

Locking System in Two-Wheelers

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ABSTRACT: *This research work mainly developed to scale back the amount of vehicles stolen per annum. There have been 49,791 bikes stolen in 2010-that's over \$325 million in losses. There are various methods of prevention to scale back the likelihood of a vehicle getting stolen. A number of these include, Devices won't to lock a neighborhood of the vehicle necessary in its operation, such as the gunlock (manual), handle bar. Currently used alarm systems are easily be immobilized. In alarm type locking system, it'll only inform the owner by high sound when someone tends to maneuver or start the vehicle and stop the motor. But it'll not preventing the movement of the vehicle. During this paper is provided on the way to use value motorering technique to enhance the performance of wheel locking system using key and to develop a replacement design in pro e software. In wheel locking system, when key is in off state then both front and rear brakes are applied. This may prevent the vehicle movement when it's not in use. This might be finished disk brake system. The brake fluid is passing from the caliper to the reservoir. Therefore the brake piston releases the restraint against the disc. By applying the wheel locking system in two wheelers, we could reduce the amount of vehicles stolen per annum.*

KEYWORDS: DC motor, Ignition lock, Motor cycle, Pro-E, Value motorering.

INTRODUCTION

Motorized two-wheel vehicles like scooters, motorcycles and mopeds are very fashionable mode of transport thanks to their fuel efficiency and simple use in congested roads or streets. The amount of two-wheelers sold is several times that of cars. There have been 154.3 million powered two-wheelers in India in 2015 compared with just 28.6 million cars. Yamaha, Hero Moto Corp, Honda, TVS Motors, Bajaj Auto and Mahindra 2 Wheelers are the most important two-wheeler companies in terms of market-share. Motor vehicle theft may be a big problem in our country. When we parking a two wheeler, we check three to fourfold whether the locks are working perfect and every one locks including key lock, side lock, and gunlock are checked. This is often the present scenario in not only in India, all the peoples are felt by this problem. Nowadays peoples are using highly expensive bikes like Honda CBR 250R, KTM Super Duke, Ducati monster which costs around lakhs, therefore the vehicles need protective systems. In present the antitheft systems used are the key lock, gunlock, alarm systems are widely used.

Automobile industry is advancing at a high speed. Motor cycles are a significant patron in the field. With an expanding reliance of individuals on bicycles, it has gotten critical to guarantee high caliber and security of these motor vehicles. Be that as it may, certain deformities have been seen in the locking frameworks of these motor bicycles. Their locks are comprised of compound steel which is a feeble material and clears path for taking. Likewise, the keys to these locks become free after a specific time span. To conquer these blemishes, the construction, material and plan of the lock and key have been given another measurement. Cast iron has been utilized as a substitute for composite steel and has indicated high effectiveness in execution. Examinations demonstrated

improved outcomes in worry with the security and nature of these locks. Following is the portrayal of the advancement.

It will only inform the owner by high sound when someone tends to move or start the vehicle and stop the motor. But it'll not preventing the movement the vehicle. Gunlock is that the manual one. Whenever we'd like to place it back and locks. We'd like an efficient protective system because it automatically locks the vehicle when it under in locked state and it releases the lock when the vehicle is under ON state. We identified this problem and style a wheel locking system using key. It automatically locks the vehicle when it's under in locked state, and it releases the lock when the vehicle is under ON state.

A anti-lock brake system (ABS) is a security hostile to slip slowing mechanism utilized on airplane and ashore vehicles, for example, vehicles, bikes, trucks, and buses. ABS works by keeping the wheels from securing during slowing down, in this way keeping in touch with the street surface and permitting the driver to keep up more command over the vehicle.

ABS is a mechanized framework that utilizes the standards of edge slowing down and rhythm slowing down, strategies which were once drilled by able drivers before ABS was boundless. ABS works at a lot quicker rate and more adequately than most drivers could oversee. Despite the fact that ABS for the most part offers improved vehicle control and diminishes halting distances on dry and some dangerous surfaces, on free rock or snow-covered surfaces ABS may altogether increment slowing down distance, while as yet improving controlling control[1]. Since ABS was presented underway vehicles, such frameworks have gotten progressively modern and powerful. Present day renditions may forestall wheel lock under slowing down, however may likewise adjust the front-to-raise brake inclination. This last capacity, contingent upon its particular abilities and execution, is referred to differently as electronic brake force conveyance, foothold control framework, crisis brake help, or electronic steadiness control (ESC)[2].

