TEST Engineering & Management

May-June 2020
ISSN: 0193-4120 Page No. 3681-3684

Review Paper on Different Technologies of Solar Grass Cutter

CH Ramanareddy[1], A. Deepak[2]
[1,2]Dept of Electronics and Communication Engineering,
Saveetha School of Engineering, SIMATS, Chennai
Chramanareddy006@gmail.com[1], deepakarun@saveetha.com[2]

Article Info
Volume 83
Page Number: 3681-3684
Publication Issue:
May-June 2020

Article History
Article Received: *19 August 2019*
Revised: *27 November 2019*
Accepted: *29 January 2020*
Publication: *12 May 2020*

Abstract

This paper portrays the various highlights and advances of Solar Grass Cutter by reviewing various research articles. Now a days Automation is a significant piece of creation. By and by, physically dealt with gadgets are regularly utilized for cutting the grass over the garden. Along these lines, there is contamination as well as loss of vitality. The old grass cutters are working with power wires as well as human power. This Grass cutters will use more accuracy as well as more efficient. This will use for direction and location purpose also. Because of sun light this cutter will not use more electric power as well as electric wires. Right now these grass cutters will us to review assorted each day reason robot which are using different progressions and can cut the grass in yard using IR sensors as well as ultrasonic sensors.

Keywords: *Contamination, Vitality, Utilization, Ultrasonic sensors, Obstruction.*

1. Introduction

The first grass cutter was discovered in 1830 by Edwin. It is just outside Stroud as well as blades, in Gloucestershire, Britain. Growing's shaper was arranged basically this grass cutter will cut the grass in the cricket grounds as well as parks and greeneries as a pervasive choice as opposed to the sickle, the permission was given by British patent on August 31, 1830. In 1995, the first completely sunlight based controlled automated cutter opened up. The trimmer can discover its charging station by means of radio recurrence discharges, by following a limit wire, or on the other hand by following a discretionary guide wire. A mechanical yard shaper is an automatic robot used to cut grass in the playground as well as parks. An ordinary mechanized nursery shaper need the customer to create an edge wire and also it creates around the yard that describes the main part to be cut. The grass cutter uses this wire to see the restriction of area as slice and once in a while to locate a restoring dock. This cutter will cut the 220000 sqft of grass at once. Mechanical garden trimmers spoke to the second biggest class of residential robots utilized by the finish of 200Possibly the primary business mechanical grass cutter was the MowBot, presented and licensed in 1969 and as of now demonstrating numerous highlights of the present most well-known items.

In 2012, the development of mechanical grass cutter deals was multiple types of that of the conventional ways. With the development of advanced mobiles some automated trimmers include coordinated highlights inside custom applications to alter settings or planned cutting occasions and recurrence, just as physically control the trimmer with an advanced joystick.

2. Literature Survey

[1] Now a dayspeople are facing lot of issues like power problems and human problems…etc. By overcome all these problems this solar grass cutter will help. This grass cutter is fully automated solar power grass cutter. The function of this automatic solar grass cutter is taking the solar energy from sun through solar panel. Then it converts the solar energy to electrical energy and gets charge to battery. This battery converts the DC current to AC power. From the battery power all the functions will work. Current innovation usually utilized for cutting the grass is by the physically taken care of gadget. Right now paper utilized novel innovation. The motor of the automatic solar grass cutter will take the power from solar panel and battery. These two are the main sources of the power for the automatic solar grass cutter. If the any issue coming from the solar panel then battery will give

May-June 2020
ISSN: 0193-4120 Page No. 3681-3684

the power to the motor. These are the power structure of the automatic solar grass cutter

[2] This framework was completely computerized dependent on sun based applied in grasscutter is a completely mechanized grass cutting mechanical vehicle by sun based vitality that additionally keeps away from obstructions and completely robotized mechanism was given to this robot so that it will work without need of human communication. This structure is based on 12V batteries to control the vehicle as well as motors similarly as the grass cutting blade dc motor moreover by using the solar panel board battery will get automatic charge so that there is no extra charge needed. The grass cutter as well as vehicle motors are working based on Arduino board and ultrasonic sensors. So depending on our program this grass cutter will work without need of any human communication and human power. This ultrasonic sensor will work to avoid the obstacles. The microcontroller then turns the mechanical at least somewhat long of the item and afterward moves the grass shaper in sending bearing once more.

