



The Energy Cycle

Parth Patel

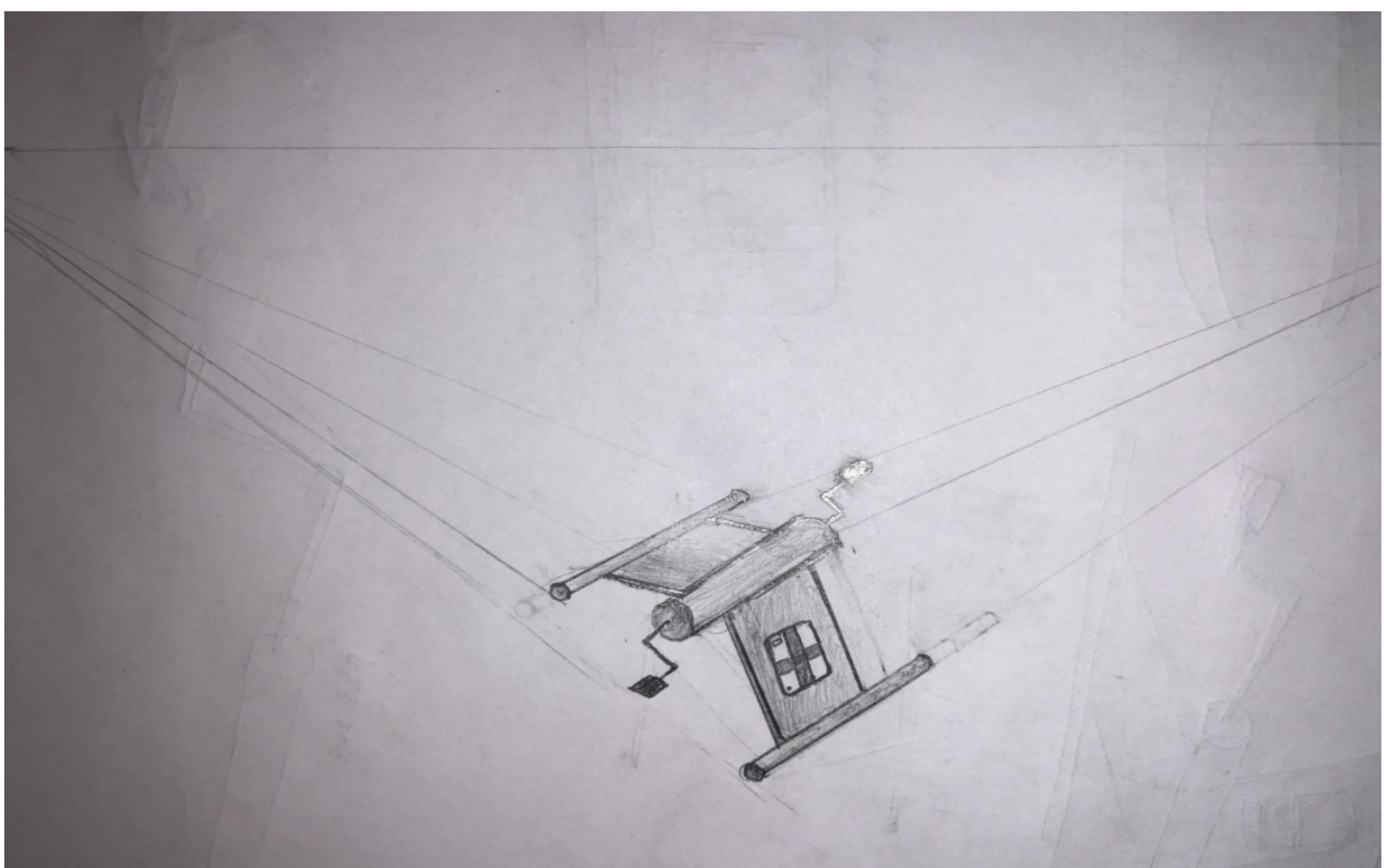
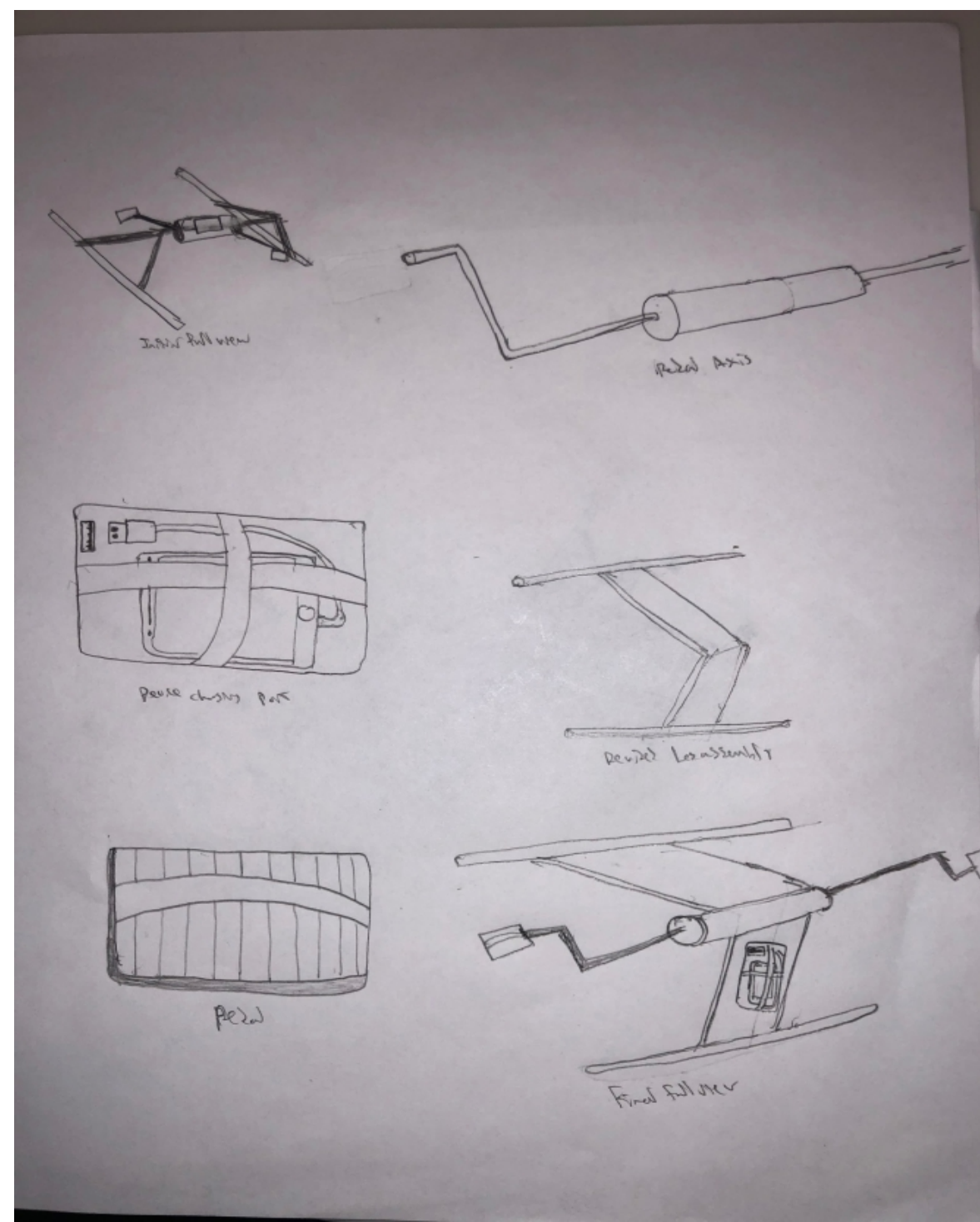
Product Description, Ideation and External-representation design-for-sustainability

