

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
13 February 2003 (13.02.2003)

PCT

(10) International Publication Number
WO 2003/012261 A3

- (51) International Patent Classification⁷: A61M 1/14, C02F 1/20, B01D 5/00
- (21) International Application Number: PCT/US2002/024277
- (22) International Filing Date: 1 August 2002 (01.08.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:

09/920,385	1 August 2001 (01.08.2001)	US
60/358,448	20 February 2002 (20.02.2002)	US
60/388,977	14 June 2002 (14.06.2002)	US
60/393,049	20 June 2002 (20.06.2002)	US

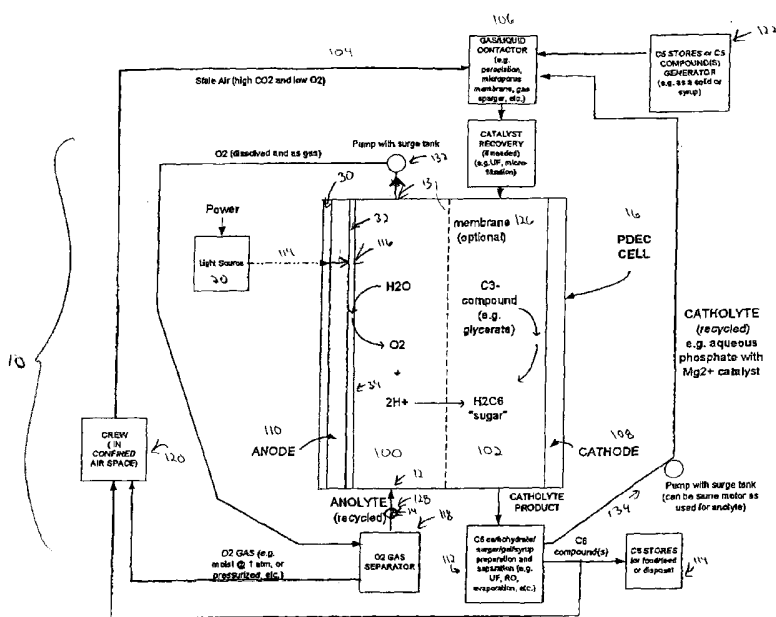
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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- Published: with international search report
- (88) Date of publication of the international search report: 27 May 2004

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.

(54) Title: PHOTOLYTIC OXYGENATOR WITH CARBON DIOXIDE FIXATION AND SEPARATION



(57) Abstract: Apparatus (10) for oxygenating an enclosed space (120) as well as removing carbon dioxide from the enclosed space (120).

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From the INTERNATIONAL SEARCHING AUTHORITY

To:
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PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT
OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference BATZ 2 00001	Date of Mailing (day/month/year) 22 MAY 2003
International application No. PCT/US02/24277	FOR FURTHER ACTION See paragraphs 1 and 4 below
Applicant MONZYK, BRUCE F.	International filing date (day/month/year) 01 August 2002 (01.08.2002)

1. The applicant is hereby notified that the international search report has been established and is transmitted herewith.
- Filing of amendments and statement under Article 19:**
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):
- When?** The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.
- Where?** Directly to the International Bureau of WIPO, 34, chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 740.14.35
- For more detailed instructions, see the notes on the accompanying sheet.
2. The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.
3. With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
 - no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.
4. **Reminders**
- Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90 bis.1 and 90 bis.3, respectively, before the completion of the technical preparations for international publication.
- Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.
- In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.
- See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Commissioner for Patents Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer Leslie R. Deak <i>Diane Smith f</i> Telephone No. 703-308-0873
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/24277

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61M 1/14; C02F 1/20; B01D 5/00
 US CL : 422/45; 204/157.22, 193; 210/188

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. : 422/45; 204/157.22, 193; 210/188

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)
 EAST BRS: sorption, photolytic, electrolysis, oxygen, oxygenator, blood

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category #	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y ✓	US 4,140,591 A (FONG et al) 20 February 1979 (20.02.1979), entire document.	1-32
Y ✓	US 4,521,499 A (SWITZER) 04 June 1985 (04.06.1985), entire document.	1-32
Y ✓	US 4,595,568 A (VAN DAMME et al) 17 June 1986 (17.06.1986), entire document.	1-32
Y ✓	US 4,790,916 A (MURPHY et al) 13 December 1988 (13.12.1988), entire document.	1-32
A ✓	US 4,952,511 A (RADMER) 28 August 1990 (28.08.1990), entire document.	1-32
Y ✓	US 4,968,483 A (MUELLER et al) 06 November 1990 (13.11.1990), entire document.	1-32
Y ✓	US 4,970,166 A (MORI) 13 November 1990 (13.11.1990), entire document.	1-32
Y ✓	US 5,052,382 A (WAINWRIGHT) 01 October 1991 (01.10.1991), entire document.	1-32
Y ✓	US 5,086,620 A (SPEARS) 11 February 1992 (11.02.1992), entire document.	1-32

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

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"A" document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the applicant's invention as cited to understand the principle of the invention underlying the invention
"B" earlier application or patent published on or after the international filing date	"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
"L" document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another cited or other special reason (as specified)	"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
"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	"Z"	document member of the same patent family

Date of the actual completion of the international search: 06 November 2002 (06.11.2002)
 Date of mailing of the international search report: 22 MAY 2003

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