

SHECURE - A WOMEN'S SAFETY DEVICE

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Abstract- *Women are afraid of walking in our society alone. Besides women are in need of going out at any time in this era for living basics. Currently there are some women safety devices present. All these devices contain only one defensive property in them, which are not effective. The problem with these devices is that they may fail on occasions. If it doesn't work at that time, there is no means of alternative to them.*

For the above mentioned problem, we are helping the women by presenting a complete safety gadget, a gun shaped device which will increase the confidence of women to go out alone. We have included four modules in our gadget. In the shock module, the front edge of the gun is provided with a shock producing shield. It will help to prevent the women when someone tries to snatch the device from her hand by giving a minute current shock.

The Attacker module is a mechanical module where chloroform is sprayed on the attacker's face as soon as the gun is triggered. In the siren module, we have included a loud siren. As soon as the gun is triggered, a loud noise is produced, which helps to gain the attention of the nearby people. And finally, the alert module, here the device will send an alert message and phone call to the nearby police station and favored people of the victim, as soon as the gun is triggered. This device is for women. It provides a complete self-defense for the women, mainly working. It is sure that the crimes are not going to end, as well as the number of working women, school and college going girls won't reduce. So it is obvious that there is a bright scope for this device in future. Thus this gun ensures the security of the women in various ways and helps to gain confidence to go free in this society.

Keywords—Women Safety, Devices for Women, Safety Gun, Self Defense, GSM, GPS, GPRS.

I. INTRODUCTION

India is a developing country with a high literacy rate. As literacy rate increases, the number of women and girls going to work and college increased. Along with that crime against women in society increased. India is the world's most dangerous country for women due to the high risk of sexual violence and being forced into slave labor, according to a poll

of global experts. Though Indian government tries to rectify the situation the most, the crime rate keeps on increasing. The situation can't be brought under control with the existing rules and regulations. Also, we can't stop women from going out of their homes for their survival. We need equality in all fields, so that we can imagine India as an economically stable and developed country in the future.

As an initiative we tried to give solutions for the above problems faced by women. Our main objective is to make women walk in society with complete self-confidence and independence. She should have the courage to pursue her dreams with complete concentration on her dream and not on 'what if' issues. Our motto is to provide a compact and complete self-defense device to women to achieve the above all.

II. LITERATURE SURVEY

K Seelam, [1] has proposed a novel approach to provide protection for women by using smart security devices. When the woman is in threat, the device senses the body parameters like heartbeat rate, change in temperature, and the movement of the victim by flex sensor, MEMS accelerometer and the voice of the victim is sensed by sound sensor. When the sensor crosses the threshold limit the device gets activated and traces the location of the victim using the GPS module. By using the GSM module the victim's location is sent to the registered contact number.

Sutar Megha and Ghewari M.U [2] have proposed an intelligent safety system for women security. By pressing the button of the system a helping message along with her location will be transmitted by the system to the police station and her few relatives, so that they will get aware of her current situation. Along with the message she is also able to give shock to the attacker with the help of the system.

Professor Smita Khairnar and a group of four students [3] have proposed a smart shield for women safety. The system is a smart wearable device which resembles a jacket. The device contains different modules such as GPS (Global Positioning System), GSM (Global System for Mobile communication), camera, buzzer, shock mechanism circuit.

The main objective of the system is to provide a reliable security system for women when they are alone or feel unsafe.

III. SURVEY

Women's security is a critical issue in today's world and it's very much needed for every individual to be acting over such an issue. This document describes a GPS and GSM based women security system that provides the combination of GPS devices as well as provides alerts and messages with an emergency button trigger. Whenever, somebody is in trouble. They might not have so much time all that they have to do is pressing the volume key. Especially women security has become the foremost priority of the world. System uses the Global Positioning System (GPS) technology to find out the location of women. When the women face into unsecured situations, to ensure safety, an automatic detection system needs to be established, which sends an alert message which includes the location of the police department. In this paper, we surveyed the existing mechanism for detecting locations, for sending communications and collecting physical parameters of the human body using sensors.

IV. PROPOSED WORK

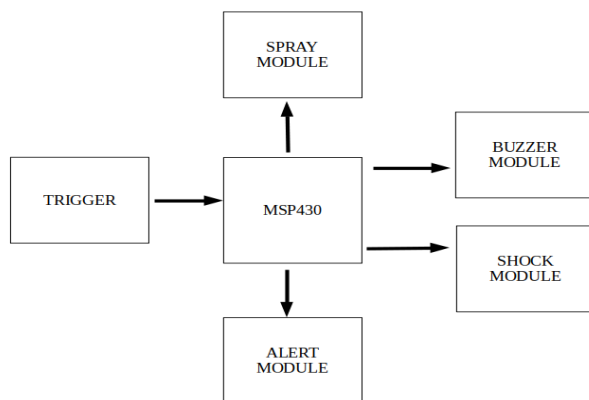


Figure 1 Block Diagram

Figure 1 shows the block diagram of our proposed solution. The gun shaped SECURE device will be controlled by its trigger. The shock module and the camera module will be activated when the victim holds the piston in hand. An array of CAP sensors attached in the pistol holder section at both sides will activate this module. The shock module will give shock to the attacker when he tries to take the gun from the victim. The Attacker module will be activated by pressing the trigger in the pistol twice. This module includes the Flash beam and pepper spray.

