Kinematic Walker Mechanism rotating 360 Degrees

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Abstract

The purpose of our project is to slow down and carry a restricted amount of load to this robot on any surface. It can be used for sewer maintenance monitoring. The design and manufacture of a moviegoer is part of this project. This six-legged kinematic walker can walk on any ground. It is an agreement of six connections which have one motor powered together. This unit is similar to a six-legged insect tested as a spider. Either a power supply or a battery can power the engine. The film walker has six legs, which move in order to move concurrently. Each of the six connections consists of a system of four bars.

Keywords-kinematic walker, Freudenstein

INTRODUCTION

This project introduces the filming of the motion for a six-legged and live-inspired mobile robot, as well as the control and control system, which enables the robot to move at distinct speeds on surfaces[1]. Stepping engines and bars are used to generate motion through a control system. The necessary movement is achieved through a frame, a connecting rod, a crank, and a lever[1]–[4]. A straightforward four-bar mechanism is used in this project. The main advantage of this system is that microprocessors, controllers and other actuator systems are not necessary[5]–[7].The applications of this system could also benefit military, law enforcement, explosive disposal units and private safety companies. It would work better than wheeled or tracked cars, as would the platform with the capacity to manage steps and other barriers. In this system, connections are linked by pivot joints and the rotating movement of a curtain is converted to a foot movement comparable to animal walking.The machine proposed uses a four bar chain fundamental mechanism and a quick return slotted lever with certain changes. The lengths of the connectors are synthesized by three precision points from Freudenstein (algebraic). The velocity and speed assessment of oscillating connections describes the impact of changes in the angular velocity and acceleration of cranks on all other connections. The proposed machine can move forward and backwards, turn right and left and rotate around a certain point on the specified instructions.

METHODOLOGY

Because of its small weight, aluminum is the material used for the project.The main benefit of legged robots is that wheeled robots can't have access to locations. The efficiency of mobile robots can be improved by replicating the physical composition of legged creatures. Scientists and technicians can introduce the corresponding biological ideas in their design in order to ensure more stable and quick walking.Behind earthquakes and in dangerous locations such as inside a nuclear reactor, legged robots can be used for rescues, providing independent legged, biologically motivated robots a wonderful potential. Further benefits of walking robots are low power consumption and weight and the minimum amount of actuators must therefore be used.

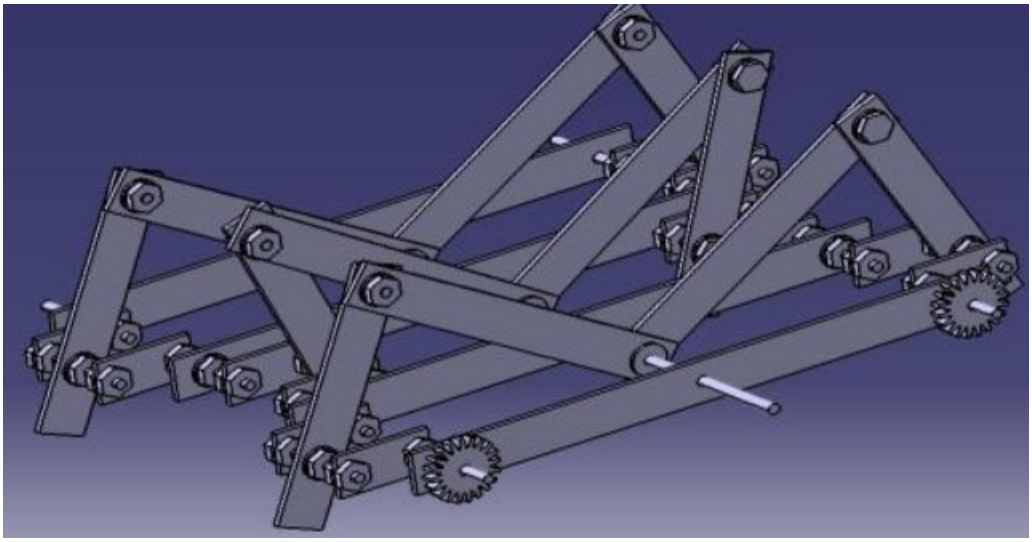

Figure1- Kinematic walker mechanism

RESULT AND CONCLUSION

A six-legged robot is created in this project. It is used in areas that can't be accessed with wheels that do not have a microprocessor control and other actuator systems. The effectiveness of a wheel on a smooth hard surface would be difficult to compete with, but as the ruggedness of the trajectory rises this connection becomes more feasible, and wheels of comparable sizes are able to manage barriers. In addition, pivoting arm optimization can be used. The height of the legs for the waterline increases the platform height and reduces the vehicle width. It allows the legs to fold up compactly for storage.

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