

# Solidworks Crashouts Stairclimber Operation Simulation



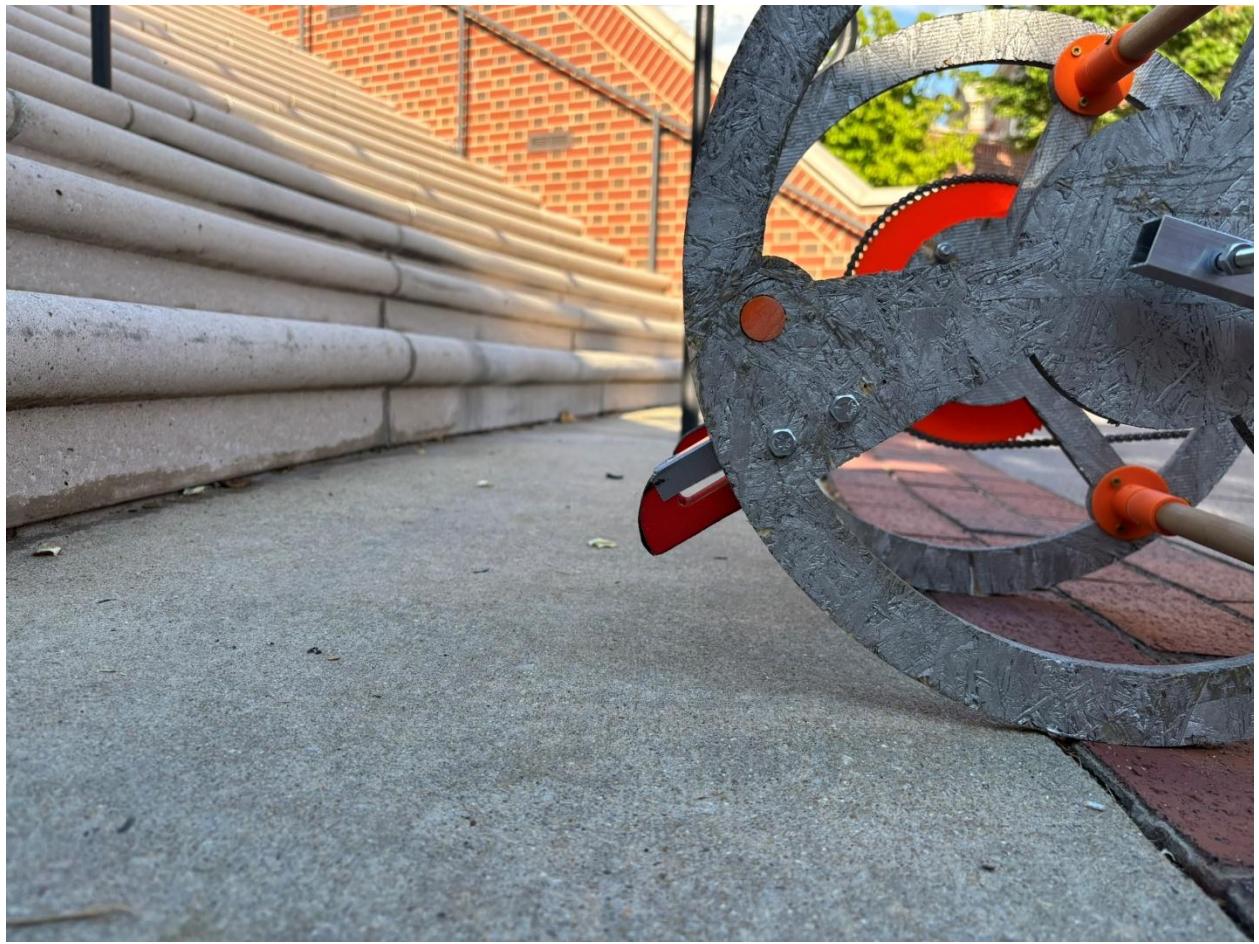


Figure 1) Stairclimber starting on flat ground.

