

US00D745142S

(12) United States Design Patent (10) Patent No.:

O'Connor et al.

(54) DRUG DELIVERY PUMP

- (71) Applicant: Unitract Syringe Pty Ltd, Sydney (AU)
- (72) Inventors: Sean M. O'Connor, West Chester, PA (US); Kevin Bokelman, San Diego, CA (US); Ian B. Hanson, Wayne, PA (US); Paul F. Bente, IV, Wayne, PA (US); Kun-Chi Wu, Princeton, NJ (US)
- (73) Assignee: UNITRACT SYRINGE PTY LTD, Sydney (AU)
- (**) 14 Years Term:
- (21) Appl. No.: 29/453,258
- (22) Filed: Apr. 26, 2013

Related U.S. Application Data

- Continuation-in-part of application No. 13/599,727, (63) filed on Aug. 30, 2012, and a continuation-in-part of application No. 13/600,114, filed on Aug. 30, 2012, and a continuation-in-part of application No. 13/612,203, filed on Sep. 12, 2012.
- (51) LOC (10) Cl. 24-02
- (52) U.S. Cl. USPC D24/111
- (58) Field of Classification Search USPC D24/111, 108, 169; 417/234; D9/526, D9/529, 668; 604/9, 143, 151, 154, 218, 604/246, 256, 244

See application file for complete search history.

(56)**References** Cited

U.S. PATENT DOCUMENTS

4,004,586	Α	1/1977	Christensen et al.
4,673,400	Α	6/1987	Martin
4,685,903	Α	8/1987	Cable et al.
4,755,173	Α	7/1988	Konopka et al.
4,840,620	Α	6/1989	Kobayashi et al.
D326,611	S *	6/1992	Dinand D9/529
5,167,816	Α	12/1992	Kruger et al.
5,795,339	Α	8/1998	Erskine
5,858,001	Α	1/1999	Tsals et al.
D430,289	S *	^s 8/2000	Mason et al D24/111
6,248,093	B1	6/2001	Moberg
D457,949	S *	\$ 5/2002	Krug et al D24/111
D461,241	S *	^s 8/2002	Moberg et al D24/111
6.699.218	B2	3/2004	Flaherty et al.

US D745,142 S

(45) **Date of Patent:** Dec. 8, 2015 **

7,036,684	B1 *	5/2006	Hantman et al 222/94
7,063,684	B2	6/2006	Moberg
7,479,135	B2	1/2009	Richter et al.
D586,463	S *	2/2009	Evans et al D24/111
7,611,503	B2	11/2009	Spohn et al.
7,803,134	B2	9/2010	Sharifi et al.
7,846,132	B2	12/2010	Gravesen et al.
7,905,859	B2	3/2011	Bynum et al.
7,967,795	B1	6/2011	Cabiri
8,029,472	B2	10/2011	Leinsing et al.
8,048,031	B2	11/2011	Shaw et al.
8,157,769	B2	4/2012	Cabiri
8,167,844	B2	5/2012	Dillard, III
8,187,232	B2	5/2012	Chong et al.
D684,685	S *	6/2013	Schneider et al D24/111
D684,686	S *	6/2013	Cronenberg D24/111
D685,083	S *	6/2013	Schneider et al D24/108
D709,183	S *	7/2014	Kemlein D24/111
2004/0092878	A1	5/2004	Flaherty
2007/0010789	A1	1/2007	Peter et al.
2008/0132842	A1	6/2008	Flaherty
2008/0269687	A1	10/2008	Chong et al.
2009/0124979	A1	5/2009	Raymond et al.
2009/0204077	A1	8/2009	Hasted et al.
2011/0166509	A1	7/2011	Gross et al.
2012/0035546	A1	2/2012	Cabiri
2012/0123354	A1	5/2012	Woehr
2013/0066274	A1*	3/2013	O'Connor et al 604/151
2014/0231427	A1*	8/2014	Botet 220/62.21

FOREIGN PATENT DOCUMENTS

EP	1702635 A2	9/2006
EP	1341569 B1	1/2007
EP	1427471 B1	2/2008
EP	1695727 B1	7/2008
EP	1513580 B1	3/2009
EP	2077128 A1	7/2009
EP	2379134 A1	10/2011
EP	2429612 A1	3/2012
EP	2433663 A1	3/2012
WO	99/48546 A1	9/1999
WO	03/024504 A2	3/2003
WO	03/103763 A1	12/2003
WO	2004/062714 A1	7/2004
WO	2005/037350 A2	4/2005
WO	2008/024808 A2	2/2008
WO	2010/077807 A1	7/2010
WO	2010/084113 A1	7/2010
WO	2010/112377 A1	10/2010
WO	2010/132196 A1	11/2010
WO	2011/006652 A1	1/2011



WO	2011/090956 A2	7/2011
WO	2011/121023 A1	10/2011
WO	2012/131044 A1	10/2012

OTHER PUBLICATIONS

European Patent Office, Communication Relating to the Results of the Partial International Search in International Application No. PCT/US2012/053241, 2 pages (Nov. 30, 2012).

European Patent Office, International Search Report in International Application No. PCT/US2012/053174, 4 pages (Mar. 28, 2013).

European Patent Office, International Search Report in International Application No. PCT/US2012/053241, 6 pages (Feb. 28, 2013).

