Patent Search

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Abstract:

The present disclosure relates to systems and methods, and provides an Intelligent Water Control System (100) for automatically controlling water flow in residential combining sensors, a microcontroller, and actuators to minimize water wastage and maximize convenience through electronic control and automation. The Intelligen Control System (100) includes a rain drop sensor (102) positioned at the tap water supply inlet (114) to detect incoming water flow, an arduino microcontroller (104) c process detection signals and issue simultaneous control commands, and a servo motor (106) configured to close the tap upon command. Upon detecting water flow Intelligent Water Control System (100) automatically controls water transfer and tank filling without human intervention, thereby reducing water wastage, enabling fu automated operation, and preventing overflow.

Complete Specification

Description:TECHNICAL FIELD

[001] The present invention relates to automated water management systems, and more particularly to an Intelligent Water Control System for residential applicati employing sensor-based detection, microcontroller-driven decision logic, and electromechanical actuation to minimize water wastage and maximize convenience th electronic control and automation.

BACKGROUND

[002] The field of automated water management has witnessed considerable development in recent years, with increasing attention directed toward reducing wate wastage in residential, municipal, and rural panchayat supply networks. Conventional residential water supply arrangements typically rely upon manually operated overhead storage tanks that are filled by manually switched motor pumps, and periodic human supervision to monitor tank levels. Such arrangements are widely d but are inherently dependent upon the continuous presence and attention of an occupant to manage water flow effectively.

[003] In conventional residential water control arrangements, the incoming municipal or panchayat water supply is typically received directly through a tap that mus manually opened or closed. When no occupant is present at the time of supply, or when the supply arrives at irregular hours, the tap may remain open for an exter duration, resulting in substantial quantities of water being wasted through overflow or uncontrolled discharge. This dependency on manual intervention represents structural limitation of conventional approaches.

[004] A further limitation of conventional systems relates to the filling of overhead storage tanks. Typically, a motor pump is engaged manually by an occupant who monitors the tank level visually or by auditory cues. In the absence of any automated level-monitoring mechanism, the pump may continue to operate beyond the

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