9705642-8

RECEIVED 06 JUL 1998

**PCT** WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

| (51) International Patent Classification 6 : A61M | A2 | (11) International Publication Number: WO 96/25186 |
|---|---|---|
| | | (43) International Publication Date: 22 August 1996 (22.08.96) |

(21) International Application Number: PCT/US96/01221

(22) International Filing Date: 30 January 1996 (30.01.96)

(30) Priority Data:

| | | |
|---|---|---|
| 08/386,916 | 7 February 1995 (07.02.95) | US |
| 08/474,456 | 7 June 1995 (07.06.95) | US |

(81) Designated States: AU, CA, JP, KR, MX, NO, SG, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

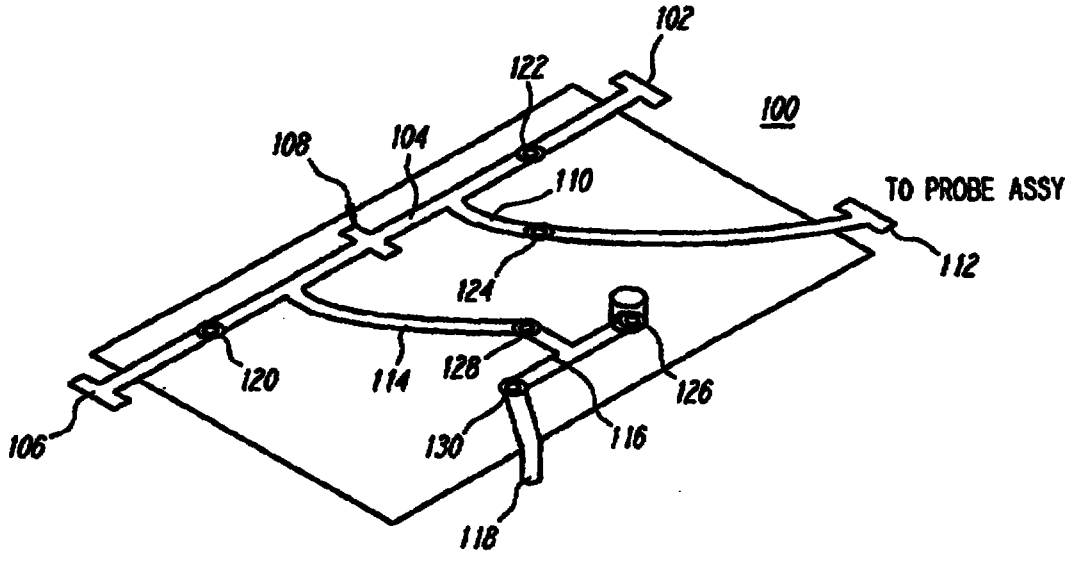
Published
*Without international search report and to be republished upon receipt of that report.*

(71) Applicant: GENSIA, INC. [US/US]; 9360 Town Centre Drive, San Diego, CA 92121 (US).

(72) Inventors: HILLMAN, Robert, Steven; 4963 Hidden Dune Court, San Diego, CA 92130 (US). VALCKE, Christian, P.; 4169 Del Mar Trails Road, San Diego, CA 92130 (US). GAUTHIER, Robert, T.; 10294 Rue Cannes, San Diego, CA 92131 (US). GORIN, Michael, Morduch; 465 Old Oak Court, Los Altos, CA 94022 (US).

(74) Agents: MURPHY, David, B. et al.; Lyon & Lyon, First Interstate World Center, Suite 4700, 633 West Fifth Street, Los Angeles, CA 90071-2066 (US).

(54) Title: FEEDBACK CONTROLLED DRUG DELIVERY SYSTEM




(57) Abstract

A feedback controlled drug delivery system includes automated blood sampling and analysis and dosing of the patient. Automated sampling is performed by direct analysis of patient blood, such as for measurement of its coagulation state. A novel manifold includes a fluid input port, a patient port adapted to output fluid and to receive a blood sample from the patient, and a fluid pathway connecting the fluid port and the patient port. A sample line is connected to the fluid pathway to provide the sample to an analyzer. In one aspect of this invention, the sample is forced through the sample line by isolating the patient port, such as by a valve, and non-drug fluid is forced into the manifold causing the blood to cross through the sample line. In another embodiment, an integrated assembly includes an integrated peristaltic pump, valve assembly, selectively movable actuator and integrated waste container. In one aspect, the peristaltic pump permits retraction of the rollers away from the inner circumference of the pump, so as to reduce deformation of the peri-pump tube and to permit sterilization.