My Balsa & Glass Workshop

3D Printed "The Heist" Puzzle Box

14 February 2026

When I gave my youngest son Ryan his "Steam Machine" Puzzle Box as a Christmas gift, my Grandson August (Gus) went crazy solving the puzzle and really enjoys using it to store his treasures. So, I decided to see what I could find in the way of a puzzle box for him to call his very own. What I found was **"THE HEIST."** A perfect project to show off your 3d printer and fire up your puzzle solving skills! Breaking into THE HEIST is not easy, and <u>**releasing the center diamond**</u> will take some SERIOUS SKILLS!!!! The Heist Puzzle Box is an original design by **Leisure Luke**. It's a 23 piece puzzle box that is SUPER EASY TO PRINT and requires no supports. Print it in PLA, and the parts without squiggly springs can be PETG or PLA. Very little plastic filament is needed for this project! All the required STL files can be downloaded **_for free_** from the Cults3D website (https://cults3d.com/en/3d-model/game/the-heist-puzzle-box-remixed-by-leisureluke) or the Thingiverse Website (https://www.thingiverse.com/thing:5140061).
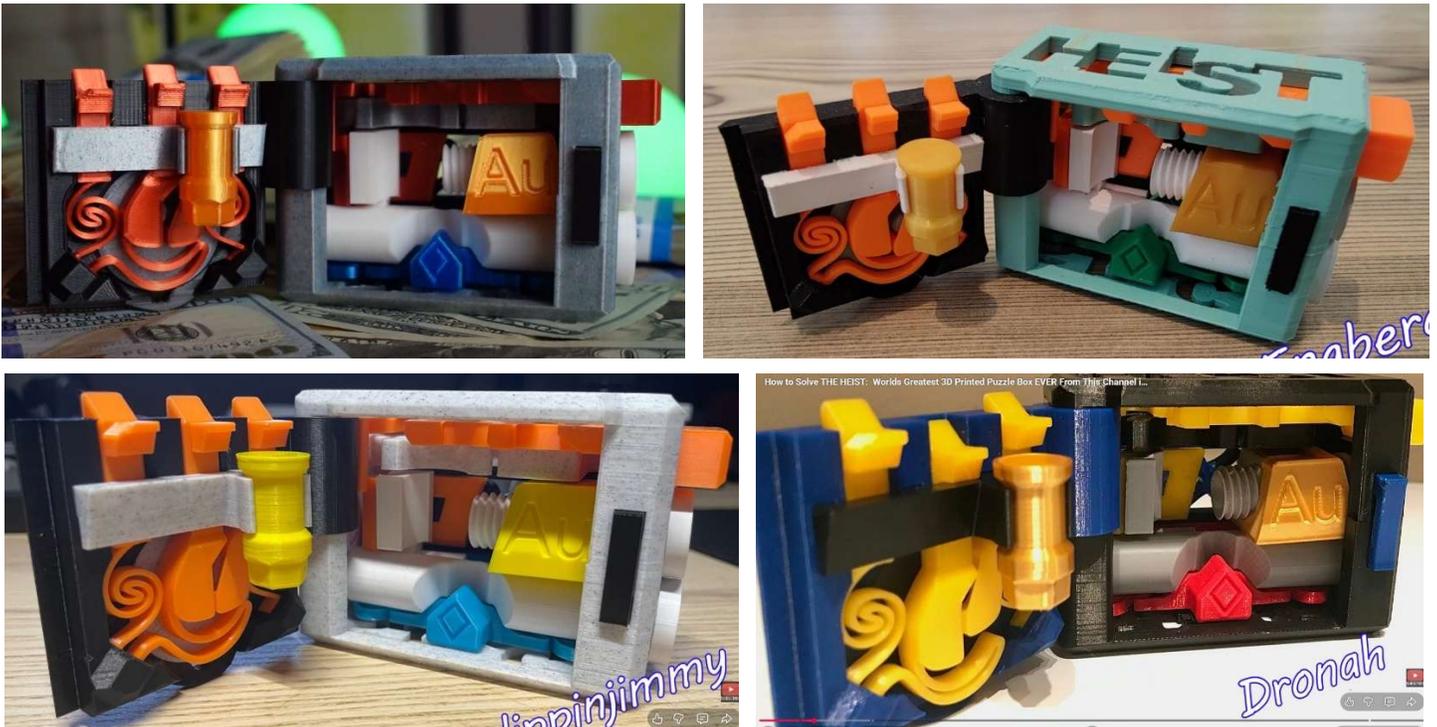

