

SMART CITY AND MANAGEMENT

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Abstract : Water is a basic necessity of humans & all living beings. There is plenty of water on earth but that is not suitable for human use. Clean water is more important if used for some purpose. The impurities present in water can cause hazardous & disease. As long as the draining system is considered as the function of main drainage system is to collect, transport & disposed of the water through an outlet. Impurities in drainage water can be only like empty bottles, polythene bags, papers etc. these impurities present in drainage water can cause blockage or drainage system can be cleaned time to time manually or such a system can be designed that will automatically throughout wastage & will keep the water clean this project is designed to keep clean the drainage system and help the smooth working of the system. This project automatically cleans the water automatically clean the water in the drainage system is time any wastage appears and this form and efficient & easy way of cleaning the drainage system and preventing the blockage.

Keywords: *Drainage cleaner, floating waste.*

I. INTRODUCTION

It has been suggested in the prior art that the effectiveness of enzymatic drainage cleaner should be improved by including an effervescent couple in the composition. This effervescent couple consisting essentially of a weak organic acid and the alkali or alkaline earth metal salt of carbonic acid such as carbonic acid, such as sodium bicarbonate will react to generate carbon dioxide gas when it contacts water. The bubbles of carbon dioxide can tend to mechanically loosen and remove the particle of the deposit near the surface where have been attacked by the enzymes. The actions enable the enzymes to more effectively penetrate the deposit. The prior art effervescent couple, however, has some disadvantages. First, the effervescent couple started to generate copious quantities of carbon dioxide gas substantially immediately upon coming in contact with water. A moveable cleaning system enables cleaning of relatively flat surfaces, and especially elevated and/or sloped and/or vertical surfaces without the use of personnel at the specific site of cleaning. System can be fully automated, with programming set to enable the system to clean an entire surface or structure (e.g., an office building or hotel) or allow system control by someone distal from or proximal to the direct point of application of the cleaning activity. According to this invention, the conveying screw is hollow and is provided at its delivery end with tightly fitting slidably mounted torpedo pin which projects partially into the chamber in axial alignment with the screw. A spring is also mounted in the bore of the screw in such a manner that one end of the spring engages the head of the torpedo pin and the other end of the spring engages a threaded plug adjustably mounted within the screw. Thus, the torpedo pin is urged by the spring in the direction of the chamber. Water is essential to life, for both plants and all living creatures; however it can be very invasive when it flows. When residential property experiences drainage issues, water can be a nuisance and actually cause a great deal of damage. Different drainage system problems, including puddling, pooling, and saturated soil, and even undirected downspout water, can destroy landscaping and turn a backyard into a swamp.

II. LITERATURE REVIEW

R. Sathiyakala 2016, said that the usage of mechanical drainage system cleaner to replace the manual work required for drainage cleaning system. Drainage pipes are very dirty. Sometimes it is harmful for human life while it is needed for cleaning drainage system. To overcome this problem, they implemented a mechanical semi-automated drainage water cleaner and so the water flow is efficient because of the regular filtration of wastage with help of that project.

Mhael Okpara (2014) [2] reviewed about drainage cleaning to replace manual work to automated system because manually cleaning system it is harmful for human life and cleaning time, is more so to overcome this problem they implemented a design "automatic drainage water pump monitoring and control system using PLC and SCADA". In this project the use of an efficient way to control the disposal of wastage regularly treatment of disposal in different ways toxic and non-toxic.

Yadav, D (2014) [3] said that today the advanced time has such a variety of advanced for making our life modern. Like that cleaning procedure is a likewise play a critical part. For example, our smart cleaning system does the residential reason cleaning flawlessly and keeps the mosquito away from the sewage by the way of intestinal sickness, influenza and so forth illnesses stay away from the future to robotization cleaning framework will be lies on each different house sewage cleaning framework.

Bharat, K. And G.a.MIHAILA,(2002)[4], said that mechanization is an innovation worried with his utilization of mechanical, electronic and pc based framework to work control generation. This framework utilized to operate automatic sewage cleaning equipment. This venture might be created with the full use of men, machines, material and cash. Additionally we have taken after altogether the investigation of time movement and made our venture temperature and productive with the accessible assets.

This paper literature survey [5] in outcomes depends upon the automatic control of sewage treatment. It is not depend on the deposited sludge of the drainage system. The purpose is this paper are design the mechanical drainage system, taking into account the various factor that might affect the functionality of the equipment.

Karthikeyan [6] explained flow of used water from homes, business, industry, and commercial activities are called waste water. 200 and 500 litter wastage water are generated each person every day. So using waste water technology that removes, a pollutant in a drainage system.

S S Rattan[7] explained a bucket use for draining system because bucket lifted sewage and used evaporation system for this sewage wet sewage was converted into dry matters, with the ARM board this process was performed. After this process they were add this waste a government without any kind of affection of the bacteria.

K Raghavendra (2015) [8] explained removes an unwanted phenomenon, by using chain drive simulation program. It is used as an alternative to or in combination with physical experiment. They formed a specific model of the marine engine chain drive for a large speed system. They used contact force method for simulation analysis. Performed a dynamic simulation of large marine engine chain drive.

K Mahadevan and Balveera reedy [9] proposed safe load for the chain and ability of the same to with stand the use of finite element modeling would be the core objective of the work. An existing chain link used for benchmarking the research work. The FEM method is used analyze the stress state of the elastic body with a given geometry, such as chain link.

