

MINI WATER CAN CLEANING MACHINE

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Abstract

Creating a mechanical method to clean household cylindrical water cans is the primary objective of this project. A rack and pinion gear mechanism and a reciprocating four bar linkage mechanism are the two primary components of the mechanical system. The whole mechanical system is raised and lowered to clean the can using a rack and pinion configuration. You may link the rack to the motor and the four-bar mechanism to the shaft of the motor in this way. Each end of the four-bar linkage is fastened with a PVC brush. It is possible to modify the four bar linkage to fit any tank diameter by adjusting its design. Once the engine is turned on, the chain moves in a circular motion, allowing the brushes to clean the inside and outside of the tank. Reducing the amount of human work required to clean the tank and protecting the health of those who enter it from potentially harmful chemicals is the goal of this research. Manually cleaning above tanks is a time-consuming chore in today's society. As a result, we set out to address the drawbacks of cleaning overhead tanks, and we succeeded in

creating an automated system that cleans these tanks in record speed while reducing the risk of injury to workers and the environment. The goal of this work is to provide a mechatronic system for cleaning home cylindrical water tanks. A mechatronics system's main component is a gear rod with grooves that is joined to two arms by brushes at both ends. A nut fastens the two arms to the gear rod. Both arms can move up and down since the gear rod may be turned. A direct-current gear motor is used to turn the gear rod. The primary grooved shaft is driven by an alternating current motor. A rubber belt connects the motor to the shaft. The arms will move in response to the main shaft's clockwise rotation, and the arms will move anticlockwise. A circuit including a PIC microprocessor, buttons, and relay switches controls the whole operation. You may tell the circuit how many times to do the procedure. This project's success lies in its cost-cutting measures, which are particularly useful for small-scale enterprises...

Keywords: Watercan, Motor, Waterpumper, Iron rod, Brushes, Pipes, Wood..

1. INTRODUCTION

The cleaning of above water cans is an area where we have seen a lack of automation in both big and small size enterprises. This is because the can placements are all over the place and have different heights. There was an effort to automate the cleaning procedure using a prior survey. Someone else has already thought of a way to fix this issue. About 71% of the population in India uses cans. As a result of research, we know that they've had to deal with a number of problems, such as having to work in filth all the time and receiving salary on an irregular basis. The main reasons for this endeavour could also include continuous effort and sporadic remuneration. We thus reasoned that an automated procedure for water purification may be a good way to address all of these issues. Here, the machine can clean the can with ease and speed. The results of the survey informed the development of our machine.

2. RELATED WORK

These are some of the existing smart cleaning designs that have been implemented:

(1) **Cleaning the water can with brushes and pipes**

(2) **cleaning the water tanks by the syntax process**

The most conventional approach of cleaning water cans is using pipes and brushes. There has to be a lot of labour and manpower put into this. There are a lot of problems with these iterative treatments, and they don't even remove all the dirt and germs from the water mineral container. Not only does this need human intervention, but it also fails to adequately wipe the can's edges and corners.... Because of the high cost—approximately 1 lakh rupees—and the fact that small-scale enterprises cannot afford it, a lot of labour goes into this, and it doesn't clean well. As new technology emerges on a daily basis. The conventional method of cleaning water cans is, nevertheless, unchanged. Overuse of chemical fertilisers has reduced soil fertility, made it harder for plants to grow, and contaminated the air and water, among other environmental concerns. A man called Rahul had a terrible experience after drinking water from a can that had not been thoroughly cleaned. We

built the water system cleaner with the necessary components, including a rpm motor, brushes, and more. By comparing two wells in urban and rural locations, we were able to draw conclusions on

the efficacy of water purification systems for use in small-scale manufacturing. Water purification is the central focus, with the goal of producing water that meets the standards set by clean water in terms of both its physical and chemical makeup.