Figure 1 – Nice Examples of "The Heist" Puzzle Box

Images Sources: Screen captures from the YouTube Videos listed below.

Also available to aid you in the printing and assembly are the following videos:

Leisure Luke YouTube Video Channel:

https://www.youtube.com/@LeisureLuke

Original Hilarious YouTube Homemade Commercial:

https://www.youtube.com/watch?v=vSHd0pNM9u0

Assembly Instructional Video:

https://www.youtube.com/watch?v=hI5dVq_Ooe4&lc=Ugzpjna8nFBcAoASS8Z4AaABAg

See this YouTube video for more detail on the REMIX improvements:

https://www.youtube.com/watch?v=iNEbo-wwUJo

THE HEIST SOLVED Video:

https://www.youtube.com/watch?v=Is-BnVotj5U

3D Printing "The Heist" Puzzle Box

Once I downloaded the 23 STL files, the first thing I did was to establish which parts would be printed with the various types/colors of filaments I planned to use. All REMIXED parts end with _R. Using guidance provided by Leasure Luke, I decided to use six filament colors for my project.

My Colors for each STL model:

HeistLid_R, UpperBoltClamp, LowerBoltClamp_R, SafeBar, Spacer, and Heist_Base_R – Space Gray PLA

Bolt, Barrel_R, BarrelSpring_R, and BarrelPin_R – White Hyper-PLA

Dial, VaultDoor, Clips_Print_3_of_These, and ClipSpring_R – Black PLA

Pins_2_and_3, Pin_1, DoorButton, and PinClipV2 – Red PLA

Gold, and Tool – Gold Silk PLA

T7_TheHeist_R – Dark Blue PLA

Next, I setup the print profile I would need in Creality Print 7.0 for a 0.15mm layer height, 0.32mm line width, three wall loops, four top and bottom layers, 100mm/sec print speed, and 20% sparse infill density required for the various puzzle box parts using a 0.4mm print nozzle. After scaling each of the STL files to 150%, I then set off to print all the Space Gray PLA filament parts. Total 3D print time for these six parts was **6 hours and 22 minutes**. Figure 2 shows the results of my efforts.
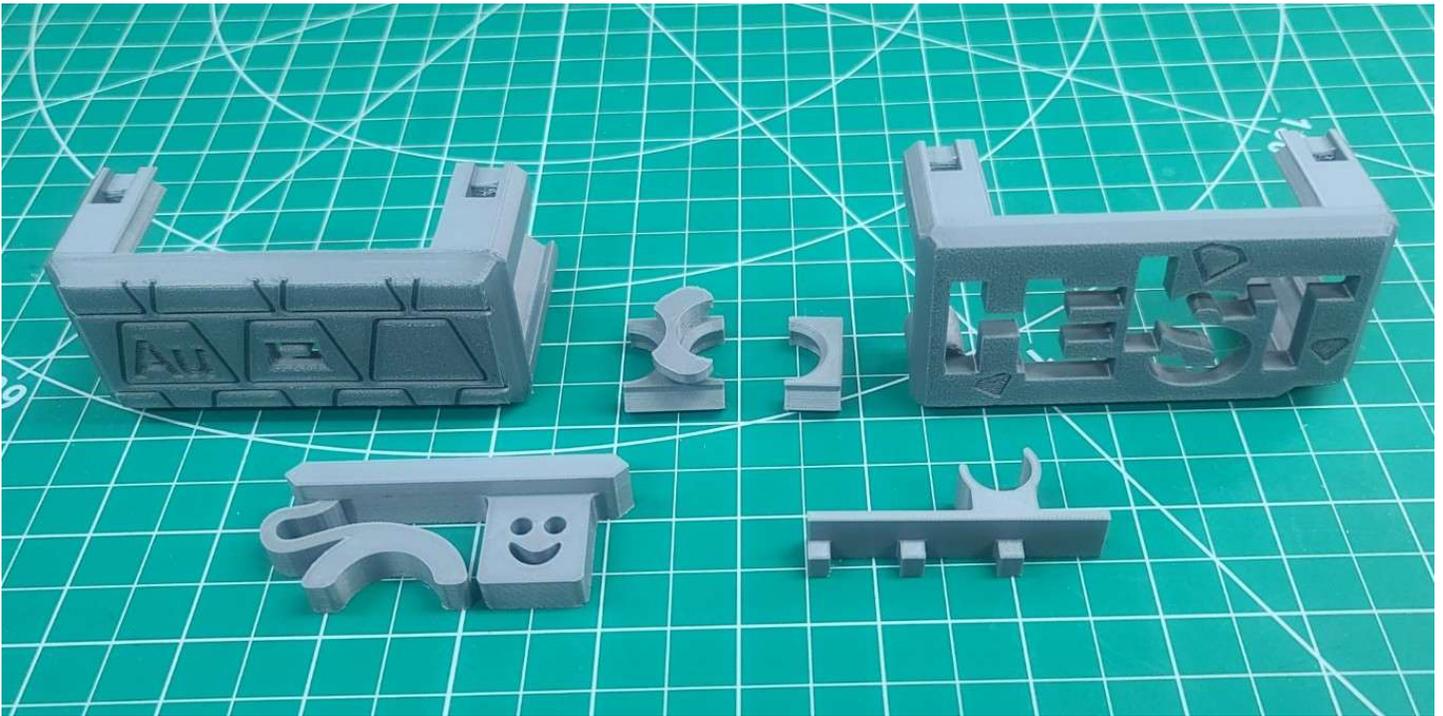
Figure 2 – The Heist Puzzle Box Space Gray PLA Parts

