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The Making of Automatic Start and Stop Float Switch for Water Tank Filling Motor

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Abstract:
The content written in this research paper is related to the filling of water in the tank on terries by the motor. The motor is made connected to the float switch so that while the tank is filled the switch cut the electric supply so that the motor stops and when the water level is low then motor starts and filling of water starts. By the method of float switch. The figure (1) is the circuit diagram of the terries and ground floor.

Introduction: -
Water on earth is 70% and the lithosphere is 30%
But the water on earth in the form of drinking is in very lesser amount. So the drinking water to be saved, there should not be any wasted. The water wastage through home appliances is very much as by washing the clothes.
There is water reservoir filling on which the operator stores the water. Filling of water is by water pump. The operator or owner of house may be forgot to switch off the button many times as ordinary seen and while filling has been done. The water might waste many times by over flow.
The content in this research paper is making of a float valve switch which will start the water pump and while filling and before overflowing the water pump stops.
In figure (1) the system is shown the movement of water from civil supplies to the reservoir on ground floor from where the water pump raises the low-pressure water and convey to the reservoir on terries, during this process the water after filling start overflowing as by non-observance the ongoing process.

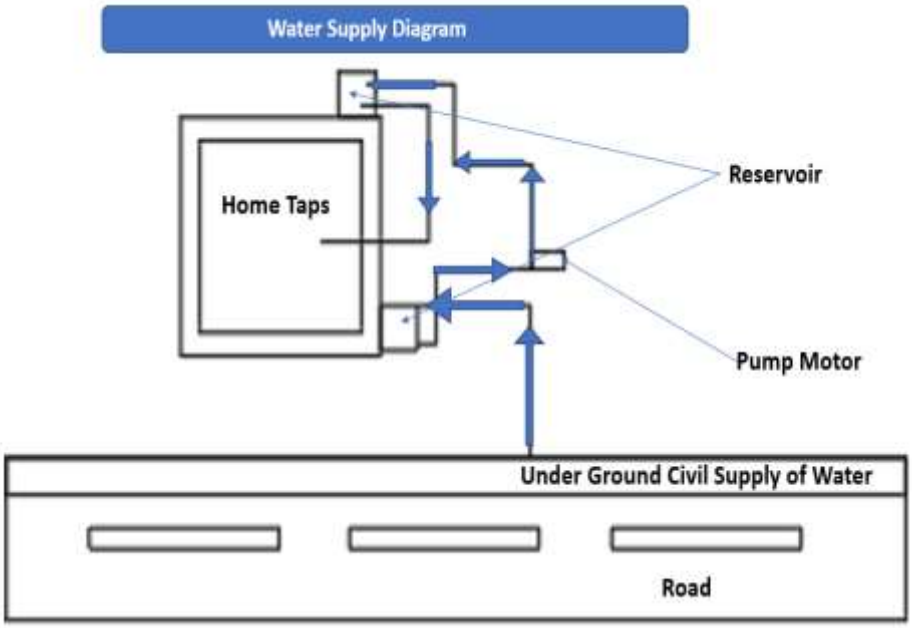


figure (1)

To stop the wastage of water the float switch is made

Which while water tank at terries (reservoir) is empty the water pump motor starts and while the tank gets full the water pump stops automatically.

Construction: -

In the float switch there push button is fixed. So that while float. While water level got ups and the push button be pressed and while the water level gets down the pump starts.

The figure (2) and (3) shows the working process of the system.

