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Borewell Protection System for Avoiding the Fall of Children

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Abstract: ***India could be your speedy emerging state, wherever by better part of those folks today rely on utilize natural sources such as gas, petrol which can be found in the world's area. The majority people have a tendency toward injuries in different manners while frustrating to utilize those tools. The injuries happened by receptive source well and also the expenditures to save those injuries happen to be escalating daily by day. Notably children are shedding their own lifestyles maybe perhaps not while taking part in also in assorted manners as a result of spacious bore-well that are moving undetected. The job has been developed as a way to save children along with other little animals from falling nicely. This comprises detector retained in addition to bore-well. The moment it defines anybody falling in to the bore-well, it functions as engine together with in a nutshell space, beneath the sensor. The engine mended the with plate along with its own particular rotating mechanism. The plates could possibly be ordered into a couple of distances, so since in the event if the upper plates has not stopped the thing subsequently then third or second discs could quit decreasing the thing which are placed at 3,5,7 feet distance inside the bore well. Along with an alert, a message will also be sent to owner of the bore well, near fire station, police station and hospitals. It is low cost, takes less time and has higher chances of saving the life of child.***

Keywords: Borewell, sensor, GPS, GSM, DC Motor.

I. INTRODUCTION

Now-a-days using the growing requirement and increase within the Web of Matters automatic system platform, the IoT units are becoming challenging day daily[1]. Back in India, lots of bore wells are drilled every-day to get gas, water, oil or to get different sources. Because of the several of the kiddies are losing and missing their lifestyles even though playing since they don't have the capacity to see the threat facing those. Lots of fatalities of kids are reported from the united states because September 2009[2]. Setup of this security Rescue Program in the various bore-well may assist you save your own entire life out of deaths and danger. The writing will be mail into the key men in this spot, police station, fire station and also local hospital along with 108 ambulance therefore they will soon be advised in regards to the events or injuries transpired in the bore-well and thus are going to have the ability to simply take immediate or precautions actions to conserve your entire life span. Additionally, information technology assists in developing awareness [3&4] of persons and sees that no-more incidents transpire near the area of their bore-well.

Now-a-days robots are designed [5-8] and used for rescue operations. These robots cannot guarantee the life of child because they don't know the depth of kid inside the bore well. These are expensive and takes much time, if they know the depth of kid inside. The proposed system will ensure saving life of kid as kid cannot go much inside bore well because of the plates arranged inside bore-well.

II. EXISTING METHOD

Generally bore wells are of 4.5-12 in diameter and at a depth vary from 500-1500 feet. The following image shows the bore-well incidents across India.

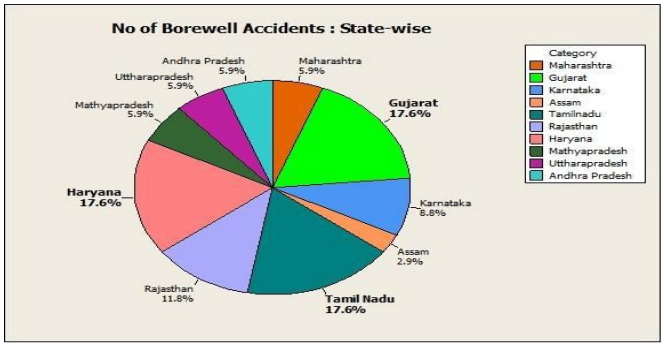


Figure1. State wise bore-well incidents

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In India many bore wells are left uncovered which lead to death of children. Traditional rescue methods (also known as parallel pit method) are using to save the child inside the bore well. In this method, a well is digged parallel to the bore-well by using large JCBs and needs high man power. This takes high amount of time and expensive too. Finally, there is no guarantee for the life of child.



Figure 2. Traditional Rescue System

There after another rescue method is proposed by using robots. But this method also failed to guarantee the life of child. This method is possible if we the depth of kid inside the bore well. If we fail to figure out the depth of kid, then there are very less chances of getting kid alive. This method is very expensive.

