CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)

Roman M. Rodriguez

Project Number

36676

Project Title

Effective Prosthetic Foot Lengthening Prototype

Abstract

Objectives/Goals

The objective of my project is to support individuals with leg prosthetics by designing a mechanism which allows the foot on the prosthesis to extend and fit appropriately in a shoe.

Methods/Materials

Air dry clay and a wardrobe door bottom guide. The clay was molded into a foot the size of an infant's (any size would work), cut into two pieces, an arch was cut into the pieces, then the wardrobe door bottom guide was placed into the arch. This connected the two pieces which allowed the pieces to extend apart.

Results

The clay prototype functioned properly. The design perfectly met the expectations. The wardrobe door bottom guide allowed the two clay pieces to extend.

Conclusions/Discussion

This project is a prototype. This design would assist individuals with prosthesis by allowing their prosthetic foot to extend along with their able foot. This means that an individual may buy a pair of shoes without worrying about one foot being bigger than the other. This can also end the struggle of having the prosthetic foot slip out of an individuals shoe. This happens because as the able foot grows, the prosthesis stays the same size. This causes the shoe on the prosthesis to constantly slip off.

For example, this affects small children. As they grow, their able foot also grows. Their prosthetic foot stays the same size. When a child puts on their shoes, the shoe on the prosthesis slips off as they walk. Many young girls like to wear dress shoes and can't because the prosthetic foot does not fit properly. My design will help with these real life issues for young children with prosthesis.

Summary Statement

I created a prototyoe which extends the prosthetic foot for children as they grow, or for individuals that want to wear different types of shoes with a protheses.

Help Received

None. I designed and completed the prototype by myself.