Automatic thief identification system in automobile

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ABSTRACT: *In this research paper, we are focusing on automobile thief evidence giving and recovery of stolen vehicles. The main purpose of this paper is to introduce new system i.e. automatic thief evidence giving system in automobile. In this system we are using IR (Infrared) pair. Transmitter of IR pair is placed at driver's seat and receiver is placed on speedometer in such a way that they will correspond to each other. Whenever person sits on driving seat and starts the car, power supply automatically will get to the circuit mounted inside the car and circuit gets started. As circuit is on, light emitted by transmitter will not be received by receiver mounted in circuit on speedometer, as the person is sitting on driving seat, therefore it creates barrier between transmitter and receiver. Now the generated signals go to circuit and camera will automatically turned on and starts to capture the three pictures in short span. This captured picture will send to the owner of the car in the form of MMS (Multimedia Messaging Service). Then owner receives MMS and decides the person driving the car is known personality or not. If not, then owner will report to the police with evidence of picture got via MMS. Therefore, it will be easy task for police department to find thief and stolen vehicles. So this system would be very helpful to the owner and police department too.*
Therefore, use of automatic thief identification system in automobile will increase the recovery of stolen vehicle.

Keyword: IR (Infrared) pair; MMS (Multimedia Message Service); LM324.

I. INTRODUCTION

By the time you finish reading this sentence, your car could have been stolen; in the U.S. alone, a vehicle is stolen every 43 seconds, according to the FBI's 2010 Crime Reports. Though there's no guarantee your car won't be a thief's next victim, there are some things you can do to improve your odds without spending a fortune. Today car security is one of the challenging issues in our society. Biometric recognition, image processing, communication etc are the currently using techniques.

The car consists of a tiny digital camera (which is able to capture and send captured images automatically), of photodiode sensor, Receiver, LM324 IC, L293D IC. Digital camera is placed at such position that it can capture the images clearly. Main power supply to the overall circuit is supplied from the battery of car.

II. PROBLEM STATEMENT

Nowadays several automobile security system is available which uses GPS (Global Positioning System), Face Recognition System. Use of GPS(Global Positioning System) gives the information about the location of car, but no such system is available which gives the information or evidence in the form of image about the thief who stolen our car. To overcome this existing problem, Automatic Thief Identification System In Automobile would be useful.

III. OBJECTIVE

The main objective of this system is to give the evidence in the form of image regarding who steal our vehicle. Use of this system will increase rate of recovery of stolen vehicles and also reduces automobile theft crime.

IV. ANALYSIS

Many times we observed that single thief steals more than one vehicle, so it is necessary to introduce such system which is capable of giving evidence or the information regarding thief .By using such system, it is possible to reduce rate of car theft and to increase the rate of recovery of stolen vehicles. When somebody stolen the car enabled with the GPS(Global Positioning System),that system gives only the information regarding the current location of car but did not give any evidence about the theft who stolen the car. Considering about India,

everyday more than 40 vehicles get stolen in only Delhi. The city accounts for 9.7% of motor vehicle thefts in the country, second only to the much larger states of Uttar Pradesh (14.1%) and Maharashtra (12.7%), says the latest National Crime Records Bureau report. At 87.6 per one lakh population, Delhi also has a much higher rate as compared to the national rate of 12.5. Only 20% of these stolen vehicles are recovered, say cops. In 2011, 14,668 motor vehicles were stolen in Delhi, which is a marginal decrease from 2010's figure of 14,966. While 9,203 of these vehicles were two-wheelers, 5,050 were cars. Only about 2,957 of these vehicles were recovered, show Delhi Police statistics. Many of the stolen vehicles are used by criminals in the commission of other crimes, making this a problem area for the police. Delhi Police has been sending out advisories to the public through advertisements and leaflets requesting vehicle owners to buy security gadgets.

| Year	Stolen	Recovered
2010	14,966	1,892
2011	14,668	2,957
2012	14,391	2,576

Table 1 Record of number stolen and recovered vehicles in Delhi.

V. WORKING OF SYSTEM

The power is supplied from the battery of car which is converted by using IC7805 into 5V DC voltage which is necessary to drive the circuit. When the car is not started, although connection is completed yet power is not supplied. As soon as key inserted into key hole and ON, the power is supplied from the battery of car to the circuit and the overall circuit get activated. When the person is sitting on driver sit, connection between transmitter and receiver get disconnected because of barrier (person sitting in driver sit).

When connection between transmitter and receiver is disconnected, internally signals goes to LM324 IC, then further signals are transmitted i.e. '1' or '0' to the L293D IC(driver IC).As shown in circuit diagram, output of LM324 IC is connected to input of L293D IC. Input of digital camera is connected to the output of L293D IC. When the signal is 1 transmitted from LM324 IC to L293D IC, then camera gets ON and starts capturing image of barrier(in this case person driving the car) which comes across transmitter and receiver. As soon as camera captures the image, it sends automatically the captured image to the owner of the car.