III.PROPOSED METHOD

The proposed rescue method will guarantee the life of child as we can easily identify the depth of kid inside bore well. In this method an IR sensor is placed at the top of bore well, which senses if any child/ animal fell into bore well and gives a signal to motors inside well. The DC motor will activate the rotating mechanism and rotates the plates which are placed at 3,5,7 feet distances. Three plates are arranged to avoid the fall of child much deeper inside well. A buzzer is arranged in order to alert the people in surrounding areas. Parallelly, by using GPS and GSM modules a message is sent to near by police station, hospitals, owner of bore well and for fire station.

Initially the status of IR sensor is 0. If the sensor detects any one then it changes to 1, indicating someone is detected. After turning off the alarm it resets itself to 0.It is of low cost compared to other methods and also requires very less man power and time.

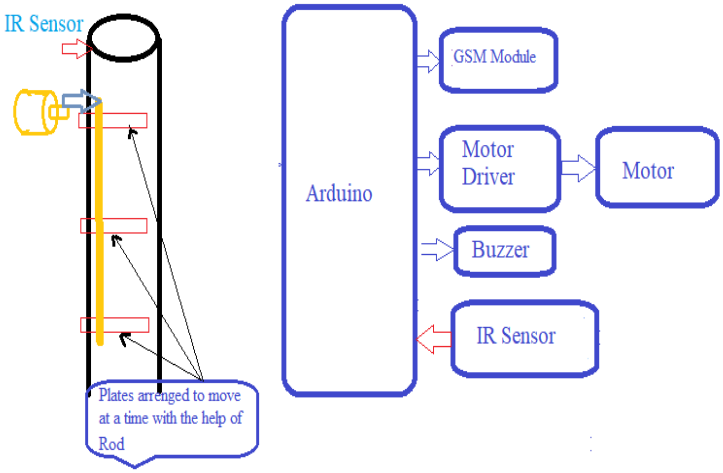


Figure3. Block diagram

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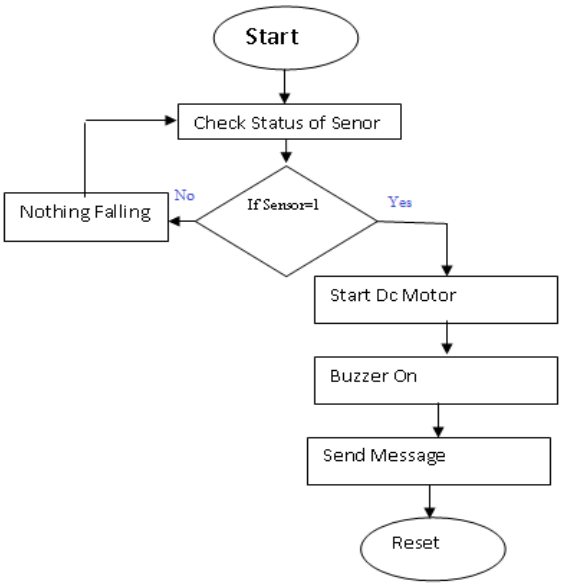


Figure4. Flow chart

IV. RESULT AND CONCLUSION

In this project we use Arduino Uno R3 board for experimental purpose. Where as, GSM, GPS, motors, IR sensor and buzzer play an important role. The proposed system is very useful to society in saving the lives of kids from bore wells. It detects the object or person falling into the bore well with the help of sensors and automatically buzzer starts ringing until someone comes rescue them and stops it, message alert is send to nearby police station, concerned persons along with information to ambulance. The carrier mounted inside the bore well gets activated and stops falling the child/object in no time.

