Assistive Pet Loading Device for Automobiles

Overview

The main purpose of this project is to design and build a prototype of a new pet ramp for smaller cars that will deviate from the current design in structure and portability, while still remaining in the same price range as competitors. The pet ramp will be able to fit a wide range of car models allowing pet owners to easily and conveniently have their pets safely enter and exit cars even in the tightest of areas.

Objectives

To improve upon the convenience of pet ramps, the team was to design a pet ramp that runs parallel to a car. The Pet ramp needs to be lightweight and have a compact design to accommodate all users. It is also essential that the pet ramp can hold a dog up to 150 pounds.

Approach

- Gathering the customer needs
- Patent search and analysis of existing products
- Concept generation
- Concept selection
- SolidWorks modelling and finite element analysis
- Material selection and ordering
- Fabricating the prototype
- Testing the prototype under static loading
- Analysing results

Outcomes

- The sponsor can now patent the ramp design
- A more convenient type of pet ramp will be available on the market
- The ramp is lightweight, compactible, and easy to set up
- Dogs up to 150 pounds can use the ramp
- The prototype can be used to test the concept and improve upon the design