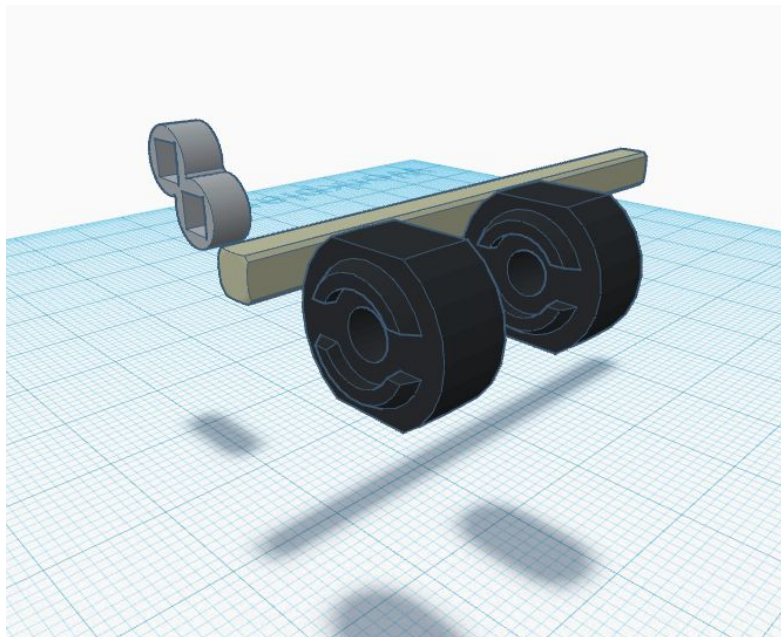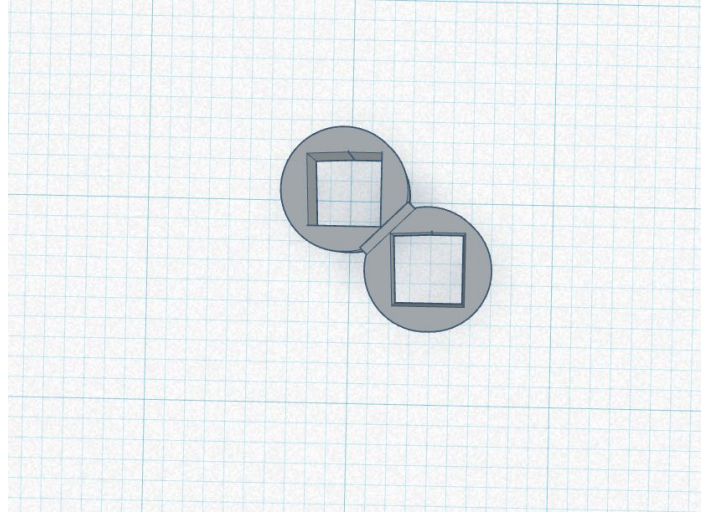**VEX IQ Challenge "Make It Real" CAD Engineering Challenge Sponsored by Autodesk®**
Shaft Stopper
Entrants: Cyrus Nobleza and Tehani Shigematsu


Team number: 74177U

Introduction

We are team 74177U from Pinecrest Sloan Canyon in Henderson, Nevada. This year we are competing in a VEX IQ Middle School Division. We're new to robotics and we still have a lot to learn. While building the robots we have found that sometimes in competitions your shaft sometimes keeps rotating even after you stop holding down the button. So to counteract this problem we made the piece to stop the shaft from rotating any further.

