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Safety system for four wheelers by seat belt

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A security factor in an automobile plays an enormous role in saving lives during accident. Accidents that happen during road trips are unfortunate and cause loss of precious lives. To minimize the loss of life several safety factors are being made mandatory; one among them is compulsory wearing seat belt. The seat belts keep the occupants positioned correctly for maximum effectiveness for airbag. If the seat belt is not locked properly the driver and co-driver are likely to get more injured during accident. Driver normally avoids seat belt or they will bypass from their chest and will lock the buckle to activate the airbag. In our project, we have designed a security based seat belt usage in a proper way. Our security system design allows the vehicle to start only if the seat belt is correctly locked. We also designed a system for co-driver. This technology is low cost but more effective. An LDR (Light Dependent Resistor) sensor is used for driver's safety, to ensure that he locks the seat belt correctly. Thus, the safety concern of driver and co-driver is improved.

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Modified rack and pinion speed control governor

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Our theoretical interpretation of the rack and pinion speed controlling governor was inspired by the basic "Cork Opener" used to open wine bottles. Our objective is to design a cheaper and efficient speed governor, to promote its use in the general public, to help in declination of high speed vehicle mishaps and to protect the environment from pollution by burning lesser amount of fuel. The gear controlled speed governor employs the rack and pinion mechanism in a way that is similar to the way it is used in a wing bottle opener but with reversed operation; the worm is modified into a cylindrical shaft that has teeth on the outer surface, it is placed centrally and is free from any rotational motion, the body consists of the housing which supports the two pinion gears on either side of the modified worm, the housing too is modified to monolithically hold a bevel gear at the bottom, the housing is in free rotation during operation owing to the rotation of the bevel gear which is connected to the rotating member of the engine or turbine. The pinion gears are in a perfect state of mesh with the modified cylindrical rack and are also connected to the arm or levers, the levers on either side hold the rotating mass (or balls) used to put inertial force in action. The cylindrical rack is extended beyond the housing on both sides; either side are held by a bush, the bottom side is extended further to be just above a spring rocker arm, similar to the one used for valve control in automobile engines and it is connected to the fuel supply throttle via a lever.

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