Value Motorering:

Value analysis (VA) or Value motorering (VE) is a function oriented, structured, multi-disciplinary team approach to solving problems or identifying improvements. The value of a product will be interpreted in different ways by different customers. Its common characteristics are a high level of performance, capability, emotional appeal, style, etc. relative to its cost. This can also be expressed as maximizing the function of a product relative to its cost. Value is the least cost that can accomplish reliably a function or a service. This implies in achieving reduced cost, the quality and performance of the item are maintained. Therefore the value analysis is a technique which builds 'value' into a product. Lawrence Miles developed VA/VE technique is in 1945 based on the application of function analysis to the components of a product. The single objective of modern value analysis is to deliver to the user/customer the required functions at minimum cost and improve the function of existing system. The functional analysis technique is so powerful that is questions everything we do in order to meet the expectations of the customers at the lowest cost. The reason for the preference of this tool by the management is that this technique tries to identify and eliminate the unnecessary costs.

But while reducing or eliminating the cost, it takes into account that there is no deterioration of quality parameters. It is not a cheapening technique. Based on the functional requirements, it tries to fulfil the need, want and desire of the customers. And in a bid to avoid erroneous decisions of an individual, it advocates multidisciplinary team approach, and is based on scientific methods of data collection from reliable resources.

Pro-E:

Creo Elements/Pro (formerly Pro/MOTORER), PTC's parametric, integrated 3D CAD/CAM/CAE solution, is employed by discrete manufacturers for mechanical Eng. design and manufacturing. Pro/MOTORER was the industry's first rule-based constraint (sometimes called "parametric" or "variation") 3D cad modeling system. The parametric modeling approach uses parameters, dimensions, features, and relationships to capture intended product behavior and make a recipe which enables design automation and the optimization of design and merchandise development processes. This design approach is employed by companies whose product strategy is family-based or platform-driven, where a prescriptive design strategy is fundamental to the success of the planning process by embedding motorering constraints and relationships to quickly optimize the design, or where the resulting geometry could also be complex or based upon equations. Creo Elements/Pro provides an entire set of design, analysis and manufacturing capabilities on one, integral, scalable platform. These required capabilities include Solid Modeling, Surfacing, Rendering, Data Interoperability, Routed Systems Design, Simulation, Tolerance Analysis, and NC and Tooling Design. Creo Elements/Pro are often wont to create an entire 3D digital model of manufactured goods. The models contains 2D and 3D solid model data which may even be used downstream in finite element analysis, rapid prototyping, tooling design, and CNC manufacturing.

All data are associative and interchangeable between the CAD, CAE and CAM modules without conversion. A product and its entire bill of materials (BOM) are often modeled accurately with fully associative Motorering drawings, and revision control information. The associativity functionality in Creo Elements/Pro enables users to make changes within the design at any time during the merchandise development process and automatically update downstream deliverables. This capability enables concurrent Motorering— design, analysis and manufacturing motorers working in parallel and streamlines development processes[3].

Ignition Lock:

A bike key's the one which is employed to start out an automobile. Modern key designs are usually symmetrical, and a few use grooves on both sides, instead of a cut edge, to actuate the lock. Its multiple uses for the car with which it had been sold[4]. A key start the ignition, open the inlet valve petrol tank. Recently, features such as coded immobilizers are implemented in newer vehicles. More sophisticated systems make ignition hooked in to electronic devices, instead of the mechanical key switch. Ignition lock has the operation of starting and stopping the motor and locks the handle bar towards the one side (right or left). This action prevents the straight movement of

the vehicle. But, now people are very smart. They learned to start out the motor even without having the key; one man can easily lift the front side of the vehicle and begin to maneuver to his place, so here the key lock fails[5].

Wheel Lock:

This a coffee security mechanism mounted on the frame that immobilizes the front wheel by moving a steel bolt through the spokes to stop motion. It uses a straight or circular bolt which extends from the housing. U-locks are safer than most other kinds of locking mechanism because they're more immune to cutting with high-leverage hand tools like bolt cutters[6]. The gunlock is fully manual so whenever of starting we must pull out the U rod and convey in it to the provided holder and when we want to lock, we'd like to tug out the U rod from stand and bring it between the alloys. In alarm type locking system, it'll only inform the owner by high sound when someone tends to maneuver or start the vehicle and stop the motor. But it'll not preventing the movement the vehicle. For a particular distance of movement, it will turn of the ignition but it won't prevent the vehicle movement[7].

LITERATURE REVIEW

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CONCLUSION

The wheel lock mechanism can be configured to further improve the protection of the system by incorporating a value motorering principle. Preliminary work is being performed in this process to develop the wheel locking mechanism using the ignition key. The research and development process will be carried out in the next step.

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