This product is unique in that it uses kinetic energy generated through pedaling of the cycle and converts it into electrical energy to charge a usb charging device. The cycle itself is compact enough to be fit under the desk of a home or a workstation. Furthermore, the cycle has a holder to place a usb device in it with a usb 2.0 port. The cycle promotes the use of sustainable energy for everyday consumption.

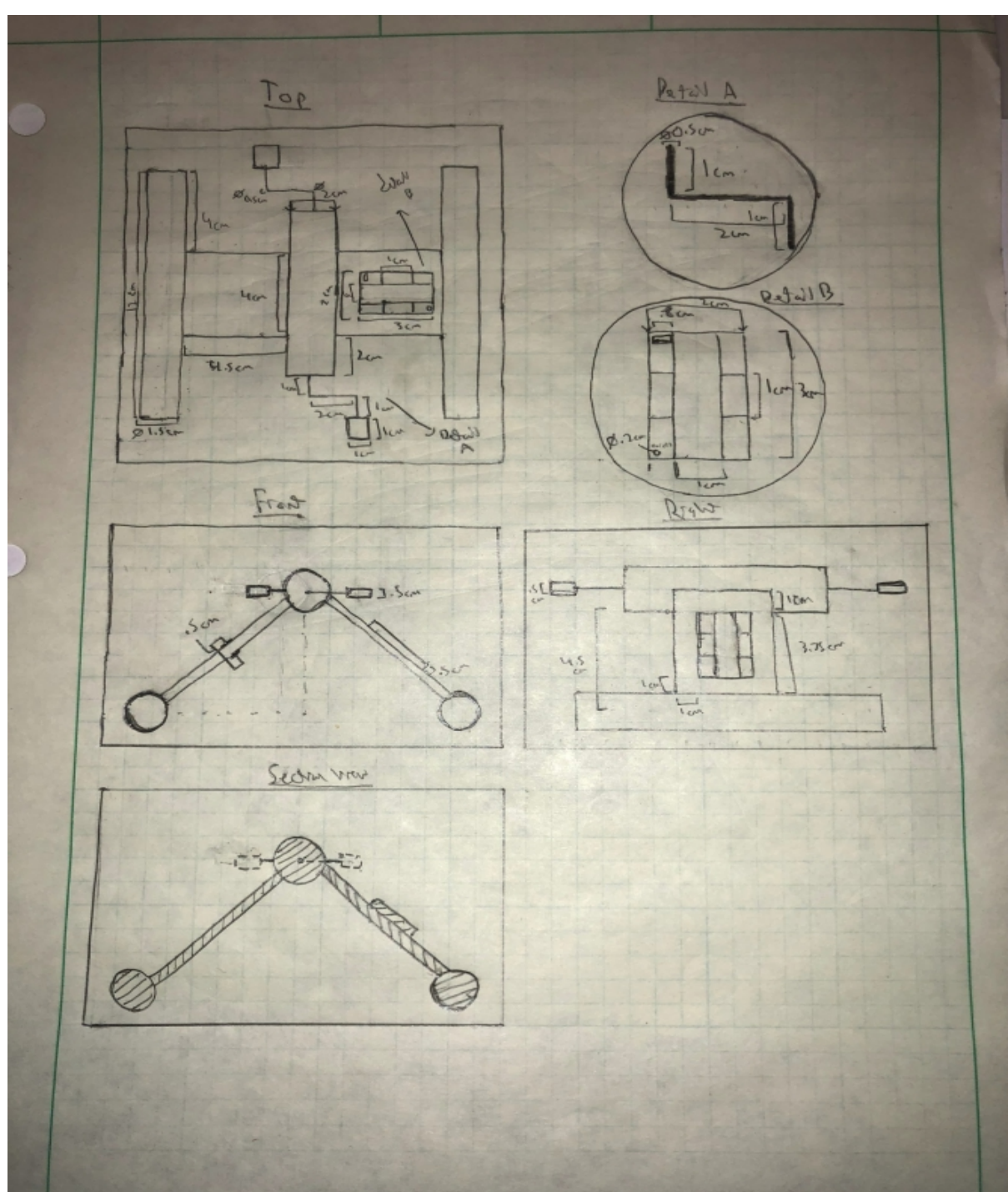
The external representation behind the idea of the energy cycle is to promote sustainable resource-use. By creating a cycle which can charge your phone, not only does this device reduce the amount of electrical energy consumption, it also increases the health of common desk. It is an encouraged product for static, everyday desk workers who need to move their body and reduce their electrical consumption. Additionally, it is accommodating for any desk space as well as foldable and portable so it can be used at work and at home.



