Automatic Clothesline Retrieval System for Domestic Purposes

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Abstract

This study addresses a common issue faced by households, focusing on the troublesome task of drying clothes. Unpredictable weather conditions often result in clothes getting soaked and drenched in rainwater, causing unpleasant odors. Working families, with their busy schedules, resort to indoor drying as a solution, unaware that it can lead to unhygienic conditions and allergies. Additionally, indoor dryers are costly, and further outdoor drying requires constant monitoring to check if clothes are dry, adding to the already overwhelming workload. To address these challenges, this project proposes an innovative solution, an automatic clothesline retrieval system that effectively shelters clothes during rain and provides convenient drying options. The system incorporates inputs such as rain presence, light intensity, cloth drying state, and user feedback, which are processed by an Arduino microcontroller. In response, a stepper motor, controlled by a driver circuit, is activated, and the user is notified via a Global System for Mobile Communications (GSM) module about rain events and the drying progress. The stepper motor's rotational motion drives a gear connected to a railing, enabling smooth movement of the clothesline slots between sheltered and outdoor positions. By introducing this system, households can overcome the challenges of unpredictable weather and manual monitoring, ensuring efficient and convenient clothes drying.

Keywords: *Automatic, GSM, Microcontroller, Rain sensor, Stepper motor*