Om Patel ——— 3-22-22

CARABINER SHUTTLE PEN

BVT
Engineering &
Robotics

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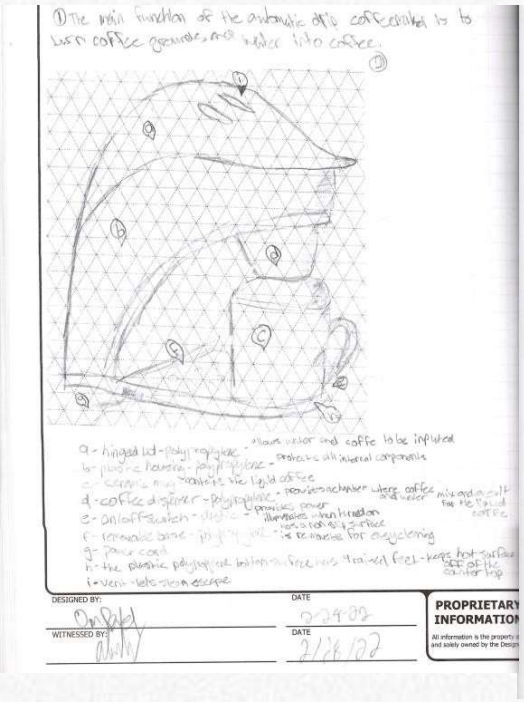
Design Brief

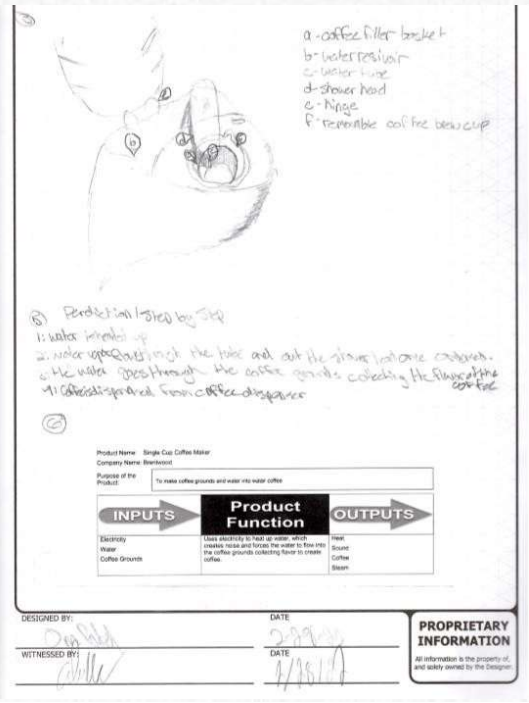
Client	Rhode Island Novelty
Target Consumer	Pen Users
Designer(s)	Om Patel
Problem Statement	A carabiner pen is running out of stock. Create 3D printable replacements for each part.
Design Statement	As a design engineer I will create an identical copy of each pen part in Inventor.
Criteria	1. Pen has to write in four colors 2. Must be identical to the real model. 3. Must switch between each color 4. Must have a carabiner that closes properly
Constraints	1. Must be made in a week 2. Has to be 2 inches or less in diameter. 3. Pen must be light. 4. Must be functional. 5. Must be 10 inches in length.

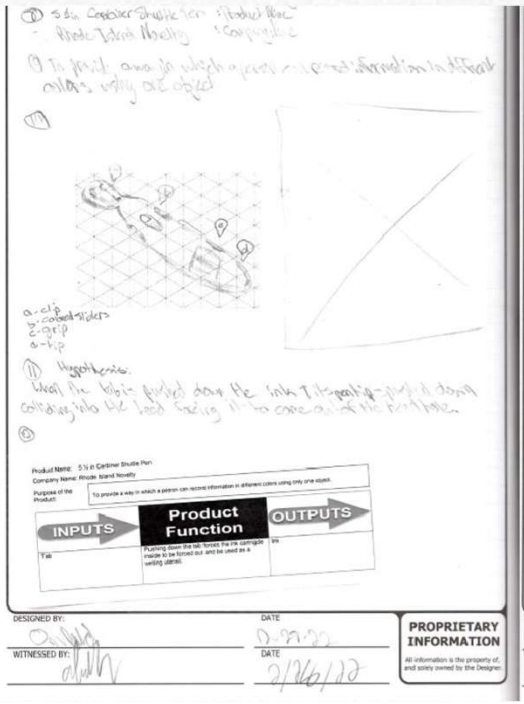
Design Brief

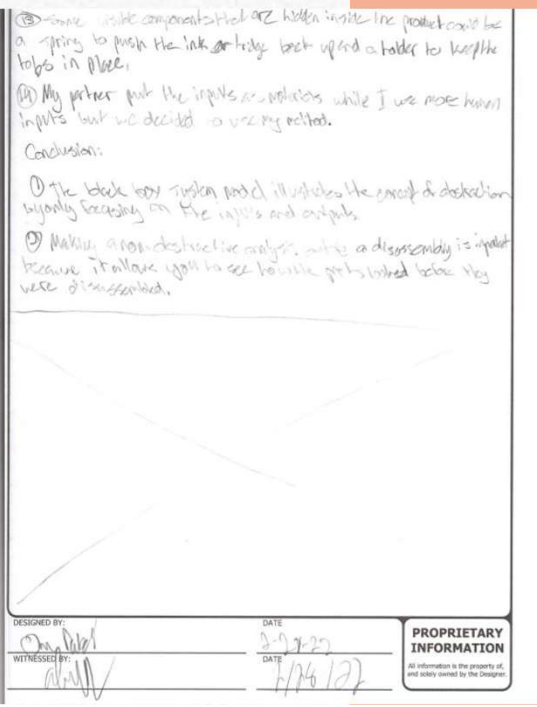
Activity 2.2.3 Functional Analysis

For activity 2.2.3 we made a Black box model and functional analysis on the Pen





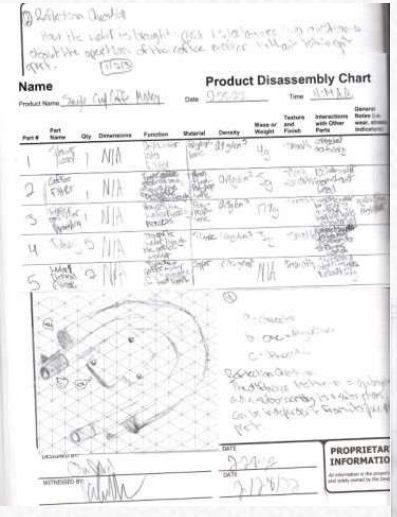


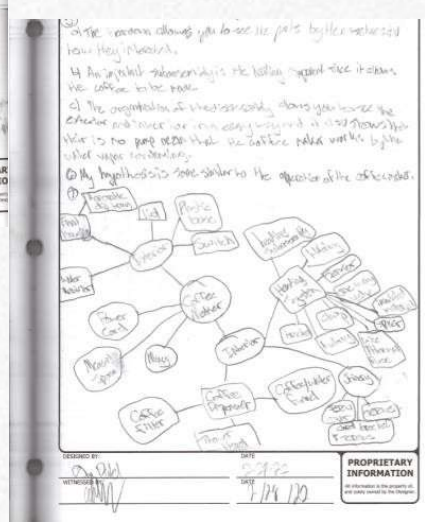


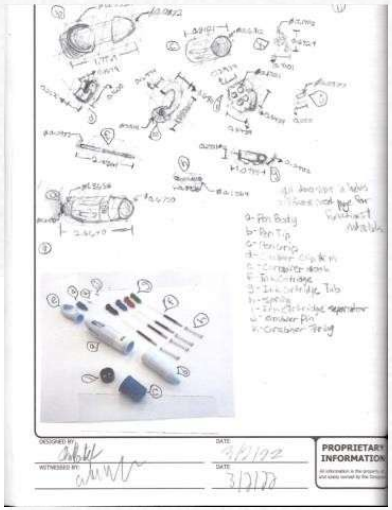
Activity 2.2.4 Structural Analysis

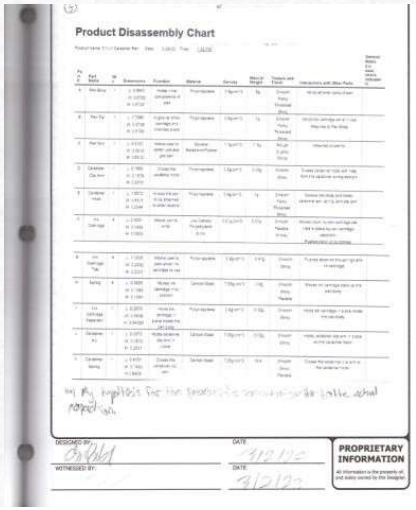
For activity 2.2.4 we had to make a product disassembly chart, measure length and width, etc.