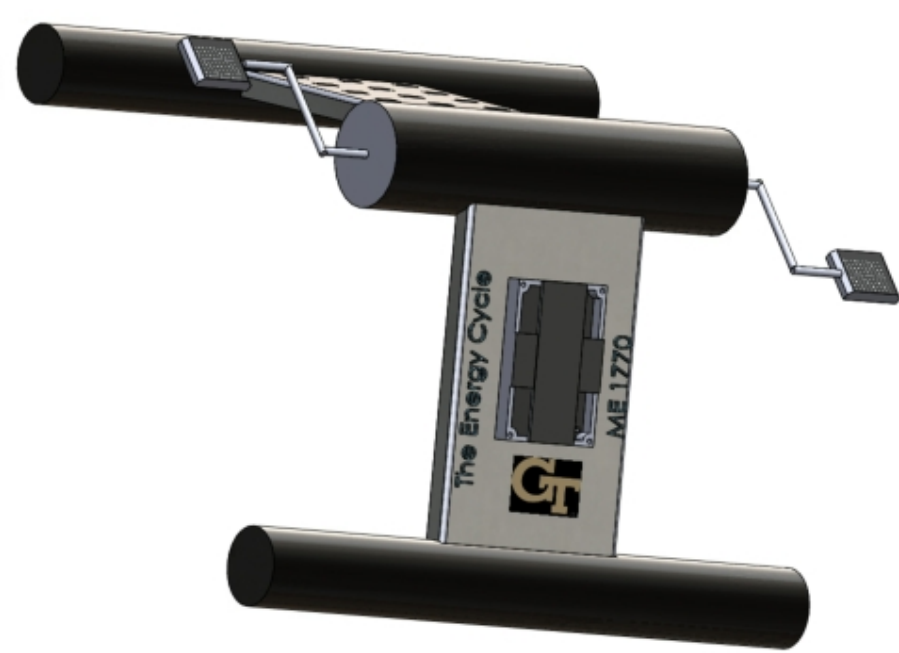
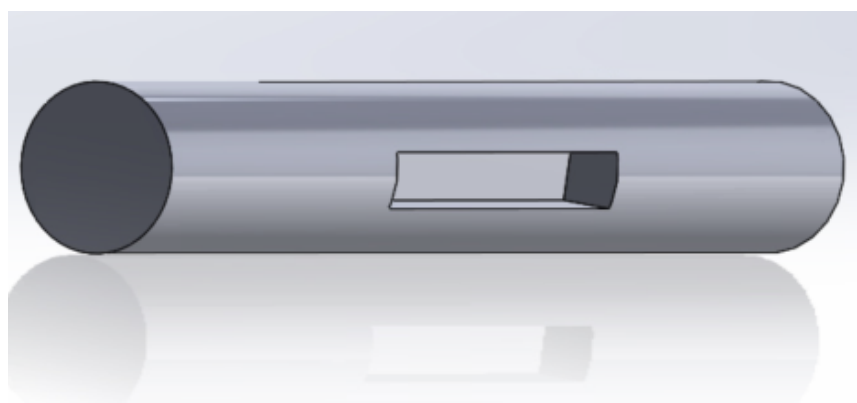
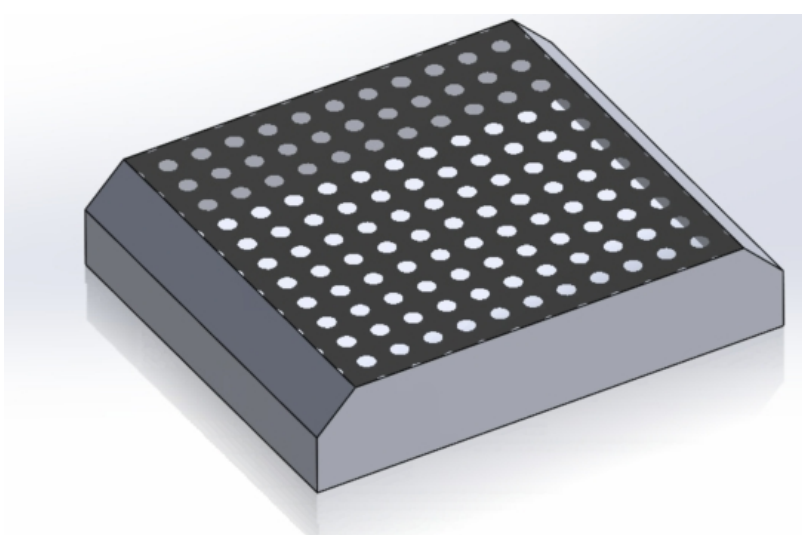
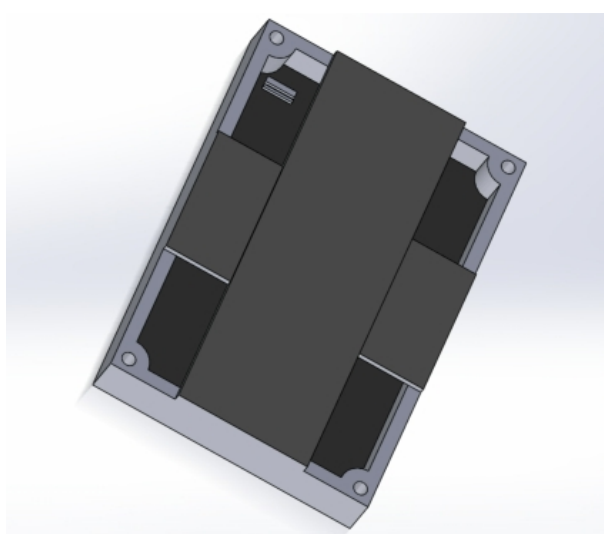
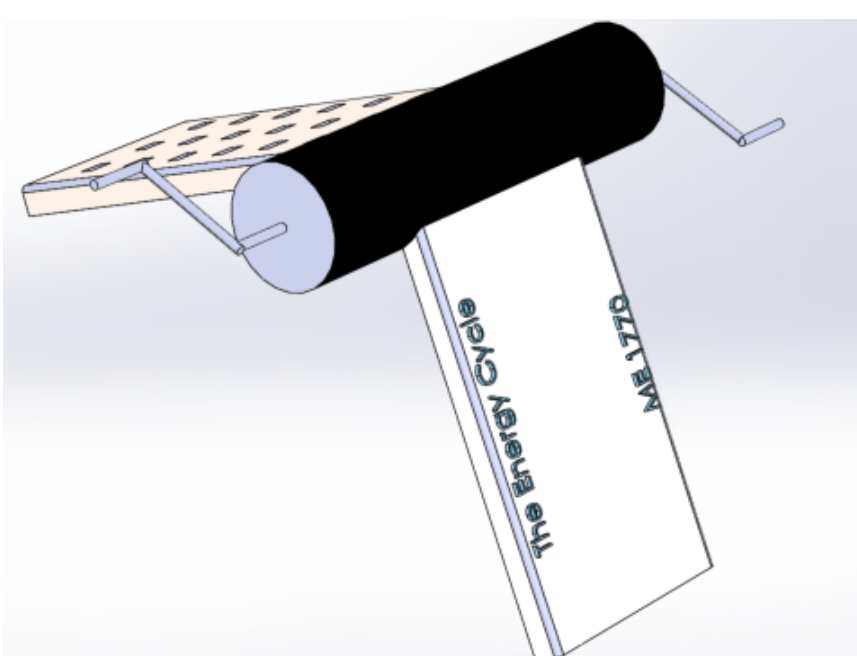
Thumbnail Sketches and Perspective View



