"REVIEW OF AUTOMATIC SPEED CONTROLLER ON TRAFFIC SIGNAL"

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ABSTRACT: *In India from the past few years, there are number of drivers break the traffic signal to save time, due to this human behavior, there is high risk of life and accidents are very much frequent and pedestrian crossing across are too not safe. So, we are trying to deescalate this possibility accidents by installing this project on traffic signal. Over prime native for development of this project is for those drivers who avoid traffic signal. In this system when signal turns red the spike shaft rotate 90^0 about its own axis and come perpendicular to road whereas, when signal turns green the spike shaft comes to rest or rotate 90^0 to 0^0 about its own its own axis. In emergency condition like ambulance with patient approaching towards signal, this system automatically sense the sound of siren and direction and spike shaft comes to rest parallel. In this way our project will be beneficially for society.*

1. INTRODUCTION

Road transport is the important mode of transportation in India. India has large network of road throughout the country. India faces the highest number of accidents in the world ministry of road transport and highways report reveals that India witnessed one road accident every minute in year 2018 which claimed one life in three minutes. A total number of 4, 38,000 accident recorded in 2018 due to breaking of traffic signal.

The concept of this project work is to have an automatic speed controller on traffic signal means that the signal becomes red then it gives command to AC induction motor which is attached to the shaft through the gear box and the spikes come out perpendicular to the road and when the signal becomes green the spike should be goes to rest position. Due to this system all drivers strictly obey the traffic rules. This project is help to follow the traffic rules and prevent 80% of road accident

2. LITERATURE REVIEW

The basic version of this system was initially installed in Pune and Noida. Now the municipal corporation of Gurgaon is thinking to install. We visited to pune and made a detailed study of the basic system. From this we were inspired to develop this system on traffic signal and try to make it advance to manage all vehicles on signal. And we are trying to develop this system to avoid the accidents on traffic signal.

3. DESIGN AND FABRICATION OF FRAME, SPIKES AND SHAFT

While designing the frame, the main motive is to sustain the load of all vehicles which are passing through it. Hence we designed and fabricated the part strong enough to sustain the static and dynamic load. That's why we selected the tough material carbon steel SAE 1030 for the fabrication. We have designed the frame and surface plate to give the mechanical support to all components which are mounted on it. Also we design the shaft which is of diameter 40 mm to lift the load of vehicle at ease. And the spikes are mounted on the shaft by the

means of welding. Thus the whole system is easy to understand and maintain it.

