A Novel Concept and Innovation - Green Light for Safety, Fuel Saving, Pollution Control and Motion Indicator in Automobiles

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ABSTRACT
Green light for safety, fuel saving, pollution control and motion indicator in automobiles is a novel innovative idea being propagated by the author. The Introduction of green light at rear end of the vehicles will give us the information about the motion of the vehicle in traffic on road and will also increase the life of gear, clutch plate and engine thus giving high fuel efficiency. It will provide safety to all vehicles on road. It will minimize pollution on road. Thus, GREEN LIGHT will prove a boon to Indian automobile industry and world too. The concept has been tested on Indian roads and yielded excellent results.

I INTRODUCTION

This invention relates to introduction of GREEN LIGHT for safety, fuel saving, pollution control and motion indicator in automobiles.

At present, every vehicle is provided with red light, orange light and white light at the rear end of the vehicle. Red light shows the application of brake, orange light shows the direction of turning of the vehicle and white light is on when the vehicle is put in reverse gear. In most of the vehicles orange light or indicators are provided at front, rear and sides of the vehicles.

Now, there is no such light which can tell about the motion of the vehicle, whether the vehicle's engine is using its power to move or going on in rolling condition.

According to the proposed invention a GREEN LIGHT is introduced at the rear end of the vehicle. The green light is 'ON' when the vehicle is using its engine's power to move. At present, when we drive behind the vehicle we continuously make assumption about the motion of the vehicle in front of us. This GREEN LIGHT will give exact information about the motion of the vehicle. Therefore, by this information the frequent use of accelerator is avoided in the vehicle behind, thus saving fuel indirectly.

It consists of a circuit connected to gear, clutch and accelerator of the vehicle to the GREEN LIGHT. It has also got a FAIL SAFE circuit connected to red light and a buzzer which is on when the GREEN LIGHT get fused at the rear end of the vehicle. It involves use of 3 micro switches at gear, clutch and accelerator a two way switch(in demonstrative prototype), a green led light, a green led indicator on dash board, a red led indicator on dash board a buzzer and a battery. The GREEN led light at the rear end of the vehicle with green led indicator on dash board glows when the vehicle is put into gear, clutch is in the released position and accelerator is in pressed position. This show that vehicle's engine is using its power to move & you can freely go behind the vehicle because of green light motion indicator.

II DETAILED DESCRIPTION OF THE INVENTION

A specific embodiment of the invention will now be described with the help of circuit diagram. The circuit consists of 3 micro switches, a two way switch(in demonstrative prototype), a green led light at rear end of the vehicle, a green led indicator on dash board, a red led indicator on dash board, a buzzer and a battery. The 3 micro switches are connected to neutral gear clutch and accelerator in series. Then this is connected in series to a green led light at rear end of the vehicle and green led indicator on dash board with a two way switch. The buzzer and red light indicator on dash board are connected to the two way switch and a battery.

The modified vehicle will have following components related to the green light.

(a) Gear switch
(b) Clutch switch
(c) Accelerator switch
(d) Two way switch
(e) Green led indicator on dash board
(f) Buzzer
(g) Red led indicator on dash board
(h) Green led light at the rear end of the vehicle
(i) 12 V Battery
(j) Two way switch first terminal point
(k) Two way switch middle terminal point
(l) Two way switch bottom terminal point
(m) resistance

The circuit proposed with above component for which Patent is pending is a failsafe circuit. Whenever the green led light at the rear end of the vehicle gets fused this failsafe designed circuit will get activated and red led indicator on dash will start glowing and buzzer will get blowing giving a warning to the driver to get repaired his vehicle's green light at rear end of the vehicle.

According to this invention when the vehicle is put into gear, the gear switch gets on, when the clutch is released the clutch switch gets on and when the accelerator is pressed the accelerator switch gets on with two way switch in first position the green led light at the rear end of the vehicle glows with the green led indicator on the dash board glows and tells the driver about the on & off position of the green light at the rear end of the vehicle.

III FIELD TRIALS

The author has carried out extensive trials on vehicles in day night conditions different drivers and with different makes of vehicles. The results are tabulated on Table 1. The average saving as works out as follows-

Table 1

Field Trials with Bajjaj Super Scooter

Driver No.	Wt. of Driver & Pillion	Age in Years	Green light fitted or Not	Fuel Quantity in ml.	Initial Reading	Final Reading	Distance Travelled in Km.	Extra milage due to Green Light
1	59 kg.	24	No	100	53470.000	53473.750	3.750	
	and 60 kg.		Yes	100	53474.000	53477.975	3.975	**0.225**
2	58 kg.	35	No	100	53479.000	53482.900	3.900	
	and 60 kg.		Yes	100	53483.000	53487.275	4.275	**0.375**
3	60 kg.	45	No	100	53488.000	53492.000	4.000	
	and 59 kg.		Yes	100	53493.000	53497.275	4.275	**0.275**
4	62 kg.	46	No	100	53498.000	53501.275	3.275	
	and 60 kg.		Yes	100	53502.000	53505.555	3.555	**0.280**
5	52 kg.	48	No	100	53506.000	53510.140	4.140	
	and 60 kg.		Yes	100	53511.000	53515.250	4.250	**0.110**
6	79 kg.	34	No	100	53516.000	53519.950	3.950	
	and 60 kg.		Yes	100	53520.000	53524.150	4.150	**0.200**

Direct Fuel Saving Data Calculation of Green Light Project

$$Average = \frac{Total\ of\ Differences\ in\ Km.}{No.\ of\ Differences}$$

$$= \frac{0.225+0.375+0.275+0.280+0.110+0.200}{6} = .25\text{km}$$

The same trials were done with Hero Honda for which results are tabulated on Table 2. The average savings works out as follows.