Multi-view Drawings



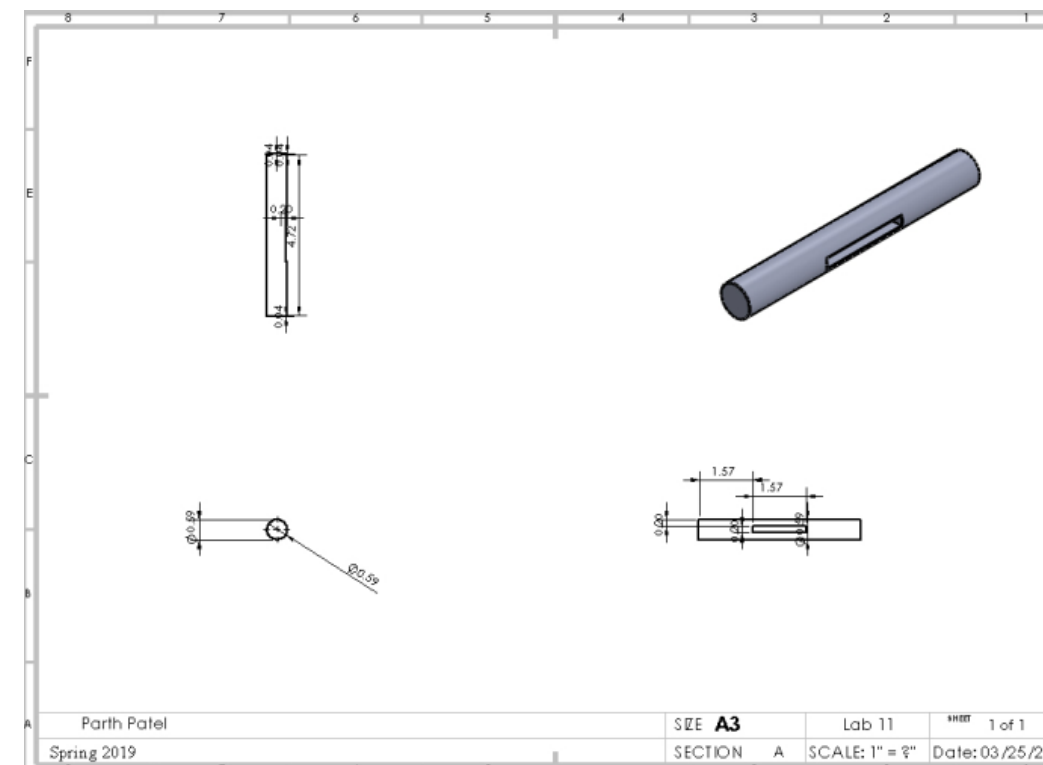
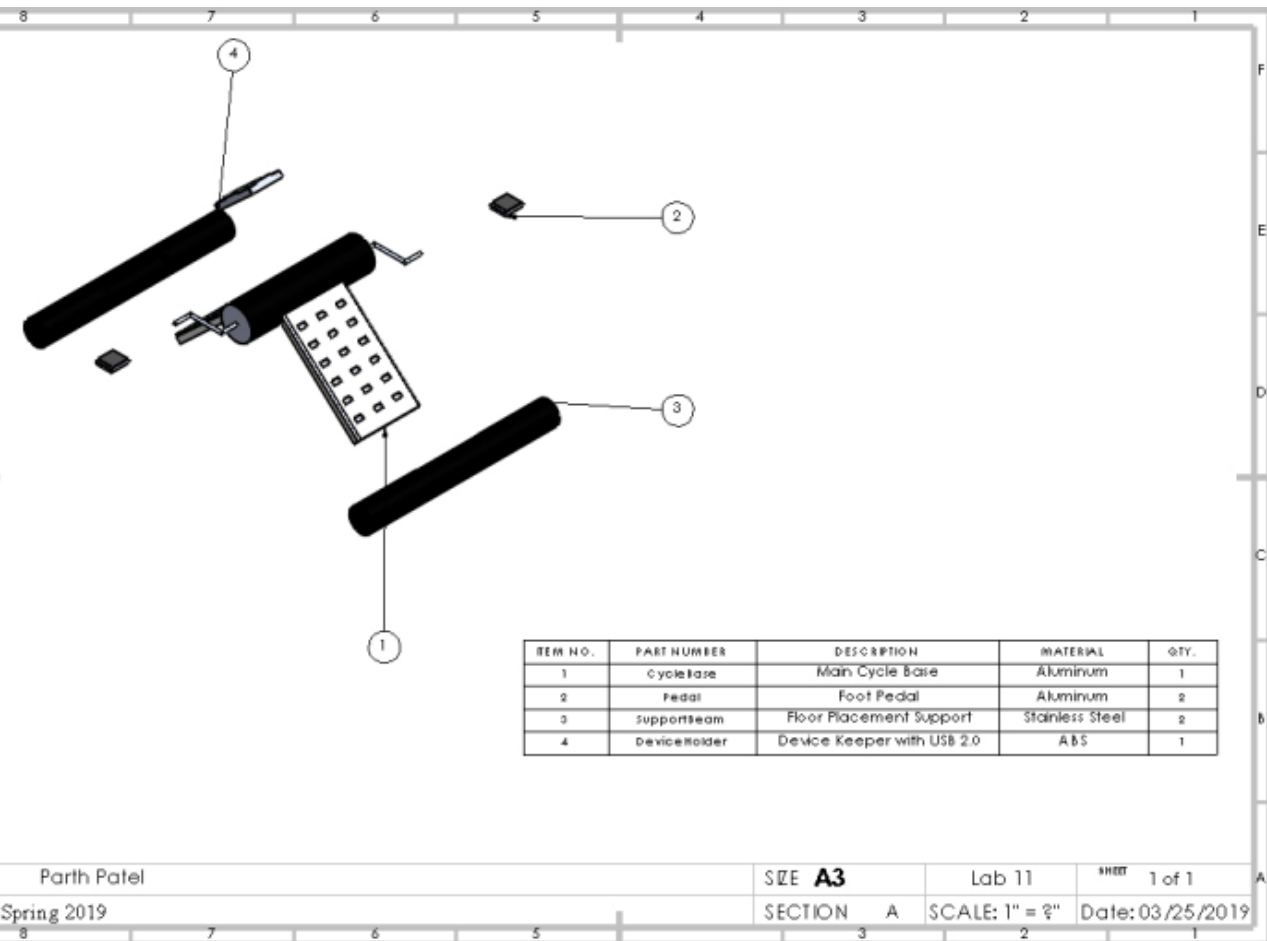
