Vol. XII & Issue No. 9 September - 2019
INDUSTRIAL ENGINEERING JOURNAL

A REVIEW ON REMOTE CONTROL CAR ROOF COVER

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ABSTRACT

The aim of this remote controlled car roof cover is to provide protection to user from rain while sitting in or getting out of car when his both hands are occupied. Here, we have taken an automation system for car to protect the person from rain. A rain shielding sheet is mounted on the roof of the automobile to provide protection to person coming in or out from the vehicle. Construction of this automation has been described as the combined use of mechanical and electronic systems to achieve automatic operation or control to reduce problems suffering during rain. In future scope the system could operate through an mobile application for controlling the process. This research paper briefly describes the problem observed during rain and how our device would help them to solve these problems.

KEYWORDS: *Automation, DC motor, IOT, Smart protection system, Sheets.*

1. INTRODUCTION

In today's world, the use of transportation has increased drastically. Though they provide us lot of benefits, but there is some drawback also that we ignore in our day to day life. People, travelling through car are not safe during rainy session while getting in or coming out from the vehicle. To protect from getting wet, this system has been designed. A rain shielding canopy is used as housing mounted to the roof of the vehicle.

In a condition when heavy rain is encountered and it is necessary for a driver or a passenger to place groceries or a baby into the vehicle, such an individual is unprotected against rainwater from the time he closes his umbrella until he is finished loading his car and finally gets into his car, it is difficult to handle both - an umbrella and the car door, so to avoid getting wet while entering or leaving the automobile an automatic rain protection is required. Also, an exposure to the rainwater can not only bring discomfort or sickness but can also cause damage to the interior of the car, especially to water sensitive electronic components in the door panel for operating the windows and door locks [1]. It is desirable to have a device that can deflect rainwater while an individual gets into or out of a vehicle so as to allow the individual to press the button on key and the sheet/canopy will be open for the protection.

2. EXISTING SYSTEMS

There are many devices which are designed for the vehicle to have protection from rain. Following inventions are already invented and are mentioned in the references.

For example, one method is using umbrella on the top of the car to protect it from heavy rain storm. Following is the diagram that shows how the umbrella protects the car while going out and coming in.

Figure 1: Umbrella attach on car [Ref. 1]

The above system has some drawbacks. First, the device fails to provide ribs with weighted elements therein for adding stability to the umbrella during harsh weather conditions and secondly, while coming out from the car, the umbrella will not open automatically and the person will not be comfortable coming out.

After this invention, the researchers also designed an automatic device. The umbrella system will be controlled by sensors and will operate automatically. Following is the system, that has been designed. Second invention is using rain shield canopy that is attached to the door of the car to protect the person from rain. The Figure 2, shows the design of the canopy used in the invention.

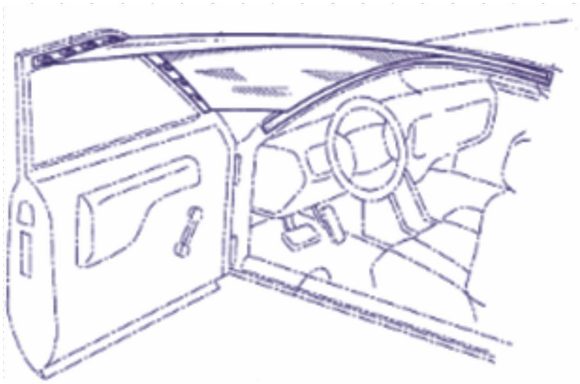

Figure 2: Shield Canopy attached on car [Ref. 2]

Similarly, one more design was designed to protect the person from rain. Following is the design of that invention.

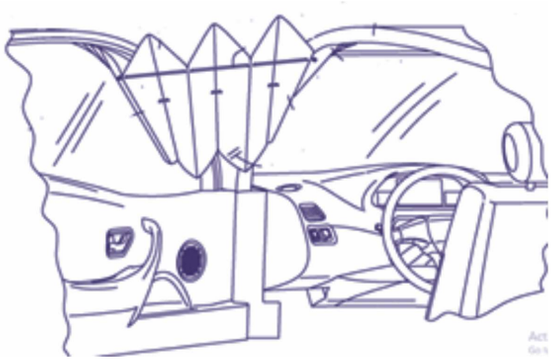

Figure 3: Folding sheet on car [Ref. 3]

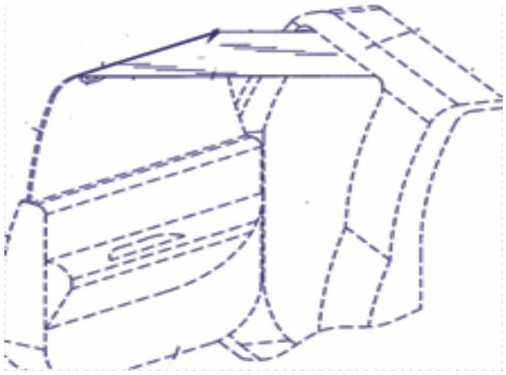

Figure 4: Sheet attached with car [Ref. 4]

The above design is useful but the person will be comfortable only while coming out from the car. If the person enters the car, he/she will definitely get contact with rain, as the canopy will open only when they will open the door. Secondly, it should be attached before using and if the person is out and has to enter then at that time this canopy is not ready, similarly while coming out this canopy has to be adjusted by fixing it with hooks on doors. This is the drawback of this invention.