Collers

Shaft

Shaft stopper
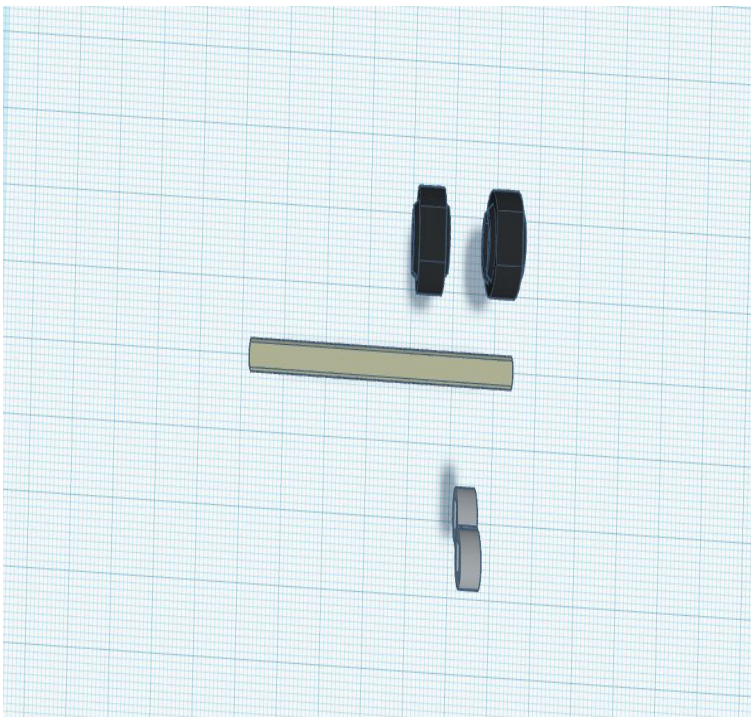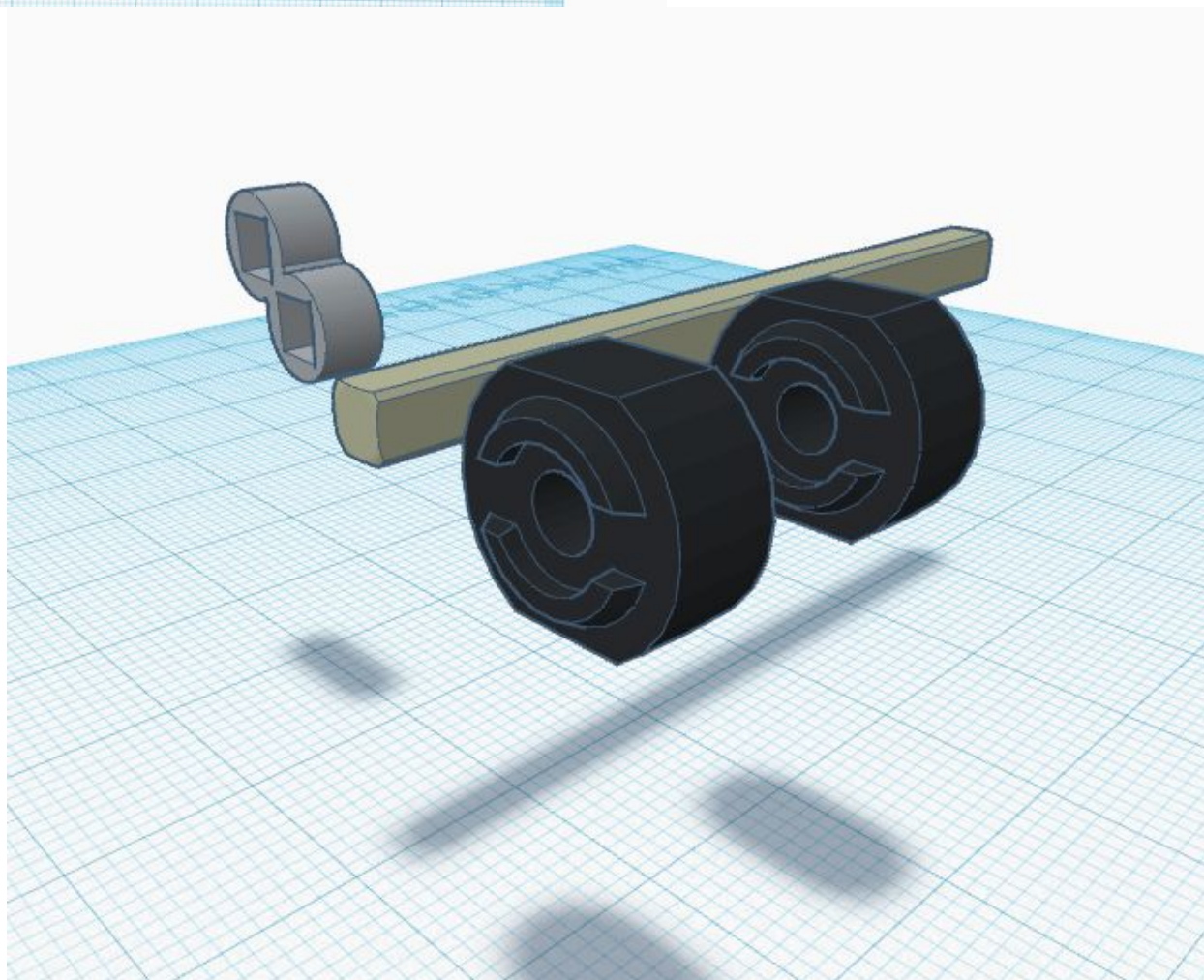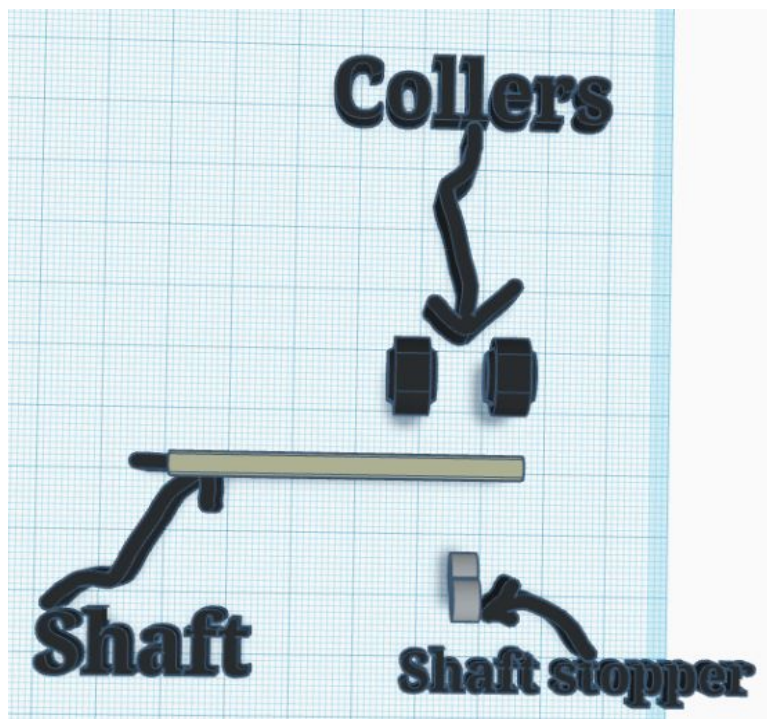
Explanation of the new part

