

Wireless Multi -Purpose Floor Cleaning Machine

Himani Patel¹, Mahima Patel², Swapnil Sharma³

^{1,2}Electrical Engineering, Neotech Institute of Technology, Virod- Harni, Vadodara Gujarat Technology University, Gujarat, India.

³Assistant Professor, Electrical Engineering Department, Neotech Institute of Technology, Virod, Vadodara Gujarat Technology University, Vadodara, Gujarat, India

Abstract-The aim of this project is to design a prototype model of floor cleaner is very much useful in cleaning floors in hospitals, houses, auditorium, shops, computer center etc. It is a very simple in construction and easy to operate. Anybody can operate this machine is easily. It consists of moisture cotton brush, cleans the floor and dried with aid of small blower. The time taken for cleaning is very less and cost is also very less. Maintenance cost is less. Much type of machine is widely used for this purpose. But they are working under different principles and cost is also very high. It performs two operations Sweeping and Mopping. With the advancement of technology, automated floor cleaning machines are getting more attention of researchers to make life of mankind comfortable. This is capable of performing cleaning of floor and corners effectively, semi-automatic water spray, dry as well as wet cleaning tasks. The machine will work on electricity. This work can be very useful to improve the life style of mankind.

Keywords-Floor Cleaning Machine, Brush, Vacuum, Design And Fabrication

I. INTRODUCTION

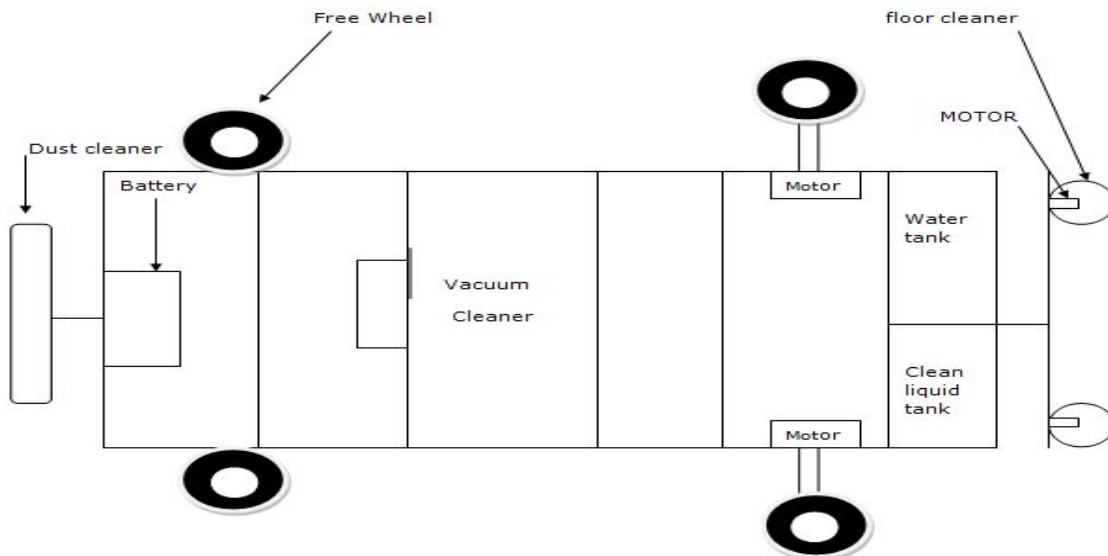
This project deals with designing and fabrication of floor cleaning machine. The main aim is that it combines operation of all three different device's operation. Good well-maintained entrance matting can dramatically reduce the need