[3] Right now shaper machines are turning out to be extremely well known today. Contamination is synthetic and these are can be found in our day by day life. In previous days in the grass cutters was used IC motors to cut the grass as a result of its ecological effect, contamination level ascents. IC motor driven shaper is all the more expensive. By using these normal machines difficulty levels are more. To keep away from these disadvantages, we found the advanced model of grass cutter which will work based on solar energy and the model is conservative contrasted with past one. The point of our undertaking is to make the grass shaper which works on sun based vitality, subsequently spare the power and diminishes labour. Right now utilize 8051 microcontroller for controlling the activities of a grass shaper. Likewise the grass shaper has Ultra sonic sensor for impediment location. Grass shaper works consequently subsequently it doesn't require gifted individual to work.

[4] The completely mechanized sunlight based grass shaper is a completely robotized grass cutting mechanical vehicle by sun powered vitality that likewise stays away from obstructions and is able to do completely mechanized and this grass cutter will work without use of any human communication. 6V battery system is used to control the entire system as well as cutting blades motor. This automatic grass cutter will contains 8051 microcontroller which controls all the DC motors. In this also we use Arduino uno board as well as ultrasonic sensor to control the vehicle without using human communication. Microcontroller then turns the computerized at any rate to some degree long of the thing and thereafter pushes the grass shaper ahead way again.

[5] Quick improvement of various inventive instruments and sorts of apparatus makes our occupations done pleasing and modern. Based on engine and Arduino program grass cutter will work experiencing sun situated vitality due to the ceaseless increment in the expense of fuel and the impact of emission of gases from the consumed fuel into the environment, this required the utilization of the inexhaustible sun oriented vitality from the sun as a wellspring of capacity to drive a grass shaper. A sun based grass shaper was structured and created, based on the general rule of cutting. There are different parts are available in this grass cutter which is Direct current engine, solar panel, solar charger..etc. The solar controlled grass shaper is worked by the switch on the board which shuts the circuit and permits the stream of current to the engine which thus drive the cutting edge utilized for cutting. The battery energizes through the solar charging controller. Execution assessment of the created machine was done with various kinds of grasses.

[6] These days grass shaper machines are turning out to be well known today. Contamination is artificial, which we can be seein our consistently life. In olden days the grass cutter is made by IC engine and it is used. Normally these grass cutter is very high cost. So these type of grass cutters used very difficult. To avoid these errors we found a new automation. This grass cutter is fully automated as well as based on sun light it will work. The main purpose this project is by using the daylight can make the grass cutter with fully automated. In our we use microcontroller for controlling distinctive movement of grass shaper. The grass shaper has block sensor for impediment disclosure. Grass shaper works subsequently along these lines it doesn't require skill individual to work.

[7] A Solar grass sharper is a machine that uses sliding front lines to cut a nursery at an even length. Continuously current contraptions are there in each field. Force use gets vital for future. Sun based grass sharper is an extraordinarily significant gadget which is clear being created. It is utilized to keep up and upkeep yards in gardens, schools, school's, and so on. We have uncovered certain upgrades in the current machine to make its application simpler at diminished expense. Our chief point in contamination control is polished through this. Blundering activity can work feasibly and keep up the yard fine and uniform surface look. In our assignment Solar grass shaper is utilized to cut the different grasses for the assorted application.

[8] The undertaking targets fabricating a grass cutting machine system which makes the grass more keen motor experiencing daylight based imperativeness. The "Sun Powered Grass Cutting Machine" is an automated vehicle controlled by sun based vitality that likewise keeps away from deterrents and is equipped for robotized grass cutting. The system uses 12V battery to control the vehicle advancement motors similarly as the grass sharper motor. A sun board is used to charge the battery so that there is no need of charging it remotely. The grass shaper and vehicle motors are interfaced to pic microcontroller that controls the working of the impressive number of motors. It is moreover interfaced to a ultrasonic sensor for obstruction acknowledgment. The microcontroller pushes the vehicle motors ahead route in case no prevention is recognized. On obstacle disclosure

May-June 2020
ISSN: 0193-4120 Page No. 3681-3684

the ultrasonic sensor screens it and the microcontroller thusly stops the grass cuter motor to avoid any mischief to the article/human/animal whatever it is and it similarly gives a caution. Microcontroller then turns the vehicle at least somewhat long from the article and a short time later pushes the grass shaper ahead way again else it changes the course.