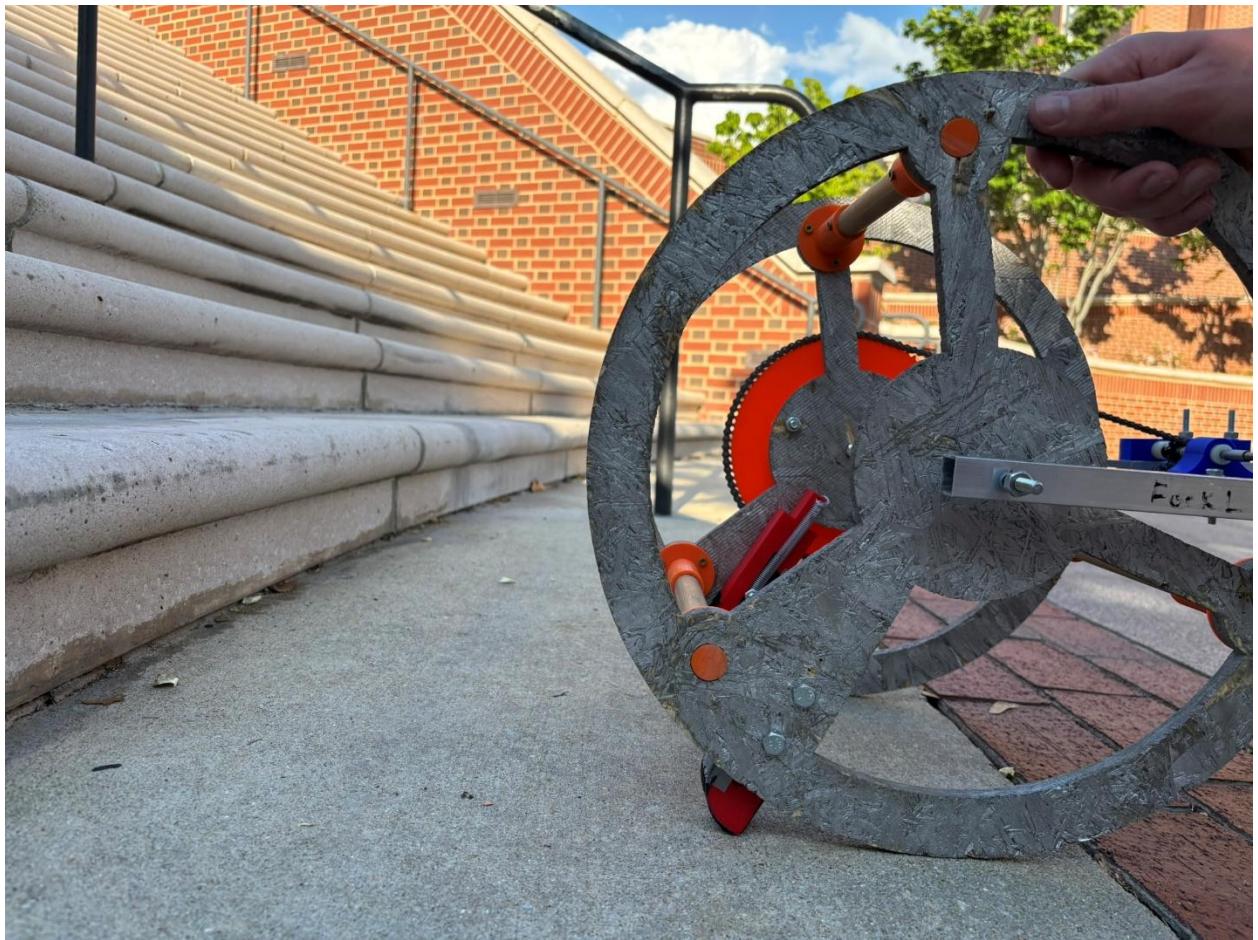


Figure 2) Feet are compressed by force exerted by ground, springs enter tension.

