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Experimentation on Automatic Operated Vehicle Door Glass with Sensor of Engine

A Review

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Abstract: The today's world is automotive; many more modern technologies are used. Different automatic door locking and window regulating systems are used they are electrically operated as well as mechanically operated Full but some time creates problem when missed out the car key inside the car the interred system is failure. Window regulating sensor is powered with electric motor as a result windows are raised and lowered automatically. No matter what type of a power source is used, window regulating sensors require mechanisms to function. Because, as known mechanisms are basis of all mechanical devices. Hence, different types of mechanisms are utilized resulting different types of window regulating sensor are used. The car engine is switched off and removed out the key from socket. The sensor detects the signals and passes the information to the control circuit provided signal to motor. Due to mechanical link is in working due to window move upward and close the after closed the door window also closed. Implementation of working idea to improve the security of car with minimum operational cast and lower maintenance and effective working condition obtained because of less moving parts.

Key word: - Automotive, Window regulator, Sensor, Signal, Mechanism, Automatic

Introduction

Usage of new generation technologies is becoming an important requirement in these days. These technologies can be used in the security of car to reduce human efforts, personal safety and protect expensive car. Many researchers have proposed various methods of security systems. Each of these systems has its own advantages and disadvantages. One of the important security systems in car is door windows access control. Most doors are controlled manually, especially by security personal that employed by the organization, through the use of handles and locks with key to operate the locks. Examples are banks, hotels, motels and so on; some are controlled by switches while others are controlled by the biometric techniques. These techniques are to enable automatic verification of identification by computer assessment of one or more behaviour and/or physiological characteristics.

Today world is automotive world most of the car are expensive is the part of status. One of the standard properties of cars is the capability to open windows of side doors. As a result, the need of a device that opens windows of car doors arose with the invention of cars. This device which is used to raise or lower the window of the car door is called a window regulator. With the growth of the automotive industry, automotive suppliers spend much effort on the design of window opener mechanism. At first, window regulators are used manually for a long time. But most of the time the windows are open accidentally due to most of car loss or miss most expensive device Like mobile phone laptop and money are present inside the car due to lower security. To improve the security such type of idea to improve the car security user generally opened and closed the window of the door by turning a handle. Later, like other man-powered mechanisms, manual operation is replaced with automatic functioning. Window regulators and sensor are powered with electric motors as a result windows are raised and lowered automatically. No matter what type of a power source is used, window regulators require mechanisms to function. Because, as known mechanisms are basis of all mechanic devices. Hence,

different types of mechanisms are utilized resulting different types of window regulators. To improve the security of car the reason for using different mechanism types may be reduce the cost, operation, assembly, production, etc.

MANUAL WINDOW REGULATOR SYSTEMS:

A manual window regulator is the most basic window lifting mechanisms. It always provide a handles ticking through the door panel that regulates the up and down motion human operator that provide the physical input to rotate the crank. Both scissor and cable type regulator can be set up for this can of operation as show in figure.

Fig. Manual window regulator types

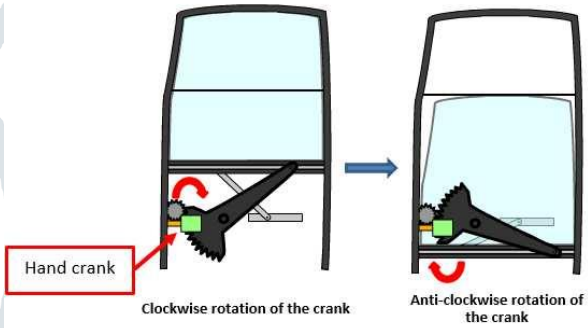

Fig. Manual Lifting operation

Figure 2 above demonstrate the working of scissor type window regulator operator via crank handle to lower a glass window

POWER WINDOW REGULATOR

Power window are setup so the rotational motion of an electric motor is transfer through a worm gear and a number of spurs gear. Instead of the sticking handle of manual system, an array a switches on the door panel or console is provided for the user to interact with the window system. The design assembly for this system can either be of scissor or cable type depending on the application. Figure 3 illustrate some design models.

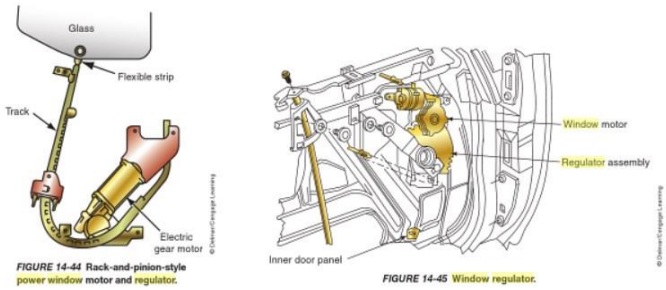

Fig.3. Automatic window regulator system configuration

Operating Principle

The following illustrate depict the working of an automatic window regulator system.

