

PREVENTION OF FUEL THEFT IN TWO-WHEELER BY USING SOLENOID VALVE**P. Indraprastha, S. Praveena**

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ABSTRACT

Nowadays, car fuel thefts are happening at an alarming pace worldwide. Therefore, it is crucial that drivers keep an eye on their cars to prevent gasoline theft. Thanks to technological advancements, drivers can use their mobile phones to monitor and protect their cars. The majority of the suggested solutions are limited to four-wheelers, and their main shortcomings are their inability to accommodate multiple users and their high cost. There are many systems proposed for vehicle security where most of them have used technologies like fingerprint detection, RFID (Radio Frequency Identification Technology), face recognition technique and can be for the security of cars.

Keywords:

Fuel, RFID, Vehicle, Face recognition, automobile.

1. INTRODUCTION

The number of automobiles has rapidly increased due to remarkable advancements in the automotive industry. The number of offenses involving car fuel theft has increased along with the enormous growth in the number of vehicles. In order to detect car and gasoline theft, numerous security systems have been developed. The majority of these systems use techniques such as face recognition, RFID, and finger print detection. However, these methods are expensive and challenging to apply in two-wheelers. In the case of fingerprint and RFID technology, it is also challenging if multiple people use the same car. Fuel theft is another issue that two-wheeler users deal with. Fuel theft occurs while cars are parked. Our research aims to provide a security solution for vehicles by locking the front wheel, particularly for two-wheelers, in order to address these security issues. Additionally, a solenoid valve and other mechanical parts are used to prevent fuel theft from the vehicle's fuel tank. Compared to other technologies, this approach is more efficient and dependable and does not require the use of electronic devices. Every car has a basic tap with the main or reserve option for the fuel delivery mechanism. In the With the current arrangement, anyone can easily empty the fuel tank because it has a minimum capacity of 10 liters. Therefore, a device to stop fuel theft from the vehicle has been created to address this issue. Here, we employ solenoids to both detect and prevent fuel theft from vehicles.

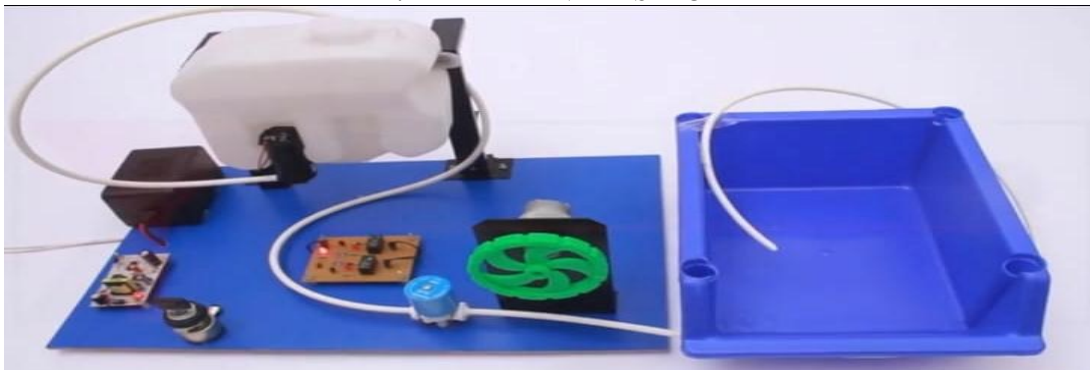
2. EXPERIMENTAL SETUP

Fig: Prevention of Fuel theft in Two-Wheeler by Using Solenoid Valve Experimental Setup

3. WORKING PRINCIPLE:

Simply starting the car will allow the valve to open after it has been fitted to the car and all wiring completed. The valve can be operated without the vehicle's user having to do anything like push a switch. The only thing the user needs to do is push the toggle switch to the reserve position, which will cause the reserve valve to open and provide the engine with fuel from the tank's reserve. The car would stall as the engine ran out of fuel if the level dropped. Fuel flows from the valve to the outlet and eventually to the engine through the carburetor when the plunger or ball is moved, disrupting the sealing between the inlet and outlet. The plunger/ball is drawn to the core-pin when the solenoid valve is activated, and it moves away from the rest of the plunger, which is in the nc (normally closed) position. When the fuel level falls below the main level, the toggle switch is activated. The LED switch will show an indication once the fuel level falls below the main level.

CONCLUSION

- With the help of this project, we can restrict the major problem of fuel theft of two-wheeler which is increasing day by day rapidly in India.
- At a very minimal cost we can reduce the crime of fuel theft by proposing this model by combining two subsystems such as Two-wheeler vehicle locking system and fuel theft detection to a single prototype.
- The solenoid valve controls the fuel flow and allows it only when the ignition is turned ON.
- When the vehicle is switched OFF, the valve automatically stops the fuel supply, preventing unauthorized access

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