European Patent Office, International Search Report in International Patent Application No. PCT/US2012/054861, 8 pages (Feb. 18, 2013).

European Patent Office, Written Opinion of the International Searching Authority in International Application No. PCT/US2012/053174, 6 pages (Mar. 28, 2013).

European Patent Office, Written Opinion of the International Searching Authority in International Application No. PCT/US2012/053241, 8 pages (Feb. 28, 2013).

Preliminary Amendment and Application Data Sheet Filed in National Phase of WO 2011/090956 A2 (U.S. Appl. No. 13/521,181) (Jul. 9, 2012).

* cited by examiner

Primary Examiner — Wan Laymon

Assistant Examiner - Mark Booker

(74) Attorney, Agent, or Firm - Leydig, Voit & Mayer Ltd.

(57) CLAIM

An ornamental design for a drug delivery pump, as shown and described.

DESCRIPTION

FIG. 1 is an isometric view showing the top of our design of a drug delivery pump.

FIG. **2** is an isometric view showing the bottom of the drug delivery pump of FIG. **1**.

FIG. **3** is a second isometric view showing the top of the drug delivery pump of FIGS. **1-2**.

FIG. **4** is an elevational view of an end of the drug delivery pump of FIGS. **1-3**.

FIG. **5** is an elevational view of the opposite end of the drug delivery pump of FIGS. **1-4**.

FIG. 6 is an elevational view of the right side of the drug delivery pump of FIGS. 1-5.

FIG. 7 is an elevational view of the left of the drug delivery pump of FIGS. 1-6.

FIG. **8** is a top plan view of the drug delivery pump of FIGS. **1-7**.

FIG. **9** is a bottom view of the drug delivery pump of FIGS. **1-8**.

FIG. **10** is an isometric view showing the top of a second embodiment of our design of a drug delivery pump.

FIG. **11** is an isometric view showing the bottom of the drug delivery pump of FIG. **10**.

FIG. **12** is a second isometric view showing the top of the drug delivery pump of FIGS. **10-11**.

FIG. **13** is an elevational view of an end of the drug delivery pump of FIGS. **10-12**.

FIG. 14 is an elevational view of the opposite end of the drug delivery pump of FIGS. 10-13.

FIG. **15** is an elevational view of the right side of the drug delivery pump of FIGS. **10-14**.

FIG. **16** is an elevational view of the left of the drug delivery pump of FIGS. **10-15**.

FIG. **17** is a top plan view of the drug delivery pump of FIGS. **10-16**.

FIG. **18** is a bottom view of the drug delivery pump of FIGS. **10-17**.

FIG. **19** is an isometric view showing the top of a third embodiment of our design of a drug delivery pump.

FIG. 20 is an isometric view showing the bottom of the drug delivery pump of FIG. 19.

FIG. **21** is a second isometric view showing the top of the drug delivery pump of FIGS. **19-20**.

FIG. 22 is an elevational view of an end of the drug delivery pump of FIGS. 19-21.

FIG. 23 is an elevational view of the opposite end of the drug delivery pump of FIGS. 19-22.

FIG. **24** is an elevational view of the right side of the drug delivery pump of FIGS. **19-23**.

FIG. **25** is an elevational view of the left of the drug delivery pump of FIGS. **19-24**.

FIG. **26** is a top plan view of the drug delivery pump of FIGS. **19-25**.

FIG. **27** is a bottom view of the drug delivery pump of FIGS. **19-26**.

FIG. **28** is an isometric view showing the top of a fourth embodiment of our design of a drug delivery pump.

FIG. **29** is an isometric view showing the bottom of the drug delivery pump of FIG. **28**.

FIG. **30** is a second isometric view showing the top of the drug delivery pump of FIGS. **28-29**.

FIG. **31** is an elevational view of an end of the drug delivery pump of FIGS. **28-30**.

FIG. **32** is an elevational view of the opposite end of the drug delivery pump of FIGS. **28-31**.

FIG. **33** is an elevational view of the right side of the drug delivery pump of FIGS. **28-32**.

FIG. **34** is an elevational view of the left of the drug delivery pump of FIGS. **28-33**.

FIG. **35** is a top plan view of the drug delivery pump of FIGS. **28-34**.

FIG. **36** is a bottom view of the drug delivery pump of FIGS. **28-35**.

FIG. **37** is an isometric view showing the top of a fifth embodiment of our design of a drug delivery pump.

FIG. **38** is an isometric view showing the bottom of the drug delivery pump of FIG. **37**.

FIG. **39** is a second isometric view showing the top of the drug delivery pump of FIGS. **37-38**.

FIG. 40 is an elevational view of an end of the drug delivery pump of FIGS. **37-39**.

FIG. **41** is an elevational view of the opposite end of the drug delivery pump of FIGS. **37-40**.

FIG. **42** is an elevational view of the right side of the drug delivery pump of FIGS. **37-41**.

FIG. **43** is an elevational view of the left of the drug delivery pump of FIGS. **37-42**;

FIG. 44 is a top plan view of the drug delivery pump of FIGS. 37-43; and,

FIG. **45** is a bottom view of the drug delivery pump of FIGS. **37-44**.

The broken lines of FIGS. **1-45** are for the purpose of illustrating portions of the article in which the design is embodied that form no part of the claimed design.

1 Claim, 25 Drawing Sheets





FIG. 3







































FIG. 38







