

FABRICATION OF AUTOMATIC DRAIN CLEANER USING SOLAR ENERGY

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Abstract—*In the proposed concept is to replace the manual work in drainage cleaning by automated system. Now-a-days even though automation plays a vital role in all industrial applications in the proper disposal of sewages from industries and commercials are still a challenging task. Drainage pipes are using for the disposal and unfortunately sometimes there may be loss of human life while cleaning the blockages in the drainage pipes. To overcome this problem and to save human life. The device is placed across drain so that only water flow through lower grids. Waste like bottle, etc. Floating in drain is lifted by teeth which are connected to chain. This chain is attached by gears driven by motor. The energy provided to motor is solar photovoltaic cell connected to it. When motor runs the chain starts to circulate making teeth to lift up. The waste materials are lifted by teeth and are stored in waste storage tank. It is very dangerous to the people who working for drainage cleaning because of in the drainage having most of solid metals waste like Blades, Waste Medical injections, Home waste, etc., these are settled under the water because density of this metals is very high as compared to the water. These metals waste is harmful to the people so this proposed system eliminates these problems.*

Keywords— *Gear, Chain, Wiper Motor, Solar Panel, Teeth, Battery, Drainage.*

LINTRODUCTION

In this research paper the proposed concept is to replace the manual work in drainage cleaning by automated system. Now-a-days even though automation plays a vital role in all industrial applications in the proper disposal of sewages from industries and commercials are still a challenging task. Drainage pipes are using for the disposal and unfortunately sometimes there may be loss of human life while cleaning the blockages in the drainage pipes. To overcome this problem and to save human life. The device is place across drain so that only water flow through lower grids. Waste like bottle, etc. Floating in drain are lifted by teeth which is connected to chain. This chain is attached by gears driven by motor. When motor runs the chain starts to circulate making teeth to lift up. The waste materials are lifted by teeth and are stored in waste storage tank. DC motors with help of h-bridge designed ic. Dc motor control plays a major role in many applications; dc motor is required to be rotated in clockwise and counter clockwise directions. For this purpose h bridge is designed. In this project l293d ic is used to drive two dc motors. Automatic Drainage Water Cleaning overcomes all sorts of drainage problems and promotes blockage free drains promoting continuous flow of drain water. In the modern era there have been adequate sewage problems where sewage water needs to be segregated to clean our surrounding environment. The waste and gases produced from the industries are very harmful to human beings and to the environment. Our proposed system is used to clean and control the drainage level using auto mechanism technique.

Water running through a water drainage system mostly carries along waste materials most which are non-biodegradable which not only cause flooding but also climate change. Overflow of water drainage system occurs when there is a blockage of an end of the drainage system forcing the water to find its way elsewhere apart from the mapped out drainage system, therefore the running water spills over the horizontal height of the drainage systems spreading to regions alongside the drainage system, thereby causing problems such as pushing down of structures such as fences, water logging of farm lands and residential building, etc. The impurities present in water can cause hazardous and disease. As long as the draining system is considered the function of the main drainage system is to collect, transport and dispose of the water through an outfall or outlet. Impurities in drainage water can be only like empty bottles, polythene bags, papers, etc.

The problem such as Environmental pollution and spreading of viral diseases are avoidable. Automation of Drainage Cleaning System would reduce the risk of various diseases spread due to accumulation of waste. This Drainage Cleaning

system will clean the waste at the surface of drainage which would allow the flow of water. The devices is place across drain so that only water flow through lower grids, waste like bottle, etc. Floating in drain are lifted by teeth which is connected to chain. This chain is attached by gear driven by motor. When motor runs the chain starts to circulate making teeth to lift up. The waste materials are lifted by teeth and are stored in waste storage tank.