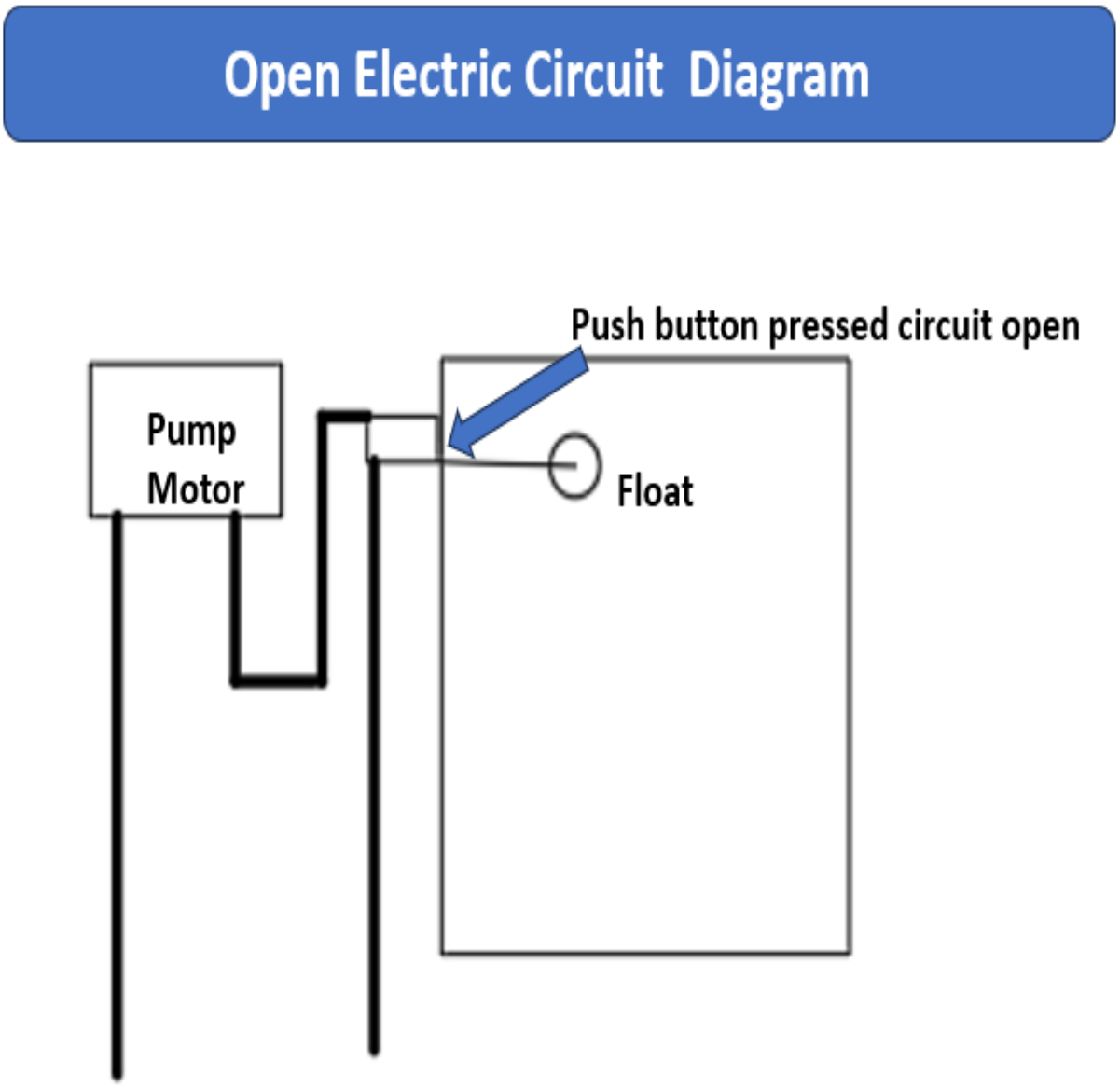

Open Electric Circuit Diagram
Push button pressed circuit open
Pump
Motor
Float

figure (2)