Table 2

Field Trials with Hero Honda 100 cc

Name of Driver	Wt. of Driver & Pillion	Age in Years	Green light Fitted or not	Fuel Quantity in ml.	Initial Reading	Final Reading	Distance Travelled in Km.	Extra milage due to Green Light
1	50 kg.	18	No	50	29623.000	29625.400	2.400	
	and 54 kg.		Yes	50	29626.000	29628.900	2.900	**0.500**
2	54 kg.	19	No	50	29630.000	29632.500	2.500	
	and 50 kg.		Yes	50	29634.000	29636.975	2.975	**0.475**
3	58 kg.	34	No	50	29638.000	29640.250	2.250	
	and 50 kg.		Yes	50	29641.000	29643.550	2.550	**0.300**
4	52 kg.	48	No	50	29645.000	29647.150	2.150	
	and 50 kg.		Yes	50	29648.000	29650.800	2.800	**0.650**
5	80 kg.	49	No	50	29652.000	29654.550	2.550	
	and 50 kg.		Yes	50	29656.000	29658.800	2.800	**0.350**
6	59 kg.	24	No	50	29660.000	29662.250	2.250	
	and 50 kg.		Yes	50	29663.000	29665.650	2.650	**0.400**

In-Direct Fuel Saving Data Calculation of Green Light Project

$$Average = \frac{Total\ of\ Differences\ in\ Km.}{No.\ of\ Differences}$$

$$= \frac{0.500+0.475+0.300+0.650+0.350+0.400}{6} = 0.45 \text{ km}$$

IV BENEFITS OF THE INNOVATION

The green light gives us many advantages. It gives safety to vehicles on road because we get the actual information about the motion of the vehicle. It gives direct fuel saving to the vehicle because of green led indicator on dashboard of the vehicle as it monitors the use of gear clutch and accelerator thus giving high fuel efficiency. It also saves fuel indirectly in vehicles behind of the vehicle with green light as it reduces the frequent use of accelerator because of the information of the motion of the vehicle got from green light. In this way the use of the accelerator is reduced which decreases the pollution on road to a great extent because the frequent use of accelerator is avoided in all vehicles in traffic. Its cost is very less. It is an universal circuit and can be fitted to all vehicles irrespective of the fuel used in the vehicle. Following are the benefits summarized:-

(a) Direct Fuel Saving in Automobiles due to dashboard indicator which increases life of clutch plate and engine and gives high fuel efficiency.

(b) Indirect Fuel Saving in Vehicles coming behind by giving the important information about the motion of the vehicle reducing the frequent use of accelerator and brake thus saving fuel.

(c) Due to reduced use of accelerator the pollution is minimized to a great extent in heavy traffic and cities.

(d) Green light will provide safety in Vehicles because it will alarm the vehicles coming behind about the exact motion of the Vehicle. Will help in preventing accidents.

(e) This will provide carbon credit to our country by reducing the carbon content in the atmosphere.

(f) The cost of this green light motion indicator circuit is very less but the benefits advantages are more.

(g) It has got a failsafe circuit whenever in future the green light gets fused. The buzzer blow and red light indictor glow on dashboard and when the driver gets repaired it then only it will stop blowing.

(h) The Led light is used in green light motion indicator which consumes very less power thus will required less power consumption in operation.

(i) By red light we always get a negative feeling to stop & stop. But by this green light we will always get a positive feeling to move forward and forward. A great Positive feeling.
(j) It is universal circuit. It is applicable for all vehicle, two wheelers, four wheelers etc.
(k) It will act as motion indicator in Automobiles and have to be implemented in all vehicles to get the most benefit from it. It will prove a boon and milestone in Automobiles Industry in India and world too.
(l) It is first of its kind in world's Automobile being introduced by India. It is under patent process at patent office Mumbai.
(m) It will also help in increasing the speed of traffic in cities as we will get important information about the motion of the vehicle.
(n) It has been telecasted on Doordarshan in 2012 and 2015. The practical demonstration of green light is observed by Engineering Students and Pollution Control Engineers and public and where much satisfied by it and appreciated it very much.

V CONCLUSION

By modifying the tail indication in automobiles with a green light and simple circuit designed by the author for which patent application has been filed can, not only save valuable fuel but can ensure better road safety and earn lot of carbon credits for the country.