

Thales

Steel Stackable Puzzle

Miles Zarick

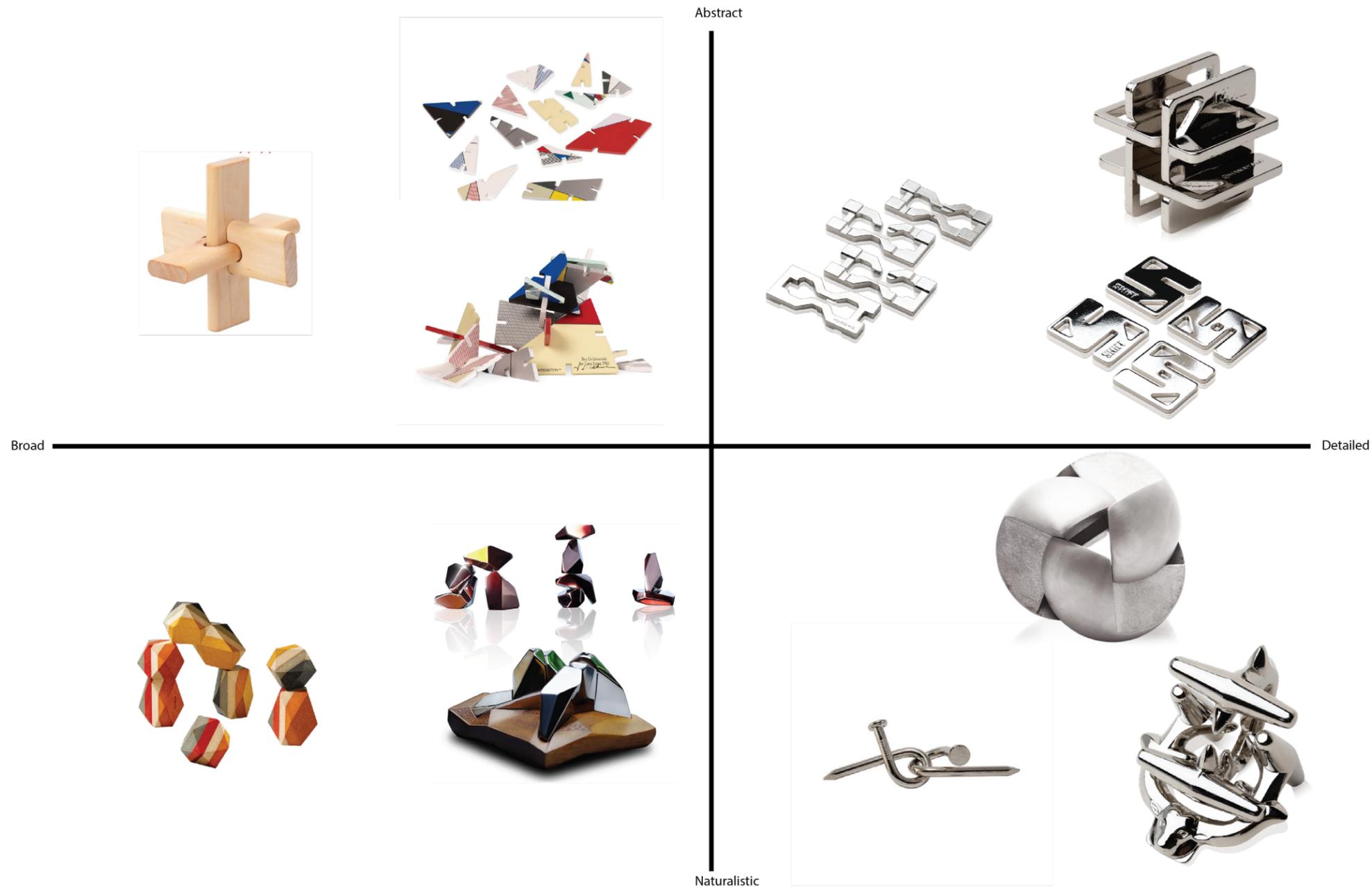
Prof. Jeanne Pfordresher

Design Studio: Play

December 13th, 2024



Research Map



Observations:

- Cast objects offer opportunity for detail.
- Objects have flat cuts.
- Metal objects have more variation.

Missing:

Metal pieces with flat, geometric forms that fit together.