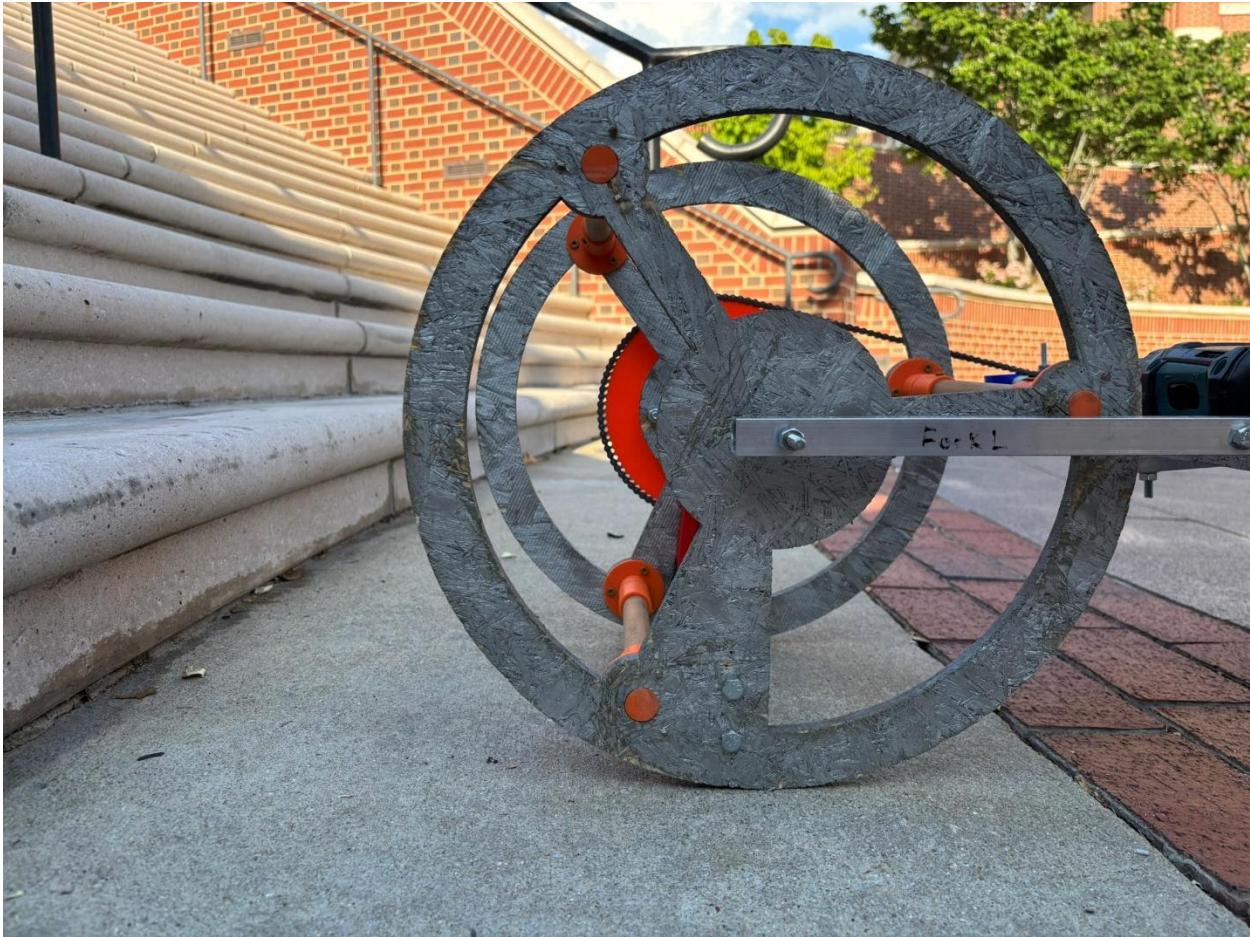


Figure 3) Feet are fully compressed within radius of the wheels,  
wheels roll smoothly.



Figure 4) Feet extend past radius due to tension forces of springs and absence of force from ground.



Figure 5) Wheels rotate fully until feet contact first step of stairs, torque from drill begins to pull wheels on top of step, leaving the ground.

