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(54) **METHODS AND APPARATUS FOR FLUID FLOW MEASUREMENT**

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CPC ..... *G01F 1/663* (2013.01); *G01F 1/662* (2013.01); *G01F 1/66* (2013.01); *G01F 15/066* (2013.01); *G06F 19/00* (2013.01); *Y10T 29/49826* (2015.01)
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See application file for complete search history.

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(57) **ABSTRACT**

A fluid flow meter estimates the velocity of water or another fluid flowing through pipe by comparing measurements of the water velocity to one or more pre-determined templates. The fluid flow meter may collect measurement signals from one or more flow sensors, estimate the fluid velocity or flow rate by comparing the measurement signals to the template, and either store the comparison results in local memory, transmit the results to a remote memory or server, or both. In some embodiments, the fluid flow meter transmits the results to a server via a wireless interface. The transducers and processing system can be powered by a battery, a power line, or, for manifolds installed outdoors, a solar cell. Example transducers and processing systems may also have a passive wake-up feature for power reduction; that is, they may only draw power when water or another fluid flows through the pipe.

**20 Claims, 10 Drawing Sheets**