Amongst the lot of similar inventions, there is one more invention that has covered near the door. Following is the design of that invention.

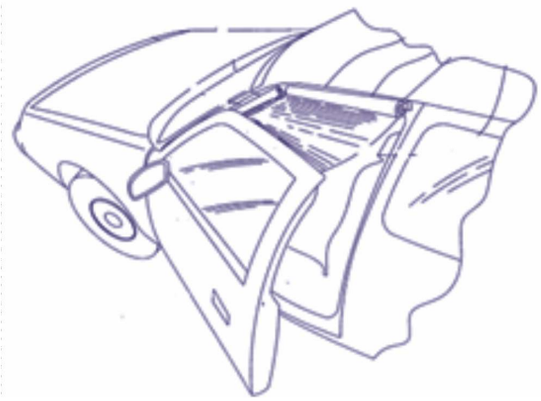

Figure 5: Different Folding sheet on car [Ref. 6]

Though, the above inventions are useful, but they don't have any automatic access. Some operates manually and some with rain sensor. The main drawback of all these inventions are that they operate manually. The sensors operated systems will detect rain they will open even while driving.

After all these inventions, an automatic car cover has been designed with rain sensor. It covers the whole car with a thin, and a strong material that protects the car from rain, dust and mud (in parked situation). Below are the designs that show the invention using rain sensor.

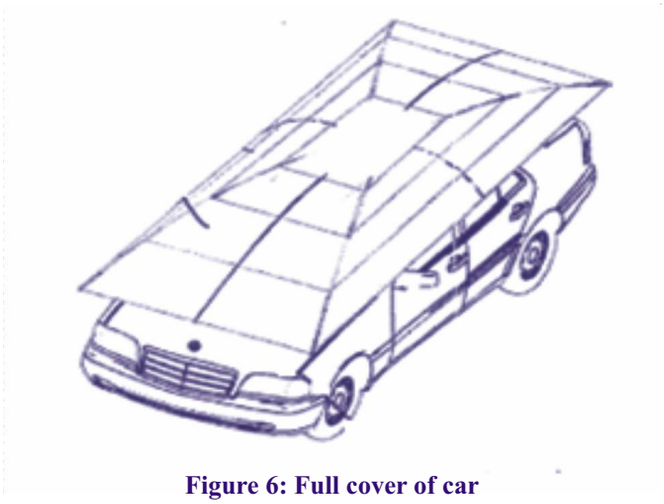

Figure 6: Full cover of car

Rain sensing module is used for working as auto roof. The drawback of this invention is whenever the sensor sense the rain , it will automatically open the cover . Mostly, this cover is used in parked mode. This cover should be fix manually first and then it will be controlled by push button. The drawback of this invention is that the cover should be adjusted manually first. Afterwards, the cover would be fold and it will come in umbrella shape at the roof of the vehicle. The height of the umbrella will disturb in driving.

3. FUTURE SCOPE

The author is trying to overcome the problems coming in above inventions. In this paper, the idea is to protect the person from the rain while coming in and out from the vehicle and is described in an innovative approach.

In this, IOT microcontroller, motor, canopy or sheets are used. There will a push button on vehicle key. Before entering the car, press the button from the key, a sheet will come out with the help of the signal transmitted by IOT and give signal to motor to take the action and it will cover the space near car door, so that the person while entering the car will not be in contact with rain. Similarly, while coming out, the person will off the engine and press the button on key to open the wings. By this the person will able to open the umbrella after coming out from the car. This invention is very useful as it will cover the whole full space between the door and car body, and the person will be protected from the rain.

Following design shows the opening of the sheet, when the person press the button on the key.

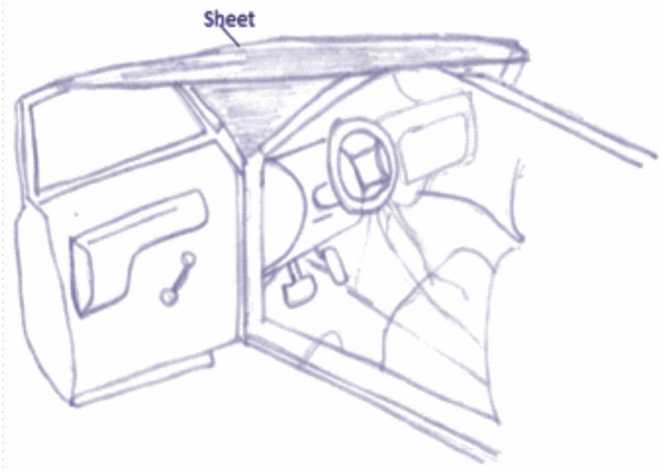

Figure 7: Automatic corrugated sheet attached with rod

The sheet is attached with microcontrollers and is mounted on a rod which is also controlled by the button on key. The button will command the rod on which side the sheet is required. The automatic moving rod will allow the sheet to protect a person on back seat or on front seat. The sheet has an automatic system which has one more sheet inside that, which will operate according to the press command. The corrugated sheet is not attached with door. The sheet is moveable and could move towards front side and back side as per the requirement. The key has the control on which side sheet is required. The person will press the button on key accordingly.