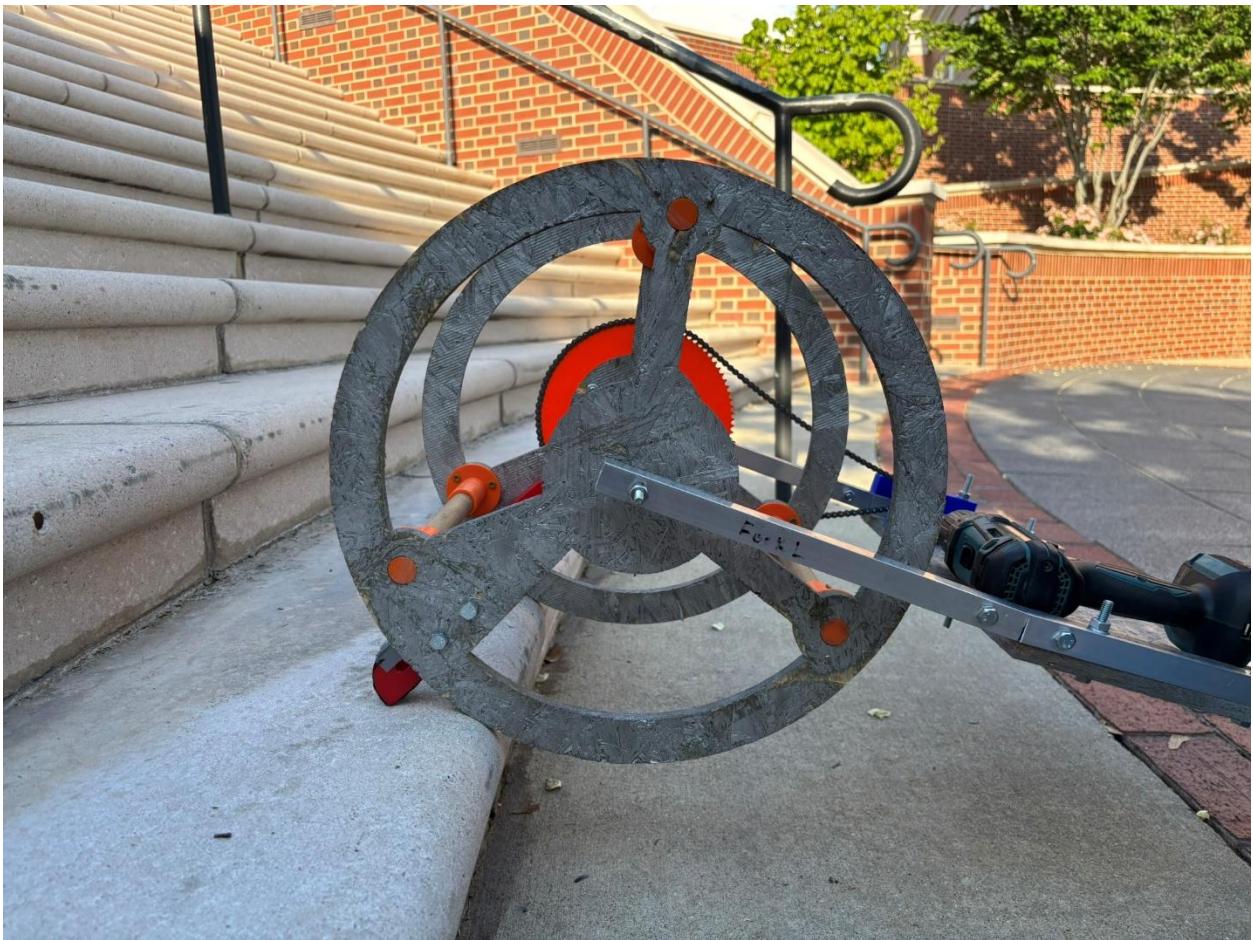


Figure 6) Wheels are pulled fully onto first step, feet begin to retract as before due to force from the ground.