[9] At this moment considered a sun controlled grass sharper. A sun arranged Grass sharper is a machine that usages turning sharp edges to cut a grass at an even length. Significantly continuously complex devices are there in each field. Power usage gets principal for future. Grass sharper is an incredibly important contraption which is extremely fundamental being developed. It is used to keep up and upkeep land s in gardens, schools, school's part, and so forth. We have revealed a few upgrades in the current machine to make its application less mind boggling at decreased expense. Our significant point in contamination control is practiced through this. Awkward development can work enough and keep up the land especially fine and uniform surface look. In our "sun sensible grass sharper" is utilized to cut the various grasses or specific grass for the phenomenal application.

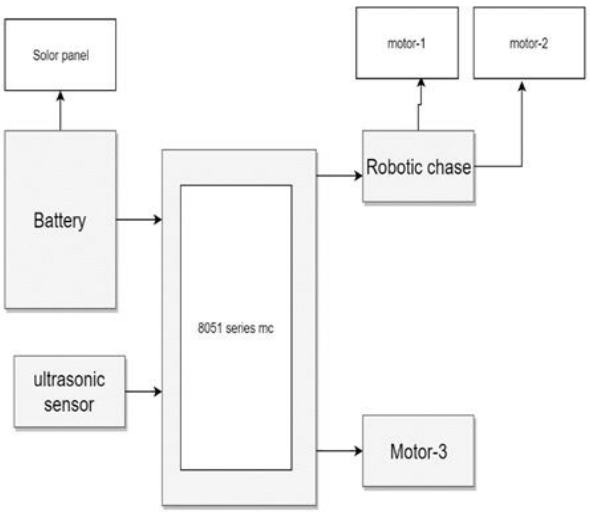
[10] Before long, truly oversaw gadget is commonly utilized for cutting the grass over the field which makes sullying and loss of vitality. The remote grass sharper structure advances a motorized yard sharper part. This will diminish the exertion required for cutting grass in the yards and sunshine based force utilized will help with contributing in chopping down corrupting. The mechanized vehicle is outfitted with a grass shaper edge that considers grass cutting at high RPM. The structure has a sharp value that grants it to cover the all out region of a yard or nursery by distinguishing corners using ultrasonic sensor and moving in a raster route in order to cover the entire district. This viable system uses an Arduino Mega microcontroller in order to achieve this handiness. The Arduino will go about as the brain of the endeavor which will send requests to the grass shaper. It in like manner controls the advancement of motors which help for the improvement of the shaper.

[11] The sharp grass shaper system propels a completely automated yard mover part. The robotized vehicle is outfitted with a grass shaper sharp edge that thinks about grass cutting at high RPM. The system has a splendid helpfulness that permits it to cover the total territory of a grass or nursery by identifying corners utilizing ultrasonic sensor and moving in a crisscross way so as to cover the whole zone. This productive framework utilizes a microcontroller based circuit so as to accomplish this usefulness. It is a battery worked framework that utilizes 2 batteries. One battery is utilized to run the vehicle development DC engines and the other one is utilized to control the grass shaper engine. Additionally the framework utilizes a sunlight based board to show the charging of vehicle development battery. The microcontroller works the vehicle development dc engines just as the grass shaper simultaneously as observing the ultrasonic sensors. The microcontroller intelligently works the dc engines utilizing the engine driver IC to accomplish wanted development dependent on ultrasonic sources of info. The framework additionally utilizes a gyro sensor so as to accomplish flawless 180 degree turns so as to accomplish total grass/garden inclusion. Along these lines this framework takes into consideration completely mechanized grass cutting framework without the requirement for any human intercession.

