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(57) Abstract :
The autonomous beach cleaning system presented in this patent harnesses advanced technology to efficiently maintain pristine beaches. Utilizing ultrasonic sensors for precise distance calculation, the robotic base, equipped with a manipulator and designated debris tray, autonomously collects and stores debris, referred to as Scarabs. The integration of Raspberry Pi technology facilitates real-time monitoring and control through the Internet of Things (IoT). The system incorporates a UV sensor to detect trash, prompting automatic cleaning via the Roller Broom Fan. Power-efficient with a 12V DC battery, the system ensures ease of operation and minimizes the need for human labor. Additionally, its versatility extends to private beaches, landscaping applications, and resorts, making it a valuable investment in environmental conservation and beach maintenance Accompanied Drawing [FIG. 1-5]

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