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Borewell Child Rescue System

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ABSTRACT—Open bore wells are always a trap and the accidents can't be avoided till now. Therefore, a practical, safe, and efficient rescue system becomes necessary. But still, the techniques are impractical. This project aims to design a system that can rescue a child easily, safely, and in a short time. There are methods or techniques which can save the child from the borewell. But it may be impractical to do it with a single method. Therefore, this project consists of providing the provision for the inclusion of multiple rescue methods, which provides the possibility of choosing the best method to save. In our project, we plan to combine the various methods of rescuing, some of which do exist today. The design system varies in the diameter of the borehole which varies from eight inches to 12 inches. The system consists of a camera, lamps, an oxygen supplier, balloon technology. Sensors and camera are used, taking into account the depth, position, and posture of the kid.

KEYWORDS – Rescue bag, Rescue techniques, Borewell rescue, Child safety.

I. INTRODUCTION

In water scarcity, borewells must meet the necessary requirements for daily life. when wells were dug, they were not properly sealed. young children unknowingly often fall into pits. rescuing a child with another busy child rescue work compared to all other available means is a major goal of this project. Arm adjustment adjustments are different technologies described in this project.

In the present case, the fall of children or adults on the breast properly increases. The accidents occur mainly because of negligence or playful pursuit of the child, In addition many digging wells have been dug and left open without proper coverage. When a child falls into an open pit, existing rescue operations in such cases become extremely dangerous and safe for members of the relief team. In the current system, a large hollow is drilled in the side of the borewell to the depths where the kid is trapped. It uses a wide range of sources (military, medical in Para, etc.), using machines (Tractors, JCBs, etc.). A small delay is also not acceptable, because it leads to decrease the chances of saving a kid. While drilling the hollow if there were a stones inside the hollow, it also decreases the chances of saving the kid and also it is very dangerous. Anything happens, the achievement rate depends on a number of aspects, such as the time required to bring the equipment back to normal, staff and especially the feedback time of different government agencies. In our country as maintained by the 2011 NCRB report, five people die every day as a result of licensing sources. Currently there is no definitive result to this problem; in this project a brief description of the lifting mechanism can be used for saving a kid.

Objective of this work:

The design should be portable.

Less time of operation and an increased chance of survival.

It should include multiple rescue techniques and necessary life support system.

To avoid further fall of the child once the child is held by the system.

Applications

It can used in industries

It will be helpful in mining industries.

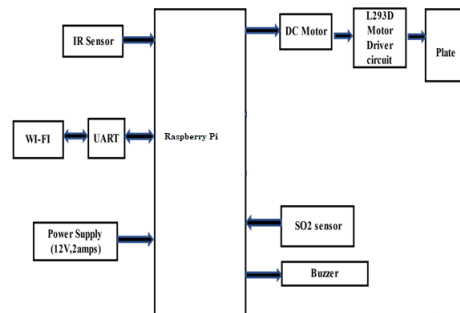
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II. LITERATURE REVIEW

A preschooler kid accidentally fell down into a 300-meter-wide hollow in the town of Vellore in Tamil Nadu on Sunday. Firefighters and rescue workers worked. Geetha and her preschooler son K Tamilarasan from Sambasivapuram passed her cousin's house in Koorampadi, near Arcot. The child was playing on a local farm with one of his cousin, Kanagashanmugam, when he crashed into the station at 8am on Sunday. When the family found him missing, they started searching him with his photo. After sometime kid's voice came from the preparation area. The family members took help of local residents, who in turn alerted the district and fire authorities and protected administrative staff. The group conquered the city of four miners and began retaining jobs.

III. ARCHITECTURE

As shown Figure 1 in the System architecture, this System design a mobile rescue system based on Raspberry Pi to help the people on time which are trapped in Raspberry Pi. The entire process takes place within a few seconds as the system is controlled by a Raspberry pi unit. IR sensors are infrared sensors which detects movement of people with the help of changes in the infrared (heat) levels emitted by surrounding objects. The human body emits thermal radiation at a wavelength of about 10 microns. It is received and manipulated by the IR sensor to detect human beings. It operates at 5V DC. The motion of the human being can be detected by checking for a sudden change in the surrounding IR patterns. Obstacle sensor detects the obstacle and sends the analog signals to the Raspberry Pi. Raspberry Pi is programmed to guide the system automatically depending on the obstacle detected and to send the human being information to remote control place through the wifi Technology. The Data is received in the Base Station(Control Center). Analyzing the data



the Rescue team can take neces

sary steps to rescue the trapped human.

