Abstract: A fluid delivery device (30) is provided for delivering fluid to a target site such as an intervertebral disc (182) during discography. The fluid delivery device (30) includes pressure (106) and volume (108) sensors to determine the pressure and the volume of the fluid delivered to the intervertebral disc (182). The fluid delivery device (30) is hand held during use and includes a syringe assembly (42) having a plunger (52) with threads (54) that enables controlled discharge of the fluid from the fluid delivery device (30) by rotating the plunger (52) in a housing (32) of the fluid delivery device (30).
**A. CLASSIFICATION OF SUBJECT MATTER**

**INV. A61M5/14**

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
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<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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</table>

* 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 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
- **YY** 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.
- **XX** document member of the same patent family

Date of the actual completion of the international search

24 November 2006

Date of mailing of the international search report

01/12/2006

Name and mailing address of the ISA
European Patent Office, P.O. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016

Authorized officer
Hansen, Soren
INTERNATIONAL SEARCH REPORT

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.: 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 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:

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

1. claims: 1-16

   A fluid delivery system, comprising:
   a housing, comprising:
   a manually actuated pump;
   a discography needle;
   a pressure sensor;
   a volume sensor;
   a controller;
   a display;
   a battery for said pressure sensor, said volume sensor, said controller and said display,
   wherein said system has a weight of 1.5 kilograms or less.

2. claim: 17

   A system for delivering fluid, comprising:
   a fluid delivery device;
   a housing;
   a plunger;
   a pressure sensor;
   a volume sensor;
   a controller;
   in combination with:
   a data transfer system configured for wirelessly receiving data from said controller.

3. claim: 18

   A fluid delivery device, comprising:
   a housing;
   a plunger;
   a pressure sensor;
   a physiological sensor, and
   a controller.
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