[12] From a long time ago, the sun has been the huge wellspring of essentialness for life on earth. The daylight based essentialness was being used clearly for purposes like drying pieces of clothing, alleviating cultivating produce, protecting sustenance articles, etc. Without a doubt, even today, the essentialness we start from fuel-wood, oil, paraffin, hydroelectricity and even our sustenance begins at an inclination from sun. Sun powered vitality is nearly unbounded. The all out vitality we get from the sun far surpasses our vitality requests. Since the time the mechanical insurgencies human have been reliant on energizes, power what's more, wind vitality. For human development in various countries there is study and primers are going on the Solar essentialness and the breeze imperativeness, So we make our new thought sun grass cutting machine in these thought we cut grass on the cultivating things or on little plants in nurseries and nurseries. Remote controlled grass more keen can be depicted as the utilization of Radio repeat to control a machine on which electric motor turns which along these lines turns a sharp edge which does the cutting of a grass.

3. Structure and diagram

The structure of the automatic solar grass cutter will be based on different review papers. Here above mentioned lot of reviews. There are different technologies are found for the automatic solar grass cutter. Based on all papers tables should be prepared.



May-June 2020
ISSN: 0193-4120 Page No. 3681-3684

4. Conclusion

This paper reviewed with different technologies of grass cutters. The main aim of this review paper is to reduce time and human power while using grass cutters. By using solar power can reduce electric power and also by using robotic sensors and obstacle avoiding robots can reduce human power. This automatic solar grass cutter is fully automatic without using human power and electricity power.

Reference

[1] Solar based grass cutter by Ms. Yogita D. Ambekar, Mr. Abhishek U.Ghate, UG Student, Department of Electrical Engineering, YTC, Satara, (India).

[2] Manufacturing of solar garss cutter by Mr.Shubham S. Dalal, Mr.Vaibhav S. Sonune, Mr. Dipak B. Gawande, final year students of mechanical engineering from Pankaj Ladhad institute of Technology.

[3] Solar Grass Cutter With Linear Blades By Using Scotch Yoke Mechanism P.Amrutesh, B.Sagar, B.Venu Student, B.Tech Mechanical Engineering.

[4] Solar Powered Fully Automated Grass Cutting Machine by BincyAbhraham, Darsana P S, Isabella Sebastian ,Sisy N Joseph Prof. George John B.Tech Student, Department of Electrical and Electronics Engineering, Mar Athanasius College of Engineering, Kothamangalam, Kerala, India.

[5] Solar Economical Grass Cutter by Akshay A. Dhabale, Dipali B. Bachhav,Ashwini M. More, Nurmohammad R. Tadvi, Ms. Shubhangi G. Kamble.

[6] Automatic Solar Grass Cutter by Mrs. Melba D'Souza Ms. Vaidhavi B. Naik Assistant Professor UG Student.

[7] Smart Solar Grass Cutter With Lawn Coverage by Prof.S.M.Patil, BhandirgePrajakta, Kumbhar Snehal, PatilDhanashri.

[8] Self-Efficient and Sustainable Solar Powered Robotic Lawn Mower by Srishti Jain, Amar Khalore, ShashikantPatil from International Journal of Trend in Research and Development.

[9] Automated Solar Grass Cutter by Ms.Rutuja A. Yadav, Ms. Nayana V. Chavan, Ms. Monika B. Patil, Prof. V .A. Mane from International Journal of Scientific Development and Research.

[10] Design and Implementation of Automatic Solar Grass Cutter byBidgarPravinDilip, Nikhil BapuPagar, Vickey S. Ugale, SandipWani, Prof.Sharmila M. from International Journal of Advanced Research in Electronics.

[11] Automatic solar grass cutter by mallikarjunamudda, Viswataja, Srujana Kumar from Elecronics and communication engineering.

[12] A Fully Automated Lawn Mower Using Solar Panel by George Fernandez and VijayakumarKrishnasamy from SRM university.

[13] Design and Implementation of Automatic Solar Grass Cutter by BidgarPravinDilip, Nikhil BapuPagar, Vickey S. Ugale, SandipWani, Prof.Sharmila M.UG Student, Department of Electrical Engineering, Sandip Institute of Engineering and Management, Nashik, India.

[14] AUTOMATED SOLAR GRASS CUTTER by Ms. YadavRutuja A, Ms. ChavanNayana V, Ms. Patil Monika B, Mr. V. A. Mane.

[15] Solar based grass cutter machine by Mr. Ritheshpatel, Mr. ShubhamBhad, Mr. Hemanth Avasaramal from North Maharastra university.