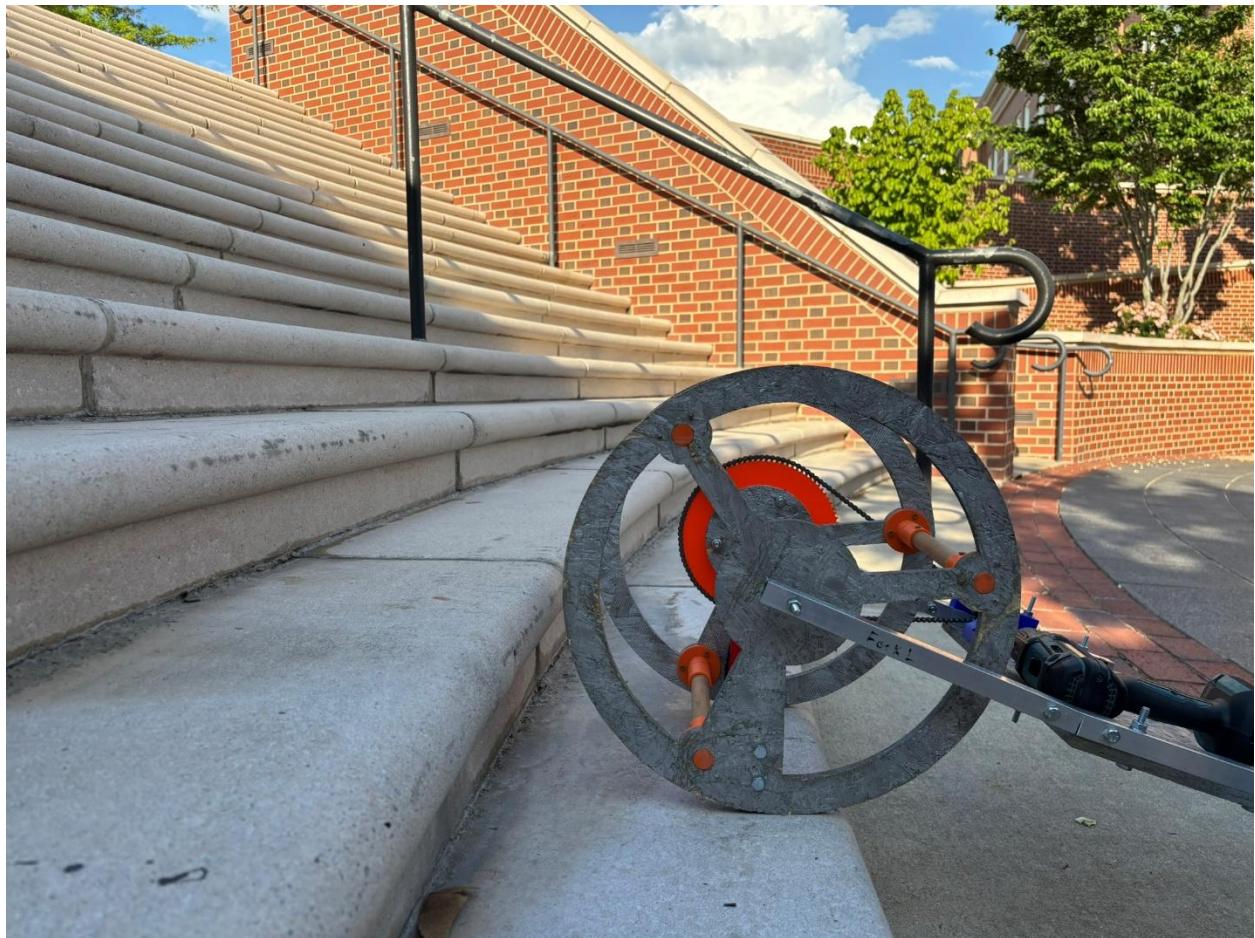


Figure 7) Feet are fully retracted as wheels roll to next step.



Figure 8) Wheels make another full rotation until contact is made between feet and step, process begins again with torque pulling wheels up and over the step.



Figure 9) Wheels are lifted off ground, frame begins to take a more diagonal angle with ground, feet begin to retract as the wheels rotate.



Figure 10) Wheels are flat, feet is fully retracted, machine rolls towards next step.



Figure 11) Wheels make next full revolution, feet grab onto step, wheels are pulled up and over as frame begins to match angle of staircase.



