AUTOMATIC COMMODE SEAT CLEANER

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Keywords:

Sanitation, Hygine, Automation.

Introduction:

Proper sanitation is important not only from the general health point of view but it has a vital role to play in our individual and social life too. Sanitation is one of the basic Determinants of quality of life and human development index.

Poor sanitation is linked to transmission of diseases such as cholera, diarrhoea, dysentery, hepatitis A, typhoid and polio and exacerbates stunting. It reduces human well-being, social and economic development due to impacts such as anxiety, risk of sexual assault, and lost educational opportunities. Inadequate sanitation is estimated to cause 432 000 diarrhoeal deaths annually and is a major factor in several neglected tropical diseases, including intestinal worms, schistosomiasis, and trachoma. Poor sanitation also contributes to malnutrition. Maintenance of cleanliness and hygiene is the main aim of this project .This project will be helpful for cleaning and sanitizing the toilet seats to ensure proper hygiene, which is low cost, effective, power optimistic and less maintenance. Toilet cleaning system was proposed by Yu in 1998, which can automatically clean the toilet seat before or after toilet usage (Yu 1998). Majority of the projects concentrated on the cleaning of the commode system without giving much importance over the commode seat. In this project we concentrated on the commode seat cleaning part.

OBJECTIVE:

- Break the spread of diseases
- Safely reduce human exposure to pathogens.
- Promote women health and hygiene.
- Improve the health and quality of life.
- Keeping disease carrying germs away from environment.
- Avoiding the human intervention of the cleaning purpose.

Methodology:

