



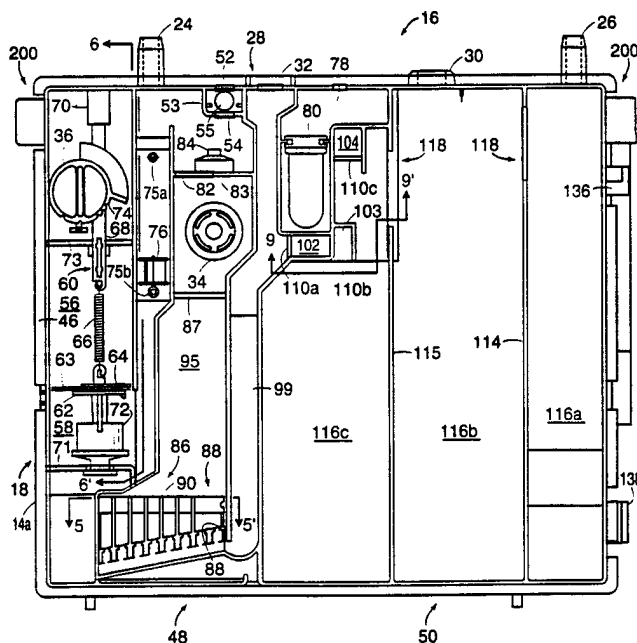
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification<sup>6</sup> : <b>A61M 1/00</b></p>	<p><b>A3</b></p>	<p>(11) International Publication Number: <b>WO 98/30256</b></p> <p>(43) International Publication Date: 16 July 1998 (16.07.98)</p>
<p>(21) International Application Number: PCT/US98/00760</p> <p>(22) International Filing Date: 9 January 1998 (09.01.98)</p> <p>(30) Priority Data: 08/783,177 14 January 1997 (14.01.97) US</p> <p>(71) Applicant (for all designated States except US): DEKNATEL TECHNOLOGY CORPORATION [US/US]; Suite 1704, Bank of Delaware Building, Wilmington, DE 19801 (US).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): VALERIO, Michael, A. [US/US]; 44 Ray Road, Wrentham, MA 02093 (US). PHUNG, Trinh [US/US]; 63 Bambury Lane, Attleboro, MA 02703 (US). CARLONE, Anthony, R. [US/US]; 7 Naomi Street, Bristol, RI 02809 (US). SANTOS, Victor, E. [US/US]; 19 Central Street, Brockton, MA 02401 (US). TRAVERS, Lawrence, F. [US/US]; 1094 Main Road, Westport, MA 02790 (US).</p> <p>(74) Agents: CONLIN, David, G. et al.; Dike, Bronstein, Roberts &amp; Cushman, LLP, 130 Water Street, Boston, MA 02109 (US).</p>		<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> With international search report.</p> <p>(88) Date of publication of the international search report: 12 November 1998 (12.11.98)</p>

(54) Title: DEVICE AND SYSTEM FOR DRAINING A BODY CAVITY AND METHODS RELATED THERETO

(57) Abstract

Featured is a device (10) for draining fluids and/or gas from body cavities, including at least a pressure control chamber (46) and a collection chamber (50) being fluidly coupled by a one-way valve (62), thereby establishing a waterless seal between the collection chamber including the patient, and the suction source. The pressure control chamber (46) also includes the patient, and the suction pressure control regulator (60) that controls and maintains the suction pressure at or about a selected valve. Preferably the regulator (60) includes a spring intermediate chamber (100) and at least two passages (102, 103, 104) that are perpendicular to two adjacent surfaces within the intermediate chambers, and intermediate chambers are arranged so liquid in the collection chamber does not flow and contaminate the upstream portions of the device when the device is resting on its front side or backside. Also featured is an auto-transfusion system (400) including a drainage device and a bag assembly (402) attached thereto.



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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/00760**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(6) :A61M 1/00

US CL :604/317, 318, 320-324

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)

U.S. : 604/317, 318, 320, 321, 322, 323, 324

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 practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,026,358 A (EVERETT, JR. et al.) 25 June 1991, entire document.	1, 2, 9-22, 26-29, 33 ----- 3-8, 30-32, 34, 35
Y	US 3,683,913 A (KURTZ et al.) 15 August 1972, Abstract.	10, 16, 17
X	US 4,658,834 A (BLANKENSHIP et al.) 21 April 1987, Figs. 1 and 2.	23-25
X	US 4,747,843 A (FELIX et al.) 31 March 1988, Fig. 1.	23-25
X	US 4,534,765 A (TODD et al) 13 August 1985, Abstract,	1, 2

 Further documents are listed in the continuation of Box C.  See patent family annex.

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/00760

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,605,400 A (KURTZ et al.) 12 August 1986, Abstract, and figures.	1, 2, 26
X	US 4,650,476 A (TELANG) 17 March 1987, Abstract, and figures.	1, 2
X	US 4,781,707 A (BOEHRINGER et al.) 01 November 1988, Abstract, and figures.	1, 2
X	US 4,857,042 A (SCHNEIDER) 15 August 1989, Abstract, and figures.	1, 2, 26
X	US 5,141,504 A (HERWECK et al.) 25 August 1992, Abstract, and figures.	1, 2, 26
X	US 5,286,262 A (HERWECK et al.) 15 February 1994, Abstract, and figures.	1, 2