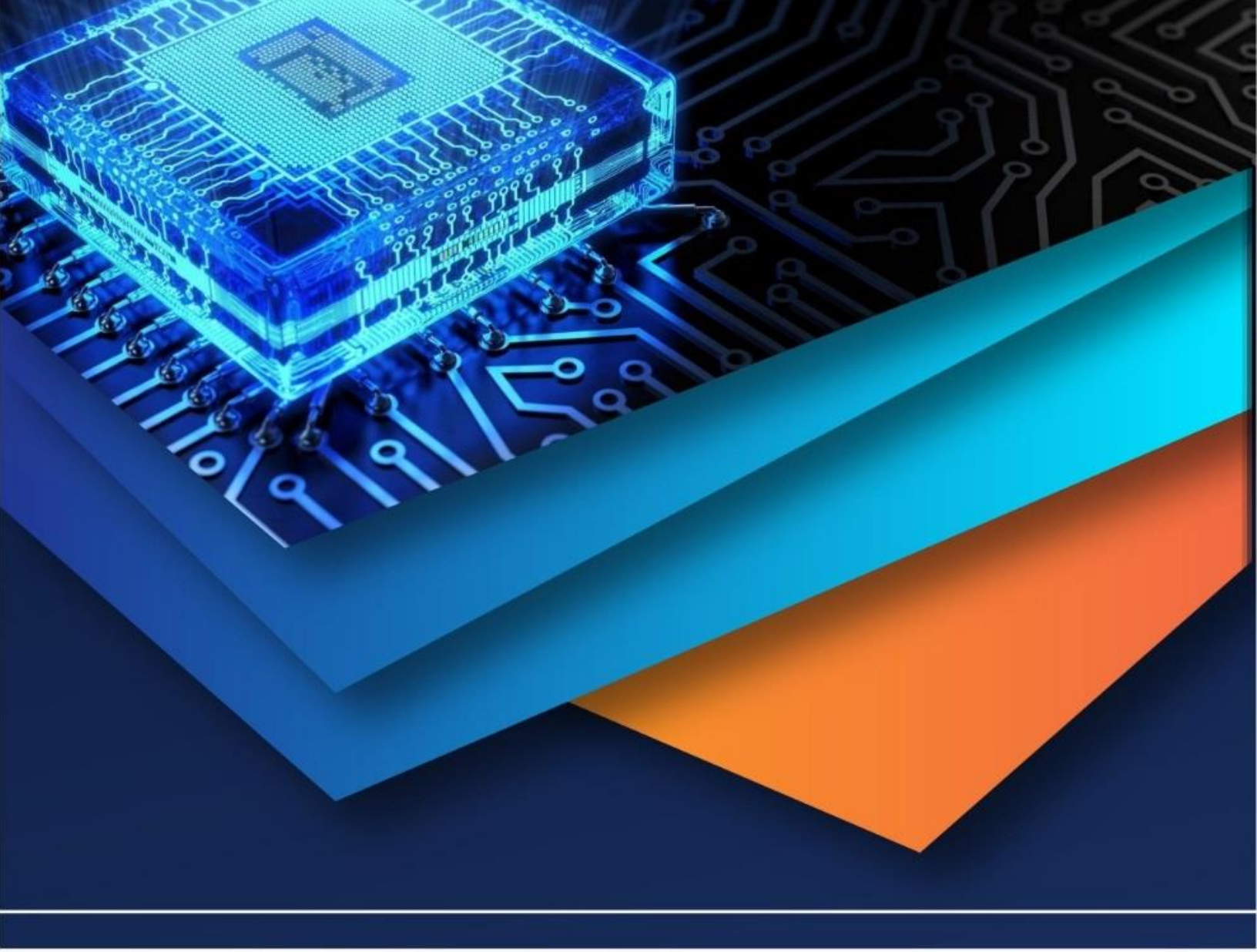
V. FUTURE SCOPE

This paper has few limitations like, the range of IR sensor is very less, so that it may not be able to figure out the fall of children and it needs continuous power supply. In this we use a battery for powering the device, if in-case the charging of battery is completed then the device will be turned off and no use of placing at bore well. It further requires proper network and internet connections .So, further improvements are made in this project to fulfill the purpose of this project. This idea will save the lives of many innocent children and also carried out for future work.

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