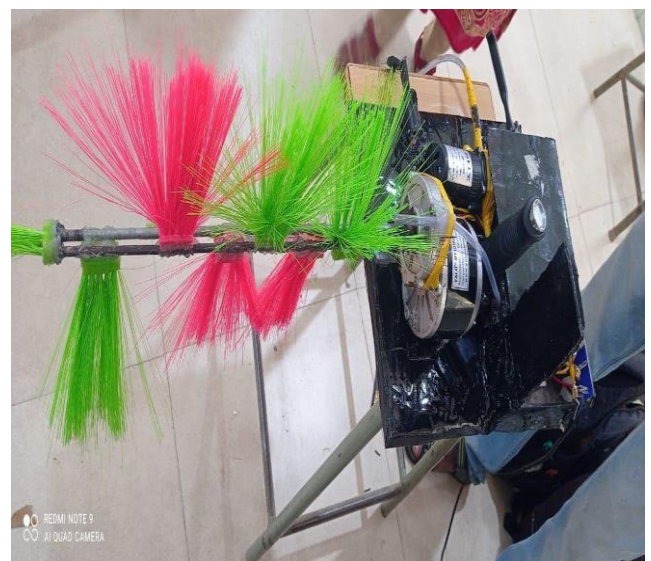
3. IMPLEMENTATION

The current way of cleaning water cans is being upgraded from a manual process to an automated machine, as we transition from a base level cleaning procedure to automated can cleaning. By ensuring that the can is thoroughly cleaned so that no filth remains, our efforts also contribute to the well-being of the people. Thus, the Mini water can cleaning machine will replace the previous techniques of cleaning. The approach allows us to clean our surfaces using brushes attached to an iron rod. The RPM motor will spin this iron rod, and the two containers of water and soapy water will be used to clean the can. The can is cleaned thoroughly without residue or risk of electrical short circuit when these containers are linked to the RPM motor via a conduit. The overarching goal of this project is to provide an alternative to the conventional method of cleaning water cans.

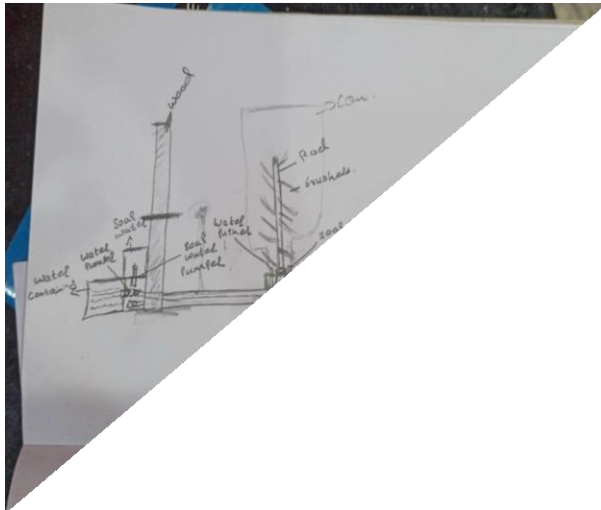
The project's stated goal is to: * Create a can-cleaning machine that doesn't use pipes

and brushes * Make the security system more automated and safer to use with electricity. * The possibility of a short circuit is not in doubt * The pipes and brushes are no longer needed This system is designed to be user-friendly and easy to use, which will eliminate fraud committed by companies due to improper can cleaning. Additionally, it will save users time and effort.

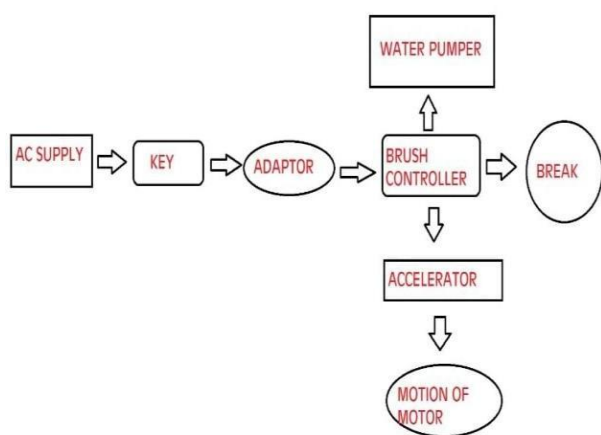
4. EXPERIMENT RESULT



By this proposed solution we can increase the efficiency of cleaning the cans and also make the cleaning process more quickly and easier which is affordable for the small scale industries..



Design



BlockDiagram

The equipment which we are using is very low of cost and are used in an effectively manner. And also this are to be used by

small scale industries and this is very useful to them. And the hardware description we use is very typical and also we should be careful on the supply as we have lots of electrical components.

5. CONCLUSION

Following this line of thinking, which offers excellent security, we began applying it in an effort to preserve human health.

It is not necessary to short circuit.

Keeps you from ingesting polluted water

Completely autonomous cutting-edge

Cleaning the pipes and brushes doesn't need any special precautions.

We helped small-scale enterprises by automating the can-cleaning process, which we had previously done manually.

6. REFERENCES

(PDF) Automatic Overhead Water Tank Cleaning System: A Review and an Approach (researchgate.net)

existing solutions

how to clear water pipeline at home by pressure pump. plumbing design knowledge.-

YouTube

water can cleaning with brushes -YouTube