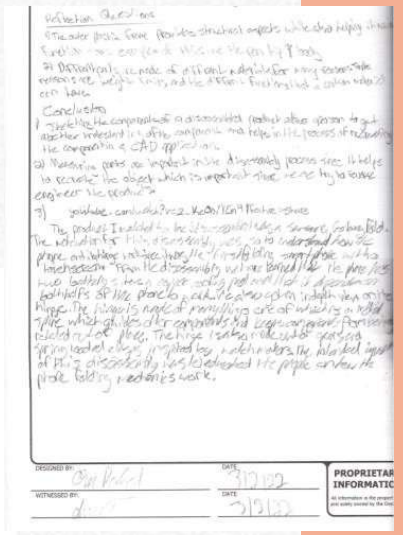
We also had to disassemble the pen.

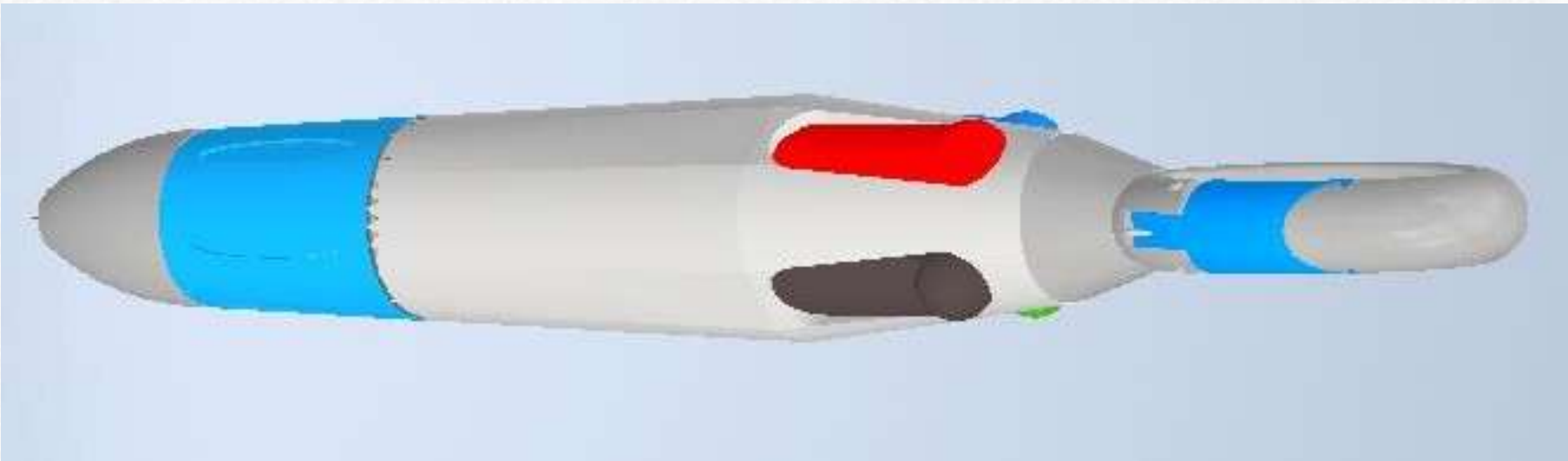






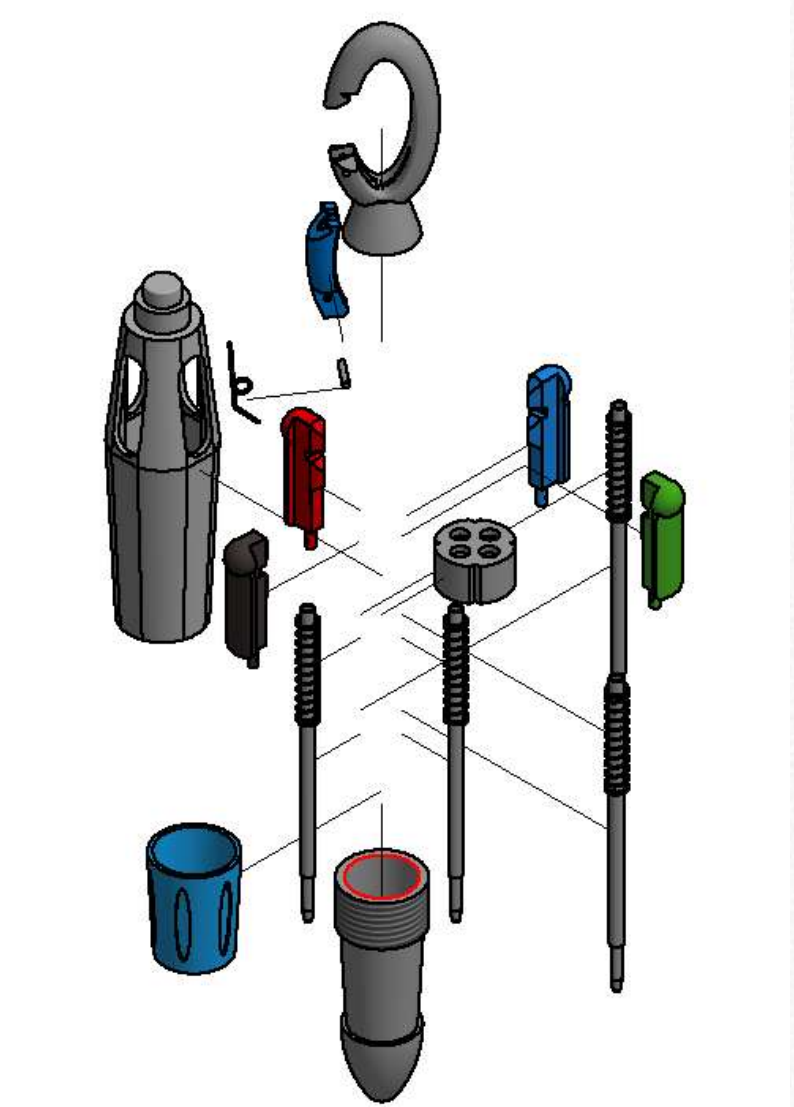




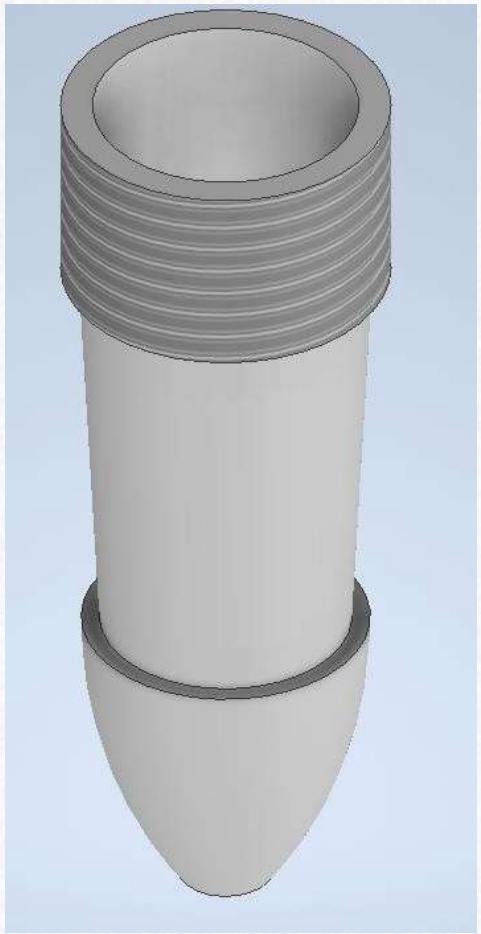