Figure 1 System architecture

IV. METHODOLOGY

The main aim of this work is to save the child from the bore well.

- Firstly, the system checks for the fall of the child.
- The primary characteristics of the borewell rescue system includes size, type of borewell and operating conditions.
- The first step is to allow the system inside the borewell and then visualize the victim inside the borewell using IR sensor.
- If the system detects the child, then it will read the sensors values like oxygen, humidity and temperature of the child.
- These sensors are attached to system.
- The temperature sensor attached to system will send a temperature range inside the borewell.
- Balloon will be placed inside the borewell such that, when the child falls on it child will not be injured majorly so that we can prevent further fall of the child.
- These sensor values get updated to the rescue team and it will turn on the metal plate to lift the child.

- An output display is also used to see the actual on time location of child every time.
- Finally the victim/baby is rescued from the borewell.



With the existing method of rescuing a child from a drilling hole it is controlled by an outsider. In the olden days, another hollow is drilled near that well in which the child had been caught up so long. A small delay is also not acceptable, because it leads to decrease the chances of saving a kid. While drilling the hollow if there were a stones inside the hollow, it also decreases the chances of saving the kid and also it is very dangerous. Saving a kid becomes very risky due to the less oxygen and no source of light. So far no special rescue kits have been found inside the trenches. There is no rescue process for the baby. If the proposed system is not working then Military people are called It includes more time ,energy and costly resources those will not be readily available everywhere.

V. IMPLEMENTATION

Even though there are so many methods existing, still there is a need of more simple and sophisticated rescue equipment. Here we are proposing a system called Raspberry Pi based child rescue system from Borewell. In this system, there is no need to dig big pit parallel to the Borewell up to the depth where the child is stuck. Hence may not depend on the huge amount of human resources (military, Para medical, etc.), and machinery (JCBs, Tractors, etc.). Therefore, the delay involved in this accumulation of resources may be reduced and the chances of saving child alive are increased.

The exciting method uses a highly advanced microcontroller, well developed accurate hand gripping mechanism (capable of carrying loads about 5kg) and a visual feedback system using a high-resolution camera the project is implemented successfully. The main aim is to save the child from the Borewells. Firstly, the system checks for the fall of the child. If the system detects the child, then it will read the sensors values. These sensor values get updated to the concerned person and it will turn on the lifting mechanism.

VI. SYSTEM REQUIREMENTS

Implementation of project is executed in two ways:

1) Hardware Requirements

Raspberry Pi

Humidity sensor

Temperature sensor

SO₂ sensor

Power supply.

2) Software Requirements

Python

Open Cv

VI. ADVANTAGES AND DISADVANTAGES

ADVANTAGES

It can be easy to operate.

It's a Cost effective.

There is no professional skills required to operate.

High reliability

DISADVANTAGES

It has lack of capabilities to respond in emergencies.

Suitable only for short borewells.

Maintenance is thoroughly required.

VII. CONCLUSION

The proposed framework is to overcome all of these problems through a customized distance across the framework. This system is used to decrease efforts of human to protect kid from open borewell. Perform protective functions in a shorter period of time compared to traditional techniques. The work involved filling the air to provide oxygen without air. By doing this work we can truly save a child's life by saving them. The proposed system operation works better and can perform different works which will make the arm more secure and easier in operation. Since there is no need for the same hole for rescue purposes and the baby is rescued through an existing hole, the recovery time is greatly reduced. And there



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is no need to dig another similar extraction hole that costs time. As a development of the system in the future, we can provide additional comfort facilities like cooling. Also, the whole system can be fully automated. And it is better to replace the rope pulley arrangement, with any other suitable safe method.

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