With the Space Gray PLA parts printed, I moved on to scaling and printing the four White Hyper-PLA parts as listed above on page 2. Total 3D print time for the four parts was **3 hours and 25 minutes**. Figure 3 below shows the results of this effort.
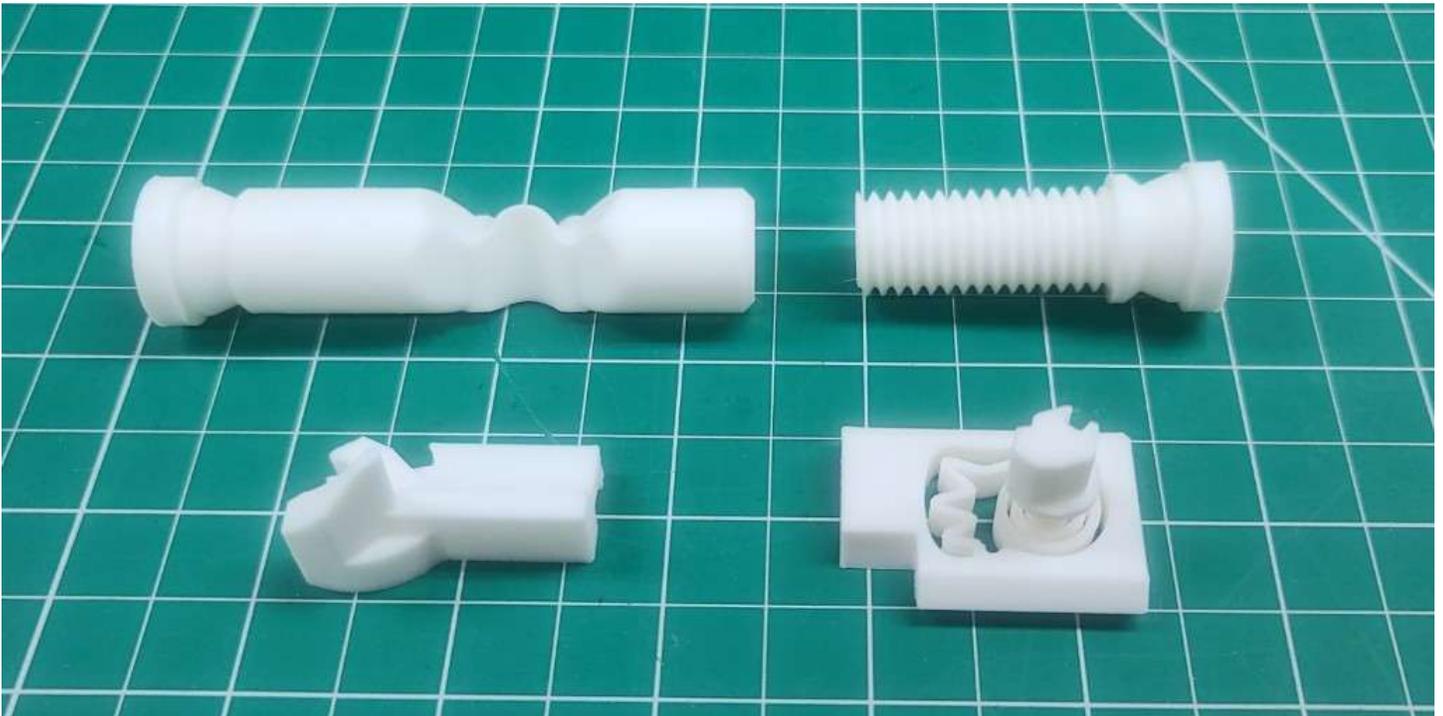

