



Mechanical/Environmental Sustainability Project

Shovel Assistor

Mission Statement

The mission is to design an innovative shovel assistor that helps in reducing effort and risk of injury aimed at the global market.

Synopsis

With an aging population in the U.S. and the desire to help others around the world involved in manual labor we are focusing on the goal of reducing stress on the body when involved in activities such as shoveling and digging. With a few adjustments, the team built a prototype of the design originally sketched by Nootools owner Mark Noonan.

The device has a belt for support and a progressive spring curving up over the head. A string is attached from that to the shovel shaft. When shoveling, the device transfers the stress from a person's shoulders/upper back to their hips. The progressive spring is ultimately assisting with the dirt/snow load, making it easier on the person's body. We tested our prototype at a motion analysis lab using an ENG machine. The data we collected displayed that shoveling with our device decreased upper trapezoid muscle activity.

This project consisted of:

- Project Planning/Team Building
- Strong Communication
- Field Research
- Designing Process
- Building of Prototype
- Testing of Prototype
- Final Project Presentation



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