Deliverable G - Prototype II & Customer Feedback

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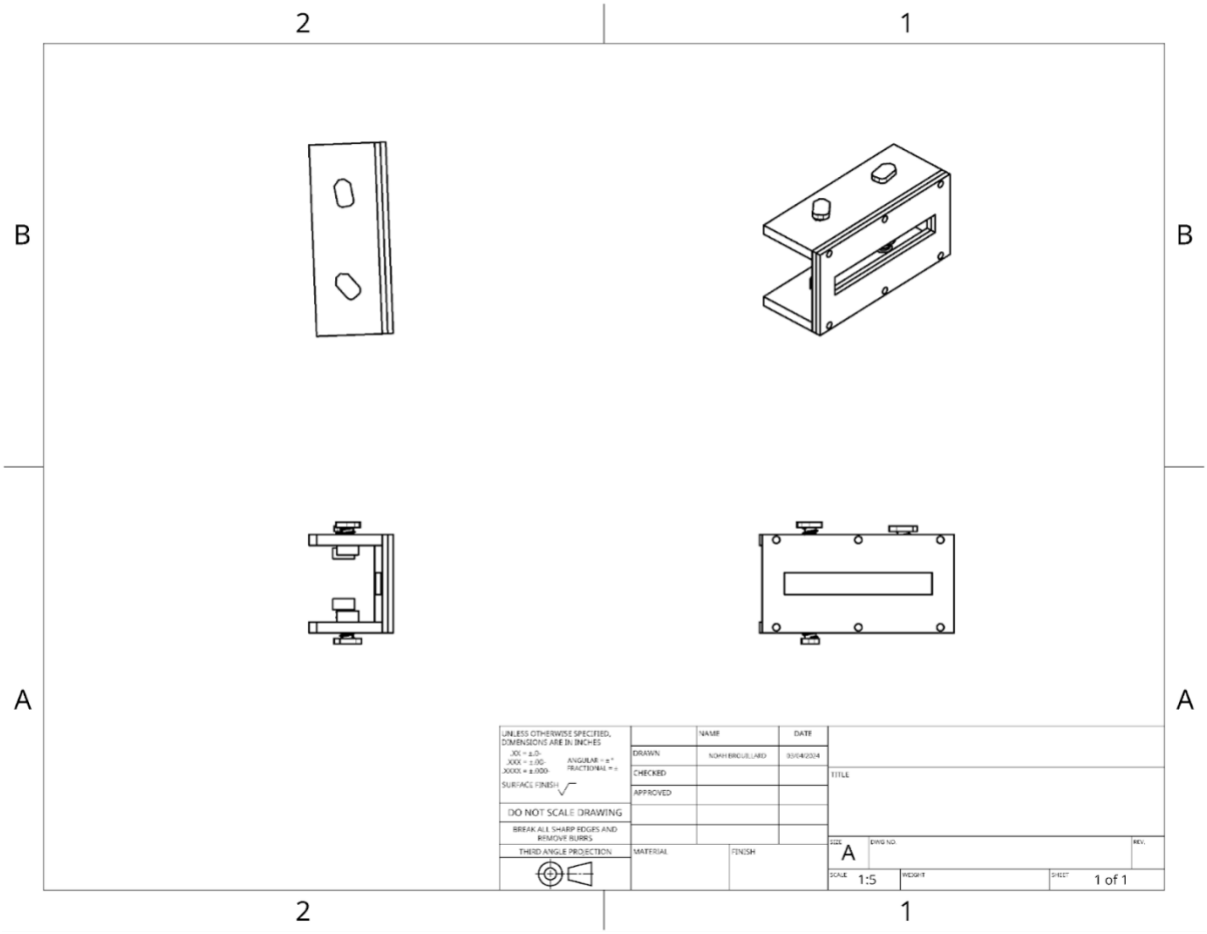
Prototype Development

During our last client meeting, the client requested that our fitting screws be more accurate so in this prototype (prototype 2), we used a thinner filament increasing the precision of the screw threads from 1/16 inch to 1/32 inches. In addition, in order to make the device easier to use, we added a marking for every thickness of the door (1 ¾ to 2 ¾). Our prototyping test plan would remain the same as our first prototype to ensure every client need is met. As for our 3d drawing, only the number of threads on the fitting screws were changed as mentioned. The size of this prototype was also reduced because of production issues. This accordingly decreased the cost of the design.

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. This is to ensure the width of each thread space is accurate to 1/32 of an inch. We would also check for any sign of wobbling to ensure stability. Record accuracy measurements	The test should take 1 to 2 days. This includes the testing and any adjustments needed to be made after.

			and stability observations.	
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. We would also check to ensure that using thinner threads rather than the threads used in prototype 1 does not considerably affect the speed at which the device is clamped.	We would record 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 as originally planned. If we cannot 3D print screws and bolts, off the shelf screw and bolts with required thread size will be sourced. The feedback will provide valuable insights into user preferences, useability, and areas for improvement in the prototype design.

Update and Iteration:

The two main improvements(Thinner Filament, Refined Screw & Additional Thickness Marking) help on increasing the precision of crew threads, ensuring a more accurate and secure fit during installation, also providing users with clear guidance on adjusting the device to accommodate different door thicknesses, improving overall convenience and efficiency. 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.

By incorporating the client's feedback and implementing the requested improvement, Prototype 2 aims to deliver a more accurate, use-friendly, and effective solution for door fitting applications.

Collaboration between the development team and client will be essential to ensure that the final product aligns closely with the client's requirements and expectations.