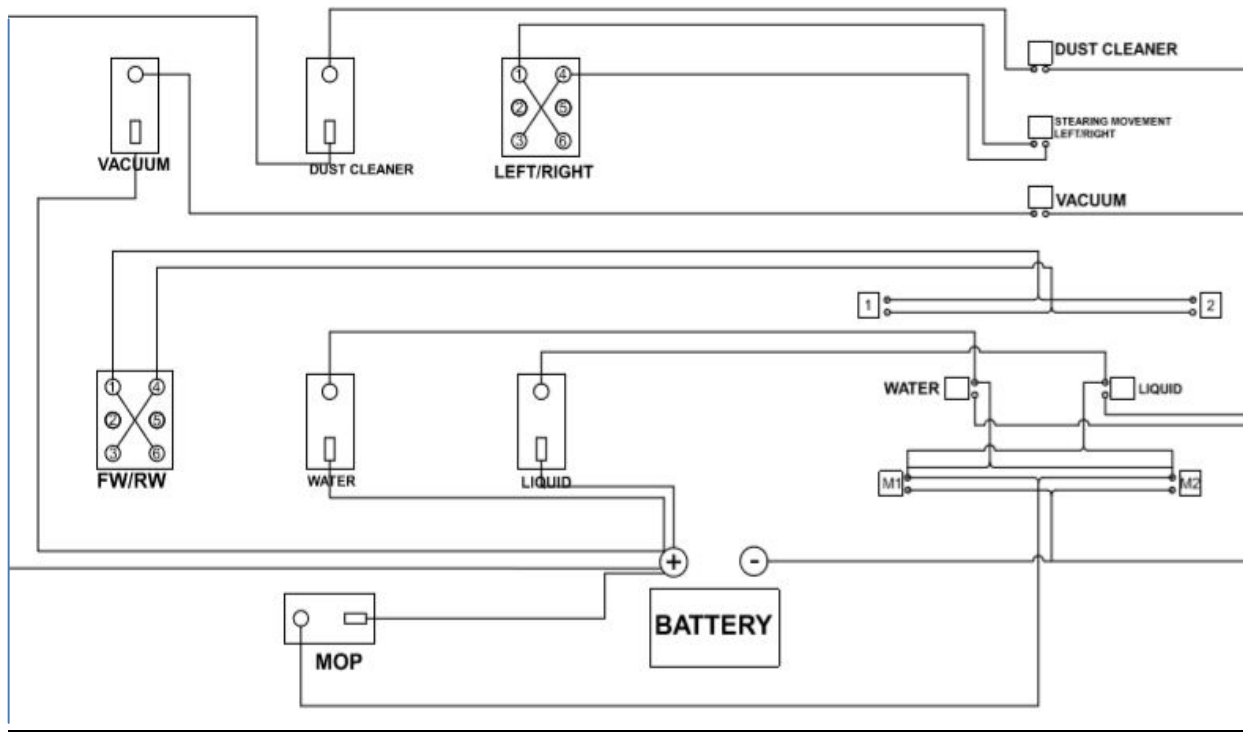
for cleaning. For public and office buildings about 80 to 90% of the dirt is tracked in from outside. Installing a total of approx. 15 feet of matting consisting of both indoor sections will remove about 80% of this. Thus about two-third of the dirt can be removed at the entrance. A Wireless operated floor cleaning is developed with major list of objective; two make the machine cost effective. easy to operate. Requires no training to operate / fast. Clean more space less time. to reduce the maintenance cost of the manually operated floor cleaning machine as far as possible. There is no machine in the markets which can be used on smooth surface. Main mottos of research are:

- To reduce the human efforts.
- To increase the effectiveness of cleaning the floors

In manufacture very simple drive mechanism we used as possible as and easy to operate, time taken for cleaning is very less and maintenance cost is also less as compared to other. This project applicable for several floor cleaning activities. considering the area and access of the floor to be cleaned this floor cleaning machine is able to handle a load of cleaning activity.

II. DESIGN OF MACHINE





III. COMPONENT

Sro.	Components	Nos.	Ratings
1.	DC Gear Motor	1	12 V, 1 A, 3.5 RPM
2.	Lead Acid Battery	1	12 V, 7 A
3.	Shaft	1	6mm
4.	PVC Sheet	1	5mm(thickness)
5.	Nut Bolt	1 Packet	8mm x 2inch
6.	Wheels	4	5cm (Radius)
7.	Wire	5m	7m
8.	FW/RW Switch	1	24 V, 7 A
9.	ON/OFF Switch	4	24 V, 7 A
10.	Metal Pipe	20ft	20ft
11.	DC Motor	3	12 V, 1 A, 200 RPM
12.	Dust Cleaner	1	--
13.	Motor Clamp	5	2mm thickness, hole 10mm
14.	Free Wheel Knob	2	--
15.	Wooden Sheet	1	1200 x 2400mm
16.	Floor Cleaner Mop	2	--
17.	Vacuum	1	--
18.	Submersible Water Pump	2	

IV. PROBLEM STATEMENT

The major problem which India face is cleanliness. The problem we came across was cleanliness on floor pathways, laboratories, auditorium, Hospitals, malls, railways etc. The main features would be cost efficiency as the cost to make machine is very less as compared to other cleaners available in the market. Another major problem with traditional or existing machine is that they are mostly operated with the help of long wires so to overcome this problem we are using battery system which can be rechargeable when electricity is available and work as required.

