

Floor Cleaning Machine

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Abstract: *Cleaning-cum-wiping machine is new kind of concept which will enables the cleaning of the dust, stains present on the floor. This kind of mechanically operated device has a significant impact on improving people daily life work. It enables us to help people in various ways like cleaning out stains, dust and moping. Any of these processes could be performed independently thus it finds get utility.*

Keywords Cleaning

I. INTRODUCTION

1.1 Cleaning

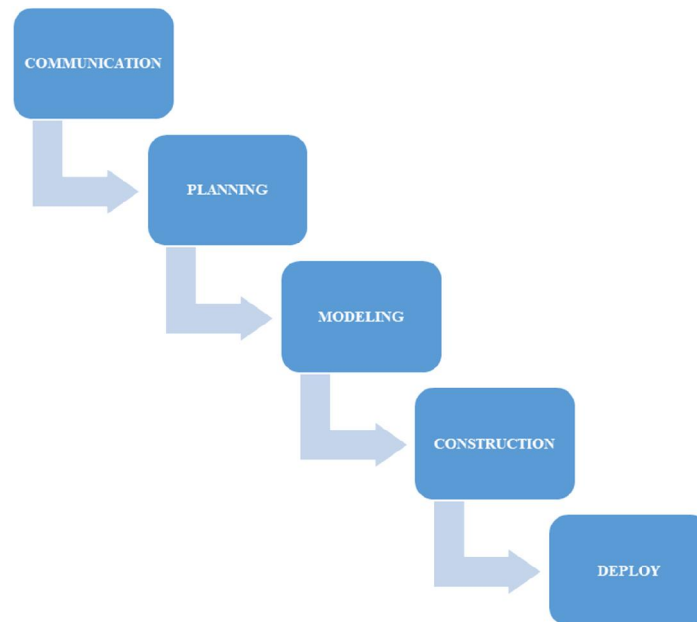
Cleaning is the essential need of the current generation. Basically in household floors the floor has to be cleaned regularly. Different techniques are used to clean the different types of surfaces.

The reasons for floor cleaning are

- Injuries due to slips on the floors are cause of accidental injuries or death. Bad practice in floor cleaning is a major cause of accidents.
- To beautify the floor.
- Debris and obstructions are to be removed.
- Allergens and dusts are to be removed.
- Surface wear to be avoided.
- To make the environment sanitary (kitchens).
- Traction should be maintained at optimum level, so that no slip will occur.

Floor cleaning is achieved by different technique which might be of different kinds. Different types of floor need different type of treatment. The floor should be totally dry after the cleaning process. Otherwise it may result in hazard. On some floors sawdust is used to absorb all kinds of liquids. This ensures that there will no need of preventing them from spill of. The sawdust has to be swept and replaced every day. This process is still used in butchers but it was common in bars in the past. In some places tea leaves are also used to collect dirt from carpets and also for odor removing purposes. Different types of floor cleaning machines are available today such as floor buffers, automatic floor scrubbers and extractors that can clean almost all types of hard floors or carpeted flooring surfaces in very less time than it would have taken using traditional cleaning methods. Again the cleaning would be different for different floorings.

In today's scenario the cleaning of the floor is basically done either manually or by robots which are specialized with just the dry cleaning of the floor, hence requiring more efforts and after the dry cleaning of the floor, if there is a need for the mopping then it is one of the most time taking as well as effort taking task. Hence the main motto of this project is removing the hurdle of cleaning and wiping, and as such no industry has made any kind of device which could simultaneously clean as well wipe. So, the use of this CLEANING-CUM-WIPING increases significantly. Hence the time required for the cleaning would be reduced drastically and mopping could be done much more efficiently. It will basically comprise of a wiper that will wipe out water from the floor. Once the water is removed from the floor then comes the sponge where the remaining water is absorbed on the floor. Afterwards the mopping of the floor takes place with the help of a circular rotating disc. It removes the diluted dust particles which get glued on the surface.



