-01-2003	NONE
EP 0268700	A	01-06-1988	DE 3520044 A1 04-12-1986
			DE 8516350 U1 27-10-1988
			WO 8803815 A1 02-06-1988
			EP 0289496 A1 09-11-1988
US 5419771	A	30-05-1995	US 5656032 A 12-08-1997