The Siren module will be activated by pressing the trigger in the pistol continuously for 10 seconds. This will alert the nearby people to help the victim. The alert module will be activated by pressing the trigger in the pistol for five times within a time interval of 10 seconds. A combination of GPS and GSM module used to send a SMS of the location where the victim is, to a list of recipients. Then automatically calls the emergency service contact and activates the Microphone so the Police can hear the conversation.

SHOCK MODULE:

We know that all our modules work on a single trigger, once triggered our gadget's shock gets activated. So if the threatening person tries to approach the victim, she can protect herself by attacking through shock. Since a metallic plate is provided at the front portion of the device it won't hurt the triggering person. Initialization of shock is simple and handling is highly efficient.

Modules are designed in such a way with a compact voltage supply, it will not cause severe danger to the person, since metallic plate is used rather than alloy since it is nontoxic. The device is compact in size wise and working wise.

ALERT MODULE:

SIM908 Module is a high-performance quad-band GSM / GPRS / GPS module of industrial grade, which can be controlled via the AT command set. It can be used to make or receive calls, to send and to receive SMS messages. Moreover, it can be used to send and to receive data after it is connected to the network. Besides, it can realize global positioning by locating its geographical position with GPS. SIM908 module is a complete Quad-Band GSM/GPRS module which combines GPS technology for satellite navigation.

The compact design which integrated GPRS and GPS in a package will significantly save both time and costs for customers to develop GPS enabled applications. Featuring an industry-standard interface and GPS function, it allows variable assets to be tracked seamlessly at any location and anytime with signal coverage.

SPRAY MODULE:

The component used in the spray module is servomotor. A servomotor is a rotary actuator or linear actuator that allows for precise control of angular or linear position, velocity and acceleration. It consists of a suitable motor coupled to a sensor for position feedback. It also

requires a relatively sophisticated controller, often a dedicated module designed specifically for use with servomotors.

The motor is paired with a type of position encoder to provide position and speed feedback. In the simplest case, only the position is measured. The measured position of the output is compared to the command position, the external input to the controller. If the output position differs from that required, an error signal is generated which then causes the motor to rotate in either direction, as needed to bring the output shaft to the appropriate position.

BUZZER MODULE:

In the buzzer module, we have included a loud siren. As soon as the gun is triggered, a loud noise is produced, which helps to gain the attention of the nearby people. Piezoelectric speakers can have extended high frequency output, and this is useful in some specialized circumstances, for instance, sonar applications in which piezoelectric variants are used as both output devices and as input devices. They have advantages in these applications, not the least of which is simple and solid state construction that resists seawater better than a ribbon or cone based device would.

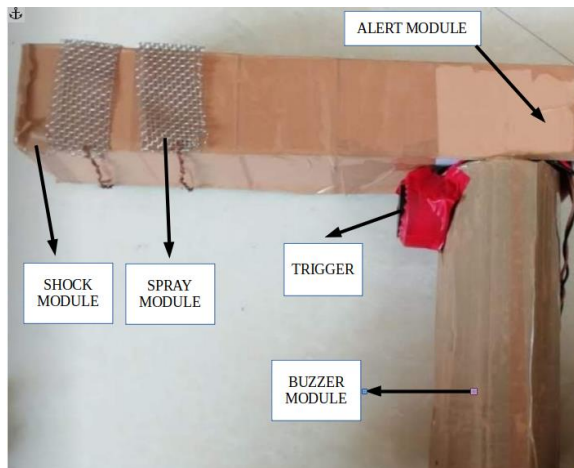


Figure 2 Final prototype - SHECURE

The figure 2 shows the final prototype of SHECURE.

V. RESULT

1. We have implemented the women safety device in the form of a gun. In this gun we have integrated all the 4 modules together.
2. The shock module is implemented at the top of the gun, by integrating the shock module with a metal sheet.
3. The buzzer at the bottom of the gun.
4. The spray module at the nostrils of the gun and the alert module within the gun.

5. All this will get activated once we pull the trigger of the gun.

VI. CONCLUSION

This device is for women. It provides a complete self-defense for the women, mainly working. It is sure that the crimes are not going to end, as well as the number of working women, school and college going girls won't reduce. So it is obvious that there is a bright scope for this device in future.

Thus this gun ensures the security of the women in various ways and helps to gain confidence to go free in this society. Even though we can't control the increasing crime rates in the society, it will be a better initiative to stop the crime that is happening. We hope for the well-being of women.

VII. FUTURE SCOPE

1. The size of the device can be reduced, so that it can be more compact for the users.
2. Camera module can be added for real time video transmission to the specific contacts.
3. GPS tracking system can be improved to alert nearby police stations.
4. Usage of GPS and GSM modules can be avoided by using the user's smart phone.

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