Figure 3 – The Heist Puzzle Box White Hyper-PLA Parts

Next I swapped filaments and then scaled/printed using Black PLA filament for the parts listed on page 2. Total 3D print time for these six parts was **3 hours and 30 minutes**. The six Black PLA parts are shown in Figure 4.
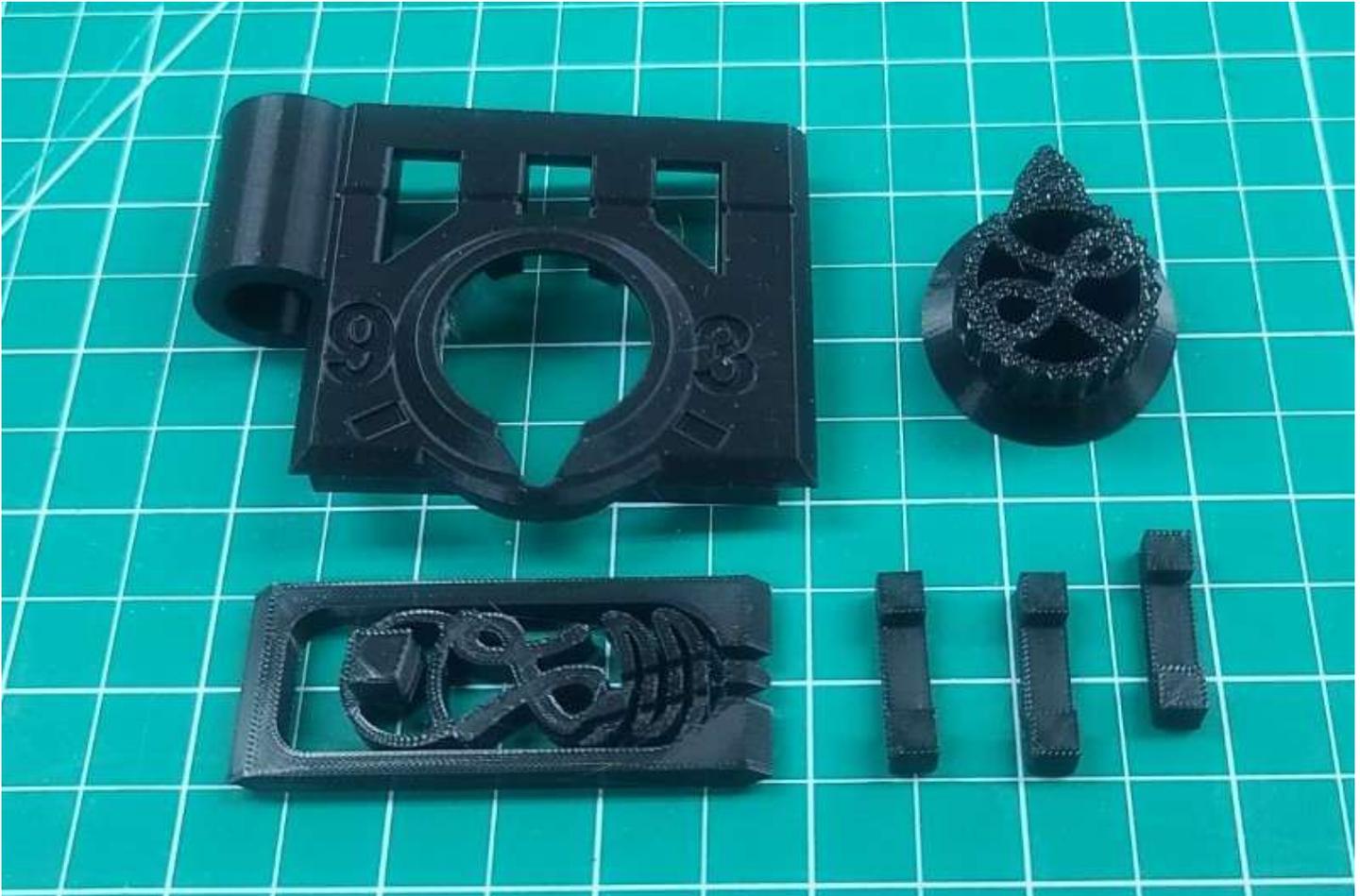