II. LITERATURE SURVEY

Traditionally floor is cleaned by hand using different handmade instruments. Initially it was being washed by different reed brushes. According to Egyptian houses were built of sundried mud bricks at times white-washed and the floors were stamped earth. The floor of the outdoor kitchen too was simply the ground baked stone hard by the sun. Unless it was raining, which happened only rarely, these floors were easy to keep clean by sweeping. Like most ancient Egyptian tools, these brushes did not have long handles which would have rendered their use less irksome, and required bending low when employing them. For the ease of human beings different designs of brushes are evolved.

Again during the age of monarchs carpets of different designs are utilized to cover the floor to keep it clean. As the time passed new scientific era begins a lot of new methods are used to clean the floor. The first among those was the reciprocating action of brush actuated by muscular force. The brush design is changed time to time depending upon the floor structure and ease of washing personnel. As the electricity came into role vacuum cleaner are invented to clean a dry surface. Moving forward different floor cleaning machines are being invented to clean the floor with less application of muscular power. Then came the concept of mobile robot. Mobile robots have the capability to move around in their environment and are not fixed to one physical location. By contrast, industrial robots are usually more-or-less stationary, consisting of a jointed arm (multi-linked manipulator) and gripper assembly (or end effector), attached to a fixed surface. For the help of mankind the first floor cleaner was manufactured during 1980s. In those equipment the aim was to wash the floor with less power utilization. There sweeping mechanism of mop is actuated by a timing motor which was controlled by the dc circuit. Here water is sprinkled on the mop and hence the wet mop is used to clean the debris from the floor. But the problem here was it can't use any chemical solvent or disinfectant. Again for soaking purpose only hot air is used. Again for moving the machine a worker has to be engaged. To overcome these conflicts current study was done to enable the cleaner move automatically throughout any kind of room. The moping mechanism is also modified to lessen the cost. In current study the mop is continuously revolving about a axis perpendicular to the motion of the cleaner which also helps in directing water on the floor backward. Instead of using a wet mop a sprinkle mechanism is used to make the floor wet which is scrubbed by the mop. A vacuum cleaner was used to soak dirty water from the floor surface and side by side cleaning the surface. For automatic motion of the cleaner mobile robotics is used. Mobile robots are a major focus of current research and almost every major university has one or more labs that focus on mobile robot research. Mobile robots are also found in industrial, military and security settings. Domestic robots are consumer products, including entertainment robots and those that perform certain household tasks such as vacuuming or gardening. From then on more sophisticated robot is designed for household equipment for automating the tasks including washing machine, micro woven. After that only the revolution of mobile robotics came to household usages. The problem with

current automatic floor cleaning machines are they are only used in households for only dry and wet cleaning but not as infection remover. So it is only used in households and not in hospitals or small areas in public. The automatic floor mops like hydrobot are bulky and they also require large power and are used for commercial purpose. But we think this (Our cleaner) will solve all in one go... We will basically focus on a smart and smaller and good designed robot which can be used in many sectors like healthcare and educational areas (which are of course small areas) and also for household use. So it will be both for terminal cleaning like medicals and indoor floor cleaning

III. ADVANTAGES, DISADVANTAGES AND APPLICATIONS

3.1 Advantages

1. Time saving
2. One of its main advantage is has it is a time saving product because it simultaneously cleans as well mope.
3. Followed by drying of the floor will save time
4. Saves human effort.
5. It easily saves human effort by eliminating the need to change the parts.
6. Finds application in both household and industrial purposes.
7. It finds great utility in household people's life so that their work could be carried out in a much more simplified way.
8. Easily portable.
9. Can be assembled very quickly.
10. Requires less area.

3.2 Disadvantages

1. Cleaning capacity depends on the skill of worker
2. Mops will be required regular cleaning

3.3 Applications

1. It can be used in hospitals, school.
2. It can also be institutes, industries, and for household purposes.