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(54) **CORIOLIS MASS FLOW SENSOR HAVING OPTICAL SENSORS**

(75) Inventors: **Todd Berger**, Hatfield, PA (US);
Joseph Dille, Hatfield, PA (US); **James Birdsall**, Hatfield, PA (US); **Thomas Brown**, Hatfield, PA (US)

(73) Assignee: **Emerson Electric Co.**, St. Louis, MO (US)

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G01F 1/84 (2006.01)

(52) **U.S. Cl.** **73/861.355**

(58) **Field of Classification Search** **73/861.355,**
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See application file for complete search history.

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Primary Examiner—Harshad Patel

(74) *Attorney, Agent, or Firm*—Locke Liddell & Sapp LLP

(57) **ABSTRACT**

A Coriolis mass flow sensor includes a flow tube, a light source, and a light pipe having a light inlet situated to receive light from the light source and a light outlet for emitting light received from the light source. A light detector receives light from the light pipe light outlet, and a drive device vibrates the flow tube such that the flow tube moves through a light path between the light outlet of the light pipe and the light detector. In certain embodiments, the light pipe defines a generally square cross section. A sensing aperture having a predetermined shape is situated between the light outlet of the light pipe and the light detector. The sensing aperture passes a portion of the light emitted from the light outlet of the light to the light detector, such that the light entering the light detector has the predetermined shape.

14 Claims, 7 Drawing Sheets

