Volleyball Launching Machine

VOLLEY BALLERS

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Executive Summary:

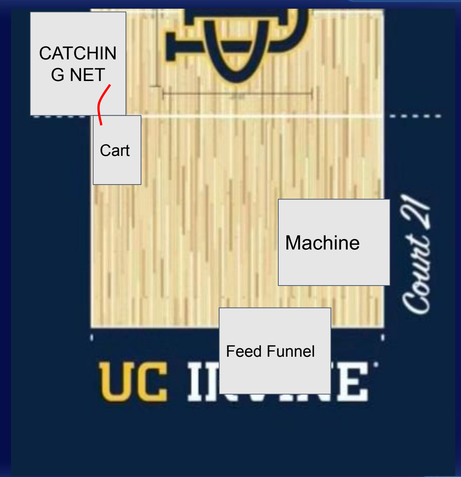
- The project aims to provide convenience to Volleyball players who wants to practice playing it by only a single person.
- The launching machine will be needed a motor which can provide strong power to hit.
- The design also aims to built under an easy and low-cost way.
- The feed tunnel of this project is made by wood that to benefit the players that doesn't have to collect the ball by themselves and the balls can be transferred back by the loop.

Background:

We want to create a machine that the collegiate volleyball players at UCI could and would want to use for training, individually outside of their scheduled practices.

Goals and Objectives:

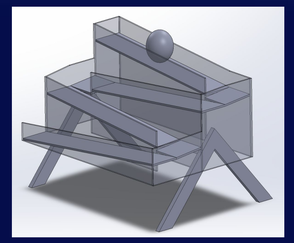
The goal would like to create an automated volleyball passing machine that will simulate the pass a libero might give, collect the setter's set into a net, then send through the passing machine again. The volleyballs will be collected into a central location under the net and returned to the passing machine.

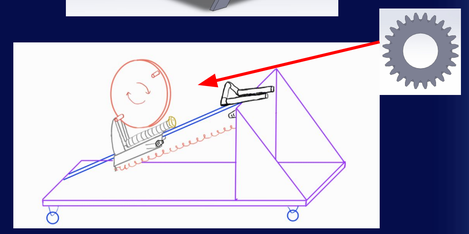


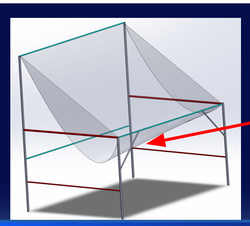
Design process:

The main brainstorming and designing part of the project is made of:

- **Ball Feed Funnel** (Modelled and Manufactured)
  - The capability of it must be able to hold all 27 volleyballs .
  - Modeled it in SolidWorks, then assembled with high-quality wooden boards, and used screws and holes to control stability.
- **Hitting Machine** (Purchase and Welded)
  - Fabricated with springs and motor attached to the puncher backward, and once the puncher is lifted, the springs contract and cause to punch the ball.
- **Catching & Net** (Purchase and Fabricated)
  - The catching net must be at least 9 feet. It must also be 9 feet wide and 5 feet deep.
  - Special pipe to assemble its support frame. Welding is needed.

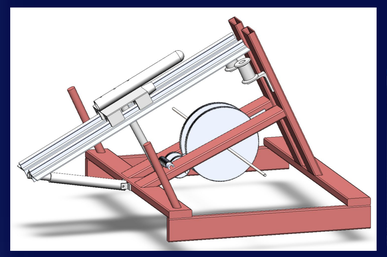


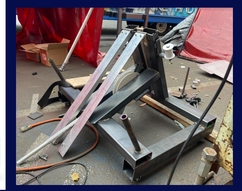




Final Design:

Passing Machine:





Feed Funnel:

Catching Net:

Future Improvement:

A main drawback the system has is, when the balls pass through the Feed Funnel, due to the friction and the angle issues, the balls will be stopped and stuck at the midway which may cause inefficiency. We can possible consider the material with low friction coefficient which means a smoother material to be made as the funnel.

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