Figure 4 – The Heist Puzzle Box Black PLA Parts

With the Black PLA finished next up was to scale/print the parts I wanted in Red PLA filament. Total 3D print time for the four parts was **2 hours and 3 minutes**. The resulting four parts can be seen below in Figure 5.
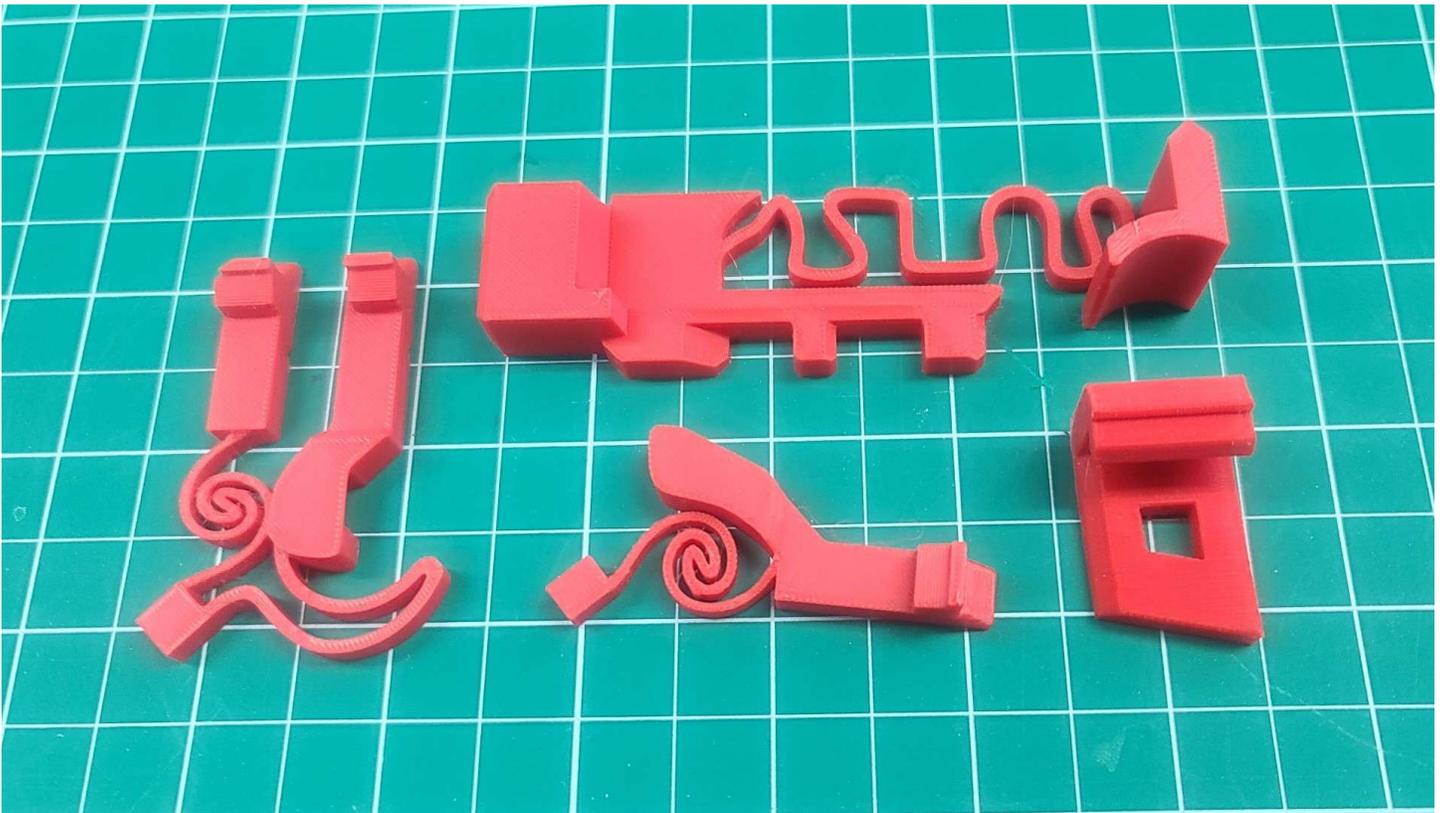
Figure 5 – The Heist Puzzle Box Red PLA Parts