There was a few expectations for the part:
- Being able to successfully stop the shaftBeing able to connect to the shaft

- Being strong enough to not break when stopping the shaft

The part's design is two circular discs connected together. WIth shaft shaped holes in the middle   of both of them
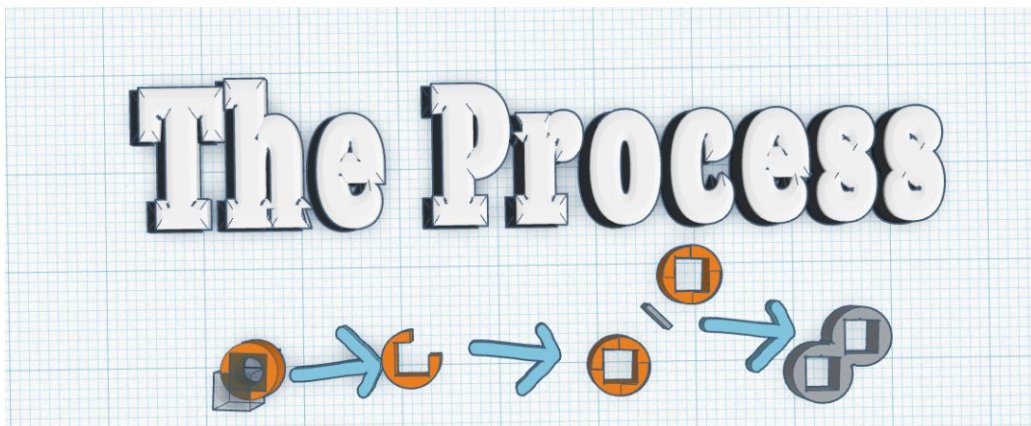
Software

We used Autodesk TinkerCad for this design. These are the reasons why we picked this software.

- TinkerCad is very simple for us.
- We are familiar with it.
- We have done TinkerCad a lot of times before.
- This software is a really good software for 3-D printing.

Design

The way we made the design is by putting 2 shaft shaped holes into 2 discs then we put them together to make the piece! The way you use it is to put it on the shaft then connect a motor to it. If there's any piece behind it or in front of it it will stop the shaft from moving forward!

Conclusion

What I learned from this project was I found out how difficult it is to make an original design that you can actually make. I will use this 3D software in the future for other robotic projects and if I am bored I can build something. The Software can help us make more legal parts without waiting for them to get shipped.3D design will help me in my career because if I want to work as a computer tech for TinkerCAD or any other 3D design software I would be able to help other students or even other people.