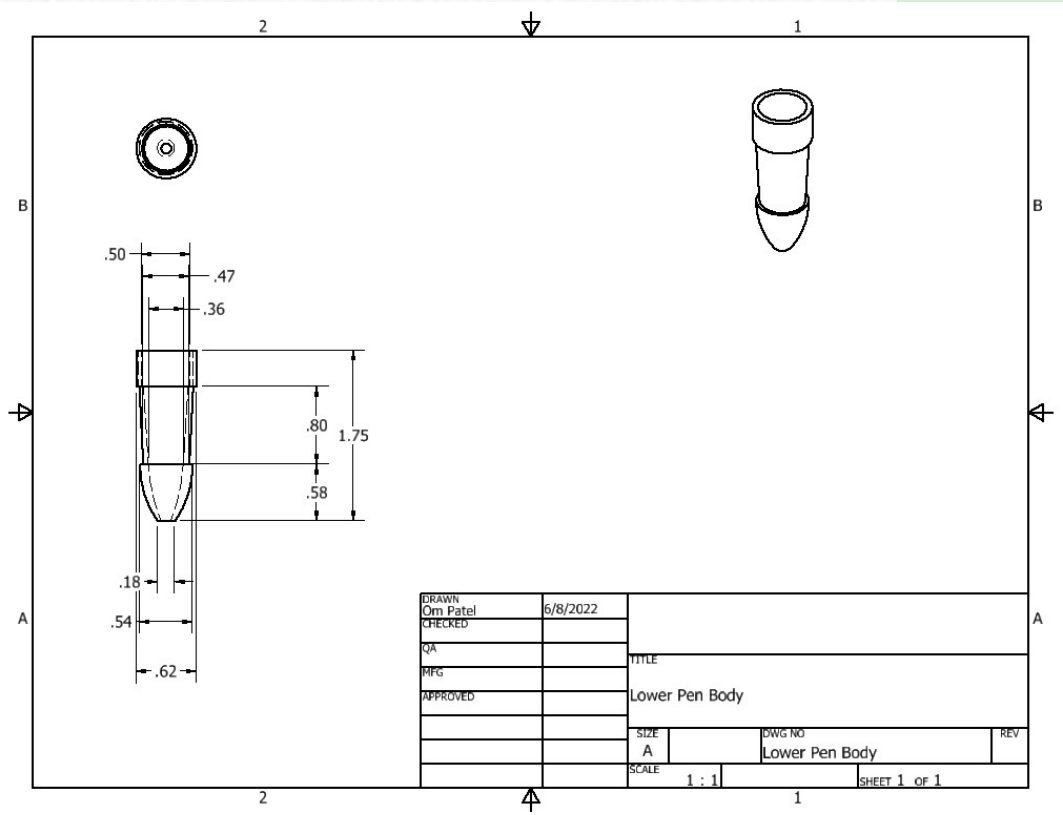
Pen in Inventor

Exploded View

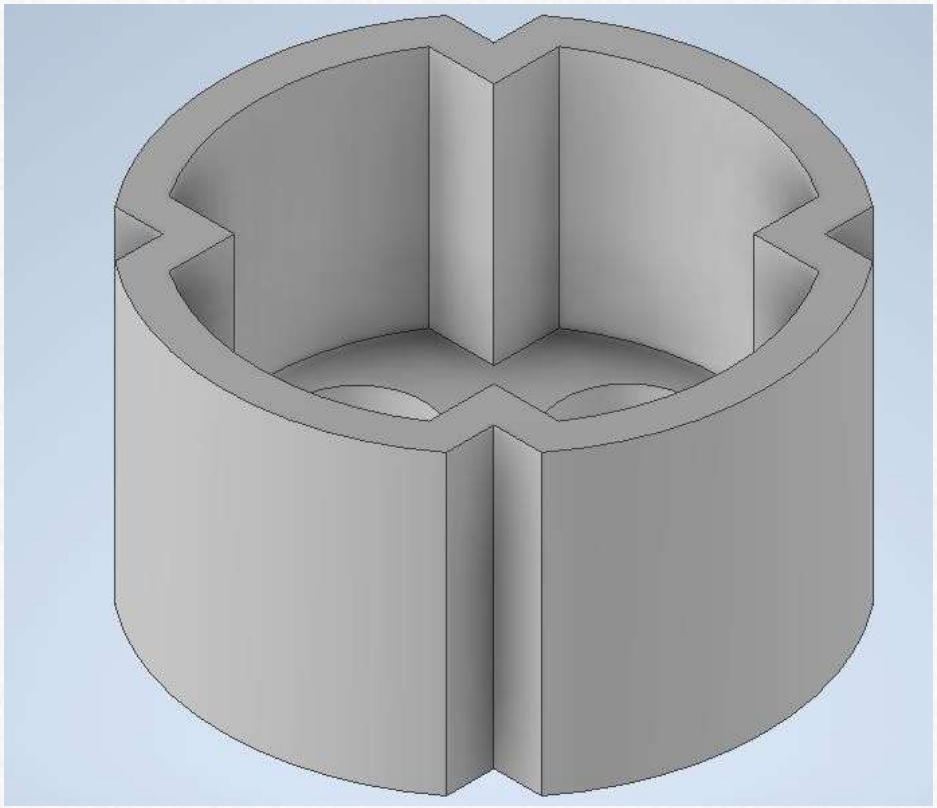


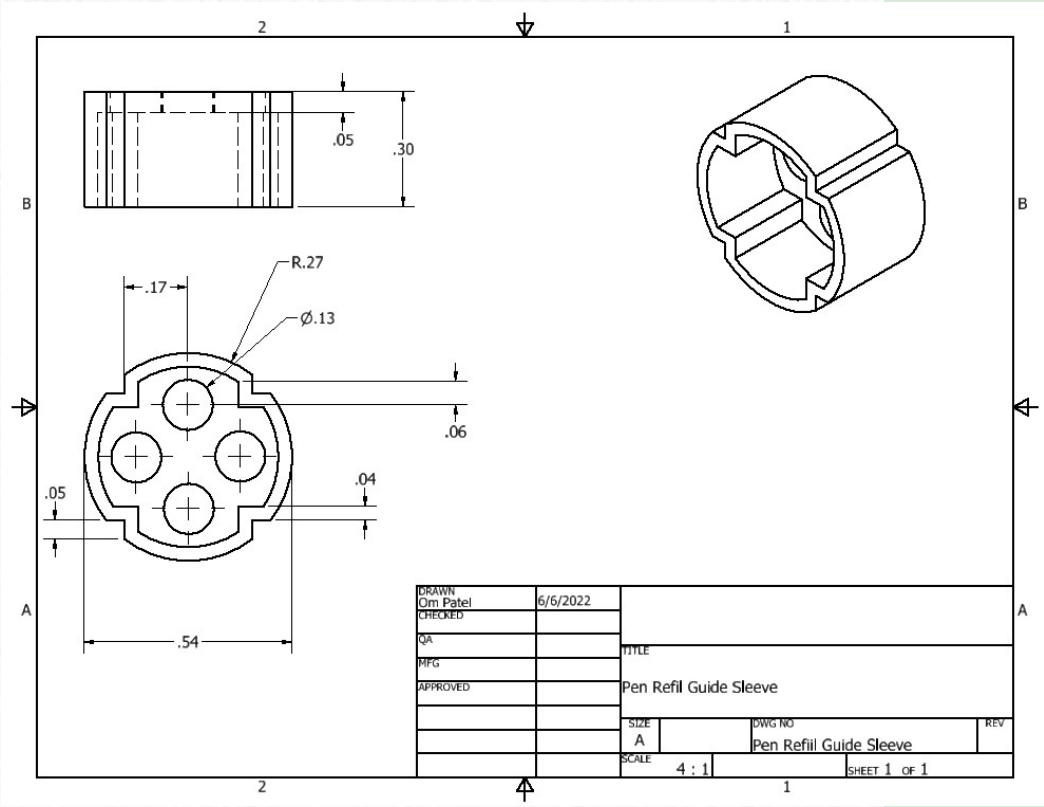
Pen Body Base



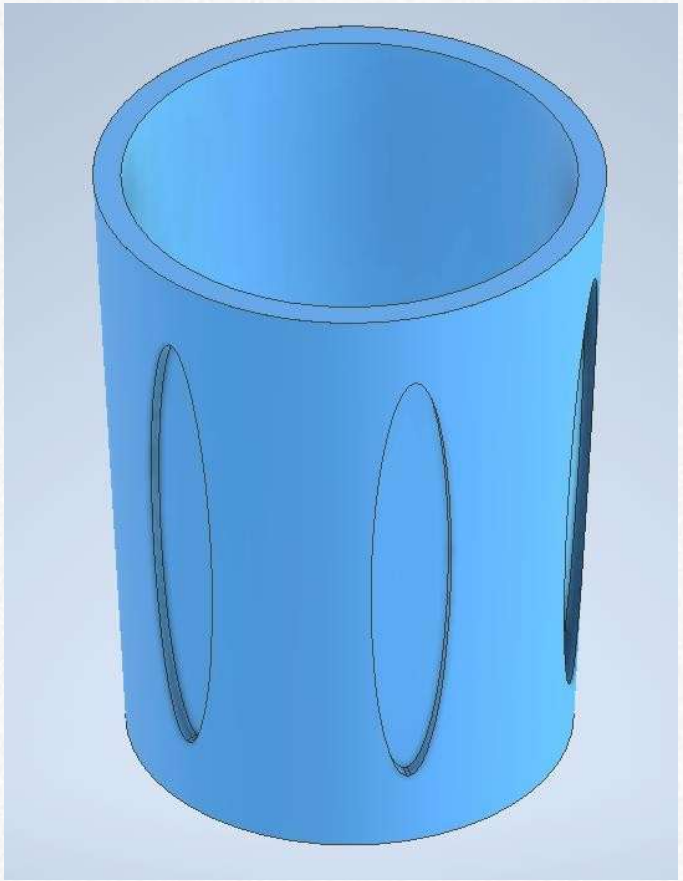