Once again I swapped out the filament in my 3D printer and changed the Creality Print filament profile settings for Gold **Silk** PLA filament, then pressed forward with some more 3D printing. Total 3D print time for the two parts was **1 hour and 10 minutes**. These two parts are shown in Figures 6.
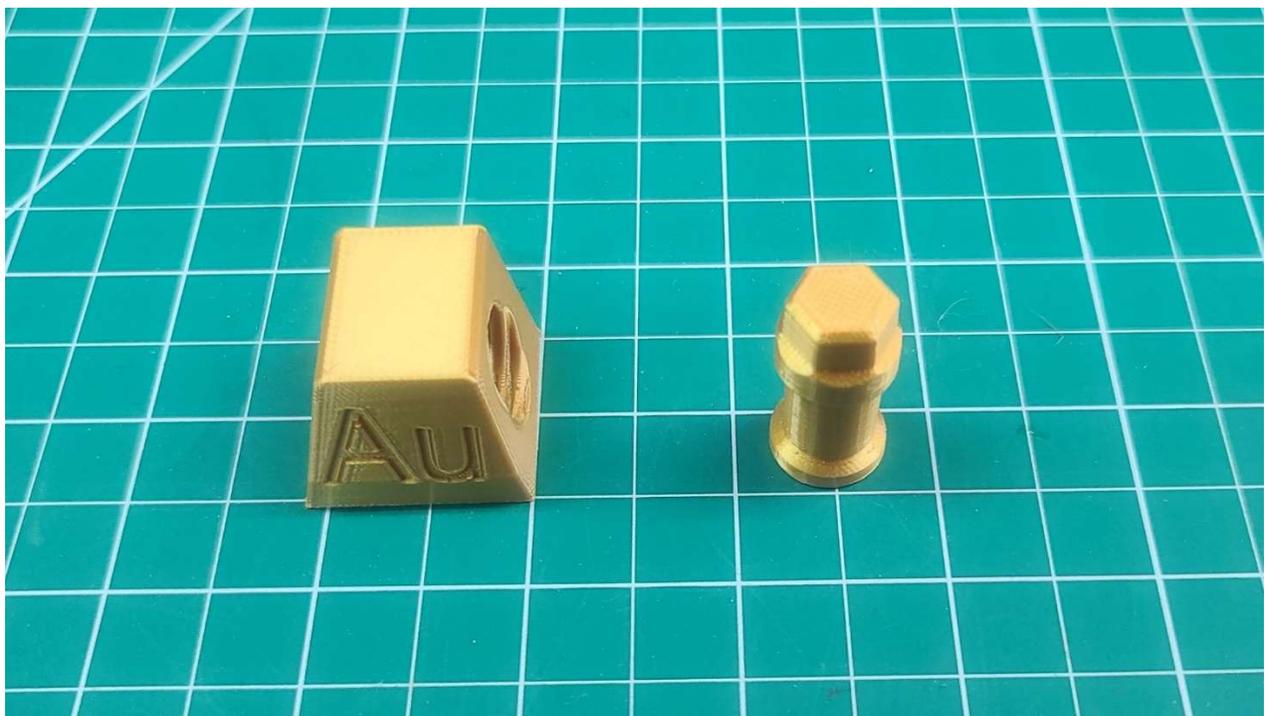

Figure 6 – The Heist Puzzle Box Gold Silk PLA Parts

Finally, the last part. After swapping out the Gold Silk PLA filament for some Dark Blue PLA I printed the last part shown in Figure 7 that I needed to assemble this puzzle. Total 3D print time for this last part was **1 hour and 10 minutes**.

Figure 7 – The Heist Puzzle Box Dark Blue PLA Part

With all 23 3D printed parts finished, it was time to put all the various parts together, and they should all fit together pretty easily. I'm not going to go through all the steps of my Heist Puzzle Box assembly. The online YouTube video assembly instructions are great, which you can view @:

https://www.youtube.com/watch?v=hI5dVg_Ooe4&lc=Ugzpjna8nFBcAoASS8Z4AaABAg.

You should be able to go straight from the PRINT bed to puzzle assembly. There are no external parts needed - no metal springs, no bearings, no magnets, no electronics, NO GLUE, NO SANDING... you get the idea.

During the assembly of my puzzle box, so the *"Dial"* part would have a greater contrast against the *"VaultDoor"* part, I reprinted the *"Dial"* part using Space Gray PLA filament. Having both of these parts in Black just didn't work for me.

The Spring improvements: All the springs that would be "stored" compressed now have the option of adding a rubber band. In "The Heist" there is a rubber band for the T7_TheHeist_R, one for Barrel_R & LowerBoltClamp_R, and a final on the ClipSpring_R, which is tricky to install. Overall, the 3D printing

was straight forward. The puzzle box design engineering and 3D modeling are excellent, and everything fits together and functions like a champ! Therefore, I highly recommend this puzzle.

Below in Figures 8 & 9 you will see my 3D printed – **"The Heist" Puzzle Box**. I know my Grandson August is going to love it, and I hope you have fun making one for yourself.