V. WHY IS IT IDEA IS INNOVATIVE?

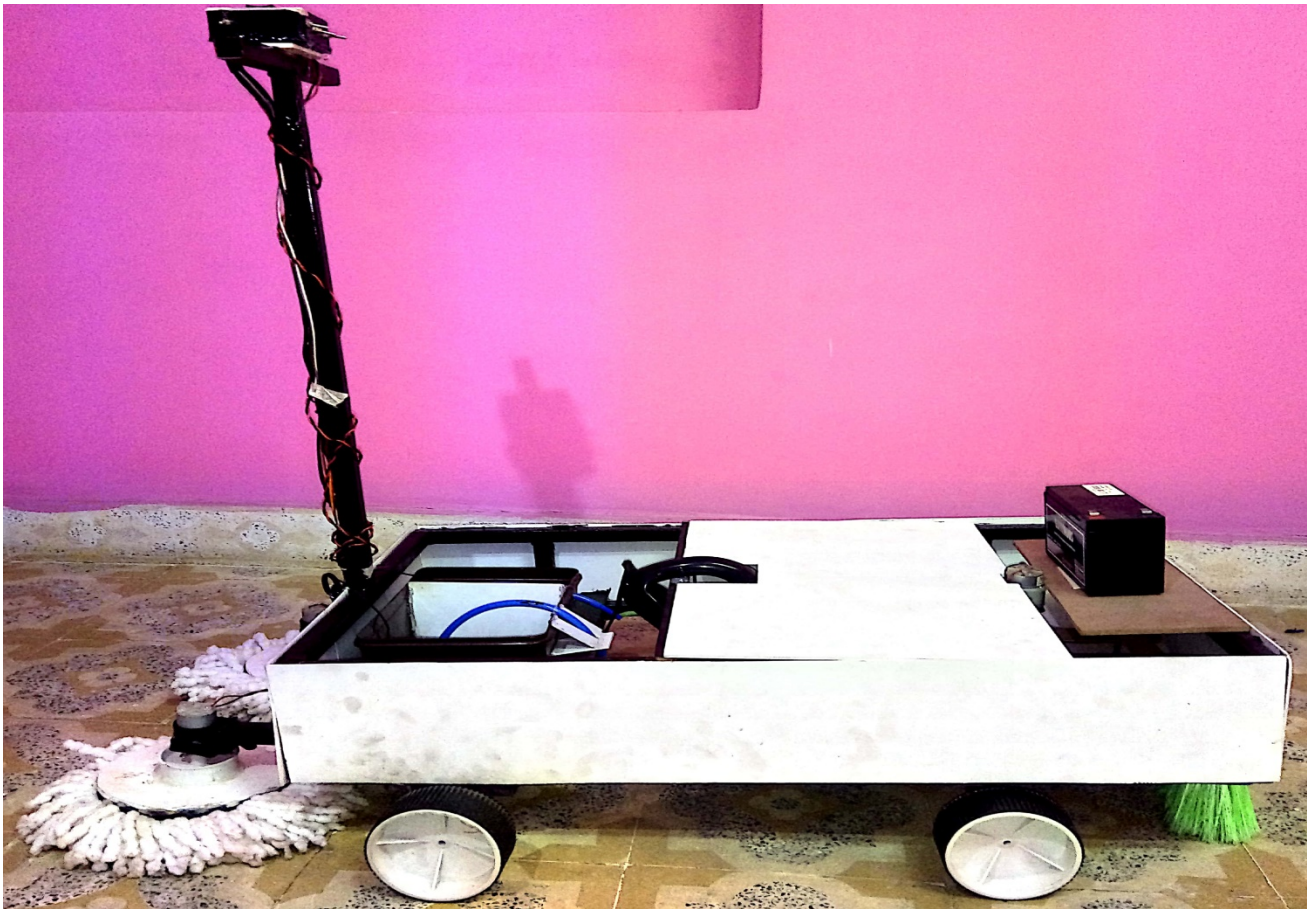
Existing machines are not wireless. There are two different product available for doing dust cleaning and floor cleaning

there are two machines vacuum cleaner and floor scrubber. **But our floor cleaning machine will become wireless. It performs multiple operation at a time for e.g. sweeping and mopping. Easy to operate, time taken for cleaning is very less and maintenance cost is also less as compared to existing system.**

VI. ADVANTAGES

- Number of cleaning tasks can be done with less cost.
- Less maintenance.
- Cleaning and drying can be done at same time.
- Manual effort is reduced.
- Operating time is less.
- Design is very simple.

VII. FIGURE OF FLOOR CLEANING MACHINE



VIII. CONCLUSION

Thus in our project we have designed the automatic floor cleaning machine with the help of DC motor. This machine is designed in order to enable easy operation and to reduce the effort of human being. The ultimate need of this project is

satisfied and with the help of this machine we can clean the floor easily. In our case a single vacuum pump is used instead of using two vacuum which saves power. Overall the project is completely successfully and will define the next start up until the best one.

REFERENCES

- [1]. M. Ranjtkumar N. kapilan Design and analysis of manually operated floor Cleaning machine, international journal of engineering and technology, 2278-0181, volume 4, Issue 04, April – 2015
- [2]. International Journal of Advance Engineering and Research Development(Technophilla-2018)-Volume 5, Special Issue 04, Feb-2018(UGC Approved) Literature Review on Manually Operated Powerless Floor Cleaning Machine.
- [3]. International Journal of Mechanical Engineering and Technology(IJMET)- Volume 8,Issue 5, May-2017,pp. 656-664, Article ID : IJMET_08_05_072.
- [4]. <https://www.scribd.com/doc/245718798/Fabrication-of-Floor-Cleaning-Machine>
- [5]. www.ijsrd.com/articles/IJSRDV5110529.pdf
- [6]. [www. enggyd.blogspot.com/2014/06/vacuum-cleaner-working-principle-design](http://www.enggyd.blogspot.com/2014/06/vacuum-cleaner-working-principle-design).
- [7]. <http://www.iaeme.com/IJMET/issues.asp?JType=IJMET&VType=8&IType=5>

Reference site