Now owner get the image and identify the person in that image if it is unknown personality, then the owner can report in the police station with the evidence which he got from the digital camera which is placed inside the car. So it is easy task for police to identify that theft by recognizing the picture with records of criminals. After that police will take further actions to catch thief and to find the stolen vehicles.

Dia. 1:- When power supply on and person not sitting on driver sit.
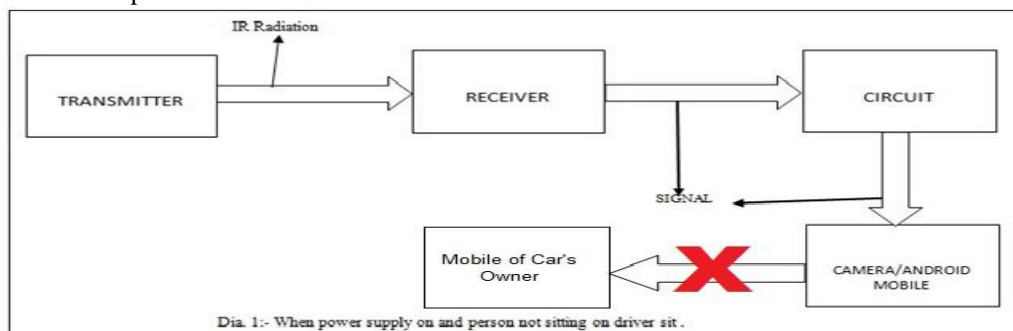
As shown in Figure 1, when the power supply is given to the circuit, the transmitter transmitted IR radiation which is received by receiver. As the person is not sitting on the driver seat, there is no barrier between

transmitter and receiver so the required signal is sent to the circuit and as there is no barrier; circuit will not allow the camera to do function of capturing pictures.

As shown in Figure 2,when the person is sitting on the driver seat, IR radiation between transmitter and receiver does not transmitted because of barriers, so the required signals sent by the receiver to the circuit and then circuit again send to camera, then it turn on and starts to capture the pictures. This captured image will be sent to the mobile of car's owner.

Dia. 2:- When power supply on and person is sitting on driver sit .
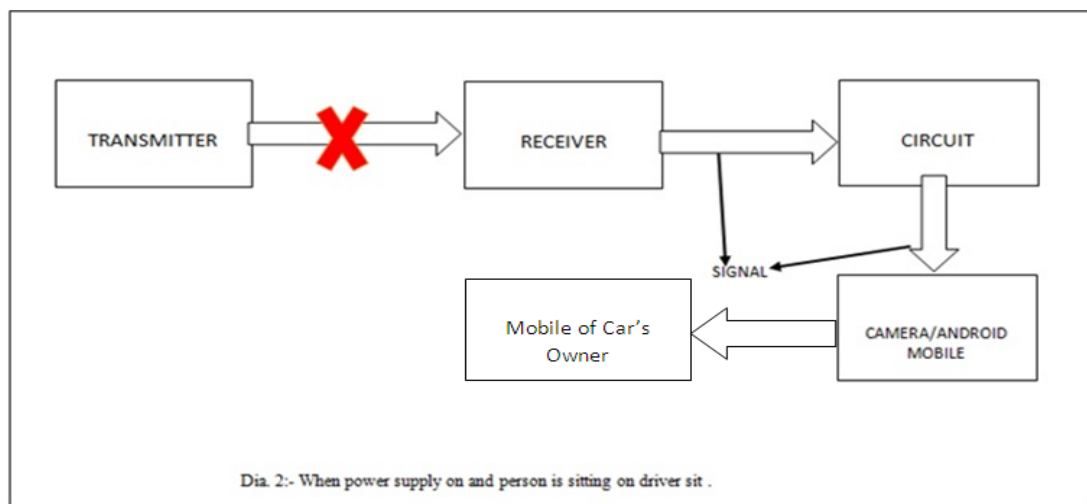
VI. ADVANTAGES

This system gives evidence about who steals the vehicles.
Easy circuit connection
Fully automated, no need of manual interfere during working of circuit.
Cost of system is less except camera.
System requires one time investment, no need of regular maintenance.
Helps to decrease in crimes like stolen vehicles and increase the safety of automobiles.
Rate of recovery of stolen vehicle increases.
Use of this system results in helping to police department.

VII. DISADVANTAGES

If person is wearing mask on face, so received image did not clarify the identity of that person.

VIII. FUTURE WORK

Appropriate camera for this system is not available in market. Instead of using camera, android phone could be an alternative with application installed on phone which is able to capture and send the captured image automatically in few second.

IX. CONCLUSION

In this security implementation of car consist of MMS sending features is to avoid car theft. Use of this system will not only help to reduce the rate of car theft but also increase the rate of recovery of vehicles. Secured and safety environment system for automobile users and also key points for the investigators can easily find out the thief from the evidence in the form of image.

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