UNIVERISTI TEKNOLOGI MARA

SEMI-AUTO GRASS CUTTER WITH IoT CONTROL

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ABSTRACT

The semi-auto grass cutter with IoT control represents an innovative fusion of cutting-edge technology and lawn care, offering a convenient and efficient solution for maintaining outdoor spaces. Through the integration of Internet of Things (IoT) capabilities, users can remotely control the grass cutter using smartphones or tablets, eliminating the need for manual effort. This visionary project incorporates various components such as sensors, motors, and IoT modules, working in unison to enable remote control and enhance user convenience. The grass cutter's obstacle detection mechanism relies on an ultrasonic sensor, designed to alert users when an obstacle is within a 1-meter range by activating a buzzer. This feature ensures precise and efficient cutting while keeping users informed of potential impediments during operation. The IoT module seamlessly facilitates wireless communication, granting users flexibility in managing lawn care tasks. The benefits of this semi-automatic grass cutter with IoT control are numerous. Users can easily control the grass cutter via mobile devices. The ultrasonic sensor, serving as the obstacle detector, enhances safety and awareness by promptly notifying users of obstacles in the mower's path. The integration of IoT technology continues to offer real-time monitoring and data collection, providing valuable insights into lawn care patterns for informed decision-making. This semi-automatic grass cutter with IoT control, featuring an ultrasonic sensor for obstacle detection, not only simplifies lawn maintenance but also prioritizes user safety and awareness, contributing to an overall enhanced lawn care experience.

Keywords *— semi-auto grass cutter, IoT, mobile, lawn, remote control*

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CHAPTER 1

INTRODUCTION

1.1 Background

In the pursuit of convenience and efficiency in lawn care, the development of advanced grass cutting technology has revolutionized the way to maintain the outdoor spaces. one remarkable innovation in this field is the semi-automatic grass cutter with IoT control. This cutting-edge device combines the power of automated grass-cutting with the convenience of remote operation. The semi-automatic grass cutter with IoT control is specifically designed to enhance efficiency, save time, and provide a user-friendly experience in the process of mowing the lawn. With advanced technology and intelligent features, this device eliminates the need for manual labour, transforming the once laborious and tiresome task of lawn maintenance into a seamless and enjoyable endeavour. Equipped with a mobile phone control function, users can operate the grass cutter from a distance, eliminating the requirement for physical pushing or manoeuvring. This functionality offers numerous advantages, including enhanced safety, reduced physical strain on the operator, and improved manoeuvrability. By utilizing the mobile phones control, users can effortlessly guide the lawnmower around obstacles, navigate challenging corners, and achieve a consistently even and tidy cut.

The semi-automatic lawn mower is equipped with an advanced sensor that will detect obstacles and a buzzer will sound if the sensor detects an obstacle and intelligent programming, these advanced features ensure smooth operation of the machine while protecting it from possible damage and maintenance the integrity of the surrounding environment. Effectively detecting and avoiding obstacles, the lawnmower operates with precision and ensure a hassle-free cutting experience without affecting its own function or cause harm the environment. The goal of developing a semi-automatic lawnmower with mobile phone control is to create more efficient, simple and user-friendly solutions for lawn care. The goal is to increase efficiency from the grass cutting process and reduce time needed to complete the task and allows faster and smoother grass cutting. This the convenience factor makes lawn maintenance accessible to a wider group of individuals, regardless of age or physique abilities. Semi-automatic lawn mowers are also intended for promote environmental awareness in lawn care practice. By using rechargeable batteries and eliminate emissions during operation, lawn mowers reduce air and noise pollution, contributing to a cleaner and a healthier environment than traditional gasoline-powered mowers.

This project offers an abundance of advantages. Users can minimise their physical exertion by eliminating the need to manually operate a cumbersome and obsolete lawn mower. This indirectly conserves their time and enables them to participate in more significant pursuits, such as dedicating quality time to their loved ones. In addition, they can reduce expenses by acquiring a more advanced semi-automatic grass cutter as opposed to a traditional lawn mower. The semi-automatic grass cutter is considered more advanced due to its compact size and lack of reliance on petrol for operation.

1.2 Project Overview

The Semi-Auto Grass Cutter with IoT Control is a fusion of conventional grass-cutting techniques with the burgeoning Internet of Things (IoT) technology. The Internet of Things (IoT) is an