INTRODUCTION

In this project we try to overcome the problems caused due to blockage of sewer. Sewer blockages are quite common at present in small as well as big cities worldwide. This has become alarming due to the use of polythene bags and other solid materials which are dumped into the sewer system. The Fig 1.1 shows the sewer lines get frequently clogged leading to their blockage and over flow which results in sanitation problems and creates health hazard for citizens. The Fig 1.2 & 1.3 shows the detection of blockage. The detection of blockage point is difficult and a major problem in maintaining the sewer system. The current methods of blockage detection are based on manual visual inspection and inspection through CCD camera based equipments.

Fig1.1 Manhole

Fig 1.2 Sewer blockage

Fig 1.3 Solid waste

The main limitation of these systems is that sewage pipeline has to be drained out first. In India and other underdeveloped countries, the CCD camera based equipments are generally not available due to their high cost and other problems and the work has to be done manually by hiring laborers. In this project robotic equipment with an embedded system will be developed with a pneumatic push for clearing the sewer blockage and a special wiggle arrangement with motors for separation of liquid from solid objects along with Grit chamber arrangement.

1.1 Salient Features

- The use of solar panel to provide energy to run the motors is one of the unique features of this project.
- The system has a wide range of applications not only in civic bodies but also can be used in industries in segregation of their waste.
- Use of Pneumatic system reduces maintenance

1.2 Methodology

- Fabrication of a semi automatic sewage system.
- Fabrication of a pneumatic push system.
- Fabrication of a grit chamber.
- To assemble all the fabricated materials and some raw material.
- To test and validate the systems performance.