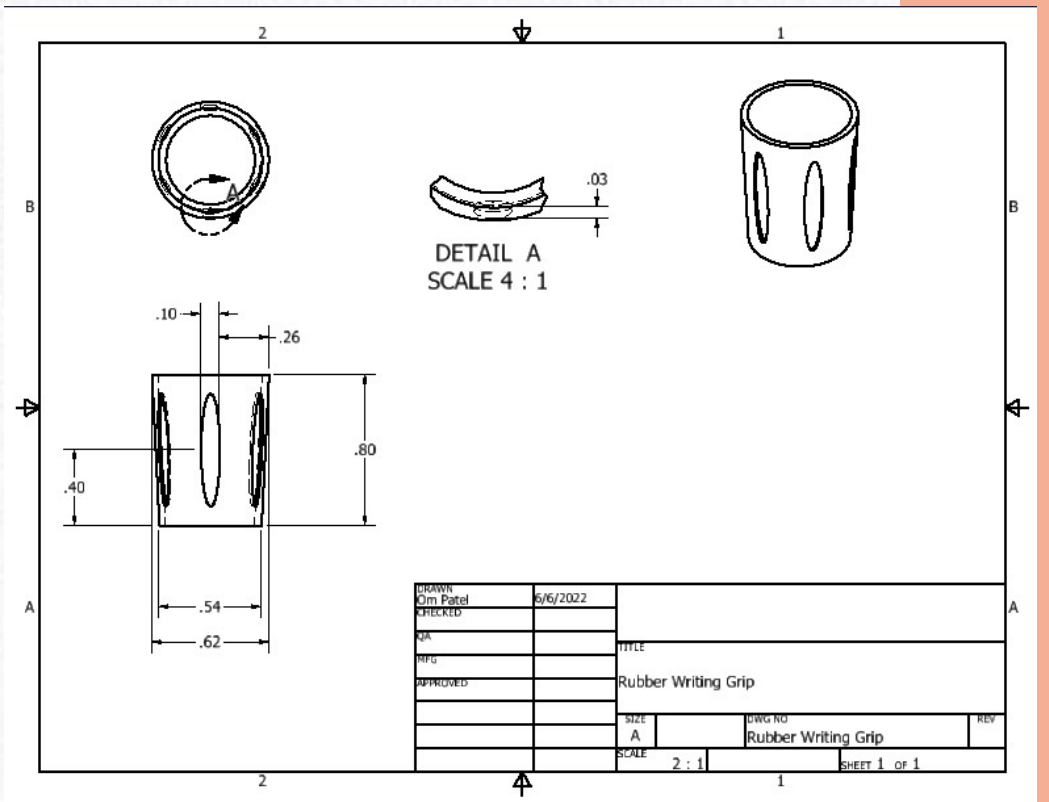
Refill Guide Sleeve



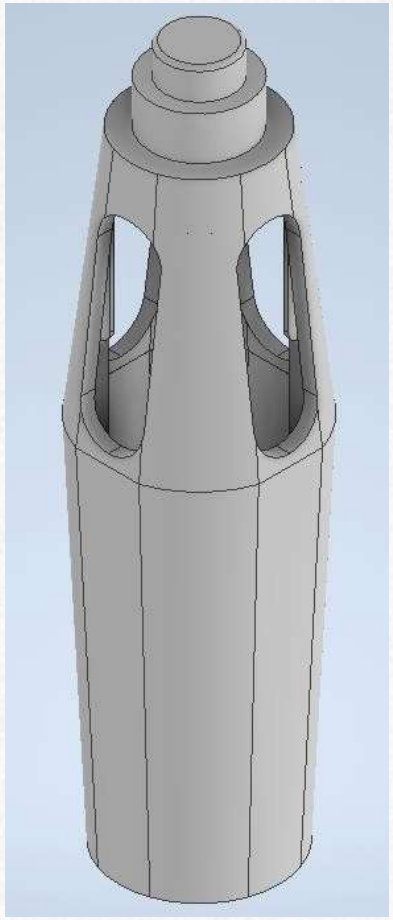


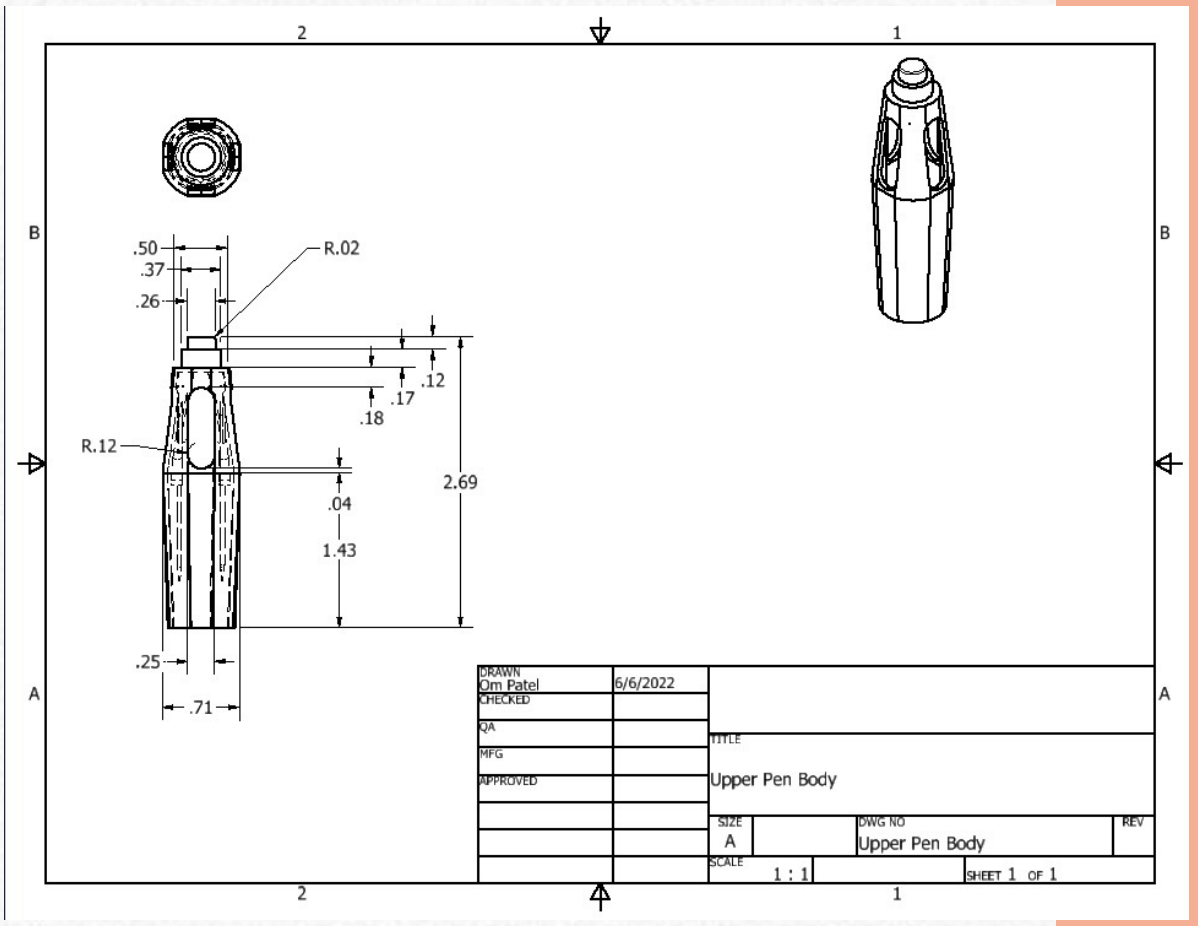
Rubber Writing Grip



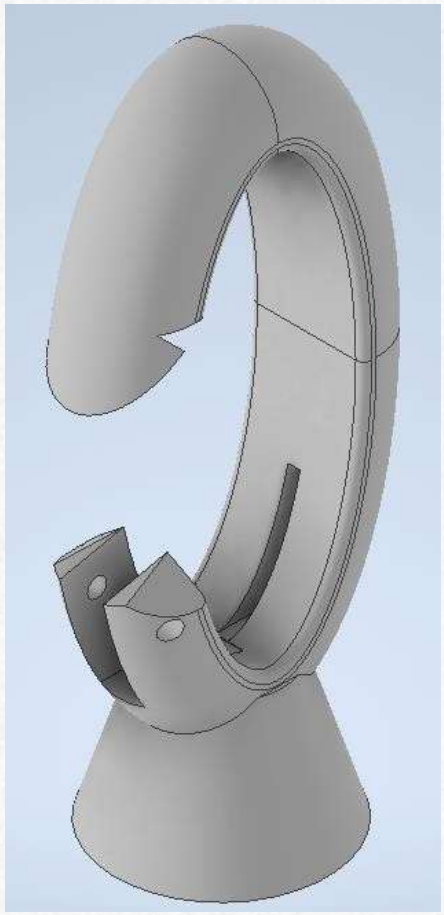