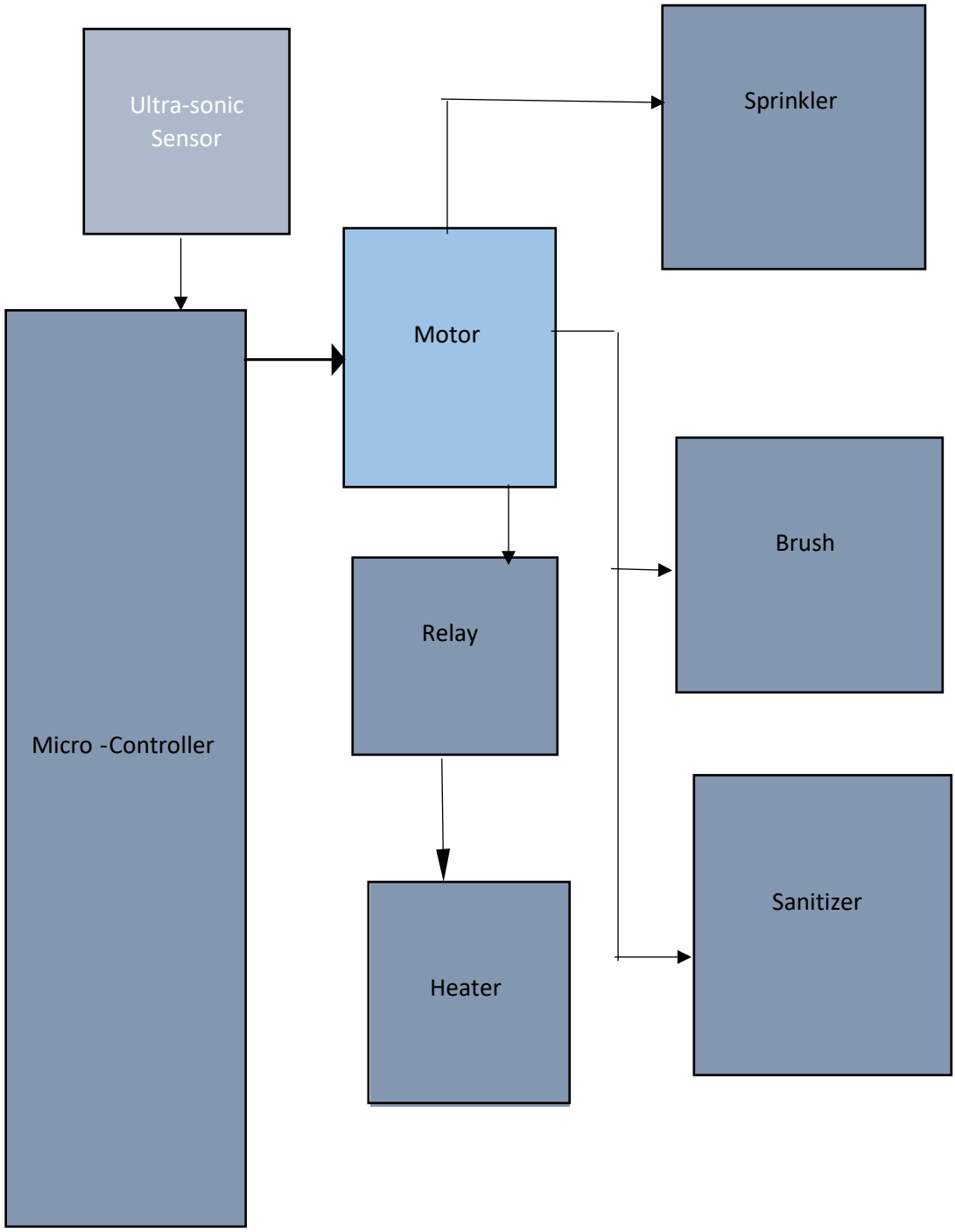

Fig 1.1 Block Diagram of Automatic commode seat cleaner

This project consist of three main assemblies .First assembly is used for washing and cleaning of the toilet seats ,second assembly is used for sanitizing the seat and the third assembly is used for warming up of the seat to certain temperature. This experimental

setup consists of sprinklers, brushes, relay, driving motors and micro-controller for storing and sending signals for the operation.

Components:

- **Ultra-sonic sensor**

An ultrasonic sensor uses a transducer to send and receive ultrasonic pulses that relay back Information about an object's proximity.

- **Microcontroller:**

Microcontroller is a compressed microcomputer implemented to control the functions of motor relay.

- **Motor:**

An electric motor is an electrical machine that converts electrical energy into mechanical energy. It is used to rotate the arm.

- **Relay**:

A relay is an electrically operated switch. It consists of a set of input terminals for a single or multiple control signals, and a set of operating contact.

- **Sprinkler:**

It is used to sprinkle the water over the surface of the seat.

- **Sponge:**

It is used to wipe the excess of water on the seat.

- **Sanitizer:**

It is used to sanitize the seat.

- **Heater:**

It is used to heat the surface of the seat.

Results and conclusions:

This projects helps use to keep the toilets clean and tidy. Especially in the public places where the usage of the commode system will be more .Due to more usage of the toilets it may not be possible to clean the toilets more often so this will be best implementation for the cleaning of the toilets which avoids spreading of diseases causing germs there by it increases the hygiene and sanitation in public places. As the requirement of components are less its cost effective and efficient and it can be implemented in public places especially in schools , colleges, theatres, and even in public toilets where maintaining cleanliness is a big issue , where toilets are continuously .

Scope for future work:

As we all know everything in the world is getting automated. Automation has become boon to this world. Using this Automatic Commode Cleaning System we can maintain healthy environment in the public toilets. In this busy life nobody will care about cleaning up of toilet and maintaining the public toilets so using this system we can avoid the involvement of people for the cleaning. In Future we can add automation to the entire commode system to make zero involvement of people for the cleaning purpose. We can inbuilt this automation systems to all commode which are available in the market by making slight changes so that these type of commode system can be useful to old people, disabled people who can’t clean

the toilets on their own in houses. In Public places many people feel uncomfortable to use toilets due to poor hygiene this problem can be solved by using these type of automated systems .