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MANUFACTURING OF AUTOMATIC FLOOR CLEANING MACHINE

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ABSTRACT

Our robot is doing the manual work. As we know that many manual work is done by robot appliances. Floor cleaner robot works in 2 modes "Automatic mode and manual mode". All the hardware operations are controlled with the help of the remote control which is operated by our member. Our robot performs dust sucking, sweeping and cleaning tasks. Our robot work performance can be varied in ranges. 7 DC motors are used in our robot. Four motors are used for wheels, two are used for scrubbers, and one is used for mop roller. Our roller works on itself only we need to give the direction with the help of remote control which works on 240 V power supply and circuit is connected to it.

Keywords: *Scrubber, mop roller, remote control, motor.*

I. INTRODUCTION

Robot is electromechanical device which is used in the industries as well as in domestic appliances. Many type of robots are used in the industries for the cleaning. Our robot is also one of them which can be used for cleaning. As today we can see that many people are busy in their work. So they don't have time to work for cleaning, so for this just to reduce the human effort we have manufactured our robot.

In 2010 a new automatic floor cleaner robot 'Mint' was developed by Jen Steffen. Detachable clothes were used for sweeping and mopping purpose

Floor cleaning robot

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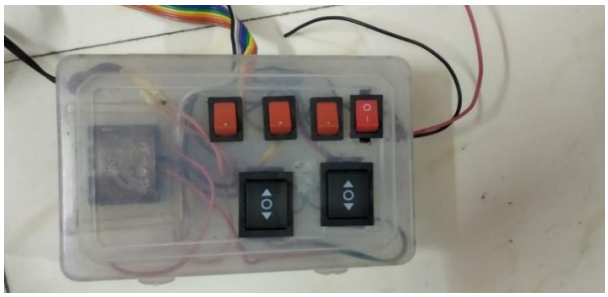

Remote control with switches to operate each component individually

In this research work we made a robot which works automatically. This robot is electric home appliance which works on electric supply and on the battery of 12V. The whole circuit assembly is connected with remote which can also be operated with the help of battery. Direction to the robot is given by the remote control and the robot automatically works on it own.

II. WORK TO BE DONE

- Manufacturing of Robot
- Testing of robot
- To look upto economics consideration.
- Reduction of human effort.

III. METHODOLOGY

As we started market survey and it came to know that there is no machine with combination of vacuum cleaner, sweeper and floor cleaning machine. Then we started to design the model by considering several aspects like weight, dimensions and cost. First we took 3 mm sheet with holes which can reduce the weight but its aesthetic look was not good so we reconsidered 2 mm thick sheet. We designed the sheet in 29 X 23 cm by considering vacuum cleaner hose and setup.

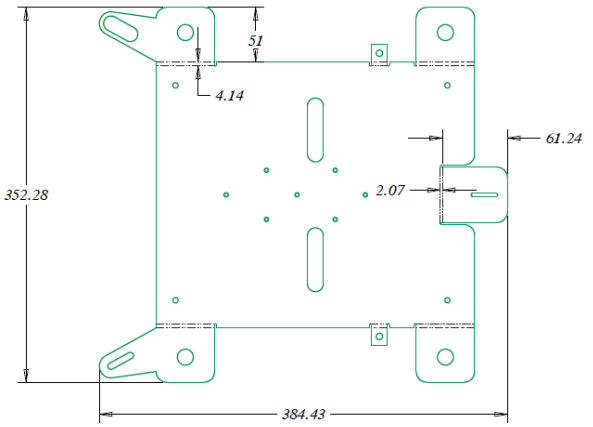

Fig: Dimensional Design on sheet of 2mm

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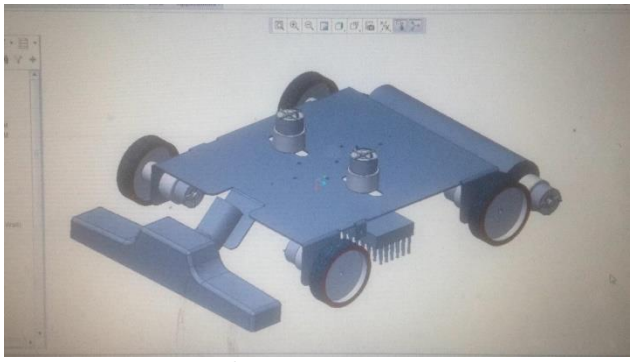

Fig: 3-D view of our setup without electric supply

We also considered dimensions by which we can mount all assembly on that sheet in light weight and less space for flexible working. We choose tank of 1.25 liters by which our assembly can run properly on plastic robotic wheels of 70mm diameter which is powered by 12V. We choose low power supply and less power setup as it is used in household and residential use for reduction of cost. We performed the operation with electric supply and the result were as accepted, but vacuum suction pressure for less so we attached external power supply for vacuum alone (battery).

IV. CONCLUSION

Our researched robot implies the efficient floor cleaning and sweeping operations. Our robot performs operations on semi-automatic mode. One robot is attached with automatic sprayers which sprays the water for convenient of machine for floor cleaning and the scrubbers clean it and the remained water is sucked and cleaned by the mop roller behind the robot and all the commands are given by the remote control which is operated by user. The distance of the machine can be varied with use of wires. We can change the scrubbers as compatible for suitable floor and materials needed easily.

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