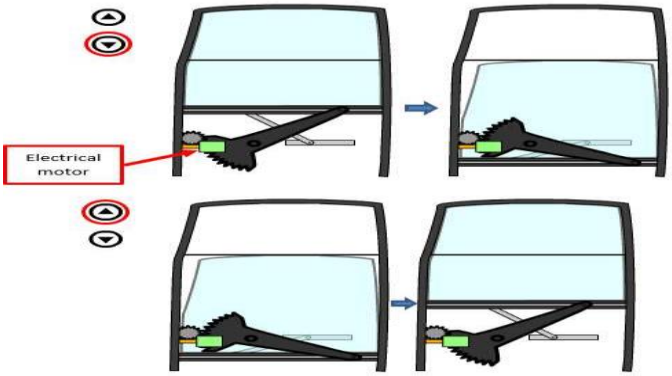

Fig. Power system Operating Modes

In figure 4, both the drive and control interface of an automatic window regulator system is shown, toggling the down pointing arrow button will lower the window by rotating the electric motor in a clockwise direction while the upper arrow pointing button will raise the glass window by turning the motor in opposite direction.

LITERATURE SURVEY:

Oladunmoye M: - In this research work, an Automatic sliding door System using an infrared sensor was developed. It uses a sensor, a control unit & drive unit to open and close doors at the entrance of a public building. The primary aim of this research work is to learn in details about how the automatic door system works and to understand the concepts involved. The secondary aim is to fabricate a simple circuit model to show how the system works. The main activities involved in this work are the research done on how the automatic door works, sketching a detailed circuit & then fabricating a simple model.

Michael Percher :- Every year, drivers of passenger vehicles involuntarily impact/drive into a body of water Such as a lake, river, canal, sinkhole, shore line, collapsing through thin ice, getting caught in flash flooding, etc., resulting in thousands of people worldwide and hundreds of people in North America alone, drowning in their vehicles. People drown in this way, because before they actually realize what is happening to them due to shock and/or trauma, the water level has reached the power windows making it virtually impossible for these people to open their respective vehicle doors or windows that would have provided them with a means to exit their vehicles.

Sanner H. Mahmood :- Design an Automatic Door System using a unique wireless ID by using infrared ray or Bluetooth technology. That consists of a sensing unit, control unit and drive unit to open and close doors at the entrance of a car that has the unique ID. This process is controlled by using Arduino Leonard programmed with IDE free open source software, that receives the signal code from the car which sends the ID through IR LED or Bluetooth by using a mobile application, decode it. And switch ON the driver that controls the DC motor. This system was designed considering some factors such as low cost and low power requirements, availability of components and low distance so there is no interference. The hardware design and software development are described, and all of the tests indicate that all component goes according to the initial design of this research.

Nnamdi S. Okomba :- his paper discussed the design and prototype implementation of an automatic window using a stepper motor with a microcontroller. A PIC16F877A microcontroller was used in this work due to its ease of connectivity with the current IC (ULN2003). Although, conventional AC and DC motors could have been used for this work but such motors will required an external feedback mechanism which will not give a precise positioning of the motor. This makes a stepper motor a better option since the feedback mechanism is in-built in the software design of the microcontroller. Finally the voltage variations of the moisture sensor enables the movement of the stepper motor to either close or open an attached window having in mind that the voltage variation of the sensor depends on moisture.

OBJECTIVES:

- The objective of this project is to introduce and make awareness among the public of the advantages of using this product which play a vital role in the present day today life.
- The main objective to improve the personal device and car safety in market as well as parking.
- Such type of system and mechanism is used to improve the performance of air-conditionings present in car.

- Such type of mechanism and system is used reduce automatic door locking chances.
- Car Air condition is the basic need this system mechanism is used the harmful gases is reduce.
- To develop such type of design and mechanism improve the vehicle efficiency.

SCOPE: -

- Used the GPS technologies used to improve car safety and Security.
- In rani session such type of technologies used to protect the car from heave rain
- Self-learning intelligent passenger vehicle comfort cooling system control strategy.
- AC/HP air Conditioning system operating intelligent control system.

SUMMARY OF REVIEW:

1. Some literatures used different sensor like temperature, Carbon-monoxide and water pressure sensor are placed inside a car to monitor the temperature range, CO levels and water pressure continuously. In case of high internal temperatures or raised carbon monoxide in the cabin due to incomplete fuel combustion or excessive heat or vehicle rested under the Sun for long, or if the vehicle is subjected to pressure by flowing or static water, the sensors send signals to the motor controlling power window to slide it down. It also sends a warning message to the registered mobile phone of the vehicle owner

2. the project has m mainly concentrated o n t his d difficulty and hence suitable
Arrangement has been designed such that the window will be slightly opened when Oxygen decreases inside the car which will be sensed by sensors. The sensors will be available inside the car which will transmit signals when the amount of oxygen in the car decreases beyond certain limit and the window will be slightly opened.

3. The various researchers are used radio reflector to regulate the automatic window it used the air conditioning efficiency. And reduce the harmful effect carbon monoxide emitted by air conditioning system.

4. The electrical and electronics system used to regulate the windows up and down but due to fluctuation of power the electrical operated windows are not efficient as per researchers.

5. Most of the remote operated window regulating system is used and also mobile operated system used but sometimes the key was missed at that time problems unlock the door by using remote.

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