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- (71) Applicants: SOMMETRICS, INC. [US/US]; 2384 La Mirada Drive, VISTA, California 92081 (US). AERFREE, LLC [US/US]; 21600 Oxnard Street, Suite 500, WOODLAND HILLS, California 91367 (US).
- (72) Inventor: WINTER, David; c/o Sommetrics, Inc., 2384 La Mirada Drive, VISTA, California 92081 (US).

- (74) Agent: WHITTAKER, Michael A.; ACUITY LAW GROUP, PC, 12707 High Bluff Drive, Suite 200, San Diego, California 92130 (US).
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(54) Title: PRESSURE RELIEF DEVICE AND METHOD FOR OPENING AN AIRWAY

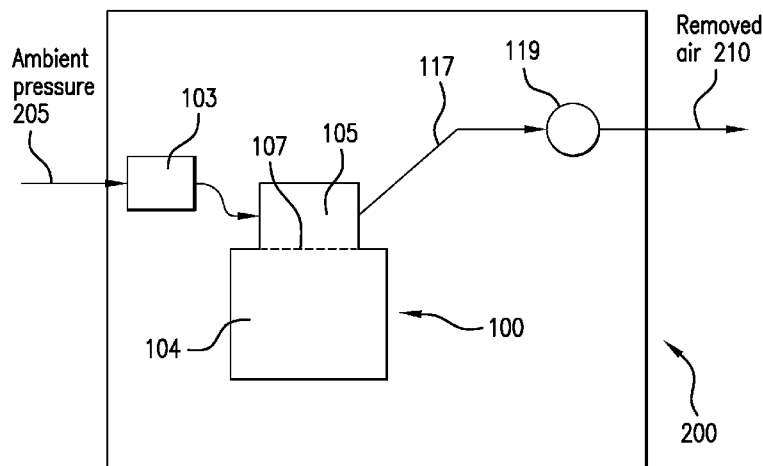


FIG. 1A

(57) Abstract: Devices and methods for regulating vacuum levels in a chamber device having a housing that encloses an inner chamber volume through the use of one or more pressure relief valve elements which open at a predetermined levels of vacuum to create an opening through the housing and which close at a second, lower, predetermined level of vacuum within the chamber volume.



TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
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Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

- *with international search report (Art. 21(3))*

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20 October 2022 (20.10.2022)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 22/19739

A. CLASSIFICATION OF SUBJECT MATTER
IPC - A61F 5/56; F04D 19/00; F04D 23/00 (2022.01)
CPC - A61F 5/56; F04D 19/00; F04D 23/00

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)
See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
See Search History document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| A | US 2008/0237278 A1 (Gaus et al.) 2 October 2008 (02.10.2008) Abstract, para [0043]-[0044], [0050], [0060], [0062]-[0063], [0071], [0073], [0101], [0104], Figure 1; Figure 3; Figure 13; Figure 14; Figure 15; Figure 19. | 1-7, 9-10, 13, 20 |
| A | US 2008/0163875 A1 (Aarestad et al.) 10 July 2008 (10.07.2008) Abstract, para [0036], [0045], [0065]-[0067], Figure 1A; Figure 1C; Figure 6. | 1-7, 9-10, 13, 20 |
| A | US 2005/0211735 A1 (Socier et al.) 29 September 2005 (29.09.2005) Entire Document. | 1-7, 9-10, 13, 20 |
| A | US 5,839,614 A (Brown) 24 November 1998 (24.11.1998) Entire Document. | 1-7, 9-10, 13, 20 |
| A | US 2015/0126912 A1 (Koninklijke Philips NV) 7 May 2015 (07.05.2015) Entire Document. | 1-7, 9-10, 13, 20 |

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

* Special categories of cited documents:

“A” document defining the general state of the art which is not considered to be of particular relevance

“D” document cited by the applicant in the international application

“E” earlier application or patent but published on or after the international filing date

“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)

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“P” document published prior to the international filing date but later than the priority date claimed

“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

“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

“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

“&” document member of the same patent family

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| Date of the actual completion of the international search 5 May 2022 | Date of mailing of the international search report JUN 28 2022 |
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 22/19739

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.: 8, 11-12, 14-19, 21-26
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.