Figure 12) Wheels fully rotate onto step, hit next step, process repeats up all steps in the staircase.

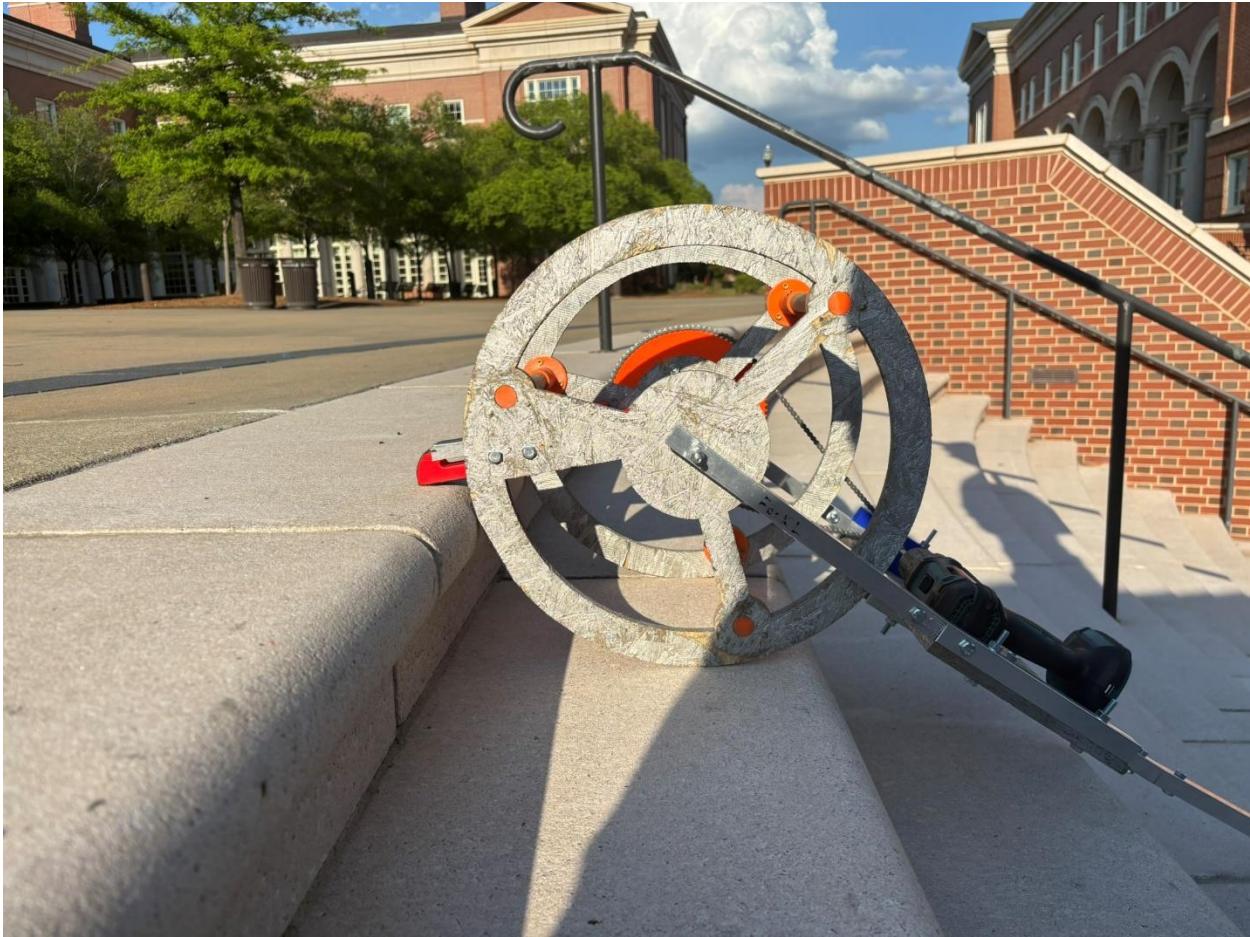


Figure 13) Upon reaching top step, wheels rotate until feet contact step.



Figure 14) Wheels begin to be pulled up and over top step.