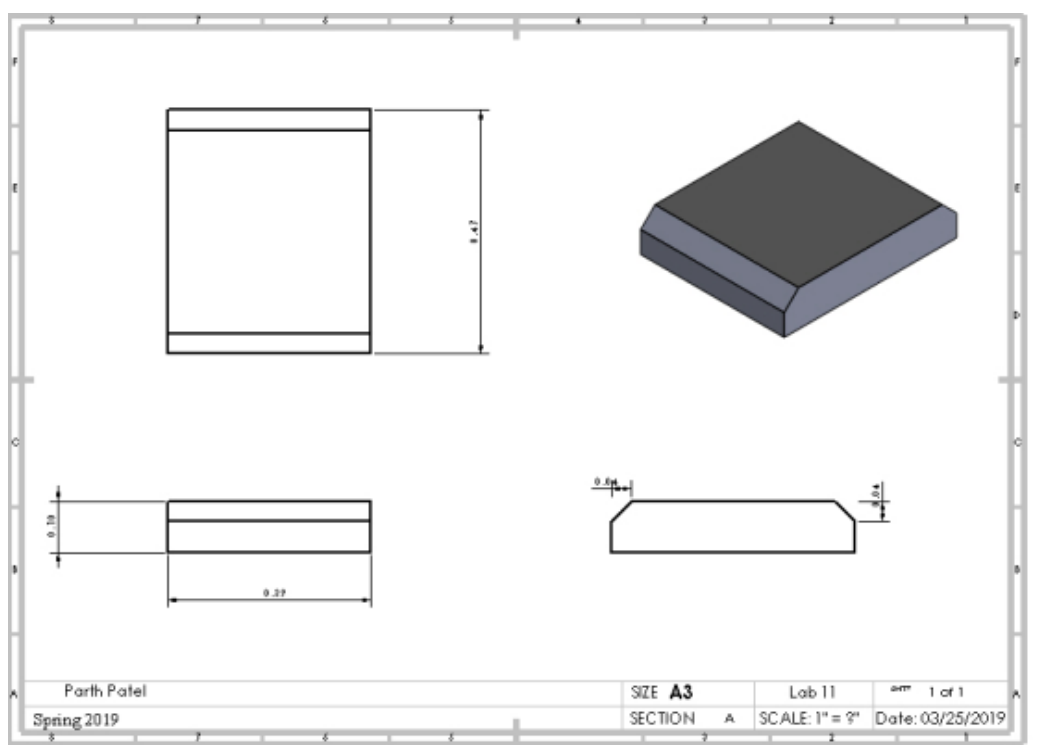
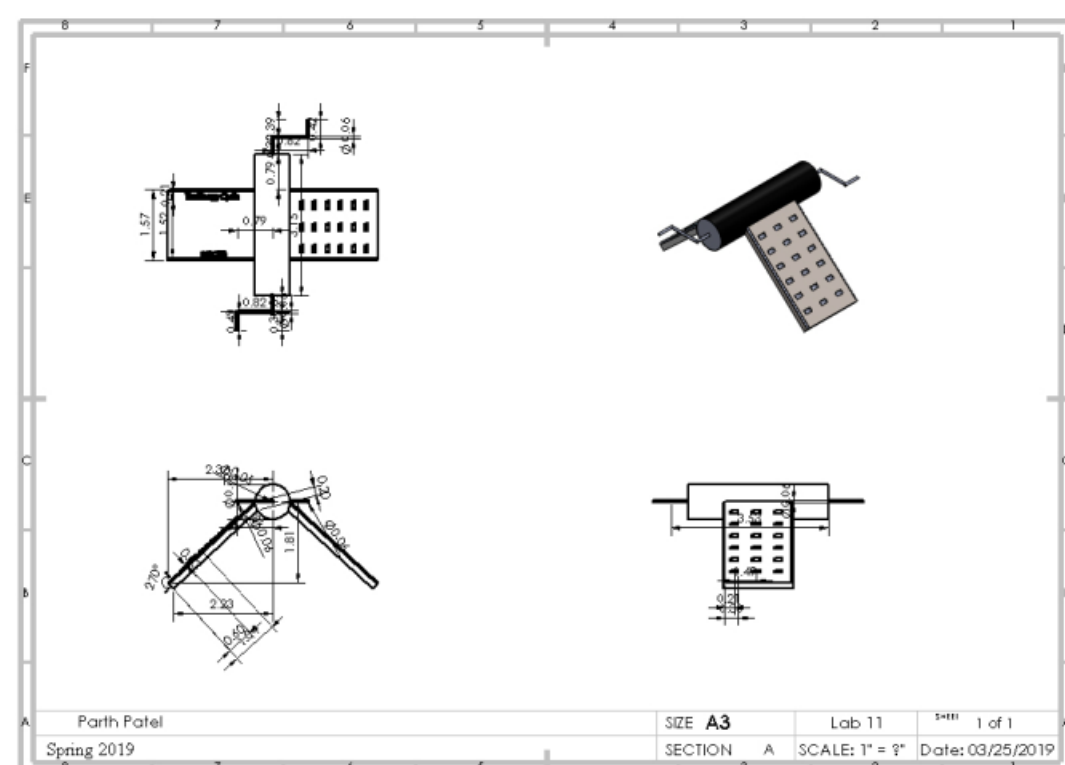
