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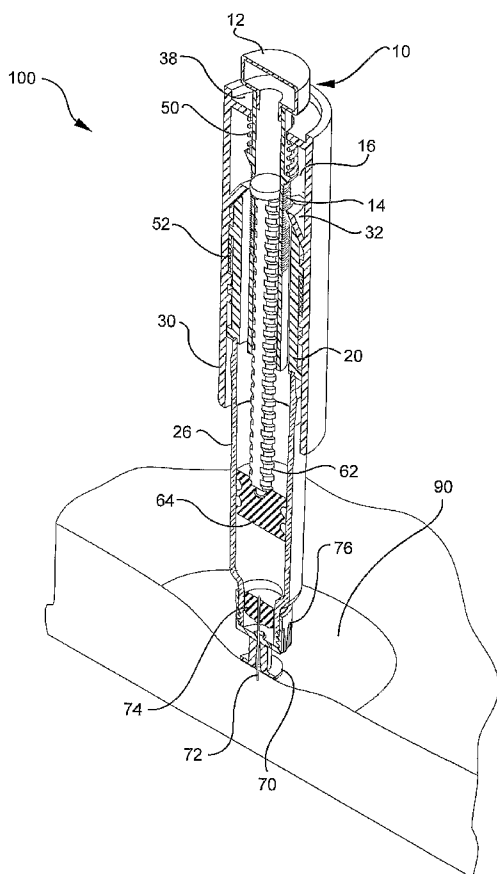
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(54) Title: INJECTOR DEVICE WITH FORCE LOCK-OUT AND INJECTION RATE LIMITING MECHANISMS



(57) Abstract: An injectable substance delivery device (100) comprising a pen device body (20), a cartridge (26), a plunger (10), a drive mechanism, and at least one of a lock-out mechanism and a rate-limiting mechanism. The lock-out mechanism is provided through a ratchet engagement between the body (20) and the plunger (10) to restrict plunger movement and to ensure that the required needle (72) puncture depth is realized prior to injection by locking out the injection mechanism from advancing until a specified force is applied to the skin (90). A rate-limiting mechanism is also provided through a user compressed plunger drive spring (50) to ensure that a specific rate of injection is realized during the injection of a medicament.

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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,  
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*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.*

INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2006/013924

A. CLASSIFICATION OF SUBJECT MATTER  
INV. A61M5/315 A61M5/20

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)  
A61M

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/254526 A1 (WESTON TERENCE EDWARD [GB]) 16 December 2004 (2004-12-16) figures 9a,9b	1, 16
Y		2-15, 17-23
Y	GB 2 331 705 A (OWEN GWYN ERFYL [GB]) 2 June 1999 (1999-06-02) abstract; figure 1	2-15, 17-23
X	US 3 494 358 A (FEHLIS LA VERNE ET AL) 10 February 1970 (1970-02-10) abstract; figure 7	1-3, 16-20
A	WO 2005/009515 A (SID TECHNOLOGIES LLC [US]; LAVI GILAD [US]; TSALS IZRAIL [US]) 3 February 2005 (2005-02-03) abstract; figures 3,10	7, 18, 21, 33

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
- \*E\* earlier document but 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
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- \*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.
- \*G\* document member of the same patent family

Date of the actual completion of the international search

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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2006/013924

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: 24-26  
because they relate to subject matter not required to be searched by this Authority, namely:  
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
2.  Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2006/013924

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004254526	A1	16-12-2004	NONE
GB 2331705	A	02-06-1999	NONE
US 3494358	A	10-02-1970	NONE
WO 2005009515	A	03-02-2005	EP 1654020 A1 10-05-2006