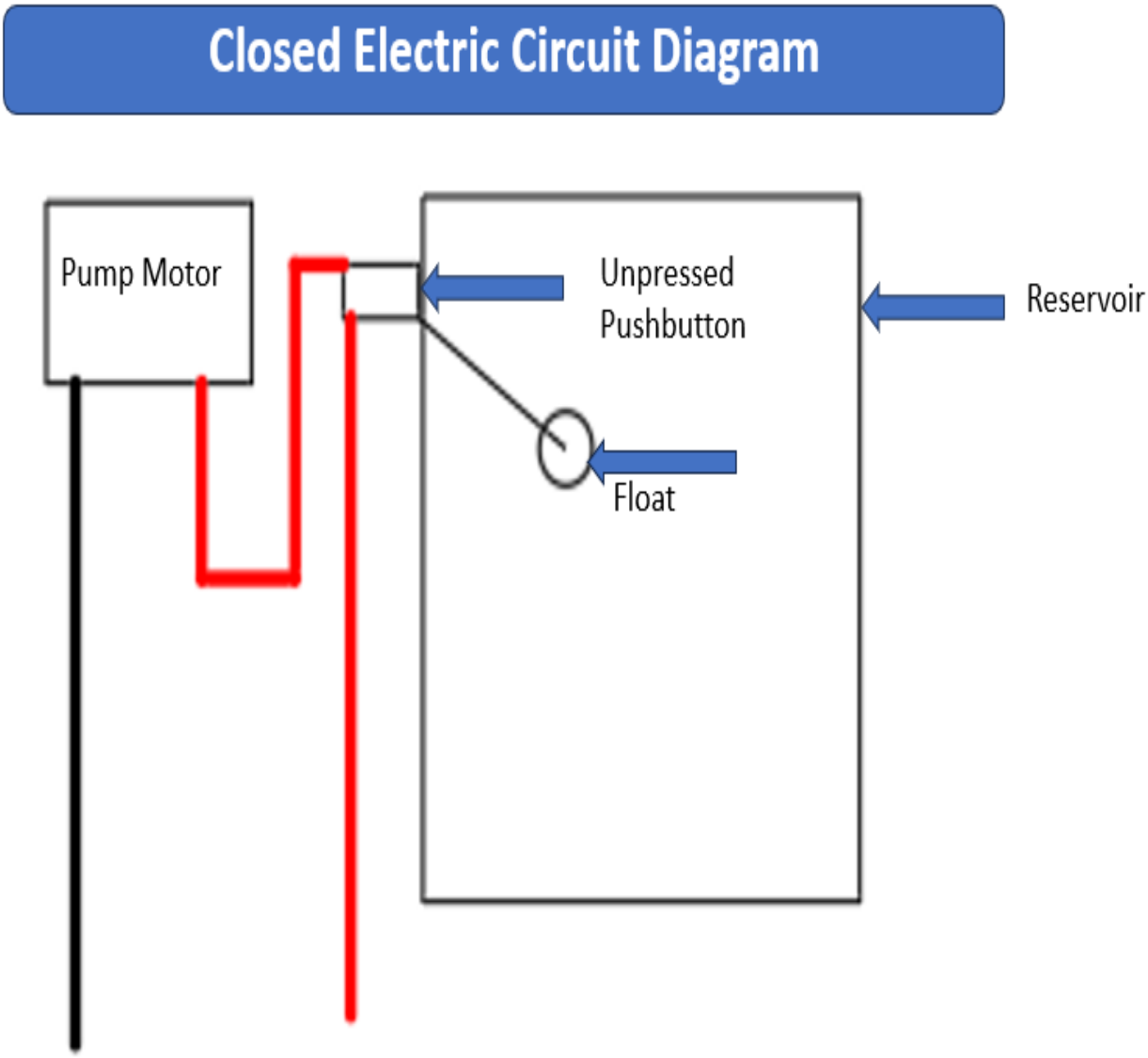

Closed Electric Circuit Diagram
Pump Motor
Unpressed
Pushbutton
Reservoir
Float

figure (3)

picture (1)

picture (2)

The picture (1) and picture (2) the press button is shown.

picture (3)

The picture (3) shows the float valve in which the press button is fixed.
There are two wires from float valve which is connected with press button in series of water pump motor connection so while series completes then the power will be passes through the press button and motor starts and while the level of water reservoir raised the float valve press the push button (normally open) then the series breaks the power of motor and motor stops.

Sr. No.	Material used	Expenditure
1.)	Float valve normally open in down position	300/-
2.)	Push button normally open	70/-
3.)	Wires and electric switches	200/-
4.)	total	570/-

picture(4)

And the picture (4) shows the close view of press button.