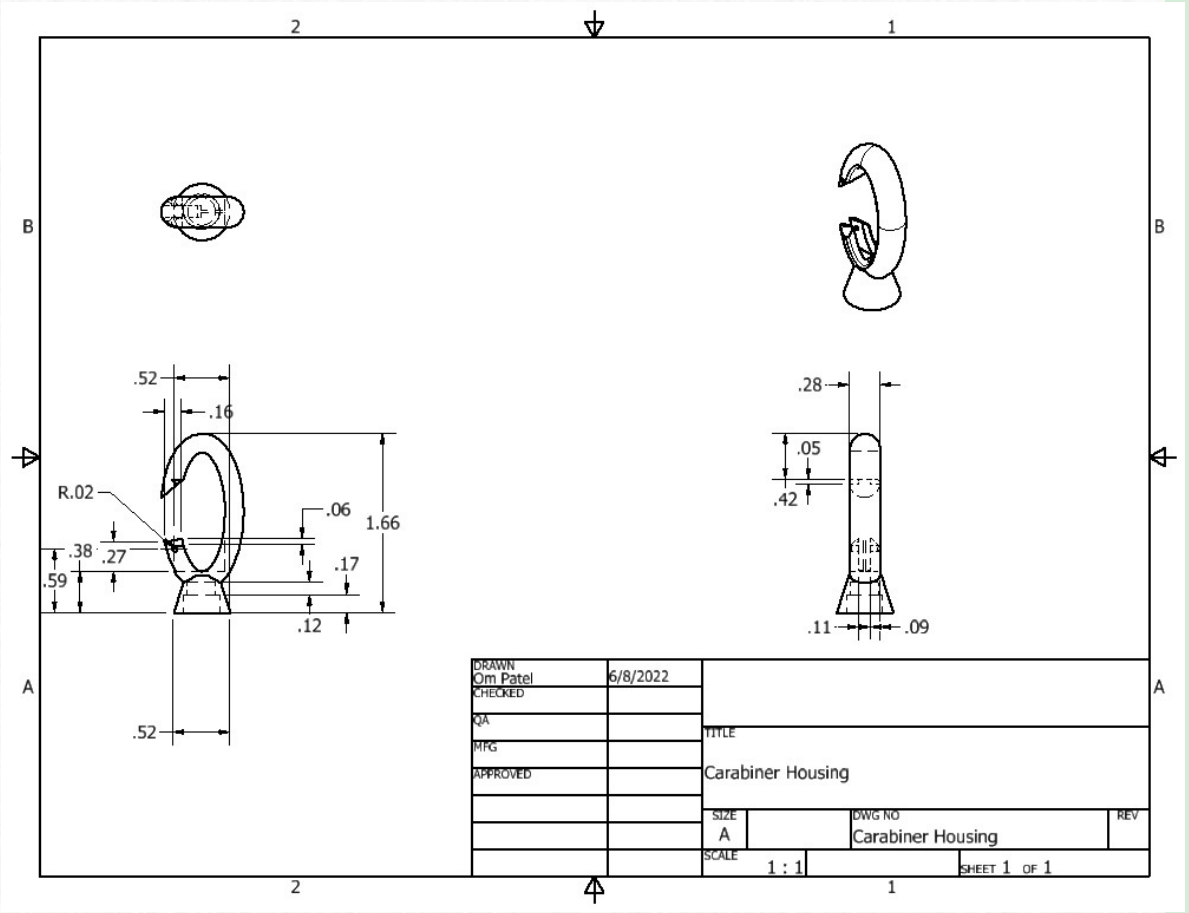
Upper Pen Body



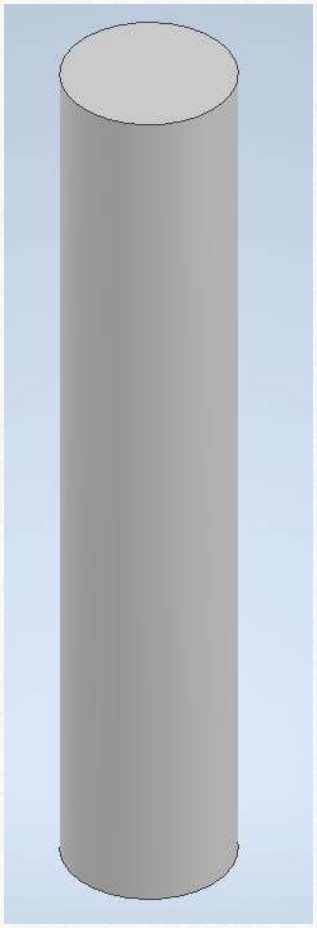


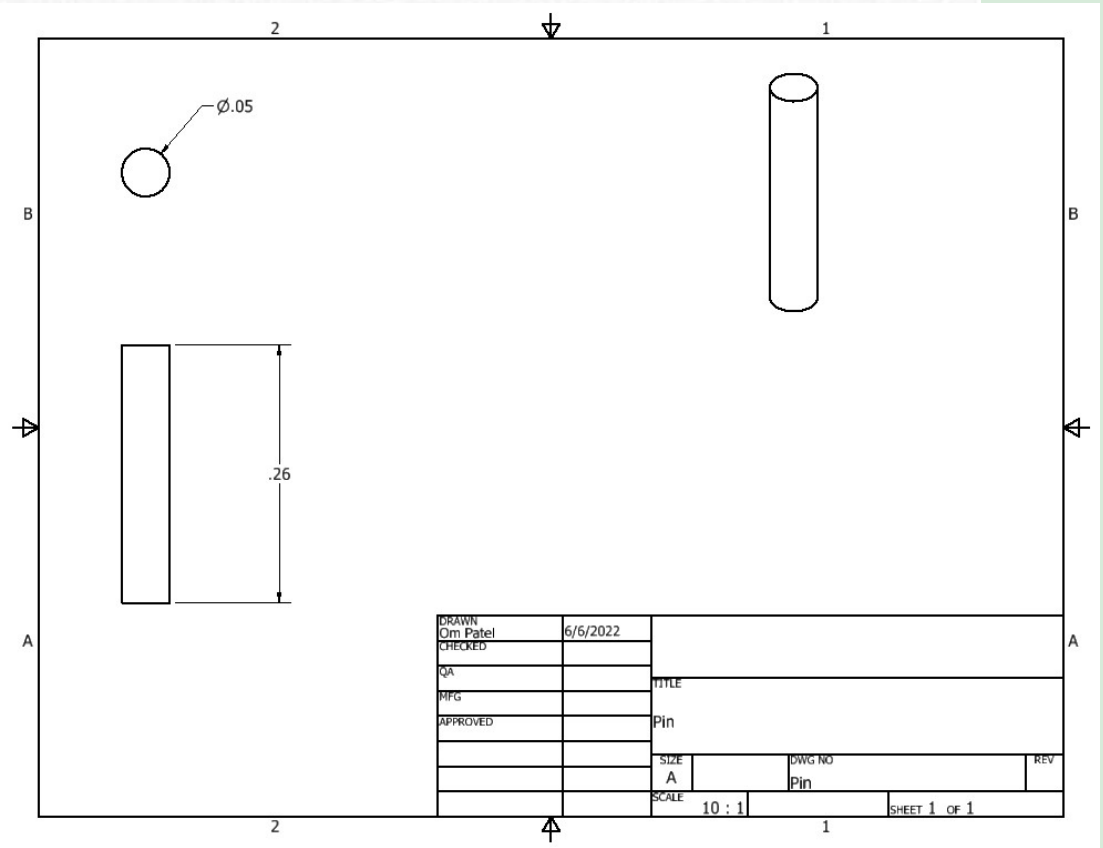
Carabiner Clip Housing





Carabiner Gate Pivot Pin