Figure 15) Wheels reach top of final step, frame begins to take a smaller angle from horizontal.



Figure 16) Wheels rotate smoothly on flat ground now as frame is pulled up from staircase angle.

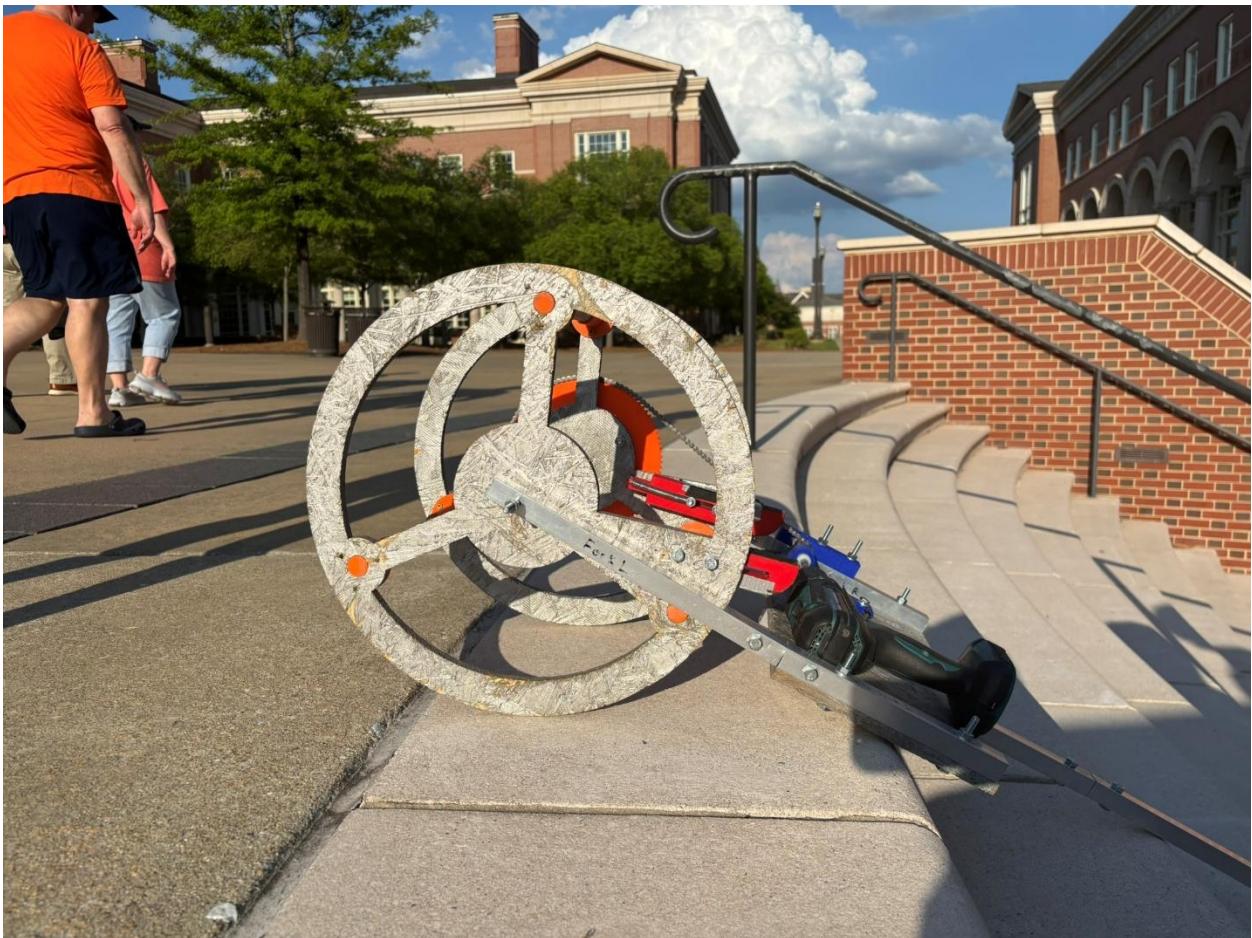


Figure 17) Frame continues to be pulled up as wheels rotate.



