

51. Title: Robotic Pipe Crawler for Inspection of Pipe

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Keywords: Robotics Pipe, Pipe inspection

Domain: Motors & Machines (Mechatronics/Robotics)

Summary: The crawler is a robotic device that can be used inside pipes for various purposes like detection of cracks, cleaning of pipes etc. thus, saving a lot of time, labour and cost that are invested in the digging of roads or removing a pipe in a complex pipe network in a larger power plant or chemical plant to detect the position of leakage manually. This invention relates to a robotic pipe crawler for inspection and capable of adjusting its dimensions according to the diameter of pipe, turning at bends, cleaning of pipes. It makes use of the power screw mechanism and crawls on the side walls of the pipe by utilizing the friction provided by the walls to move forward.

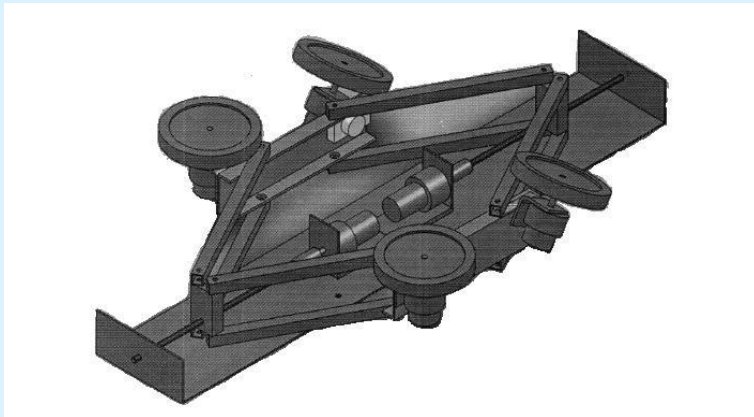


Image: Robotic Crawler

Advantages:

- » This device has wide range of diameters, controllable remotely, and able to operate when fluid is present in pipes which may be flowing or stationary.
- » Supports inspection of pipes in all vertical, inclined and horizontal orientations.
- » Cost effective as the number of components used in this device are much lesser than the existing devices.
- » Simple in construction, Reliable and efficient

Applications: Pipe Networks

Scale of Development: A working prototype device is developed and performance is validated by testing in Laboratory.

Technology Readiness Level: 5

IP Status: Granted Indian Patent 367367