Deliverable F - Prototype I & Customer Feedback

Group 3

Ziyan Zhao

Nate Probert

Noah Brouillard

Nnamdi Momah

Obaidah Moati

March 03, 2024

To fulfill the objectives outlined for developing the first prototype and devising a test plan for the second, our team will follow a structured approach:

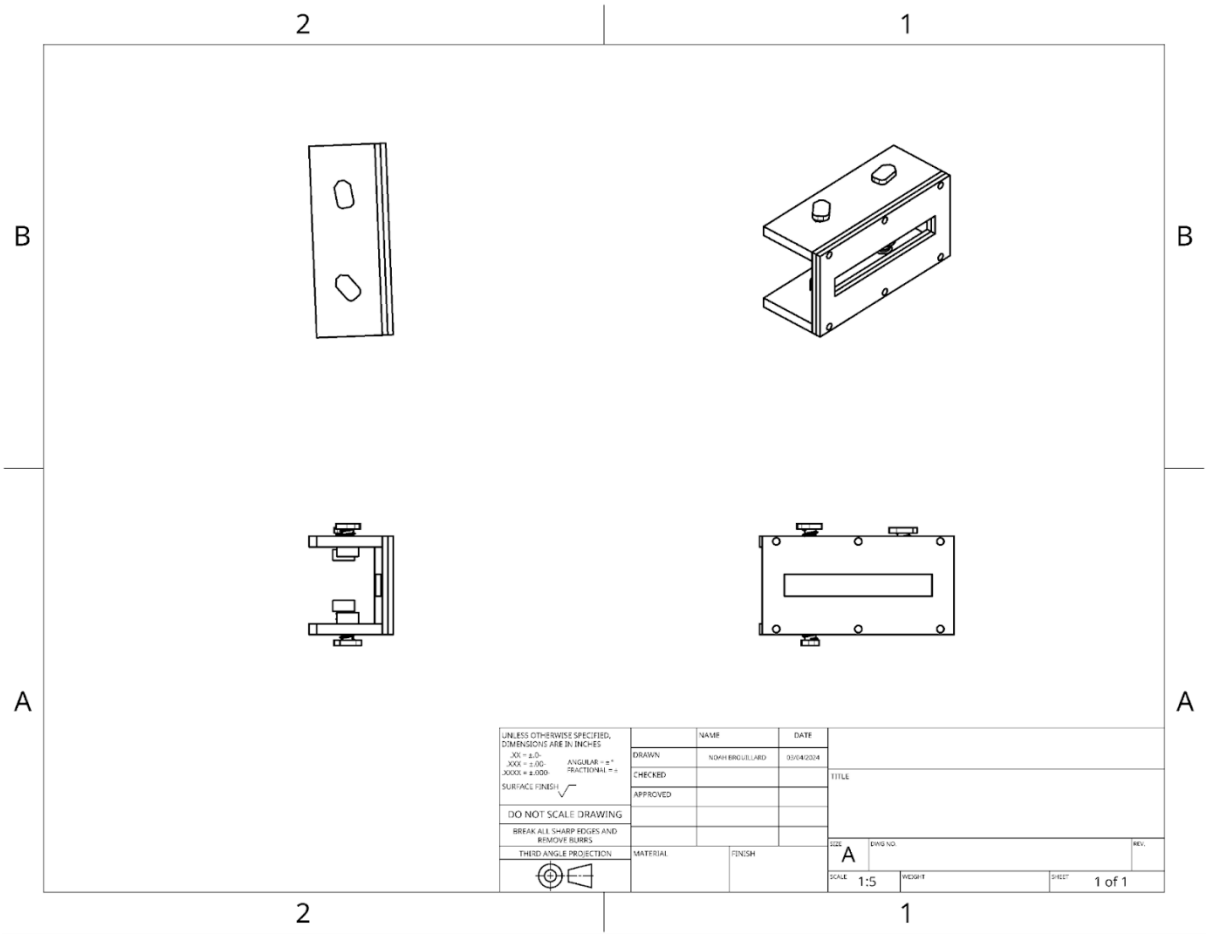
Prototype Development:

The team will focus on developing three prototypes over the course of several weeks. Each prototype involves 3D designing components and assembly. We started with a detailed drawing, trying to document all the processes, going to record how the parts fit together and what the reason is for our design choice. We will keep reviewing the design and bill of materials with the teaching assistant and going to purchase materials as soon as possible to make a prototype 2 can be tested and get measurable results to evaluate metrics.

Prototyping Test Plan and Documentation:

Test ID	***Test Objective (Why)***	***Description of Prototype use and of Basic Test Method (What)***	***Description of Results to be Recorded and how these results will be used (How)***	***Estimated Test duration and planned start date (When)***
1	Clamping to the door	The prototype will be placed onto a door or something of similar thickness to test if the clamping mechanism is strong enough	Place the prototype onto a door or similar surface and attempt to move it while clamped. Measure the force required to shift the prototype.	The test should take 1-3 days depending on how many adjustments need to be made.
2	Increasing and decreasing the clamp width.	The different sizes of the prototype's clamp width would be checked for stability and accuracy.	We will check each of the step sizes of the clamp and measure with an external device for accuracy. We would also check for any sign of wobbling to ensure stability. Record accuracy measurements and stability observations.	The test should take 1 to 2 days. This includes the testing and any adjustments needed to be made.

3	Time consumed during the clamping and unclamping process.	We will be clamping the jig to a door and unclamping it to determine how much time is consumed during this process.	recording the time taken for clamping and unclamping.If the time is fast (<30 seconds), adjustments are not necessary. If the time is slow, adjustments are necessary to increase time efficiency	This test can be conducted any time after conducting the clamping test and should take less than three mins. This test can also be conducted as many times as needed as it is not time consuming



Gathering Customer Feedback:

Feedback, questions, and comments on the prototype will be gathered from the clients next Monday, in class. The feedback will provide valuable insights into user preferences, useability, and areas for improvement in the prototype design.

Update and Iteration:

Based on the results of testing and feedback gathered, we will update target specifications, detailed design, and Bill of Materials as necessary to improve subsequent iterations of the prototype.