## Poisoning prevention device for unpowered internal combustion engines

Author: Zheng Junming

Min Zhenran Chen Xuyan

Zhixin High School

1. Generation of inventions

When using the engine, carbon monoxide is generated, and traditional carbon monoxide alarm devices cannot be installed on the engine. It use internal batteries or external power sources, That resulting in high power consumption.

Our team member finds sparks after a short connection between the engine shut-off wire and the engine housing, we wonders if a new carbon monoxide alarm can be designed to power the carbon monoxide alarm using the shut-off wire.

The present invention is the first "no power supply" in the world. It does not need internal batteries and external power supply. Through a new circuit design, the carbon monoxide alarm device can be powered by a fire shut-off wire, while the engine can be shutdown by a short connection, It can protect personal safety.

2. Project display of Poisoning prevention device for unpowered internal combustion engines



Fig. 1: Project display of Poisoning prevention device for unpowered internal combustion engines

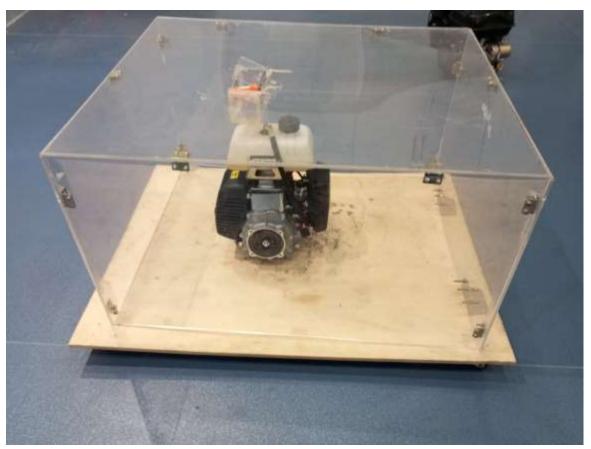


Fig. 2: Project display of Poisoning prevention device for unpowered internal combustion engines

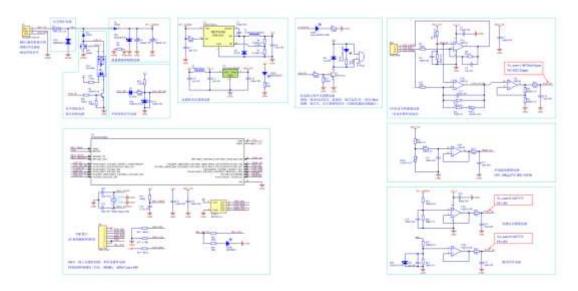


Fig. 3: Circuit diagram of self-designed carbon monoxide alarm device

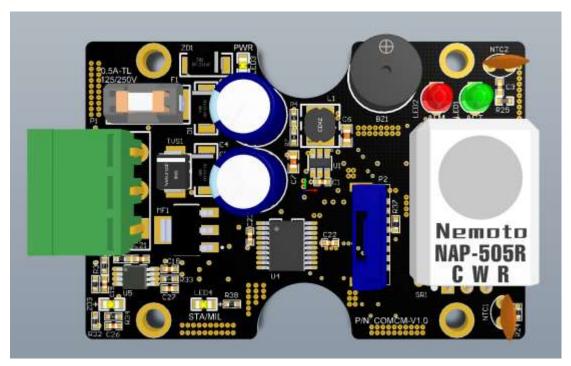


Fig. 4: PCB 2D 3D design of Poisoning prevention device for unpowered internal combustion engines

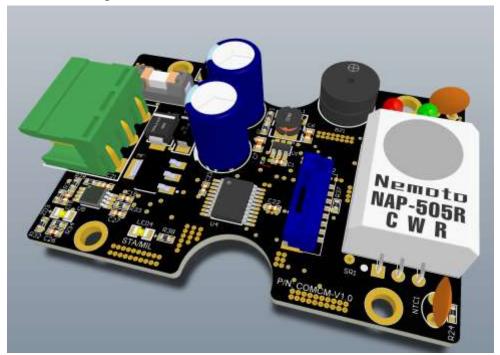


Fig. 5: PCB 2D 3D design of Poisoning prevention device for unpowered internal combustion engines

3. Pictures of project members participating in Market Research



Fig. 6: Our team members conduct market research on probationers



Fig.7: Our team members are discussing how to improve the solution

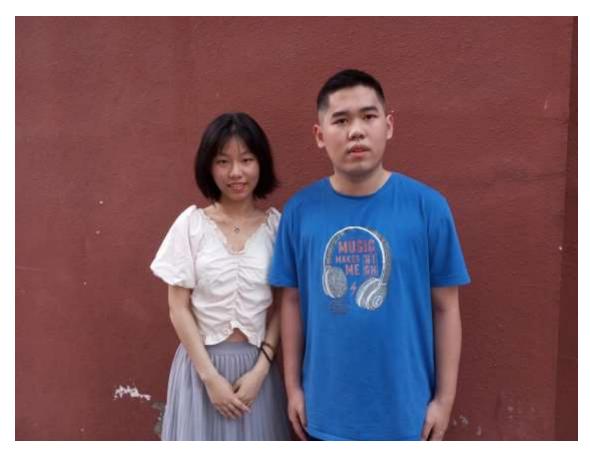


Fig.8: Team members do market research in Guangzhou

The design of this project ensures no risk of carbon monoxide poisoning by detecting gas concentration. In view of the existing problems of carbon monoxide alarm device, this product proposed for the first time to design a new carbon monoxide alarm device to supply power to the carbon monoxide alarm device by using the shut-off wire, which perfectly solves the problem of high energy consumption, not being able to shutdown in time, and not durable.