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MEC 299

PROJECT NAME:

ECO-FRIENDLY CLEANING MACHINE

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SEM MARCH OKTOBER 2022

ABSTRACT

This paper presents the design and features of eco-friendly cleaning machine, in our country various types of electrically operated sweeping machine is available in the market but the cost of this equipment is high. So, these machines are not used in small spaces like college area, industrial area or hospital area. Therefore, the objective of this project is to design a product that can clean a wide area using Solid Works. In this project an effort has been made to develop a mechanically operated eco-friendly cleaning machine so that it can be used for small space cleaning without pollution. The brooms and scoops have been enhanced in various aspects such as the broom will stick in front of the scoop so it can roll over the broom without needing to swipe it. The broom can also be pulled up to collect bigger rubbish such as water bottle or cans. In conclusion, this eco-friendly cleaning machine will be way effective than the usual one and easy to use.

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1.0 Introduction

Cleaning is a must-have skill for today's generation. In general, the floor in the home must be cleaned on a regular basis. The design and production of floor cleaning equipment is carried out by this machine. The main objective is to design a product using Solid Works and to fabricate an eco-friendly cleaning machine. Various floor cleaning techniques machines with high ranges and weights are readily accessible on the market. As a result, not everyone can afford them both financially and in terms of weight. Numerous machines are used extensively for this job. A versatile and economical floor cleaning machine needs to be created as a result. In this project, the main goal is to design an eco-friendly cleaning machine. The purpose for this research is to find a product to make cleaning easier for people. This product is important as it is will be use to keep the environment clean.

2.2 Background of Study

Cleaning is the removal of undesired substances from an object or environment, such as dirt, infectious agents, or other contaminants. Cleaning is a profession that includes janitors. A janitor cleans and maintains buildings such as hospitals, schools, and residential facilities. The main job of a janitor is to keep the place clean. The janitors may be responsible for maintenance and security in some circumstances. Although janitors and building cleaners spend most of their work indoors, janitors do occasionally have to work outside. Sweeping walkways and mowing lawns are two common outside jobs. Janitors have a wide range of tools and equipment at their disposal. Brooms and scoop are two common cleaning instruments.

The objective of this project is to design a product that can clean a wide area using Solid Works. The brooms and scoops have been enhanced in various aspects such as the broom will stick in front of the scoop so it can roll over the broom without needing to swipe it. The broom can also be pulled up to collect bigger rubbish such as water bottle or cans. This example above has proven that this project has improved the product currently on the market. Materials used to make the eco-friendly cleaning machine are also easy to find and come at an affordable price.

The product will also consider the pros and cons that the user/customer will get in the future so that the project can make the best outcome through this discussion. After the analysis and design are complete, the ideas and design specifications will be combined and the product model will be shown using a 3D simulation, SolidWorks software.

1.2 Problem Statement

Using a regular broom and scoop can be a pain as it requires more time and human energy. Users will have difficulty gathering their trash and moving it to an appropriate place because of the low mobility of those two pieces equipment. There are also different types of brooms for the right cleaning job. Some may have unique design to suit their wany and needed for cleaning purposes. Having multiple cleaning product at once depends on the user's budget as each product use for different types of cleaning. This can also lead to waste of money in the long term run as brooms also have their usage limit and lack of build quality.

1.3 Design Objectives

- 1.To design and fabricate a product that can clean wide area using Solid work.
- 2.To test the functionality of the eco-friendly cleaning machine.

1.4 Scope of Project

The scope of a project is simply all of the work that must be completed in order to meet the project's goals. To put it another way, the scope refers to the process of determining and documenting specified project objectives, outputs, deliverables, technical requirements, and limitations.

The objective of the project is to produce a multipurpose cleaning swiper that can make customer/user live their life easier and more comfortable. For the deliverable, this cleaning machine can just be rolled over to collect rubbish and this machine has a high mobility due to the wheels attached to the roller. For the technical requirement, the cleaning machine must meet the SolidWorks design and the waste collection box should be able to collect more rubbish. Limitation for this product is difficulty to purchase and limited choice in interior design.