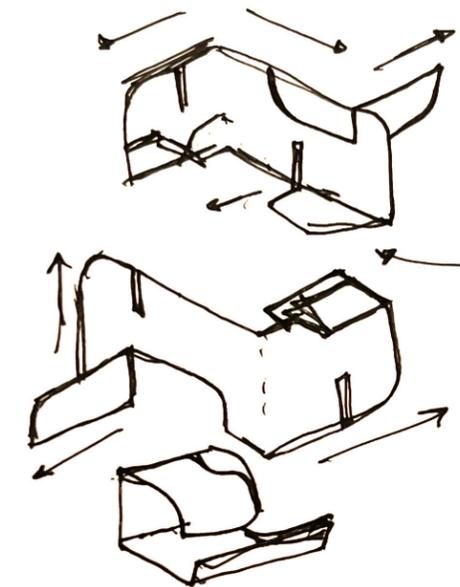
Made in a similar process to wood form (non-cast).

Market goal:

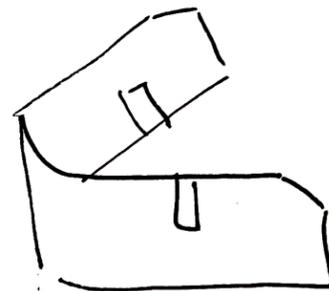
Scultural desk toys for adults.
Sold in museum stores.

Ideation Sketches

- Bends in three dimensions give the flat pieces more volume
- Uniform slot sizes offer play variation



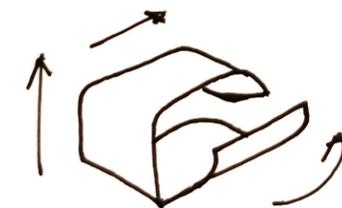
-10 tall pieces
 - 5 bent
 - 5 flat.



Mirrored parts
 to fit into one another.

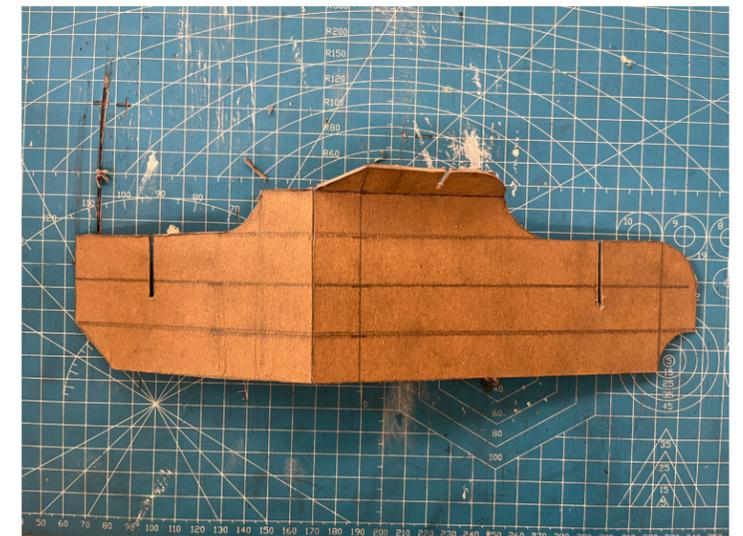
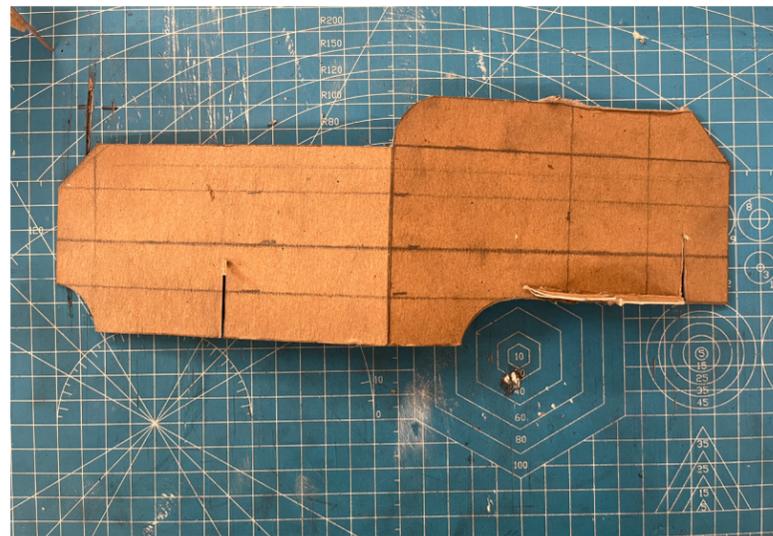
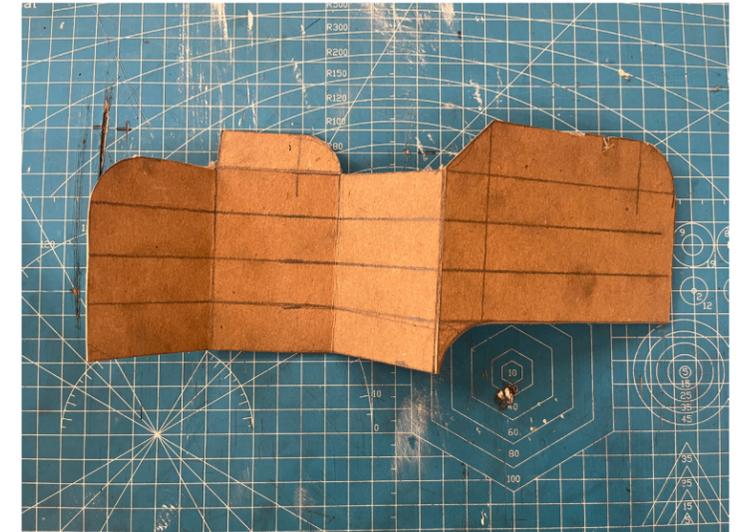


