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SMART AND SAFE CHILD INSTANT RESCUE SYSTEM FROM BORE WELL

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Abstract- In times children falls within the bore well because of the carelessness nature of the people in society. The currently available some systems to save the kid are less effective and costly too. Thus, the society need a new technique which is more efficient and effective. The number of the reported cases thus far a parallel hole is dug then horizontal path is being created to reach the child it's a time taking process but also risky in various ways. The present some cases of rescuing the child from the bore well using robotic arm techniques and capable of moving inside the bore well but this method involves high cost and the safety of the child is very less and it is a risky process in various ways. This project includes the series of development by designing a pipe in hour glass shape and placing an ultrasonic sensor, Global System of Mobile Communication, Global Positioning System so that we can rescue the child easily. In future enhancement we can develop this project by implementing Internet of Things and cloud computing methods which can send the image of the victim to the corresponding officials.

Keywords- GSM, GPS, Ultrasonic Sensor, Arduino Uno, Buzzer

I. INTRODUCTION

In India recently we have witnessed some of the tragic but helpless incidents which touched us deeply and forced us to look after the matter seriously.As the insights proposes in the successive years beginning from 2006, even in excess of 30 passings happened while stuck in bore well. The most forlorn truth is that 92% of that casualty is younger than 10. The kids were playing around the drag well ignorant of the way that the drag very much was sitting tight for them as a demise trap. Subsequent to sneaking in the spoiled blocked completely dark climate, they were sitting tight for them for the assistance to come. Be that as it may, the absence of oxygen and dreadful environment has ended their life gradually before the salvage group can contact them.. The incident of losing lives caught in bore all around was featured in 2006 where a five-year-old kid named sovereign was protected by Indian armed force specialists after an intense battle which endured 49 hours. The kid showed enormous endurance impulse by keeping quiet and being helpful with survivors. Measurements uncover that relatively few children were pretty much as fortunate as ruler, a considerable lot of them kicked the bucket, some got public consideration, while many went unnoticed. Another episode in Indore occurred in the very year where a kid name Deepak stuck in the pit opening and passed on for the absence of oxygen. We have attempted to sum up the occurrences in this worry.

II.RELATED WORK

A significant issue looked by the human culture was water shortage which is examined by Bartha and suchitha. Because of dry season and exhaustion of underground water, more bore wells are penetrated on the outside of the earth. In numerous regions, the drag wells are penetrated and left open with no appropriate covering. These bore wells became demise pits and begun taking numerous lives particularly little kids. Presently a days falling of kids in bore wells are expanding because of imprudence and perky exercises of the kids. The opening burrowed for the bore wells are profound around 700 feet. In these cases, the save a kid from such most profound bore well is very difficult [3].

Raj Manish depicts the plan of a robot for saving the kid from bore well. This robot is fit for moving inside the bore well, as indicated by the human remark by pc and furthermore pick and set on the arm plan. This robot is worked through pc with the assistance of remote Zig bee innovation and remote

camera which gives both sound and video signals on the TV. The powerful LED in the robot goes about as a light source in the line where the light force is low [8].

Pal winder Kaur depicts the salvage activity without human intercession. Here the wheeled leg component is intended to go inside the line and the legs are circumferentially and methodicallly scattered separated. The robot can change its legs as indicated by the pipeline measurements. The robot has comprising of force supply, switch cushion, and stuff engine. The youngster position is caught from bore well with USB camera and checked on pc.LM35 temperature sensor and 16*2 LCD are interfaced with pic 16F877A miniature regulator to detect and shows on LCD.[1]

.III.EXISTING SYSTEM

3.1 PARALLEL PIT METHOD:

During this method a parallel hole is dug adjacent to the bore well courting on geology of the sector and once the vertical digging reaches the depth at which the child is stuck a horizontal hole is drilled to reach the child and canopy the bore well hole through spiked iron rod or wood down the child. To make sure that less time is wasted in horizontal drilling, the vertical hole drilling should be planned in a manner that it's slanting towards the bore well, rather being perpendicular to earth and parallel to the bore well. This makes it easier to extract the child by reaching about 3 feet underneath the child at distance of 1-2 feet from bore well. This protects tons of your time in horizontal drilling and subsequent earth removal. This needs proper centering while drilling to make sure that we are at exact place where the child is stuck and to rescue the kid from bore well.

3.2 ROBOTIC ARM METHOD

A robotic arm method has a machine like development than change its design using a social occasion of electric motors that continue like servo motors, pneumatic, etc They attempt to reproduce improvement like a human arm which is used to shield the young person from the drag well using lifting instrument. In this procedure it is of servo motors which is used to equip the instrument, discover the opening, changing the bar and screw the opening to move towards the lower part of the adolescent..In a bit of the mechanical arm procedures the robot is prepared for moving inside the line and change according to the pipeline estimations. In some robotized arm procedures a mechanical system will be annexed to the higher plate which will endeavor to convey two straight enactment units which will stand firm on the robot in balance by pushing the mass of the drag well and stuff segment will be associated with the lower plate and some mechanical arms involves objective cameras will be joined downwards in the circumstance of the lower plate and a couple of structures the significant standard cameras will give the point of view on the well environment which will be valuable in tele operating the two arms.

IV.METHODOLOGY

In order to overcome the drawbacks of the existing system, a new system is designed which rescues the child from the bore well.

This system consists of an ultrasonic sensor, GSM, GPS, Arduino atmega328p, Buzzer and here the pipe is designed in hour glass shape. Micro controller atmega328p is power controller from microchip and it based on AVR RISC architecture Ultrasonic sensor is able to detect people over wide range of distances GPS used to track the location and GSM is used for sending messages as shown in Figure 4.1.The plan of any framework comprises of equipment necessities and programming prerequisites is centered around the segments which are utilized for planning the task and programming improvement is centered around the coding which is stacked into the equipment. as shown in Figure 4.1.

