

Robot for Borewell Rescue

Children often fall down in the borewell which have been left uncovered and get trapped. The rescue of this trapped children is not only difficult but also risky. A small delay in the rescue can cost the child his or her life. To lift the child out the narrow confines of the bore wells is also not very easy. The child who has suffered the trauma of the fall and is confined to a small area where, with a passage of time the supply of oxygen is also reduces.

Robot for borewell rescue offers a solution to these kind of situations. It is fast, economical and safe. Moreover, it has the facility to monitor the trapped child, supply oxygen and provide a supporting platform to lift up the child.

The prototype developed by the 8th semester mechanical engineering students of Amal Jyoti College of Engineering, Khanjerapally, Kerala consists of 4 separate mechanism driven by motors.

The motor placed at the top turns a gear mechanism which, in turn, pushes 3 blocks arranged at 120 degrees from each other towards the side of the bore well. This clamps the whole system firmly to the bore well wall. The 2nd motor placed below the plate turns the bottom shaft by 360 degrees, thereby helping to locate the gap through which the lifting rod passes. This is done with the help of a wireless camera attached to the lifting rod. Once the gap has been located, the 3rd motor adjusts the radial distance of the lifting rod. When the diameter is adjusted, the 4th motor helps the lifting rod to screw its way through the gap towards the bottom of the child.

Once the lifting rod reaches a safe position under the child, an air compressor is operated to pump air to the bladder attached to the end of the lifting rod through an air tube that runs downwards inside the lifting rod. The bladder provides a safe seating to the child. When the child is secure, the lifting rod is contracted to its maximum position. The 1st motor is then reversely operated so as to unclamp the system. Simultaneously it is lifted out of the well using a chain or rope.



For further information please contact:

ROBOT FOR BOREWELL RESCUE

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