

Leak Detection Band



Abstract A band mounted about a pipe joint for providing real-time monitoring of liquid leaks.

The Invention

The leak detection band includes an annular mount having a pair of opposed annular edges and an annular recess formed in an interior surface thereof adjacent one of the annular edges as shown in the figure. A transmitter is attached to the annular mount, and a pair of substantially semi-circular leads are provided. Each lead has opposed first and second ends and a central portion. The first ends are electrically connected to the transmitter. The second ends and central portions are disposed within the recess so that the second ends are mounted opposite one another with a gap being formed in between. When a conductive liquid leaks from the pipe joint, the conductive liquid fills the gap, closing a transmitting circuit, causing the transmitter to transmit an alert signal.

The present invention relates generally to water distribution and plumbing pipes, and particularly to a leak detection band adapted for mounting about a pipe joint for generating an alert signal when a liquid leak from the pipe joint is detected

Market Need

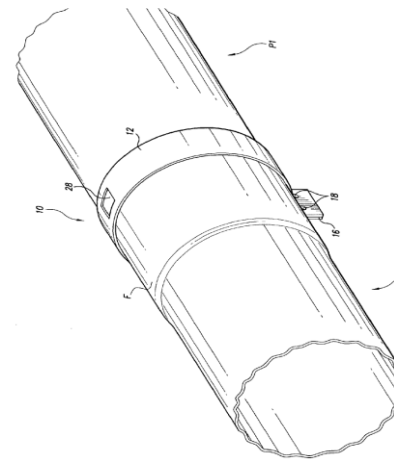
Water is an expensive commodity especially in Gulf countries. Recent studies have shown that more than 50% of leaks occur at joints between pipes. Hence leak detection can be achieved by placing a relatively affordable fixed leak detection system at the joints.

Competitive Advantage

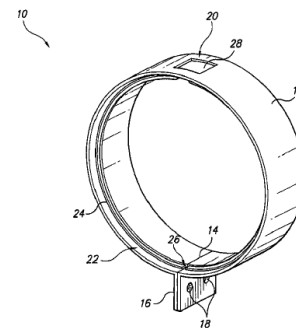
This leak detection band, with an estimated cost of a fraction of a pipe section, can easily detect leaks occurring at joints and send a signal wirelessly using RFID technology. The method is robust and can generate alert about the leak at an early stage and therefore would be helpful in avoiding major accidents and long shutdowns.

Readiness for Market / Looking for a Development Partner

The invented concept is easy to implement. Companies manufacturing pipes for water or oil distributions system are invited to collaborate towards developing this potential technology including building a prototype.



Band Installed at the joint of 2 pipe sections



Drawing of the flexible band

Patent Protection

A patent US8289173 covers the method and related concept of an integrated smart pipe have been filed. KFUPM would like to talk to companies as described above that are interested in developing this leak detection method.

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