Engineering a Mechanical Finger Prosthetic

Manuel, Bryson Spencer (School: Waipahu High School)

Fingers are an important part of the body and are needed for everyday life. If someone were to lose even a single digit, a significant amount of hand dexterity will be lost. The purpose of this project was to design and prototype a working, entirely mechanical, prosthetic for those who have lost parts or complete segments of their fingers. Finger amputees can benefit from this project by using my design to return lost function in the hands and further improving activities that would be difficult or impossible otherwise. In this project, the prosthetic was tested for overall usability and durability. Both the material and design are at the basic requirements for producing a viable prosthetic for those who have a partial loss in their hands and/or fingers. The prosthetic has been tested to withstand multiple shear forces on multiple points on the prosthetic. The next step would be to improve the methodology of production and material cost. Overall, this prototype is a product that could solve problems for thousands of people who have abandoned the thought of using their fingers again.

Awards Won: