

Multitasking floor cleaning machine

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Abstract— The main purpose of this project is to clean the floor surface in colleges, hospitals, auditoriums, malls and workshops. The intend of this project work is to design and develop process for cleaning the dry as well as wet floors. Interior decoration are becoming more in our daily life, cleaning of floor is vital for our health and this floor cleaning minimize our effort which require for cleaning that's why project is very much useful in our daily life. Construction is simple and easy to operate so that illiterate person can also be able to operate this machine the main parts of this machine are moisture cotton mop, swiping brushes, wiper and vacuum cleaner. It is available in cheap price. Such types of machine under different price are available but they are expensive. Now floor cleaning machines are popular for cleaning the huge floor area in less time.

I. INTRODUCTION

In large floor area such as malls, colleges, railway stations, hospitals. The cleaning is serious issue, it sets aside a lot of effort for the manual human hand or needs more labour "Multipurpose floor cleaning machine" single man operated machine, reduces time and man power. It can clean both dry and wet cleaning. A vacuum cleaner used for the dry-cleaning purpose. For wet cleaning purpose a portable water tank, mops connected to motor, one wiper at the back to remove unwanted water etc. are used Machine can perform dry and wet cleaning in single pass. Machine is designed by using local resources It is powerful to utilize. Support is simple, parts can be effectively replaceable.

Multipurpose floor cleaning machine is used for both dry as well as wet cleaning. Application of machine is made in a such way that it can be easily operated by anyone, can be used in hospital, colleges, railway station etc. Assembly and disassembly should be easy. Electricity required for the operation. There is some work done in various experiments, Raj Vishal (1) worked on the machine with automation by the use of robotics technology. Neil Francis (2) worked on the railway track cleaning, operated along the station in specified range. R. Sharavan (3) worked on the machine that can be controlled by the remote, range about hundred meters. Rajaranjan Senapati (4) focused on automation machine, used the small radar system that detects the obstacles, whole system is automated. Dhiraj Banker (5) worked on the manually operated cleaning machine, no requirement of external power. Nayan Joshi (6) unique designed machine is controlled by mobile phone, smartphone act like a remote for the machine.

Manreet Kaur (7) took a shot at the machine that can be worked utilizing mechanical technology, utilization of obstruction identification sensor Ranjeet Kumar (8) developed dry cleaning machine, manually operated, whole set up is on the bicycle, no external power required. Aman Khan (9) worked on road cleaner, its contents arm to lift the dust from the road. It cleans the large dust particles such as metals, wood etc. on the road. Wei Wang (10) worked on glass wall cleaner, used the pneumatic robot.

II. EXPERIMENTAL DETAILS AND SETUP

A rigid supporting iron frame is used in which whole assembly is mounted. Vacuum cleaner having suction power 1300W is used to collect the dry dust & dirt. Rotating mop connected to AC motor which works on 220V, 50Hz

having 1350rpm. A V belt is used for transmission of power from motor. A wiper is attached at the rear part to remove extra water on the floor. Energy required to run the motor and vacuum cleaner is provided electrically . So motor and the vacuum cleaner are connected to the switch board through the electric supply. The parts of the system are easily replaceable if they are damaged.

As the system works manually if the machine starts and a movement is given by operator, vacuum cleaner suck the dry dust particles on the floor. behind it mop rotates on which a water is sprayed from water tank through a pipe and the wet cleaning is achieved. The remaining water on the floor is removed by the rubber wiper attached at the end part of the system. 4 wheels are attached at the four corner for easy movement of machine during cleaning. Thus machine can clean the floor in less amount of time.



COMPONENTS:

Sr. No	Requirement/Components	Specification
1	washer motor	220V,50Hz 70W ,1320r/min
2	Vacuum cleaner	1300W
3	Cleaning Mop	Synthetic material
4	Water tank	10lit capacity
5	Chassis	Iron Bar, cast iron
6	Wheels	2 wheels having 360 ⁰ rotation and 2 normal wheels

I. APPLICATIONS

There is vast application of floor cleaning machine. They are mainly used in commercial places like hospitals, malls, colleges where surface to clean is where large. They are a used to clean the floor of factories and industries. Nowadays, airport cleaning is also done by floor cleaning machine.

They have a wide application where cleaning is required for large surfaces, this machine can be used.

Cleaning is essential part of every organisations, factories, industries commercial complexes etc. Thus, for better cleaning with less efforts of human, floor cleaning machines is used.

II. RESULT AND CONCLUSIONS

Thus, by using manually operated floor cleaning machine a clean surface i.e. free from dirt and dust is achieved. As the desired effect is for dry and wet cleaning is done simultaneously .The human efforts is also reduced to a great extent. The work of sweeping and wiping is also saved .as it runs on clean energy, it I also environment friendly product.

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