

DESIGN AND FABRICATION OF SOLID WASTE COLLECTOR

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Abstract - At present time land pollution is one of the main concern of the government as well as society. Many government projects and cleaning programs are also in action for cleaning land areas.

This project developed the vehicle for collecting the garbage. A continuing rise in the rate of waste production is no longer acceptable - hazardous waste affect the health of millions of people. In many places people live surrounded by garbage and landfills. This vehicle is expected to overcome the garbage problem and still be improved to control from more distance .So this project emphasis on fabrication of "Solid Waste Collector" which collects solid wastes near beaches and shore of water bodies. The main objective of this project is to help and facilitate the cleaning of beaches and this directly effects tourism in our country by use of this machine we can reduce time as well as human efforts and also ensures daily basis cleaning, so it will become very useful for society.

Key Words: Wireless Bluetooth, Relay Bridge.

1. INTRODUCTION

Solid wastes are all the discarded solid materials from municipal, industrial, and agricultural activities. The objective of solid wastes management (SWM) are to control, collect, process, utilize and dispose of solid wastes in an economical way consistent with the public health protection.

Solid wastes carried by the wind and tides reached the native vegetation, where it remained imprisoned and accumulated in large amounts, making the beach aesthetically objectionable. The origin of the largest part of this solid waste was the local rivers. Beach users and locals were equally responsible for the accumulated residue. From August 2001, the municipal administration started a beach cleaning service, aiming to minimize the negative aesthetic effects caused by the accumulation of solid wastes

Coastal cities are surrounded by important but fragile ecosystems that are under pressure from population growth, tourism and large commercial enterprises. These factors contribute to a complex solid waste management situation, which is exacerbated by lack of planning and sanitation infrastructure, common factors in cities in developing countries. The analysis included planning, implementation, performance indicators and future prospects.

The waste collection process contains the way from filling of containers to loading of the collection vehicle. Because of a variety of residential, commercial, and industrial development, it is impossible to collect waste with just one system. A variety of collection systems are used that respective municipal requirements to be used accordingly. Each collection method has compatible container systems and vehicles with dedicated loaders.

Specialized waste collection vehicles featuring an array of automated functions are often deployed to assist waste collectors in reducing collection and transport time and for protection from exposure. Waste and recycling pickup work is physically demanding and usually exposes workers to an occupational hazard Also, Municipal solid waste workers (MSWWs) or refuse collectors, universally expose too many work related health hazards and safety risks, notably allergic and other diseases of the respiratory system..

Statistics show that waste collection is one of the most dangerous jobs, at times more dangerous than police work, but consistently less dangerous than commercial fishing and farm work. On-the-job hazards include broken glass, medical wastes such as syringes, caustic chemicals, falling objects from overloaded containers, diseases that may accompany solid waste, asbestos, dog attacks and pests, inhaling dust, smoke and chemical fumes, inclement weather, traffic accidents, and unpleasant odours that can make someone physically sick.

Municipalities will have to implement solid waste collection at their municipal sources and provide adequate disposal to solve the problem at the beaches. Controlling the source of solid wastes from beach users through environmental education actions is also urgently needed.

1. DC motors

It is used to rotate the wheels which helps to move the vehicle. The motor which is used in this vehicle having high torque and low rpm. Four motors are used to rotate the wheels of vehicle and one is used to rotate the basket.



Fig-1

2. Wireless Bluetooth

Wireless Bluetooth is used to operate the vehicle through the device such as cell phone and laptop.



Fig-2

3. Battery

The UPS battery is used in this vehicle. This battery is used to supply power to motors and circuit through which other components are connected which are used to operate the vehicle.



Fig-3

4. Shaft

Shaft is connected between bearing and basket, it rotates with the help of bearing which is responsible for the rotation of basket in which solid waste collection takes place.



Fig-4

5. Bearing

Bearing is used to rotate shaft.



Fig-5

6. Basket

Basket is connected at the one end of the shaft. It rotates due to the rotation of shaft. The basket is used as a solid waste collector chamber. In this the solid waste such as poly bags and bottles are collected which are near the sea and rivers.

2. CONCLUSIONS

This project is to facilitate cleaning of beaches on a daily basis with less human effort. Perhaps, the greatest advantage of waste collecting is to keep the environment fresh and neat. The garbage and recycling pickup work is physically demanding and it exposes workers to many occupational hazards. This project is designed to fulfill the task of collecting garbage from certain places and then dispose it at a single place from where the garbage will then be taken for disposal or process of recycling. So, this reduces the requirement of manual clearance of plastic waste.

Perhaps, the greatest advantage of waste management is keeping the environment fresh and neat. These waste disposal units also make the people go disease-free as all the resultant wastes are properly disposed and taken care of.

The waste collecting process is cost effective and environment friendly as it works on battery so it results in pollution free cleaning of land areas. As the device is wireless controlled so it reduces human efforts.

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