

Automatic Grenade Launcher

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ABSTRACT

The remotely operated vehicle (ROV) grenade launcher is a weapon system, which can launch grenade remotely by a human operator, remotely operated vehicle has a launching range of up to 40 meters. It is a launcher designed to be capable of destroying enemies (snipers) hiding in buildings. It has a firing range for up to 40 meters. It launches grenades remotely by a launcher mounted on the vehicle. The grenade will also be loaded into the launcher automatically by using motors so that there is greater precision in handling the grenades, which are yet to be launched. This system also has a mechanism to remove the safety pins of the grenade. The camera mounted on the remotely operated vehicle is to provide video surveillance at operator. The whole system is operated remotely by Wi-Fi to control various operations. The vehicle is connected to the launcher by a micro controller kit and the interfacing is done accordingly. The Army can rely on the automatic grenade launcher to fulfil the requirement. In particular, the REMOTELY OPERATED VEHICLE grenade launcher allows for the use of a launcher mounted on a remotely operated vehicle to be operated remotely and deploy grenades with a video assistance. Along with the launcher's position, remotely accessible camera, and the motion of the remotely operated vehicle are interfaced to a microcontroller. The safety pin removal system to remove safety pin of the grenades is also integrated to the circuit. Usage of the belt tires will help to minimize noise and favours the disguise of the vehicle. The video assists a wider vision to the operator, which helps to set the position of the launcher. In cases of incursions by the terrorists and capturing hostages, this REMOTELY OPERATED VEHICLE will be an important asset, this system puts at an added advantage to secure parameters without a human life risk.

Keywords : Remotely Operated Vehicle, PCB, Grenade Launcher

I. INTRODUCTION

Tele-robotically operated and semiautonomous machines have become a major component in the arsenals of industrial nations around the world. Military leaders want autonomous robots, because they are more cost-effective and give a risk-free war. Although there are many reasons for the use of robots on the battlefield, perhaps one of the most interesting assertions are that these

machines, if properly designed and used, will result in a more just and ethical implementation of warfare.

A grenade is an explosive weapon typically thrown by hand, but can also refer to projectiles shot out of grenade launcher. Generally, a grenade consists of an explosive charge, a detonating mechanism, and firing pin inside the grenade to trigger the detonating mechanism. Once the soldier throws the grenade, the

safety lever releases, the striker throws the safety lever away from the grenade body as it rotates to detonate the primer. The primer explodes and ignites the fuze (sometimes called the delay element). The fuze burns down to the detonator, which explodes the main charge. There are several types of grenades like the fragmentation (frag), high explosive (HE) concussion and smoke grenades.



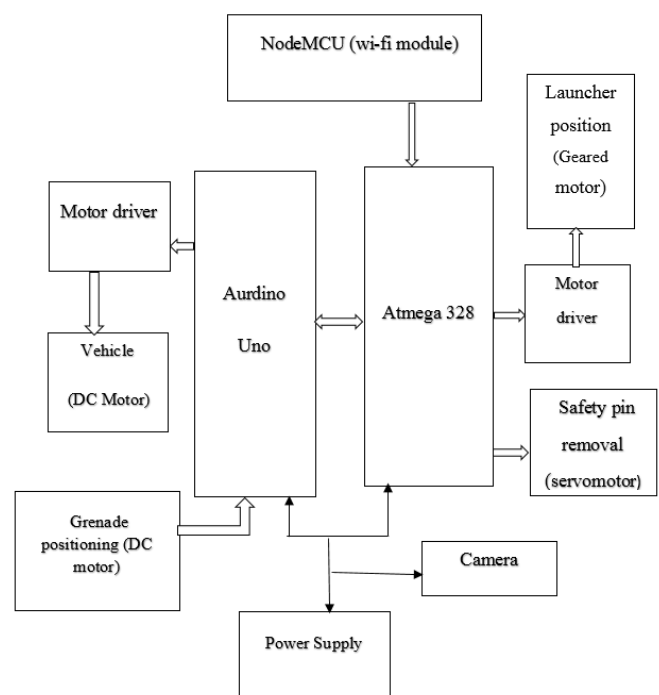
grenade into the launcher so that there is greater precision in handling the grenades, which are yet to be launched. The Safety pin removal mechanism is a basic circuitry that uses stepper motor to hook and remove the safety pin. The camera mounted on the remotely operated vehicle provides video surveillance at operator. Wi-Fi to control various operations remotely. The remotely operated vehicle is connected to the launcher by a microcontroller kit and the interfacing is done accordingly.



II. METHODS AND MATERIAL

This remotely operated vehicle is an unmanned remotely operated vehicle interfaced to that is grenade launcher capable to fire and store 3 grenades. It can be divided into two parts as Remotely operated vehicle and Launcher. The remotely operated vehicle is a remotely operated vehicle, which has four wheels interfaced to motor driver and further to the microcontroller. To reduce the noise and to create a remotely operated vehicle that can be used on a terrain a belt drive is used for its locomotion. The launcher is more-of-a mechanical part of the REMOTELY OPERATED VEHICLE. A helical concentric spring is used to launch the grenade in the air; servomotor is used to keep the spring in a defined position. There are servomotors connected to the launcher to give it a perfect angle. Motors and belts are used to load the

Block Diagram



III.CONCLUSION

Automatic grenade launcher can be divided into two parts launcher and remotely operated vehicle. We have simulated the working for the remotely operated vehicle and created PCB layouts for those . The remotely operated grenade launcher allows for the use of a launcher mounted on a remotely operated vehicle to be operated remotely and deploy grenades with a video assistance. We created a remotely operating vehicle by interfacing Atmega328 to DC-motors by using L293D. Wi-Fi Trans-receiver is used for communication.

IV.FUTURE SCOPE

Range can be increased by adding additional springs. One can add drone for video surveillance.

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