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Automatic Drainage Cleaning System

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Abstract:- **In this project we proposed the concept of "AUTOMATIC DRAINAGE CLEANING SYSTEM", which replace the manual work of cleaning drainage by humans. AUTOMATIC DRAINAGE CLEANING SYSTEM (ADCS) proposed to overcome the real time problems. This system is used for automatic cleaning of drainage. This proposed system uses an automatic drain cleaning system that lets fluid flow through it but catches large solid waste like bottles, plastic and accumulates it. Labour cleaning drainage leads to a high risk of them catching infections or poisoning due to large amount of waste/chemical in them.so for reducing work of humans and analysing several problems, we proposed our project ADCS.**

Keyword: Drainage Cleaning, Society

1. INTRODUCTION:

The Automatic drainage cleaning system is used to clean the drainage system automatically by the ADCS Machine, which is operated mechanically with the help of several arrangement of various components of machine and various linkages. The water flowing in drainage have various impurities which having plastic bottles, polythene, dirt and other solid waste. Due to blocking of drainage system we may face several problems in rainy seasons as well as normal days. Due to blocking of drainage we see that the wastes get overflow on the roads which is a big problem mostly in rainy season.

So by introducing the Automatic drainage cleaning system we can eliminate the several problems as well as we can replace the human labour who clean these drainage and they having high risk of catching infections. As we know that the drainage is narrow width of 910mm approx. So we have to introduce the ADCS in between the width of drainage.

2. WORKING PRINCIPLE:

The device is placed across drain so that only water flow through screen, the waste like bottles, plastic etc. Floating in drain are lifted by lifter which is attached with screen. Screen is connected to the shaft which is driven by chain with the help of DC motor.

When motor runs the chain start the circulation making screen with lifter to lift up waste, further it is connected to a horizontal screening and waste stored in a container.

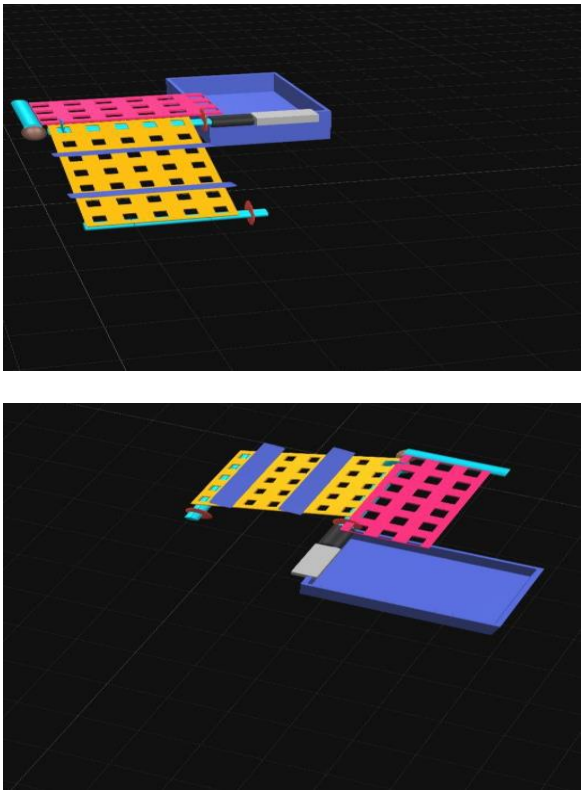

Fig. -Model of Drainage Cleaning System

3. PROCESS:

- When the current is supplied to motor, motor starts to rotate,
- Rotary motion of the shaft is transferred to sprocket by the help of chain
- By the help of upper sprocket the rotary motion is transferred to lower sprocket using chain.
- The lifter is used to lift the plastic waste from the drainage are placed between two chains.
- When motor is switched on the two shaft start to rotate, thus the lifter also start rotate.
- The lifter enter into water and lift the plastic waste from water along it,
- It carries to waste and drop the waste on other assembly of sprocket, chain and shaft which moves horizontally.
- The horizontally assembly store the waste to the container from where the plastic waste can be remove by labour.

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4. APPLICATIONS:

- Sewage cleaning
- Cleaning of rivers
- All type of drainage (large, medium, small)

5. ADVANTAGES:

- Easy maintenance
- Low cost
- Reduce men power
- Simple in construction
- It is compact and portable

6. DISADVANTAGE:

- Continuous power required to operate
- Container need to be clean time to time
- Rusting risks of System
- Material selection & design

7. CONCLUSION:

The problem of drainage blockage due to plastic waste and other solid waste can be eliminated by using of ADCS system. Cleaning of drains/gutters has always been a problem. Labours cleaning gutters & drain seems unethical and also leads to a high risk of them catching infections or poisoning due to large amounts of waste/chemicals in them. So here we provide a fully automated drain gutter cleaning mechanism to tackle these modern day gutter jamming issues. Our system uses an automated gutter/drain cleaning system that lets fluids flow through it but catches large solid waste like bottles & plastic and accumulates it. So gutter cleaners need to just clean these gutter cleaning systems installed at points instead of cleaning entire gutter floors.

8. FUTURE SCOPE: -

We gathered information and equipment required for the Automatic Drain cleaning system.

- Studied the construction and principle of ADCS.
- To Fabricate the ADCS and to test its working. We hope that this will be among the most versatile and interchangeable in cleaning system.

As the project has been based on the concept, to integrate the benefits for human health, societal concerns and national cleanliness policy. Therefore it covers many sections of proportionate benefits to the all sphere of our present life.

I. For Industry-

- Our Project, as being new in the market network will provide the entrepreneurs the much-needed ideas to blend the technology with societal benefits and harness the market.
- As a nation we are focusing on the Public benefits in the policy making and providing the young generation the employment and environment safety. While being a high-market potential project conserves the profit for the industry section with the advance of providing the corporate social benefits.

II. For Society-

- . Sanitations is one of the very basic amenities required for the basic living of a man and providing with such a technological and economical instrument which can change the pathetic sewerage condition of the town and cities of mediocre India.
- With such a potential instrument of employment generation in the society through industry co-operation, these products land you in the win-situation for the people.

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