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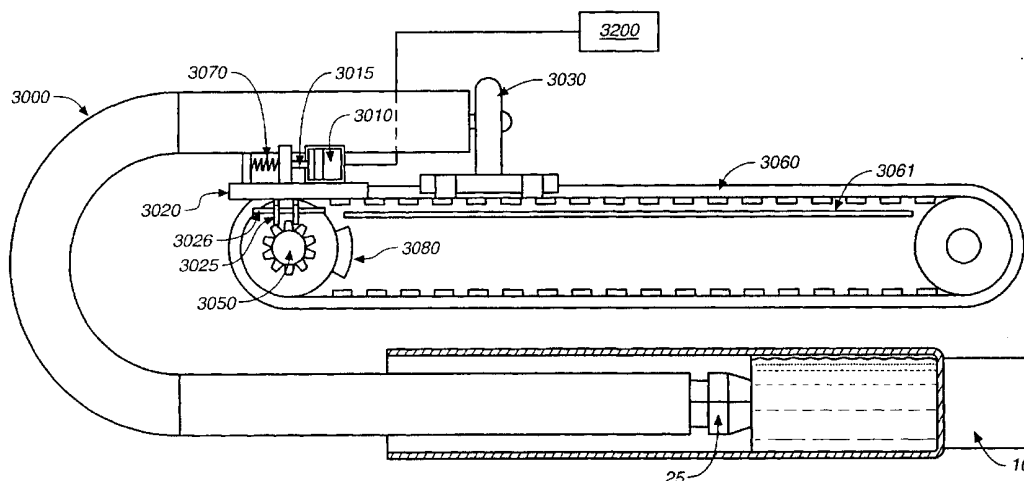
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09/845,256 1 May 2001 (01.05.2001) US
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- Published:  
— with international search report  
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: MICRO INFUSION DRUG DELIVERY DEVICE



(57) Abstract: An infusion pump includes a plurality of projections configured so that they enter the subcutaneous region of the patients skin and provides a painless means of creating a breach in the stratus corneum which is sealed against leakage by the skin surrounding each projection and provides a flow path for either a basal and bolus injection of medication. The pump includes a drug reservoir containing a drug. The pump includes a microactuator (3010) and includes a housing having a foundation or lid which opens and closes so that the medication container can be inserted and supported in a delivery mode position. A microactuator is used to advance either a roller or a piston (25) in communication with the medication container (10). Attached to the microactuator is a device that is mounted for movement along the access of the medication container. The device indexes along the medication container that is used to dispense the medication.

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6 June 2002

*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/US 01/14916

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC 7 A61M5/142 A61M5/145 A61M5/148 A61B17/20 A61M37/00

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)

IPC 7 A61M A61B

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, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 561 122 A (BRAUN MELSUNGEN AG) 22 September 1993 (1993-09-22) the whole document	1,5
A	---	7
X	FR 2 628 636 A (MMS SA) 22 September 1989 (1989-09-22) the whole document	1,5
A	---	7
A	US 5 914 507 A (KIM JOON HAN ET AL) 22 June 1999 (1999-06-22) cited in the application abstract	2,3
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Further documents are listed in the continuation of box C.



Patent family members are listed in 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
- \*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.
- \*G\* document member of the same patent family

Date of the actual completion of the international search

14 March 2002

Date of mailing of the international search report

25.03.02

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INTERNATIONAL SEARCH REPORT

International Application No  
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 295 075 A (HYPOGUARD UK LTD) 14 December 1988 (1988-12-14) column 11, line 31-52 column 12, line 37 -column 13, line 57; figures 2-4 ---	1,7
A	EP 0 323 321 A (GODEFROY ALAIN JEAN ROBERT) 5 July 1989 (1989-07-05) column 2, line 10 -column 3, line 33; figures 2-7 ---	1,7
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A	US 4 493 704 A (BEARD ROBERT W ET AL) 15 January 1985 (1985-01-15) column 2, line 50 -column 6, line 25; figures 1-5 ---	9,10
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A	WO 93 17754 A (ELAN MED TECH) 16 September 1993 (1993-09-16) page 2, line 33 -page 3, line 2; figures 1-3 page 5, line 6 -page 6, line 16 page 9, line 24 -page 10, line 15; figures 6-7D ---	11
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## INTERNATIONAL SEARCH REPORT

International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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A	EP 0 937 475 A (BECTON DICKINSON CO) 25 August 1999 (1999-08-25) abstract; figures 5,6 -----	11

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 01/14916

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 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.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

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

see additional sheet

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.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-6

System for dispensing medication comprising foundation, gripper with two portions the first of which is movable towards and away from the second in the gripper direction, first actuator to move first portion in gripper direction and second actuator to move one of gripper portions in a direction different to the gripper direction.

2. Claims: 7-8

System for dispensing medication comprising medication cartridge, plunger, slide, first actuator to move slide in slide direction, second actuator to engage barrel inside surface and to hold slide in barrel.

3. Claims: 9-10

System for dispensing medication comprising u-shaped flexible shaft, solenoid and linked pawl, pinion, belt, and arm.

4. Claims: 11-15

Device for dispensing a liquid comprising plurality of needles, base and cap

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/14916

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