



CAD Global Online Challenge: Ratchet Gear



Team: 9393A

Location: United States, Miami FL.

Rockway Middle School

Credits:

Made by:

Alexis Garcia

Luis Mason

Created with:

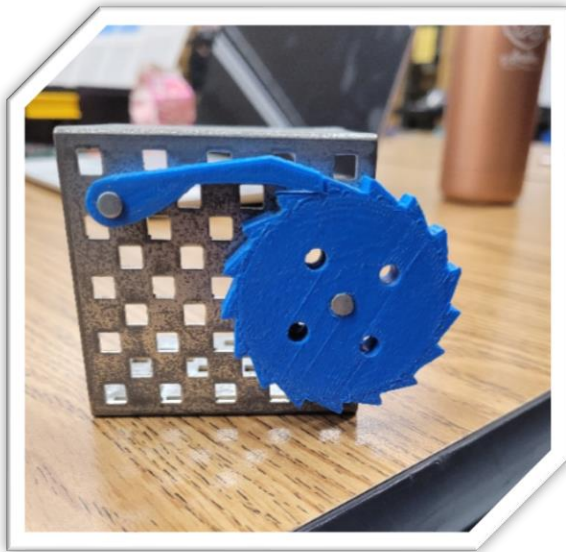
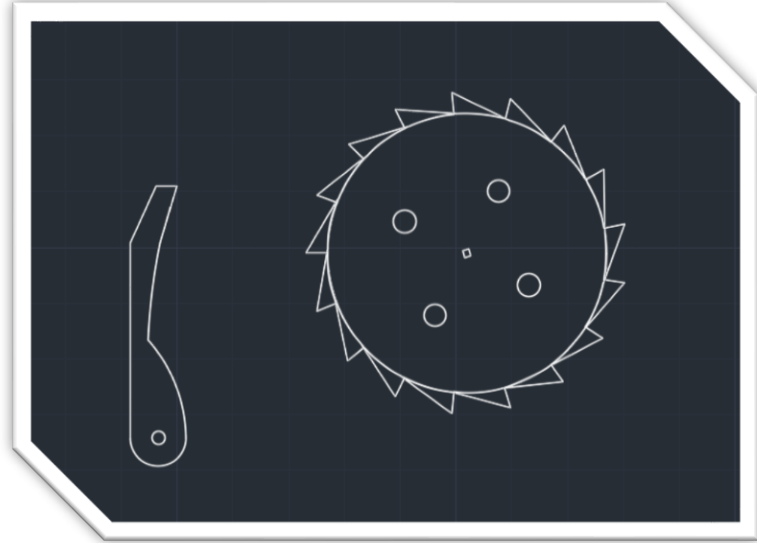
Autodesk AutoCAD 2023

3D printer:

Palmer trinity school's STEM lab

Design Report

This is our first draft of our ratchet gear. We used AutoCAD to make our design. The object on the left is the lever that will stop the gear from spinning only allowing rotations to the right. This gear can be used in many ways and in different mechanisms. This year we could use this in our intake to allow the disks to go inside of the robot but not let them go out. The lever is free spinning so that it can let gravity pull it down to stop the gear. It has 4 screw holders in case you would need to attach it to a plate for any reason.



This is our final prototype. This design is very space efficient and very lightweight. As shown, the lever fits almost perfectly within the wedges to increase surface area contact and minimize risk of slipping. If we were to make a change to our prototype, we would make the wedges slightly taller. To prevent the lever from going over the spike. Palmer trinity school's STEM lab allowed us to use their 3D printer to print out our prototype because the 3D printer at our school was not completely built.