



**(43) International Publication Date**  
**3 January 2002 (03.01.2002)**

**(10) International Publication Number**  
**WO 02/001171 A3**

**(51) International Patent Classification<sup>7</sup>:** **A61F 7/12,**  
A61M 5/00, 37/00, 1/00, F04B 19/24

**(21) International Application Number:** PCT/US01/41158

**(22) International Filing Date:** 26 June 2001 (26.06.2001)

**(25) Filing Language:** English

(26) **Publication Language:** English

**(30) Priority Data:**  
09/603.777                      26 June 2000 (26.06.2000)      US

**(71) Applicant: GAYMAR INDUSTRIES, INC.** [US/US]; 10 Centre Drive, Orchard Park, NY 14127 (US).

**(72) Inventors: STEWART, Thomas, P.;** 37 Fox Chapel Drive, Orchard Park, NY 14127 (US). **POHL, Hermann, K.;** 335 Country Side Lane #4, Orchard Park, NY 14127 (US).

**(74) Agents:** EVANS, Georgia et al.; Nixon Peabody LLP, Clinton Square, P.O. Box 31051, Rochester, NY 14603-1051 (US).

**(81) Designated States (national):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

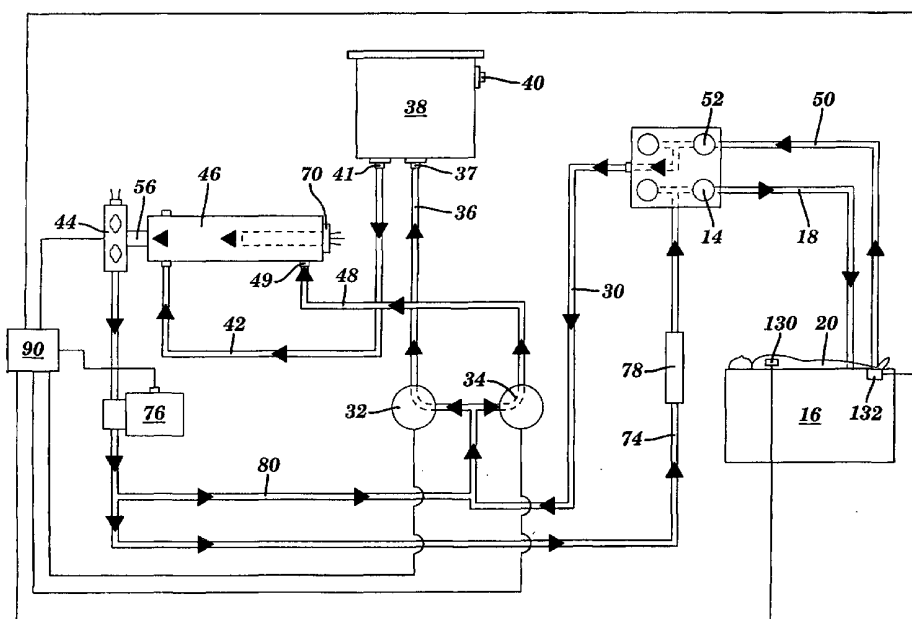
**(84) Designated States (regional):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

**Published:**  
— *with international search report*

(88) **Date of publication of the international search report:**  
29 August 2002

*[Continued on next page]*

**(54) Title:** AUTOMATIC PATIENT CONTROL DEVICE



**(57) Abstract:** The present invention relates to regulating the temperature of a desired medium (32, 34) that is applied to the exterior surface of a mammal (20). These devices have been used in the past but not with the ability to control the temperature of the desired medium (32, 34) in a predetermined ratio to the temperature of the mammal (20). With such control, the present invention decreases the change of discomforting the patient when the patient's temperature (130) is being brought to a set point temperature body temperature.



*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/US01/41158

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61F 7/12; A61M 5/00, 37/00, 1/00; F04B 19/24  
US CL : 604/113, 151, 131, 6.11, 6.13, 23, 30, 114, 27; 417/207

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. : 604/113, 151, 131, 6.11, 6.13, 23, 30, 114, 27; 417/207

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
pump, hot (high), cold (low), heat exchanger, control temperature, valve, microprocessor

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	WO 99/44552 A1 (KUSHNIR) 10 September 1999, pages 15-19, especially page 15-16.  see entire document.	1-3, 10-12, 20, 21, 30-32, 40, 51-56, 63-66, 69, 73-76, 87 ----- 4-9, 13-18, 33-38, 57-62, 67, 68, 71, 72
Y	US 5,097,829 A (QUISENBERRY) 24 March 1992, column 4, line 30-59, Figure 1.	22-29, 41-50, 70, 77-81, 82-86, 88
A	US 4,691,762 A (ELKINS et al.) 08 September 1987, see entire document.	1-88
A	US 5,183,039 A (SARIAN et al.) 02 Feb 1993, see entire document.	1-88
A,P	US 6,149,674 A (BORDERS) 21 November 2000, see entire document.	1-88



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:		"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
"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier application or patent published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		

Date of the actual completion of the international search

29 April 2002 (29.04.2002)

Date of mailing of the international search report

30 MAY 2002

Name and mailing address of the ISA/US

Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703)305-3230

Authorized officer

Thomas E Denion

Telephone No. 703-308-2623