PRECISION IRRIGATION SYSTEM USING PASSIVE MECHANICAL VALVES AND MOBILE ROBOTS

Tech ID: 25151 / UC Case 2015-208-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,631,475	04/28/2020	2015-208

BRIEF DESCRIPTION

Prolonged drought in California and the Southwest has both severely reduced water allocation to farmers, and substantially increased water prices. As the drought continues, so does the pressure to increase water use efficiency and streamline water delivery practices in agriculture. The systems currently in use are insufficiently precise to satisfy the demands of high value crops such as almonds and grapes, which often require watering regimes tailored to individual plants.

UC Berkeley researchers have developed a low-cost system of mechanical valves and mobile robots that will address this issue. One or more valves can be installed per plant, and periodically adjusted by the robots based on sensor data. The system provides a fine-grained control of water flow to compensate for factors that vary across the planting region.

SUGGESTED USES

- Precision irrigation system to streamline water use and increase efficiency

ADVANTAGES

- Ability to tailor watering regimes to individual plants
- Can be easily retrofitted into existing drip irrigation systems
- Designed to withstand harsh conditions
- Low production cost
- Can be used by human or robot workers

RELATED MATERIALS

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INVENTORS

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OTHER INFORMATION

CATEGORIZED AS

- **Agriculture & Animal Science**
  - Devices
- **Engineering**
  - Robotics and Automation

RELATED CASES

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