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(54) Title: **MEDICAL INJECTOR WITH ROTATABLE BODY PORTIONS**

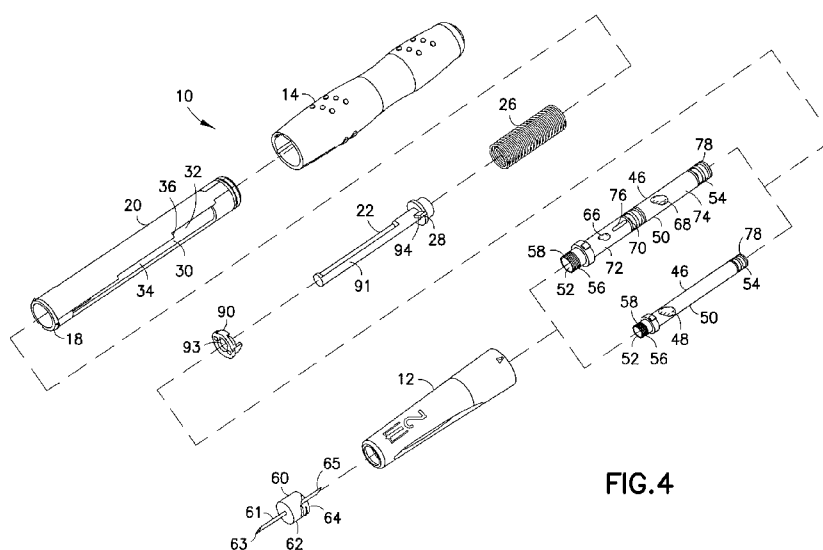


FIG. 4

(57) Abstract: A medical injector is provided herein which includes first and second body portions rotatably coupled together; a displaceable plunger disposed in at least one of the first and second body portions; a spring disposed to advance the plunger; and, a releasable retainer for retaining the plunger in a first portion against force of the spring. The releasable retainer releases the plunger upon a predetermined extent of relative rotation between the first and second body portions, thus allowing the spring to advance the plunger. Advantageously, the subject invention provides a medical injector having an automated plunger drive which is triggered upon rotation of injector body portions, thereby minimizing premature or failed activations.



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INTERNATIONAL SEARCH REPORT

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PCT/US2009/057460**A. CLASSIFICATION OF SUBJECT MATTER****A61M 5/20(2006.01)1, A61M 5/315(2006.01)1**

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A61M 5/20, A61M 5/00, A61M 5/32, A62C 37/16

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

(Chinese Patents and application for patent)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords injector, plunger, spring, retainer

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	US 2002-0095120 A1 (LARSEN, ANDRE et al.) 18 July 2002 See Claims 1-10, Figures 1-2	1-4
A	US 5584815 A1 (PAWELKA, GERHARD E. F. et al.) 17 December 1996 See Claims 1-64, Figures 1-24	1-4
A	EP 0630663 A1 (GLORY KIKI CO., LTD.) 28 December 1994 See Abstract, Claims 1-8	1-4
A	US 6945960 B2 (BARKER, JOHN et al.) 20 September 2005 See Claims 1-19, Figures 1-6	1-4



Further documents are listed in the continuation of Box C



See patent family annex

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002-0095 120 A 1	18.07.2002	AU 200 1-81753 A 1 WO 02- 17996 A 1	13.03.2002 07.03.2002
US 55848 15 A 1	17. 12. 1996	EP 0692988 A 1 EP 0692988 B 1 EP 07 10487 A2 EP 07 10487 A3 JP 02-826196 B2 JP 08-503874 A JP 10-506827 A JP 10-5 110 14 A JP 2826 196 B2 KR 10-0 151 365 B1 US 5478323 A 1 US 5505704 A 1 WO 94-22507 A3 WO 96- 14097 A1 WO 96-32973 A 1	24.01 . 1996 06.08. 1997 08.05. 1996 02.04. 1997 11.09. 1998 30.04. 1996 07.07. 1998 27. 10. 1998 18. 11. 1998 17.08. 1998 26. 12. 1995 09.04. 1996 13. 10. 1994 17.05. 1996 24. 10. 1996
EP 0630663 A 1	28. 12. 1994	CN 1102351 AO DE 630663 T 1 JP 02-602239 Y2 JP 07-003666 U JP 2602239 Y2 KR 10- 1995-0000178 A US 5505266 A 1	10.05. 1995 06.07. 1995 29. 10. 1999 20.01 . 1995 11.01 .2000 03.01 . 1995 09.04. 1996
US 6945960 B2	20.09.2005	AU 200 1-41 380 A 1 AU 200 1-41 380 B2 CA 2382459 C CA 2382459-A 1 EP 1233803 A2 EP 1233803 A4 EP 1233803 B1 JP 04-29582 1 B2 JP 2003-514627 A US 2003-0149403 A 1 WO 0 1-37898 A2 WO 0 1-37898 A3	04.06.2001 24. 11.2005 29. 12.2009 3 1.05.2001 28.08.2002 04.06.2003 15.02.2006 17.04.2009 22.04.2003 07.08.2003 3 1.05.2001 3 1.05.2001