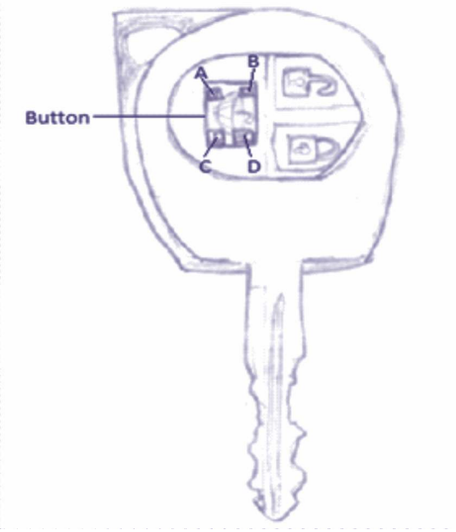

Figure 8: Car key

The key consists of a button which is in umbrella shape, and has four small buttons A, B, C, D. This small button shows which side we need the sheet. A and B are for front doors, when we need sheet for person coming in /out from front doors. C and D has control the back doors, when person sitting on back seats want to come in/out, the the sheet will move towards backside and will open automatically after pressing the button.

Now, will discuss how actually the whole system will work. In rainy season, When a person wants to come in/out from car, he will press the button from the key and the sheet will come out according to the direction the person need. Suppose the person is on driver seat and want to come out. He will turn off the engine and press the button A from the key. The sheet will come out straight first and then automatically one more sheet will come from that sheet to come the front portion, so that the whole area will be covered by the sheet. Similarly, if we want to use the sheet for any other seat, we will press that particular button and with the help of rod the sheet will move and will cover that space.

The whole process of key could also be operated through a mobile application which will control the movement of sheet in all directions. Just by giving commands through mobile app. using IOT we could operate the whole system.

Following figure will show the top view consisting of sheet and rod.

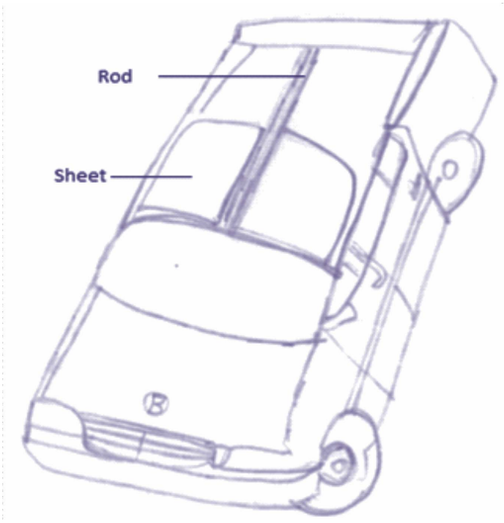

Figure 9: Showing moveable sheet attached with rod

This invention is very useful as the person will not be in contact with rain. We have an additional invention also.

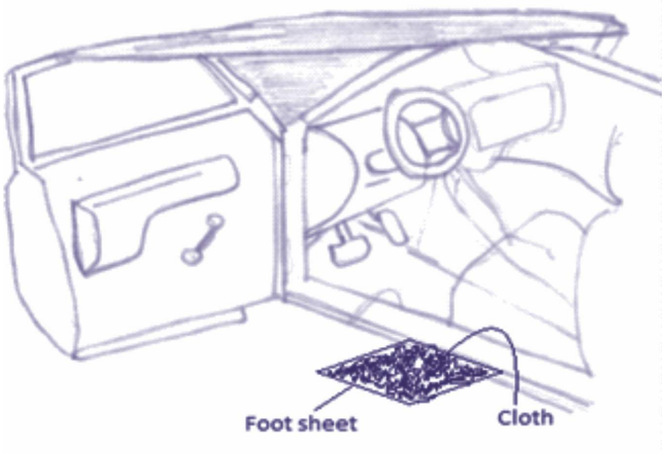

Figure 10: Foot sheet with cloth on it

The invention also consists of a sheet attached at the lower part of the door to rub the shoe over there and then enter the car. Following diagram will give us more clarity about the additional invention.

The foot sheet operates manually. When a person enters the car, their shoes are wet and dirty. So, when they enter while sitting, they can pull this sheet and rub their shoes and sit properly and could easily drive the car.

For sheet on the top, we don't need four sheets to protect all the person coming out from car, as there must be maximum use of two and even one single and the driver could park the vehicle in protected area so that all other person could come in /out. Both the above inventions are very useful and could be implemented for the protection and safety of the citizens.

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