Figure 18) Frame approaches original angle from start.

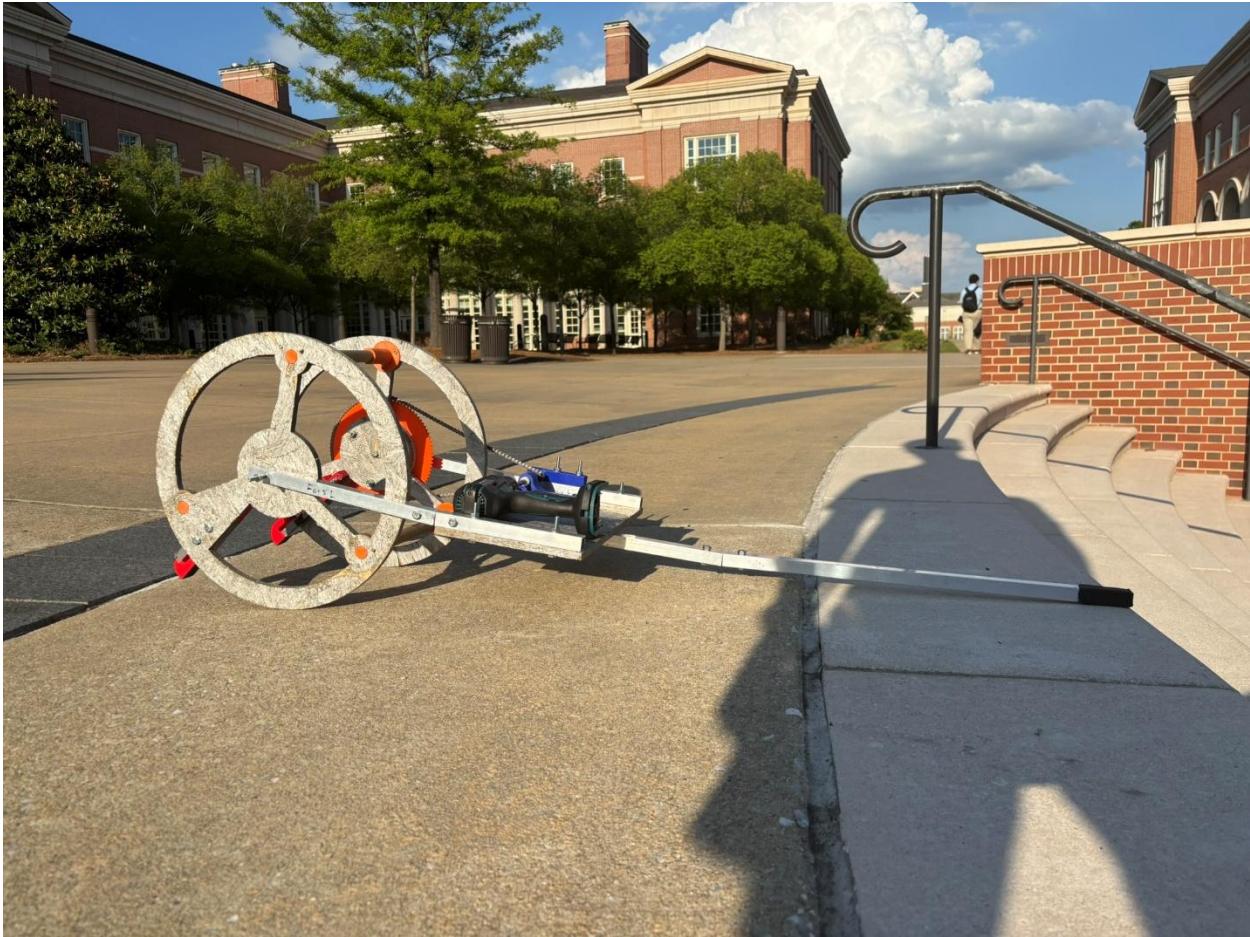


Figure 19) Frame is pulled completely onto flat ground as wheels rotate, machine is stopped as it has reached its final destination.