II.WORKING PRINCIPLE

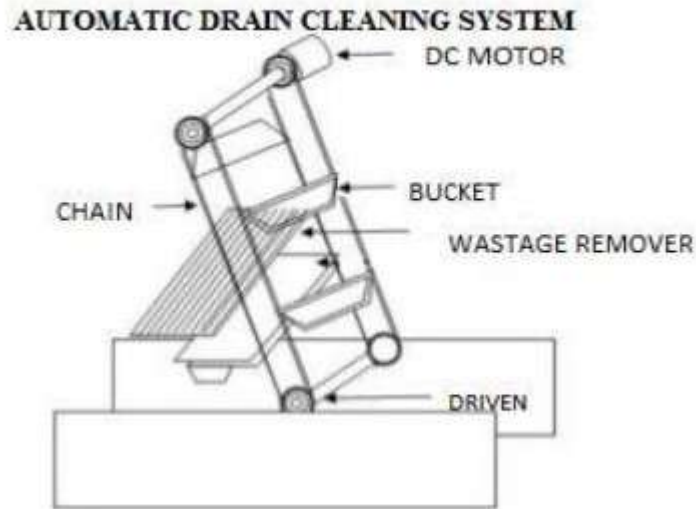


Figure 1: Sketch Diagram of Automatic Drainage Cleaning System

The devices is place across drain so that only water flow through lower grids, waste like bottle, Etc. Floating in drain are lifted by teeth which is connected to chain. This chain is attached by gear driven by motor .When motor runs the chain starts to circulate making teeth to lift up. The waste materials are lifted by teeth and are stored in waste storage tank.

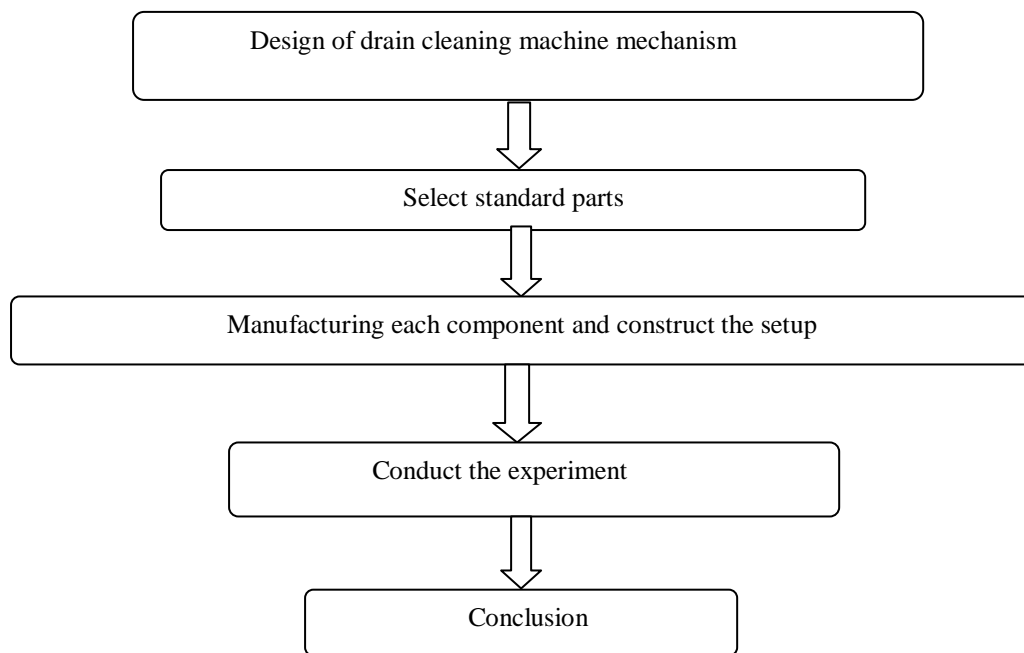
III. CONSTRUCTED WORKING MODEL



Figure 2: Fabricated Model

IV. METHODOLOGY

Methodology used for whole processing of Drain cleaning Machine is given below; this methodology gives way about how work is to be carried out in systematic way. It is standard process of describing process, how it is done in simplest manner.



V. APPLICATIONS

1. It can be installed for domestic sewage treatment.
2. It can be used for proper treatment of sewage as well as to avoid blockages of drains.
3. It is portable and compact in size which initiate easy handling.
4. Manual assistance is not required.
5. In industries, streets, houses, etc., which can be practically implemented in real time.

VI. FUTURE SCOPE

The proposed project can extend the project by adding wind power to charge the battery from wind turbine energy. It can also extend the project by adding one suppression motor to suppress the dust particles in the storage tank also increase the storage tank size for more particles to store which are collected from the drain water.

VII. CONCLUSION

Integrating features of all the hardware components used have been developed in it. Presence of every module has been reasoned out and placed carefully, thus contributing to the best working of the unit. Thus the project has been successfully fabricated and tested.

VIII. REFERENCES

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