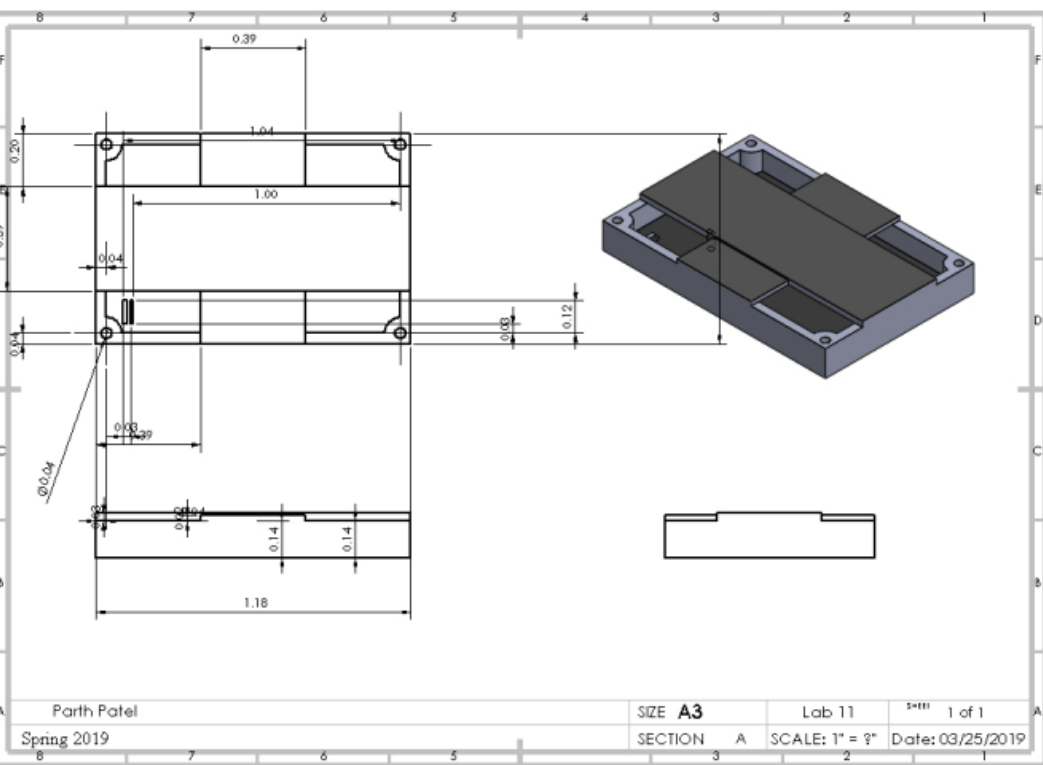
Part and Assembly Models