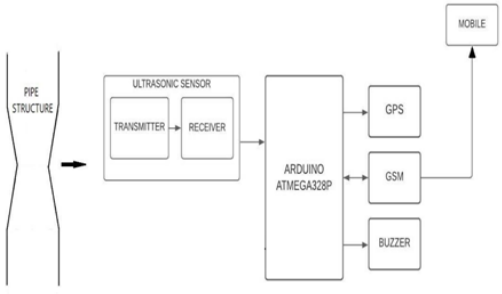

FIGURE 4.1 Proposed system block diagram

V.SYSTEM ARCHITECTURE

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HARDWARE DEVELOPMENT

The smart and safe child instant rescue system from bore well consists of Arduino, ultrasonic sensor, buzzer, GPS, GSM.

5.1 ARDUINO ATMEGA328P

The low force Atmel 8-bit AVR RISC based miniature regulator consolidates 8KB of programmable blaze memory, 1KB of Static RAM ,512 KB EEPROM. The gadget underpins through put of 16MIPS at 16Mhz and works between 2.7-5.5 volts. As shown in Figure 5.1.

Figure 5.1 Arduino atmega328p micro controller

5.2 GPS neo 6m

GPS neo 6m is a highly integrated smart GPS module with a ceramic GPS patch antenna. The antenna is connected to the module via an LNA. The module is with 51 station getting motor and 14 station track motor, which be useful for getting signals from up to 65 GPS satellites and moving them into the particular position and timing data that can be examined either Universal Asynchronous Receiver Transmitter port or RS232 back to back port. As shown in Figure 5.2.

Figure 5.2 GPS neo 6m

5.3 Buzzer

Buzzer A toll or beeper is a sound hailing contraption, which may be mechanical, electromechanical, or piezoelectric. Normal employments of ringers and beepers incorporate alert gadgets, clocks and affirmation of client information, for example, mouse snap or keystroke as shown in Figure 5.3.

Figure 5.3 Buzzer

5.4 Ultrasonic sensor

ultrasonic sensor is an electronic contraption that quantifies the distance of something objective by delivering ultrasonic sound waves and converts the reflected sound waves into an electrical sign and the picture of ultrasonic sensor.Figure 5.4

Figure 5.4 Ultrasonic sensor

5.5 GSM

GSM The Global System for Mobile Communication is a standard created by the European broadcast communications norms establishment to portray the convention for second era (2G) advanced cell networks utilized by cell phones like cell phones and tablets.

VI.ADVANTAGES OVER EXISTING METHOD

1. Since the youngster is safeguarded from the current opening itself, the salvage time will be a lot lesser than the regular time so that there

is no need of burrowing the equal opening alongside the current opening.

2. Low force utilization and cost is low.
3. Less labor and no need of huge gear.

VII.EXPERIMENTAL RESULT

This kind of item can be utilized to save the kid Oxygen level of the casualty is kept up appropriately in light of the fact that the youngster fell not exceptionally somewhere down in the red. The youngster is saved from the current opening itself, the salvage time will be a lot lesser than ordinary time so that there is no need of burrowing the equal opening alongside the current opening. In this framework comprises of miniature regulator, ringer, GPS, GSM, ultrasonic sensor. Line structure planned fit as a fiddle so effectively salvage the kid from the bore well.As shown in figure 7.1,7.2&7.3.

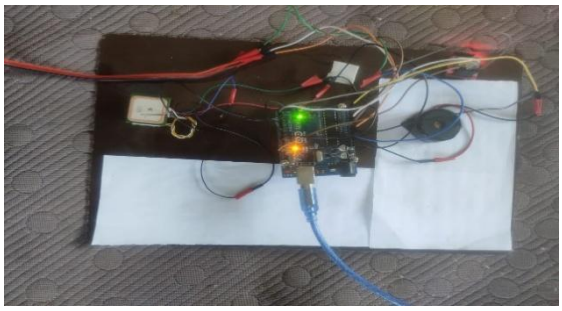

Figure 7.1 Hands on kit before connecting it to pipe

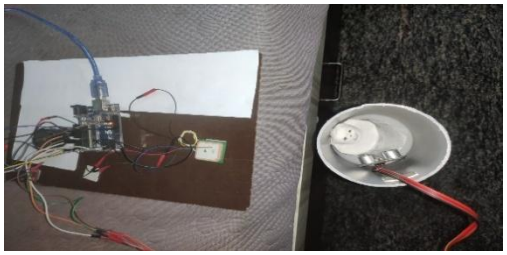

Figure 7.2 Hands on kit after connecting it with pipe

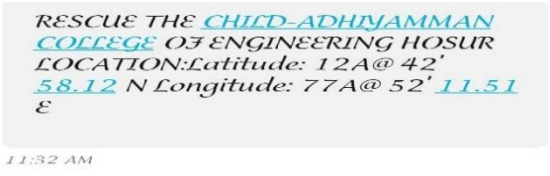

Figure 7.3 Message after child fell inside the bore well.

VIII.CONCLUSION

We have successfully completed this project work. In existing this project work, we got exposed to many practical problems and difficulties, facing such situation and solving this problem as given in us a confident and courage, which are very essential for a successful engineer. By doing the project, we understand the working principle and uses of various electronic component. It will be no doubt that micro controller will be an integral part of any process in industry,Soon we have utilized the micro controller for completion of this project. Once gain we express our gratitude to our project guide and staff members.

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