Dr.K .Kumesaran m.e (2013) [10] showed the research was an assessment of drainage problem in the tropical environment of Ilorin, Nigeria. In order to achieve a philosophy of work, such a data have been sourced from direct field work. Such data include drainage dimensions, types of waste in drainage channels, problem of waste and technique for waste management.

Ganesh U L, et.al. [11] Drainage pipes are very dirty. Sometimes it is harmful for human life while it is need for cleaning drainage system. To solve this problem, they implemented mechanical semi- automatic drainage water cleaner. The usage of mechanical drainage cleaner to replace the manual work required for drainage cleaning system.

Elangovan K., et.al. [12] Reviewed about drainage cleaning to replace manual work to automated system because manually cleaning system it is harmful for human life .for toxic & in toxic gases wastage thrown into the drainage this project works efficiently to dispose of the waste. PLC controller from Siemens was used in the treatment system of drainage wastewater control by the stepper motor, compressor, gas exhauster, pressure valve and the liquid level, flow and other analog variables to achieve automatic control of sewage waste water treatment.

Dr .K.KUMARESAN [13] explained manual work converted to automated system. They made their project economical and efficient with the available resources. As their risk of human loss during cleaning Drainage pipe this project works to reduce the loss of death during work disposal. To overcome this problem they implemented “drainage cleaning machine”.

R.Sathiyakala, et.al. [14] explained E bucket (electronic bucket) use for drainage cleaning system because Ebucket lifted a sewage and used evaporation treatment for this sewage wet sewage was converted into dry matters, with the of ARM board (ARDUINO) After this process they were add this waste a government bank without any kind of affection of the bacteria.

S D Rahul Bharadwaj, et.al. [15] Proposed with the automatic cleaning of waste water in order to reduce global warming& wastage of power to treat waste water management.

Nitin Sall, et.al. [16] Here using waste water technology that removes, rather than destroys, a pollutant in a drainage system. flow of used water from homes, business industries, commercial activities is called waste water.

Mr. Nikhil S. Pisal, et.al. [17] Proposed safe load for the chain and the ability of the same to withstand the use of Finite Element Modeling would be the core objective of the work. The design for the chain would be subjected to F.E Analysis to find the effect of loads (tension) on the link. An existing chain link was used for benchmarking the research work

NDUBUISI C. Daniels, et.al. [18] Showed the Drainage system cleaner machine used to remove garbage and the drainage system cleaner has three major parts which are the Propeller, the Cleaner and the Pan all makes up for its effective functioning.

Shao-Wu-Zhang, et.al. [19] Introduced three drainage devices about the ceramic filter dewatering system. They compared the working processes of three drainage devices, and analyzed its future development. Modified the design according to the shortage coming of drainage equip and working mechanism of automatic drainage device.

Prof S.D.Anap, et.al. [20], showed blockage is the major cause of the pollution and flooding in the metro cities. They explained about the design of the cost effective, easy method to control the water level of the tank wirelessly and automatically. They have designed the drainage blockage detection system to avoid such problems.

James C.Y. Guo, et.al. [21] Showed roadway sanding is a common practice in cold regions because sand increases the roadway friction when mixing with snow. This study also presented a maximization methodology by which the size of snow storage

area can be determined by the diminishing return of sand recovery. In this study, a snow storage element is introduced to the renascence project of a mountainous highway which is running through an environmental sensitive forest area in Colorado.

James C. Conwell, G. E. Johnson [22] proposed the design and construction of a new test machine configuration that offers same advantages over the traditional one. The incorporation of idle sprocket allows independent adjustment of test on length and preload.

N.Prabhushankar, et.al. [23] The main aim of the proposed work was to remove drainage water by the pneumatic operated spring return reciprocating pump. Showed dewatering of drainage is generally done using centrifugal pump, but using centrifugal pump is not much effective in complete removal of the suspended and heavy solids and also it consumes lot of electric power for its operation. Manual work can be reducing while cleaning.

Gregor Burger, et.al. [24] Described the concept and software design of an innovative general purpose platform for network based model development and look at some of crucial computational design issues they included features such as the hot-start mechanism and the extension interfaces have proven to be extremely useful when linking city drain3 as a sub-model into larger software project. Described the concept and software design of an innovative general purpose platform for network based model development and look at some of crucial computational design issues

Ms T.Deepiga, et.al. [25] They also detect the leak by an increase in the LED meter and rushing sound will be bearded in the headset. Defined the water monitoring systems such as Tank water pollution monitoring and water pipeline leakage sensing monitoring. They avoided huge amount of water wasted by uncontrolled use of large apartments. They used the PID based water level monitoring to indicate the level of water in the tank.

III. METHODOLOGY

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.

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 collected.

IV. CONCLUSION

By study of many literature review we conclude that. Many specific empirical studies have been carried out and categories such as automatic drainage cleaning system and its automation have been studied to a great depth. We focus more on making the system in the drainage.

1. In the treatment system of drainage Waste water control by the motor, screw conveyer and sprocket, lifter, and the collecting to achieve automatic control of sewage waste water treatment
2. The system can move in the drain to collect the floating waste so as to reduce human labor.
3. The cleaner functioned move effectively during the heavier rains which had more volume of running water with garbage and high velocity.
4. The system can move in the drain to collect the floating waste so as to reduce human labour.
5. In the treatment system of drainage Waste water control by the motor, roller chain and sprocket, lifter and the collecting bin to achieve semiautomatic control of sewage waste water treatment.

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