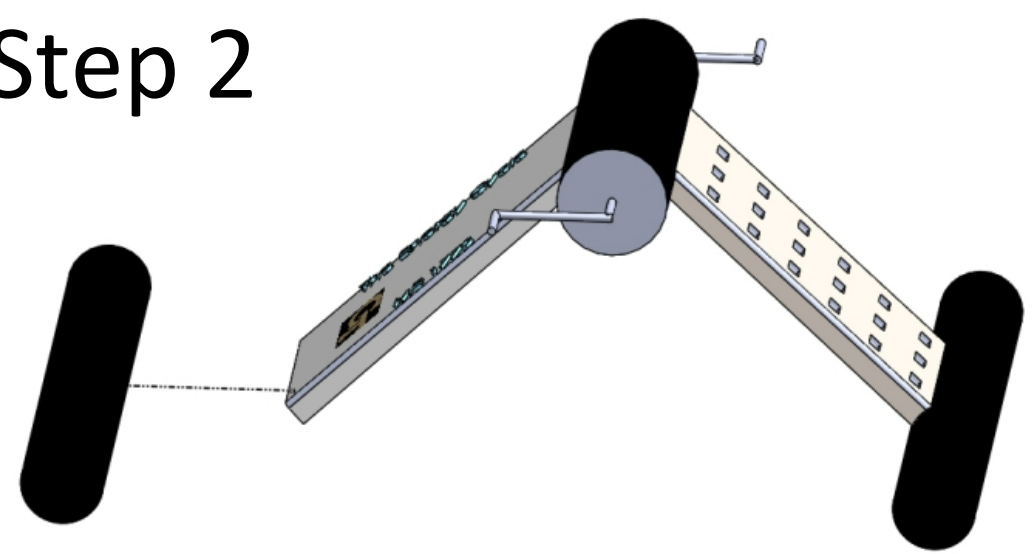
GDT, Part Drawings, Exploded view with parts list and Assembly Instructions

Part Name	Modeling Approach	Manufacturing Process	GD&T parameter to Control	Tolerance with symbol
Cycle Base	Extrude, Revolve	Welding	Profile	0.03 in
Pedals	Extrude	Injection Molding	Position	0.01 in
Support Beams	Extrude, Sweep, Loft	Injection Molding	Position	0.2 in
Device Holder	Extrude	Water Jet Cutting	Profile	0.02 in