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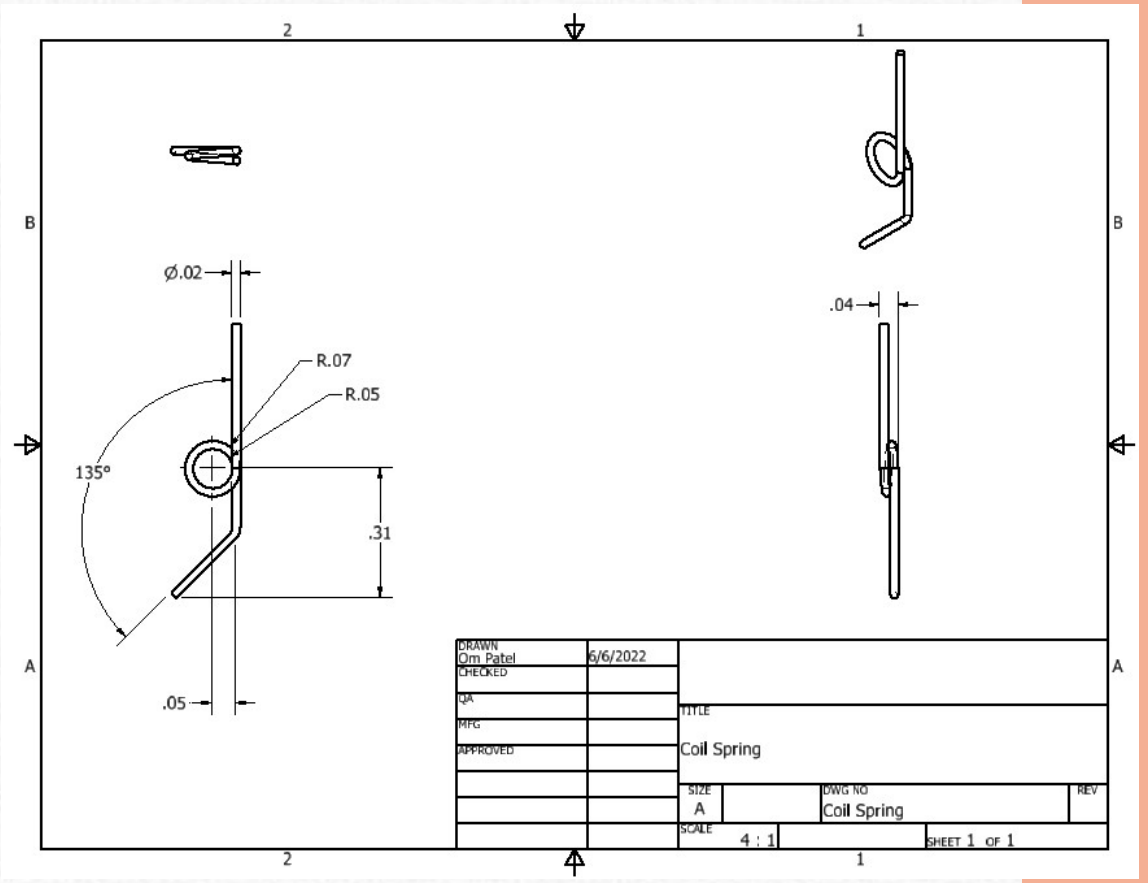
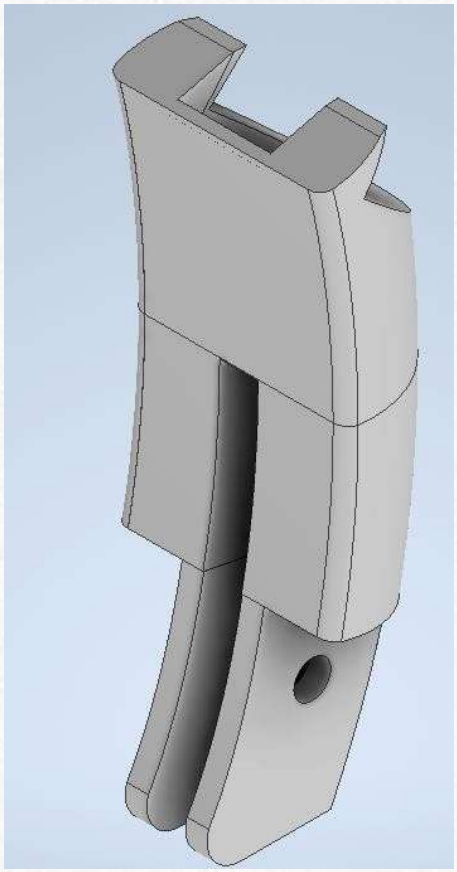
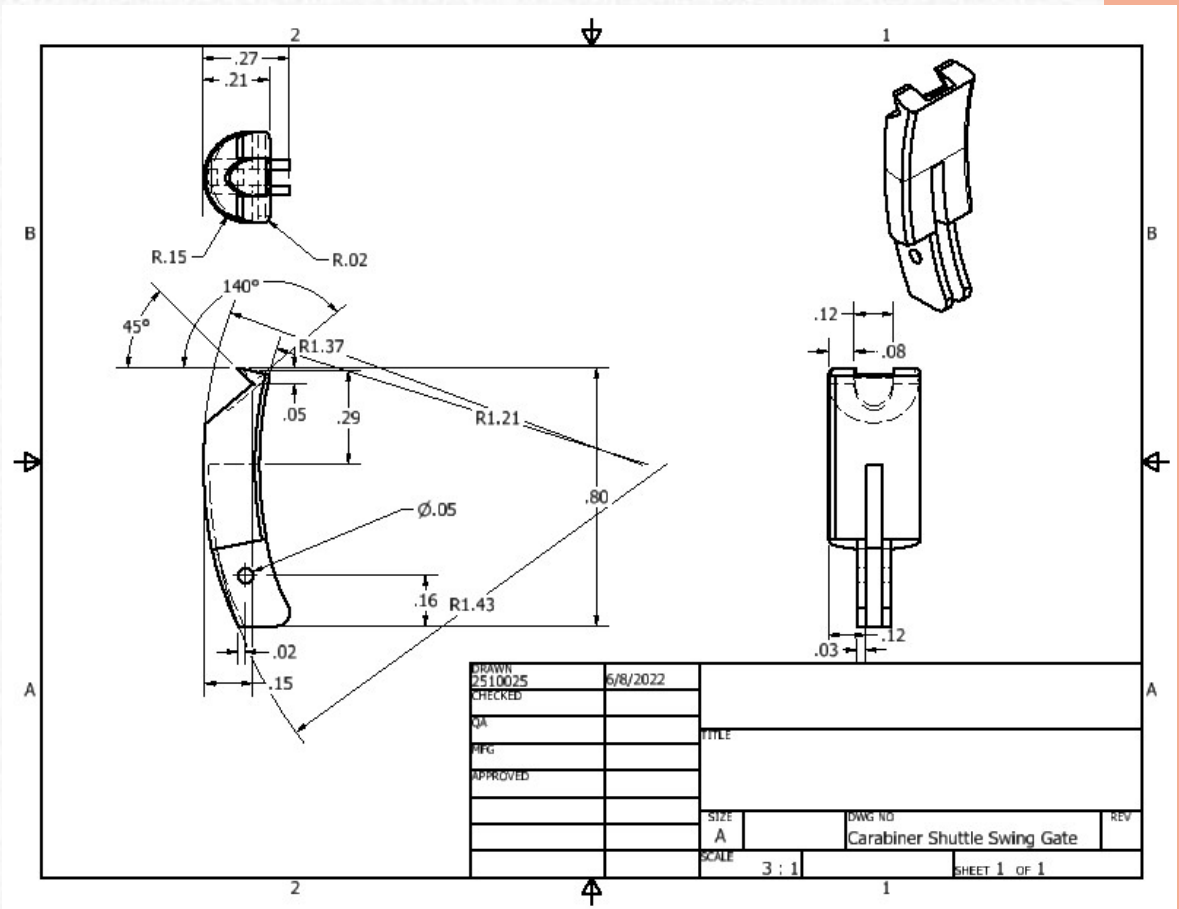
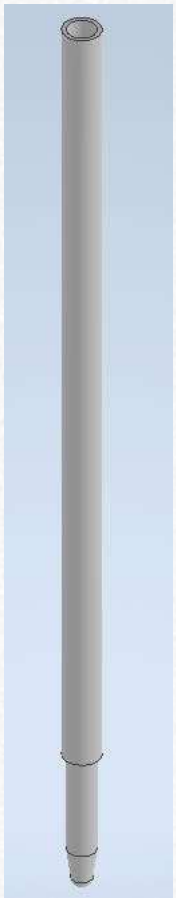