Tools and Equipment used:-

Sr. No.	Tools and Equipment
1.)	Solder
2.)	Screw driver
3.)	Water motor pump

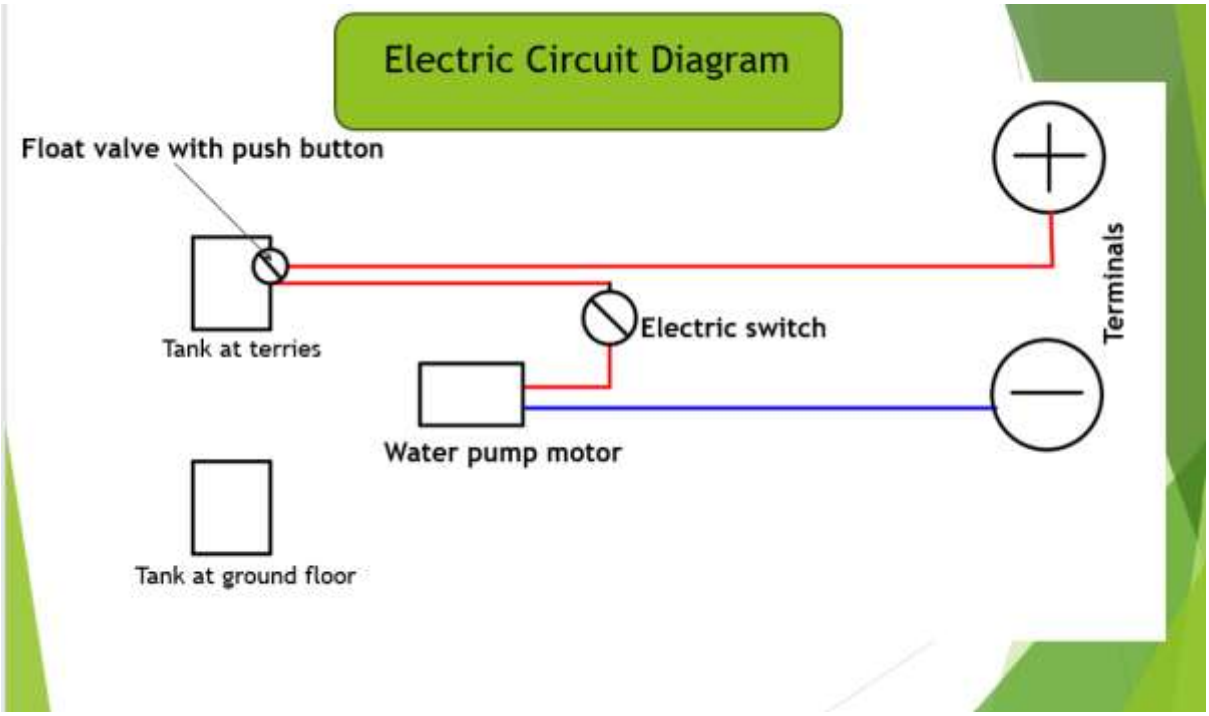
Methodology: -

Solder: - By heating the solder, making the space in the float valve and a push button is settle down In the float valve the such that the while the float got ups the push button be pressed. And the electric wires connected in the series i.e. such that in phase wire of the motor.

Working: -

As shown in figure (1) there is a home where the taps are running on civil services supply of the water. But civil supply may not be run whole the day i.e. only the 4 hours in morning and 4hours in night. So for the remaining time there are two tanks (reservoir). One at ground floor and one is at terries. Because of low water pressure the water at ground floor tank is to be pump the water so that terries tank to be filled and the home taps may supply the water.

To raise the water on terries there is water motor pump. Which is in connection with motor such as per circuit diagram and the water supply diagram is as figure (1).



Literature Review :-

(1) The author made an automatic water level controller. The design based on mercury-based switch which is poisonous so it is dangerous if leaks. (2)The sensors based on digital logic circuit depends upon conductivity of water.(3) physical water level sensor is replenishing has been done which is too much costly.(4) manual system is applied which is manually on and off.(5) this paper is based on architecture level controller which controls with the help of computer.(6) An Arduino microcontroller is used to control the level of water tank with help of SMS.(7)an Arduino ultrasonic sensor based on water level controller is used. (8) an image sensor is used to control water level.(9) an ultrasonic sensor is used to get live indication level of water.(10) the Wi-Fi based on float switch module is used which is too much costly.(11) the serval devices are fixed at different level of water in tanks which is very costly.(12) low water level indicators are used which shows also the different levels of water.

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7. An Arduino UNO, an ultrasonic sensor, and a pump are included in the proposed model. An ultrasonic sensor was used to determine the water level. There was a link between the Arduino and the LABVIEW software. The Arduino turned on and off the pump based on the sensor readings, and the water was filled into the tank, as shown on the LABVIEW front screen. If there is no water in the lower tank and the pump is turned on, the pump will be disabled and energy will be lost. This is because the ultrasonic sensor is only mounted in the upper tank and not the lower tankk
8. The water level sensor, buzzer, and water pump were used to create the prototype. The controller received the water level sensed by the sensor, which was then passed to the Bluetooth module, which then transmitted the information to the registered mobile. Additionally, a buzzer was used as a signal. When exposed to a damp atmosphere, the sensor takes the form of a touch sensor, with a measurement range of just 4 cm and a short lifetime. Having power applied to the probe continuously speeds up the rate of corrosion dramatically.
9. An Arduino microcontroller, a water level sensor, and a cell phone were used to create the prototype. The controller received the level of water sensed by the water level sensor and updated the information on the server. The cell phone receives the information stored on the server by working the buttons on the mobile. The user decides whether to turn on or off the motor. A contact-type sensor is used. When exposed to moisture, the measurement range is small and the lifetime is short. Intervention by humans is needed
10. The float switches, the 89S52 microcontroller, and the ESP8266 Wi-Fi module were used to build the prototype. Four tanks were taken in this operation. The sensing factor was afloat. The information was transmitted to the ESP8266 Wi-Fi module, which will upload it to the server. Water level sensors and motor driver circuits were controlled by the microcontroller. A total of 16 float switches are used in the system. The contact type float switches are easily stuck and do not move; they have poor accuracy and precision, and they require regular maintenance.
11. The system proposed in this paper is a basic water level monitoring system with multiple stages indicated. It also indicates when the water level falls below or rises above the required level. This method allowed us to better understand how Bluetooth modules work and how they can be used to create a portable device