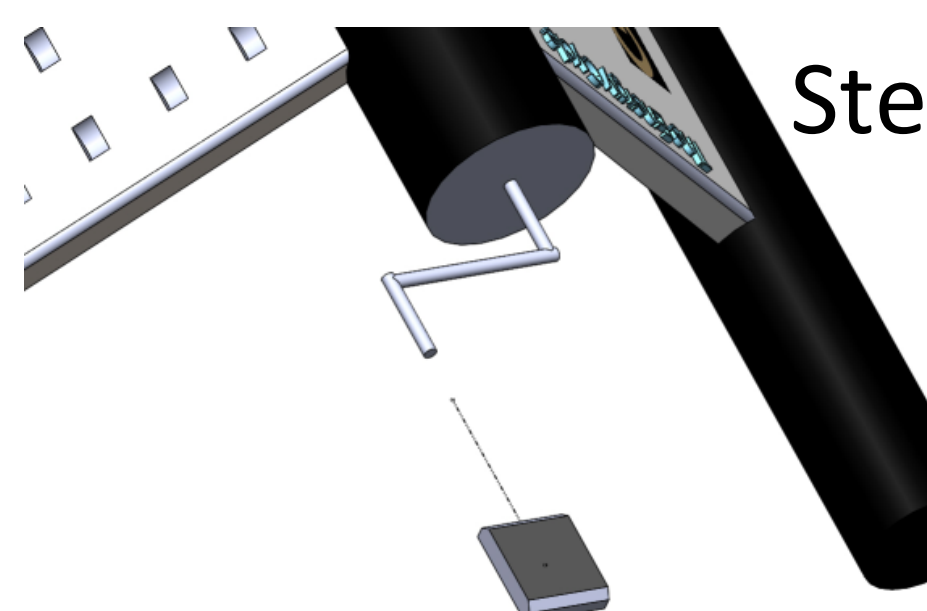
Parts in the assembly	Fit type	Dimensional Tolerance limits for Part A & B		Max. Clearance or Interference (MMC/LMC)
Cycle Base and Pedals	Interference	.75±0.03	.5±0.01	Interference .29 in. (LMC)
Cycle Base and Support Beams	Interference	4±0.03	4±0.2	Interference .23 in. (LMC)
Cycle Base and Device Holder	Interference	4±0.03	3±0.02	Interference 1.05 in. (LMC)



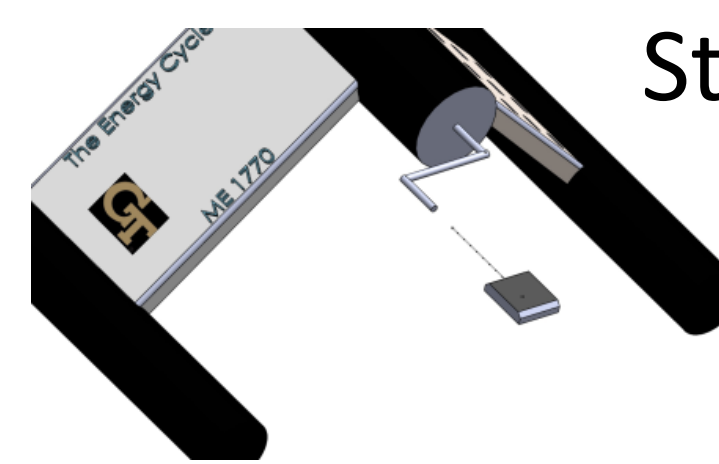
Step 2



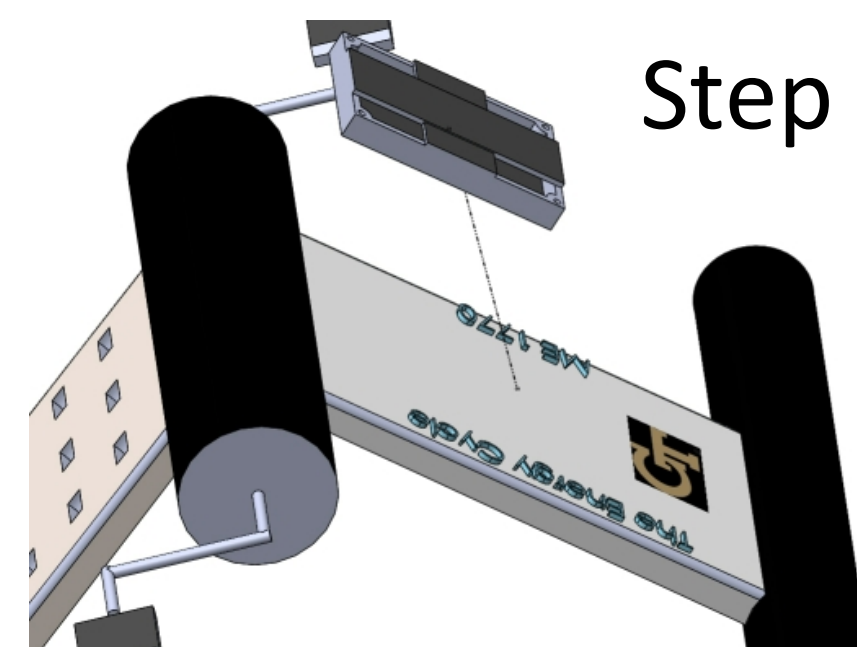
Step 3



Step 4



Step 5



Step 1