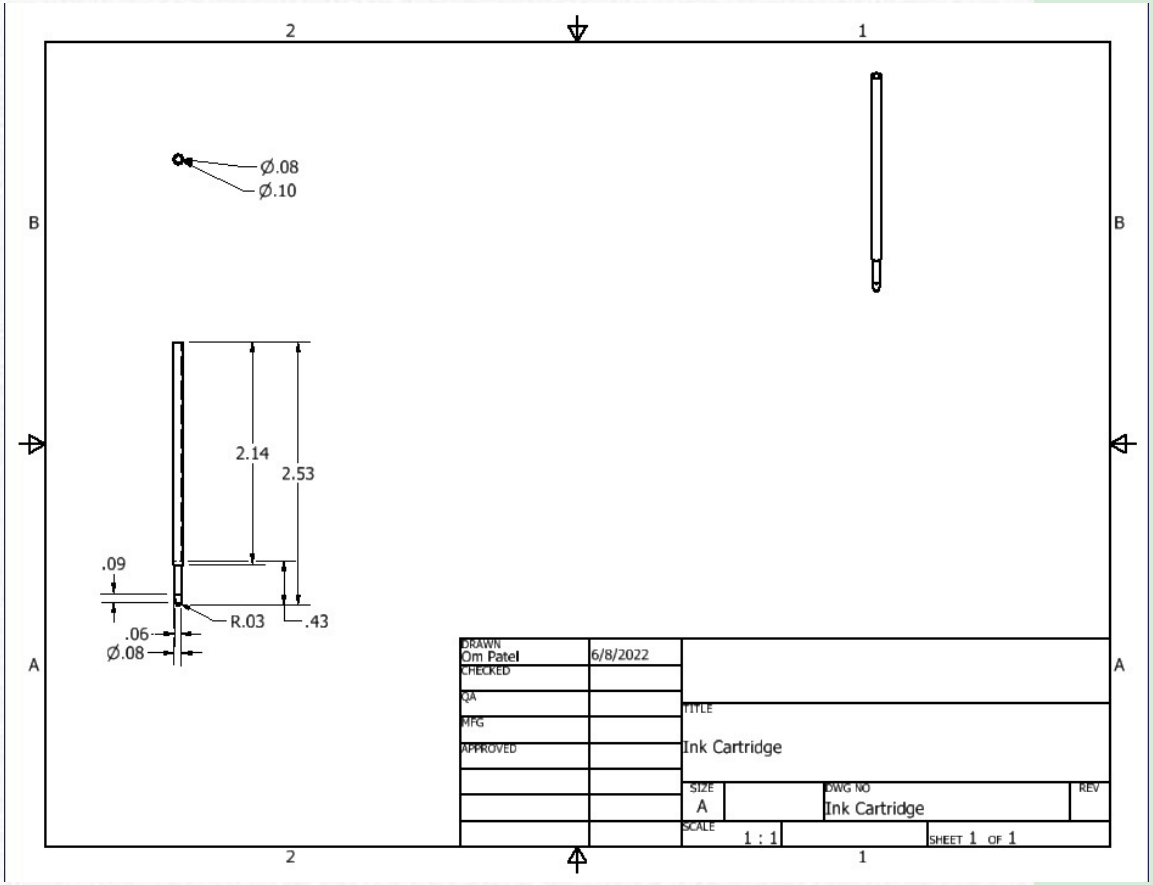
Carabiner Gate



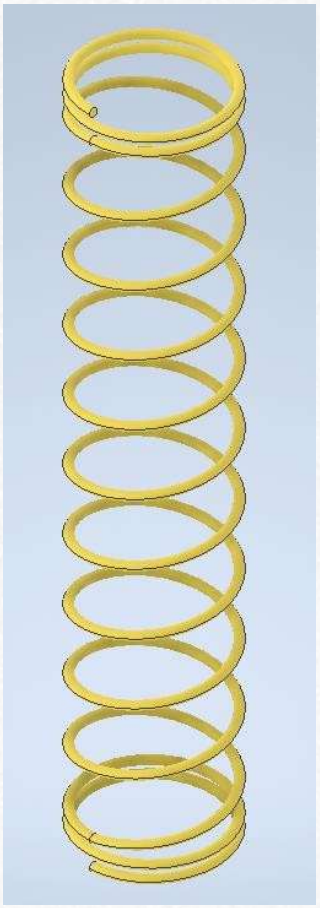


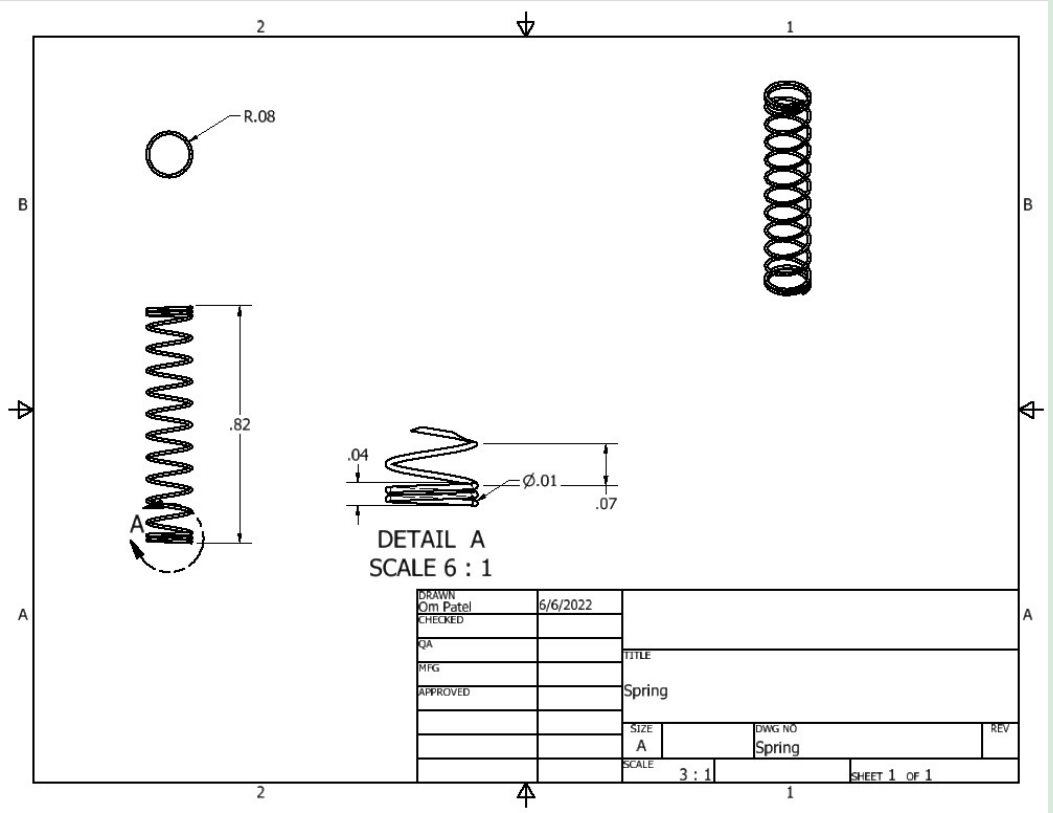
Ink Cartridge



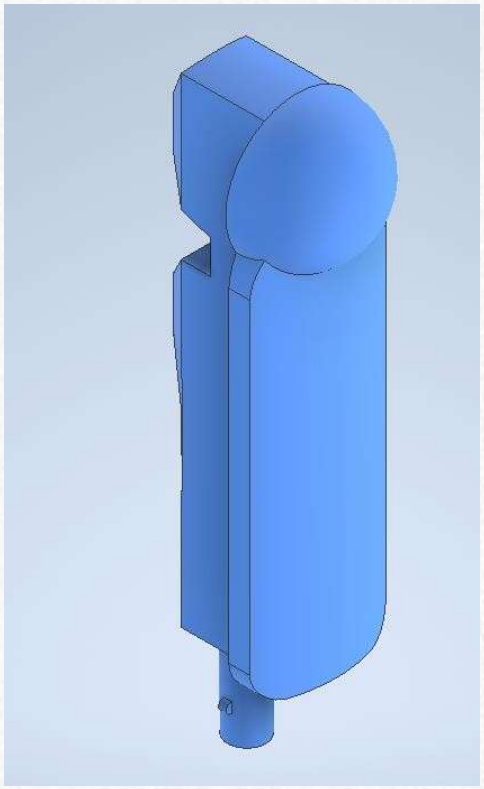


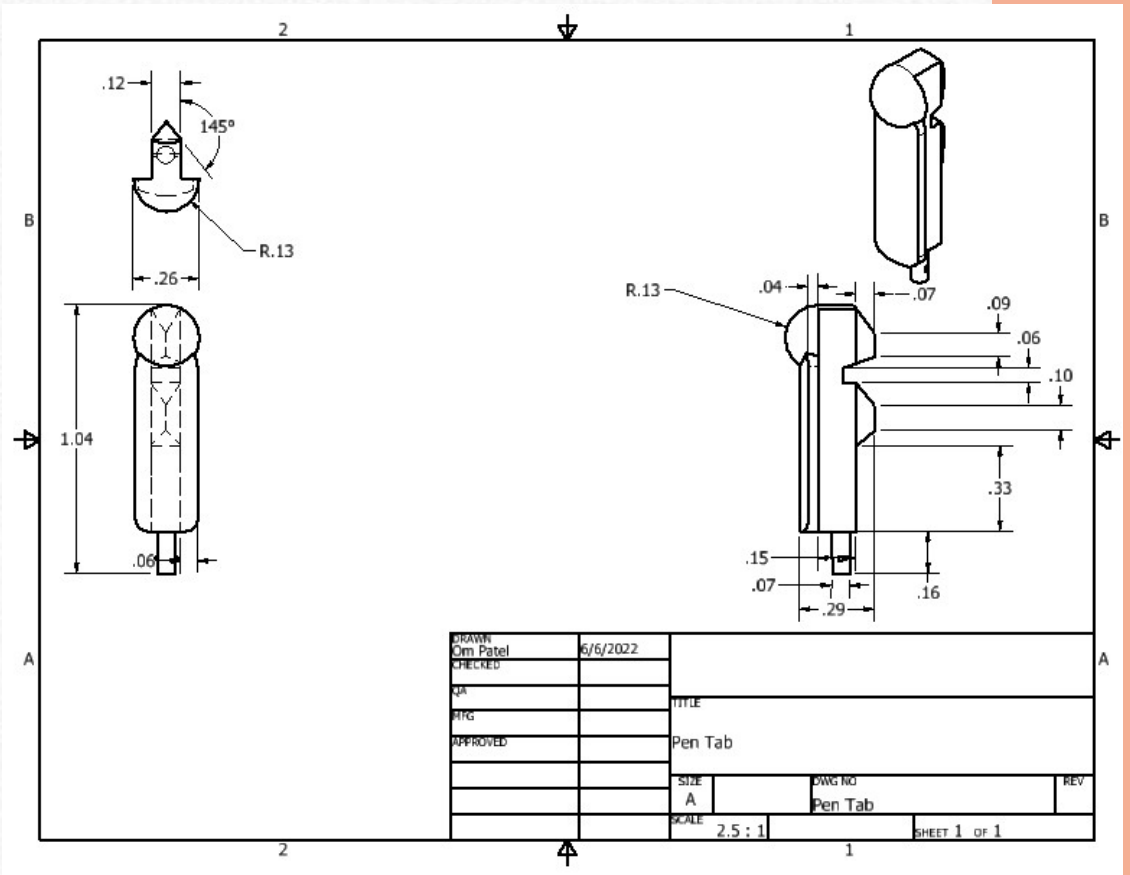