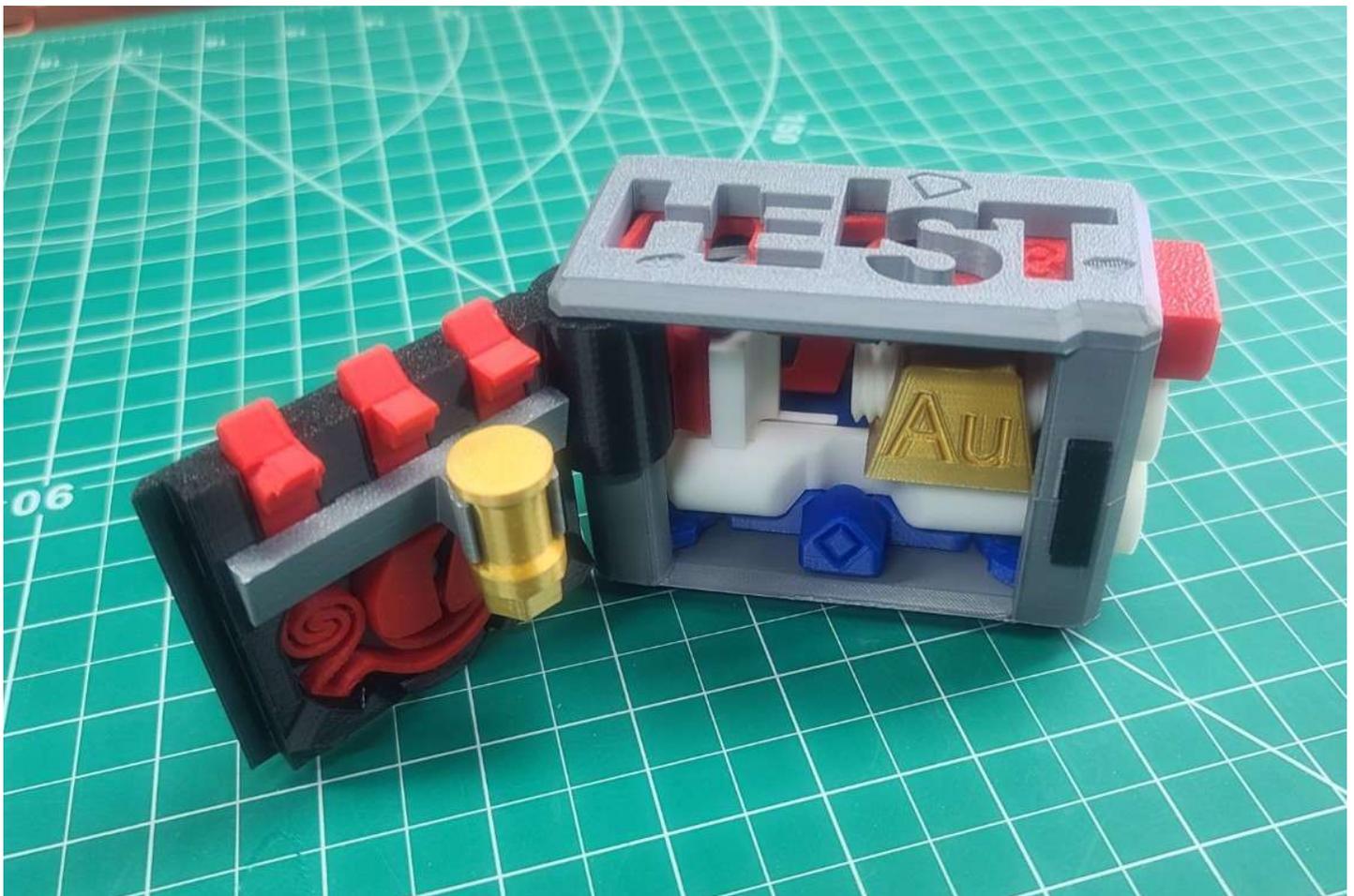*Figure 8 – The Heist Puzzle Box Outside Views*

Figure 9 – The Heist Puzzle Box Inside View