990530-6

**PCT** WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

| (51) International Patent Classification 6 : A61M 16/00 | A1 | (11) International Publication Number: **WO 98/50095** |
|---|---|---|
| | | (43) International Publication Date: 12 November 1998 (12.11.98) |

(21) International Application Number: PCT/AU97/00278

(22) International Filing Date: 7 May 1997 (07.05.97)

(71) Applicant *(for all designated States except US)*: COMPUMEDICS SLEEP PTY. LTD. [AU/AU]; 1 Marine Parade, Abbotsford, VIC 3067 (AU).

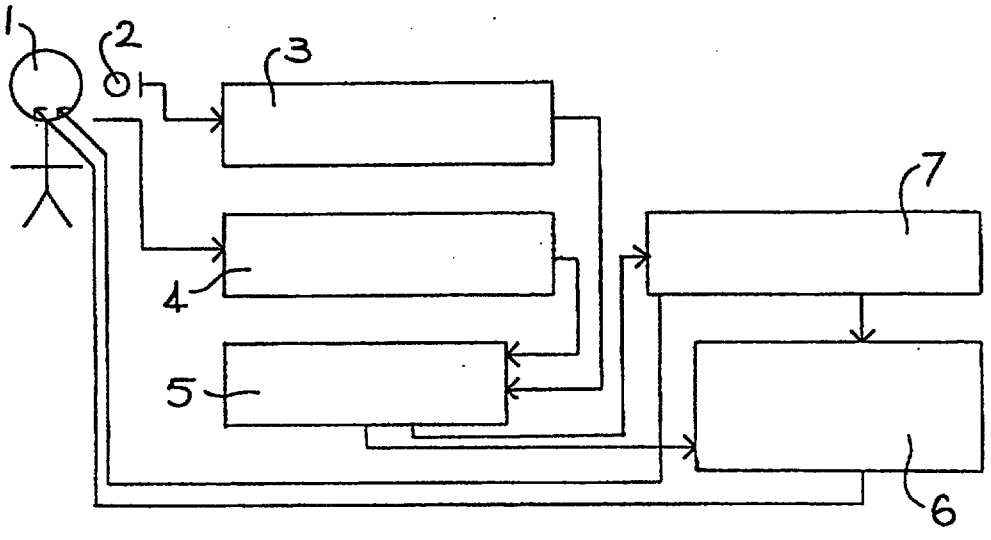
(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: BURTON, David [AU/AU]; 62 Broadway, Camberwell, VIC 3124 (AU).

(74) Agent: PHILLIPS ORMONDE & FITZPATRICK; 367 Collins Street, Melbourne, VIC 3000 (AU).

(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, HU, 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, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), 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).

**Published**
*With international search report.*

(54) Title: CONTROLLING GAS OR DRUG DELIVERY TO PATIENT




(57) Abstract

Apparatus for controlling gas or drug delivery to a patient, said delivery being adapted to maintain effective respiratory function. The apparatus includes means (2, 3, 4) for monitoring one or more physiological variables such as breathing airflow sound, EEG, EOG, EMG and/or patient position associated with the patient. The apparatus also includes means (4) for deriving from the variables, data representing a physiological state associated with the patient and means (5) for determining from the data, a gas pressure or drug quantity which substantially prevents a deterioration in the state. The determining means may include an algorithm adapted to generate a gas pressure signal which is substantially 180° out of phase relative to the phase of the patient breathing and/or sound. The apparatus may include a gas delivery means (6) for delivering gas to the patient in accordance with the determined gas pressure. The apparatus may include a drug delivery module (7) for delivering a drug to the patient.