



US008201438B1

(12) **United States Patent**
Thornberg et al.

(10) **Patent No.:** **US 8,201,438 B1**
(45) **Date of Patent:** **Jun. 19, 2012**

- (54) **DETECTION OF GAS LEAKAGE**
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- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 407 days.
- (21) Appl. No.: **12/424,791**
- (22) Filed: **Apr. 16, 2009**

Related U.S. Application Data

- (60) Provisional application No. 61/046,174, filed on Apr. 18, 2008.
 - (51) **Int. Cl.**
G01M 3/34 (2006.01)
 - (52) **U.S. Cl.** 73/49.3; 73/49.2
 - (58) **Field of Classification Search** 73/49.2,
73/49.3
- See application file for complete search history.

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(57) **ABSTRACT**

A method of detecting leaks and measuring volumes as well as an apparatus, the Power-free Pump Module (PPM), that is a self-contained leak test and volume measurement apparatus that requires no external sources of electrical power during leak testing or volume measurement, where the invention is a portable, pneumatically-controlled instrument capable of generating a vacuum, calibrating volumes, and performing quantitative leak tests on a closed test system or device, all without the use of alternating current (AC) power. Capabilities include the ability is to provide a modest vacuum (less than 10 Torr), perform a pressure rise leak test, measure the gas's absolute pressure, and perform volume measurements. All operations are performed through a simple rotary control valve which controls pneumatically-operated manifold valves.

6 Claims, 3 Drawing Sheets

