



Flow Research, Inc.

27 Water Street
Wakefield, MA 01880 USA
www.flowresearch.com

+1-781-245-3200
+1-781-224-7552 (fax)

Contact: Nicole Riordan, Flow Research: +1-781-245-3200 nicole@flowresearch.com

For immediate release

US Patent Office Approves Yoder Dual Tube Meter

Wakefield, Massachusetts; May 14, 2015 — Flow Research is pleased to announce that the United States Patent Office has approved the application by founder Jesse Yoder of a new dual tube flowmeter. This flowmeter is designed to provide superior and more accurate measurement of flows in large pipes at a reduced cost. The approved patent application applies to seven different flow technologies, including Coriolis, magnetic, ultrasonic, vortex, thermal, differential pressure, and turbine.

The new Yoder dual tube meter contains two equally sized round tubes placed within a meter body. A sensor within each tube computes the flow within the tube. The total flow through the pipe is then computed from the results of the flow measurement within the two tubes, plus a calculation based on testing. The design works especially well in large pipes. The Yoder dual tube meter uses smaller, less expensive dual sensors to measure flow more economically than larger sensors that have to cover the entire pipe. It is also potentially more accurate because, unlike insertion flowmeters that measure flow at a single point, it makes two flow measurements and computes flowrate for each measurement.

According to Dr. Jesse Yoder, the inventor of the “flowtube” meter:

“The flowtube meter represents a major breakthrough in flow measurement technology for measuring flow through large pipes. Not only does it promise higher accuracy and lower cost, it also opens up the possibility of mixing different flow technologies within a single meter. This is not a completely new concept, but it is one that has not been adequately explored or implemented by flowmeter suppliers. It is easy to assume the idea that each flowmeter has to use only one sensor type (e.g., Coriolis, ultrasonic, etc.), while much can potentially be gained from using multiple technologies within a single meter. This is the path already taken by inventors of multiphase meters. Measuring flow through a pipe by measuring the flow through dual tubes inserted into the pipe is itself a revolutionary idea, and has the potential to change the flowmeter landscape across many flow technologies.”

The geometry underlying the flowtube meter is explained in Chapter Seven of Yoder’s new book, *The Tao of Measurement*, which was published in March 2015 by the International Society of Automation (ISA). This chapter describes traditional Euclidean geometry, and proposes the round inch as a substitute for the square inch as a fundamental unit of geometric measurement. The design of the flowtube meter follows logically from the use of the round inch as a unit of measurement for circular area. However, the utility of the flowtube meter does not depend on circular geometry, and the geometry of the flowtube meter is completely consistent with traditional Euclidean geometry.

Flow Research is seeking to license this technology to flowmeter manufacturers who are interested in incorporating the flowtube meter into their product lines. While the company already has agreements in place for some technologies, there are other technologies that are still open for development. For more information on the flowtube meter, go to www.flowtubemeter.com, or contact Flow Research.

The graphic that follows shows the first page of the flowtube meter patent application.



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(54) **FLOWMETER DESIGN FOR LARGE DIAMETER PIPES**

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(71) Applicant: **Jesse Yoder**, Wakefield, MA (US)

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(72) Inventor: **Jesse Yoder**, Wakefield, MA (US)

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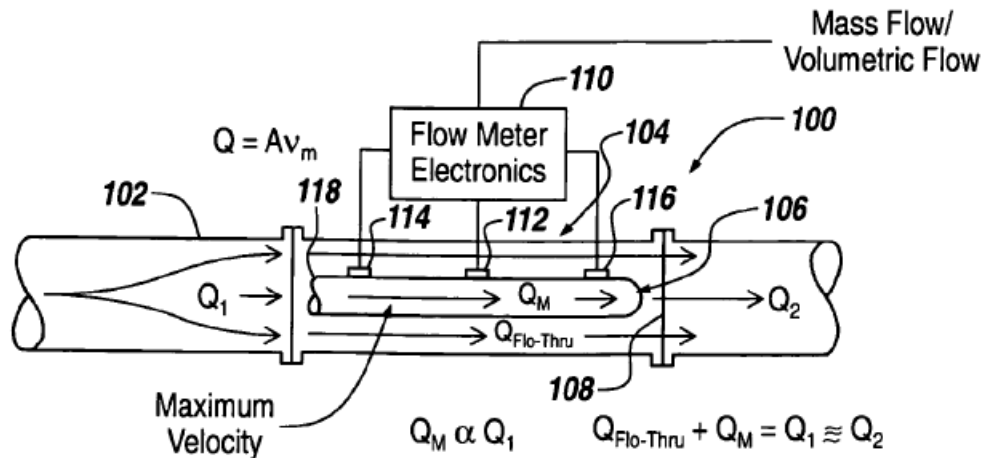
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(57) **ABSTRACT**

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An in-line flowmeter for large diameter pipes includes an outer pipe with a diameter equal to that of the pipe to which it is coupled and an inner measuring tube carrying a portion of the flow, the flow through the measuring tube being sensed by a flowmeter associated with the measuring tube and with the total combined flow rate out of the in-line flowmeter calculated from the sensed flow through the measuring tube.



About Flow Research

Flow Research, with headquarters in Wakefield, Massachusetts, is the only independent market research company whose primary mission is to research flowmeter and other instrumentation products and markets worldwide. Flow Research specializes in flow measurement devices, and conducts market research studies in a wide variety of instrumentation areas. These studies are developed through interviews with suppliers, distributors, and end-users. Topics include all of the flowmeter technologies – both new and traditional – as well as temperature sensors, temperature transmitters, level products,

and pressure transmitters. The company has a special focus on the energy industries, especially on oil and gas production and measurement. A series of quarterly reports called the Worldflow Monitoring Service provide regular updates on both the flowmeter markets and the energy industries (<http://www.worldflow.com>).

In 2015, Flow Research is doing the 3rd Edition of its classic series on the gas flowmeter market. This series is made up of a Core Study and four additional studies called modules. Related areas of specific focus for Flow Research include custody transfer, multiphase measurement, and liquefied natural gas (LNG). Flow Research is also publishing two new studies on liquid and gas flow calibration (<http://www.flowcalibration.org>).

For more information, visit <http://www.flowresearch.com> or call +1 781 245-3200. For information on the flowtube meter, visit <http://www.flowtubemeter.com>.