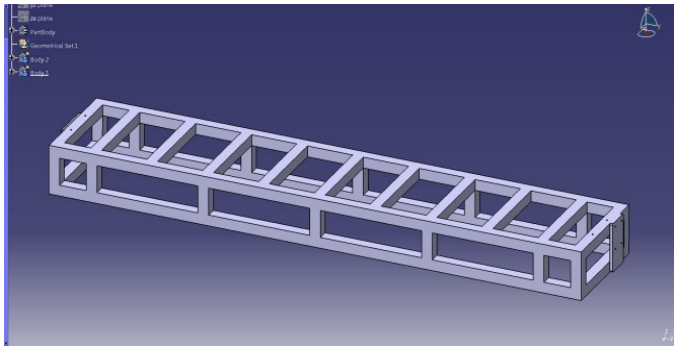

Figure 1: Frame CAD Model

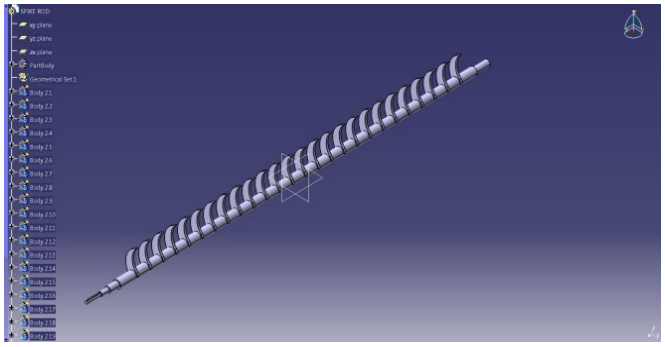

Figure 2: Spike shaft CAD Model

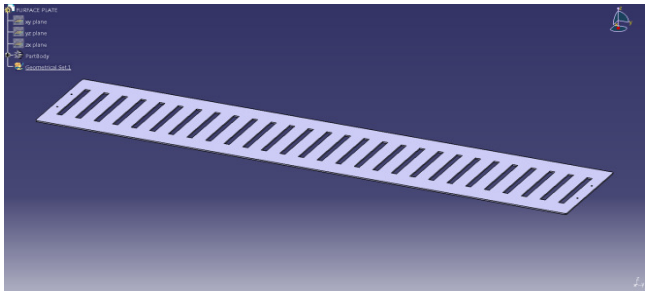

Figure 3: Surface plate CAD Model

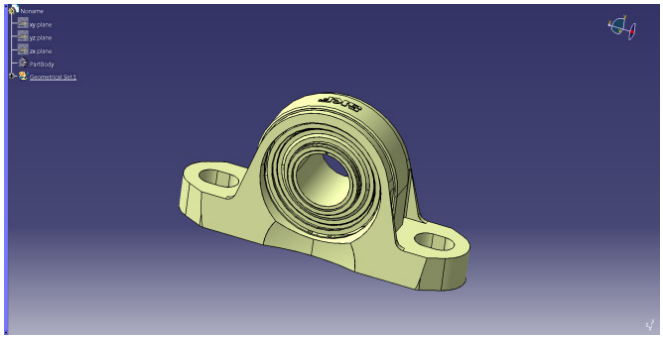

Figure 4: Pillow block bearing CAD Model

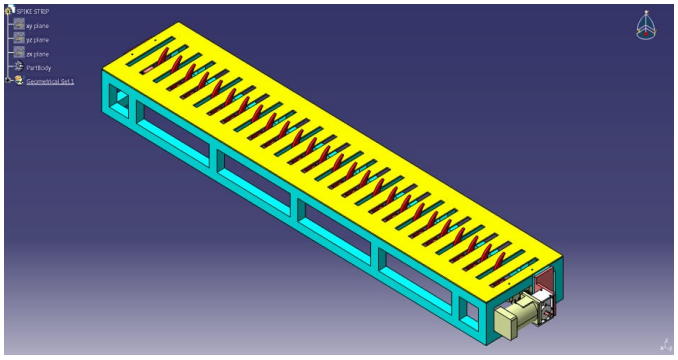

Figure 5: Complete assembly CAD Model

Justification: Round fully solid shaft are able to lift the load of all vehicles easily.

Fabrication process: Cutting, Welding, Grinding, Facing, Turning, Drilling.

Dimension:

Sr. No.	Description	Dimension
1	Length of Frame	2000 mm
2	Width of Frame	400 mm
3	Height of Frame	180 mm
4	Diameter of Shaft	40 mm
5	Length of Shaft	2100 mm
6	Type of Bearing	Ball Bearing
7	Bearing Number	0406
8	Type of Gear box	Planetary Gear box
9	Gear ratio	**4.5:** 1

Table 1: Dimension

Electrical Specification

Sr. No.	Description	Specification
1	Power of motor	3 HP
2	Type of microcontroller	Aurdino mega microcontroller
3	Power supply	single phase

Table 2: Electrical Specification

4. SAFETY AND ERGONOMICS

Safety is the most important concern in this system. Hence, ergonomics is designed perfectly for the comfort of all traffic police, drivers, and pedestrian also.

5. CONCLUSION

This project is very helpful for all the drivers who are passing from the traffic signals. It is also very important to minimize the chances of accidents which are occurs on squares. It also helps to reduce the man powers who are working on traffic signal. This system is automatic which runs on traffic signals system. The mechanism is very efficient and easy to understand. This system is made up of tough material carbon steel to sustain the load.

In the current system of traffic signal, some people try to break the signal when it is red. But in comparison of our current system people cannot able to break the traffic signal. This design of automatic traffic controller was based on the standard data available.

6. FUTURE SCOPE

While using the sensor in this project there are different types of sound on the signal which will be difficult to recognize the actual sound of Ambulance. We can modify this by using sensor and image processing unit. Image processing captures the images of ambulance and sends command to feedback system to respond

7. REFERANCE

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