Pen Refill Return Spring

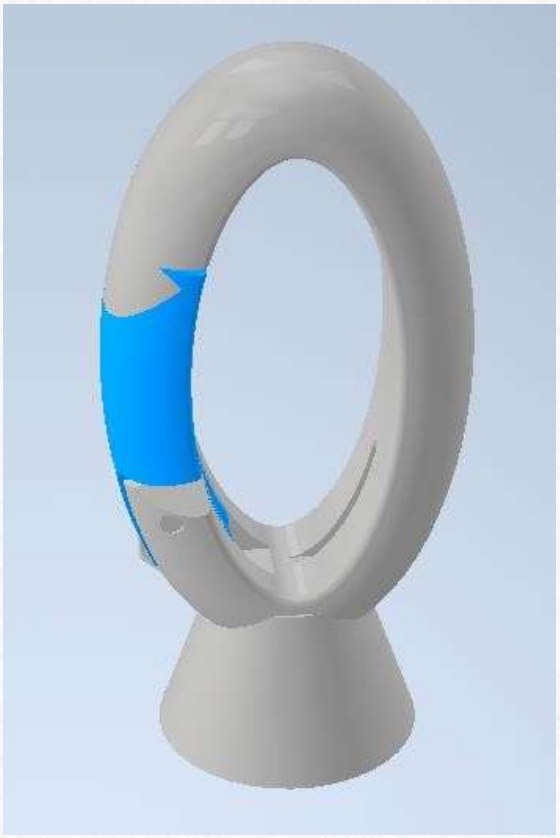




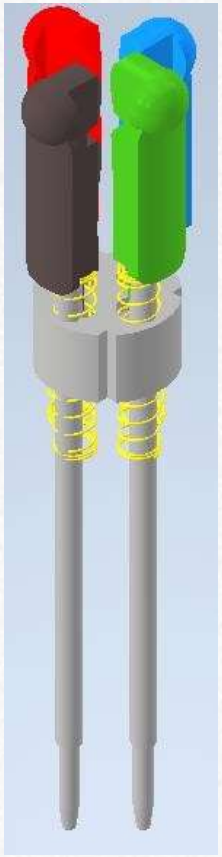
Writing Plungers







Carabiner Su
Assembly

Pen Body Sub Assembly

Ink Cartridges Assembly