ISSN- 2394-5125 VOL 9, ISSUE 05, 2022

VACAN

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Abstract

A clean environment improves our health. Generally while cleaning using a broomstick it works effectively, but takes more time and more manual effort. Vacuum cleaner works efficiently, but the major drawback is its high cost. Every household cannot afford a vacuum cleaner. Hence, a vacuum cleaner that requires reused components is made of meagre cost. Every year tons of plastic is generated with no proper disposal management. It is very important to manage waste plastic effectively. The best practice to reuse waste plastic effectively is to make new gadgets using recycled plastic so that the production of new plastic can be reduced in order to protect the environment. If we use recycled plastic to develop new gadgets then we will be able to provide it at acheaper price.

1. INTRODUCTION

There are many solutions that can be made by using the technology, we thought of something which should be developed instead. So, we chose to implement something that's a minute but very effective issue in common households and other areas. As we have said that we have an idea on cleaning the floor without heavy physical activity we decided to make a vacuum cleaner made of old items to reuse them. Many people cannot afford vacuum cleaners so, we have decided to make it using recycled items which are cheaper. All our team members had decided to do a project, that is "Vacan", by which we can clean the floor without heavy physical activity.

2. RELATED WORK

A vacuum cleaner is a device that uses an air pump to create a partial vacuum to suck up dust. The dirt is collected by a dust bag for later disposal. Vacuum cleaners are existing in different sizes to use for general purposes and industrial purposes .A vacuum's suction is caused by a difference in air pressure. A fan driven by an electric motor reduces the pressure inside the machine. Atmospheric pressure then pushes the air through the carpet and into the nozzle, and so the dust is literally pushed into the bag. Most vacuum cleaners

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are supplied with numerous specialized attachments, such as tools, brushes and extension wands, which allow them to reach otherwise inaccessible places or to be used for cleaning a variety of surfaces.In this project we tried to make a model of a simple Vacuum cleaner by using recycled materials. The materials we used are DC motor, regulator, switch, bottle and a flexible pipe.

3. IMPLEMENTATION

Vacuum cleaner is the most useful and a very common household cleaningtool that uses a suction mechanism to clean the dirt. In this model, we made apowerful vacuum cleaner at home using a powerful high rpm 12v DC motor, aplastic bottle and a propeller. This Vacan is equipped with a separate dustcontainer.

Need OfVacan

The main need of this ‘‘vacan’’ is to clean the dirt aroundus.Even the vacuum cleaners do the same but the speciality of this model is it isdone using the recycled materials and this is cheaper than the vacuum cleaner.Thiscan be moved easily and vacan occupies less space.

Project Justification

The main aim of this project is to make a model which helps usto clean.The vacuum cleaners are existing but they are not affordable byeveryone.So,we decided to make a vacuum cleaner named “Vacan” which isavailable at less cost, easily portable and works as efficiently as vacuum cleaner.In this project we include design and construction of a vacuumcleaner made using recycled materials. We have used a motor whichhelps in the movement of the fan. The connections are connected inreverse bias so as to create a suction pull which sucks in the dustparticles. All the dust particles which are collected are stored in themembrane across the cloth. A regulator is attached to the model so as toincrease or decrease the speed of the fan based on the requirement of theuser.In this project we are going to make a Vacuum cleaner by using some recycledmaterials.We have used a bottle which is the body of the model for consuming andremoval of wastage.The fan is made by the tin sheet for suction purposes.The motor here we used is of12V and speed 18000 rpm which helps to spin the fan.To run the motor we haveconnected the lithium ion batteries to it.These batteries are rechargeable.We haveattached a pipe in front of the bottle which is used for sucking dust.The regulator is connected to the motor which helps us to control the speed of themotor.The switch connected is used to turn on or off the vacan.

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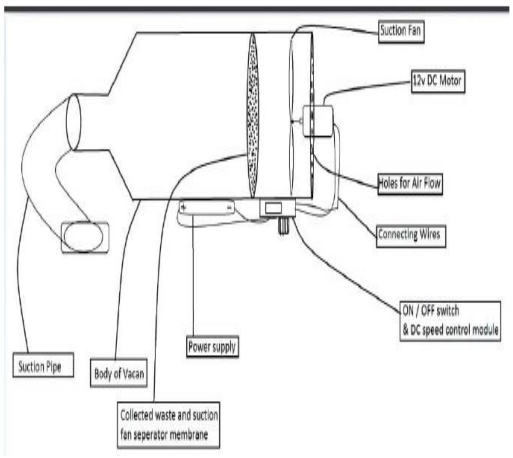
4. EXPERIMENTAL RESULTS



Schematic Diagram

Prototype

5. CONCLUSION

This research facilitates efficient floor cleaning with VACAN, a vacuumcleaner which is made of recycled items. This proposed work provides quicksuction and sucks in any dust particles. This model can also be modified by usingthe Bluetooth module and GSM module. We can also modify the model by addingsuction pipes and sprinklers which can make the model more efficient.

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