Bends in 3
 directions
 (at least)



Form Exploration

- Models made with paper, Chipboard and cardboard.
- Planes in three dimensions.
- Each model piece is 3 inches tall.
- Drawn on a 0.75 inch grid.
- Designed to slot together.



Final Drawing models:

Changes:

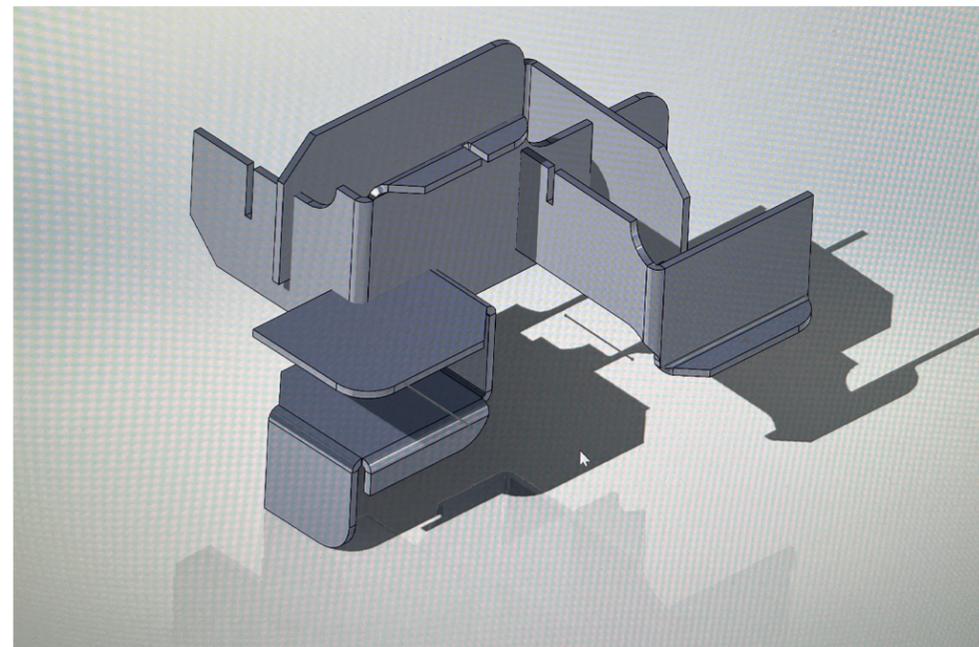
- Scale down grid to half inch scale.
- Eliminating the slots.

Slotting the pieces together is more of a traditional puzzle mechanism.

Allowing the shapes to exist without slots they offer more interpretation.

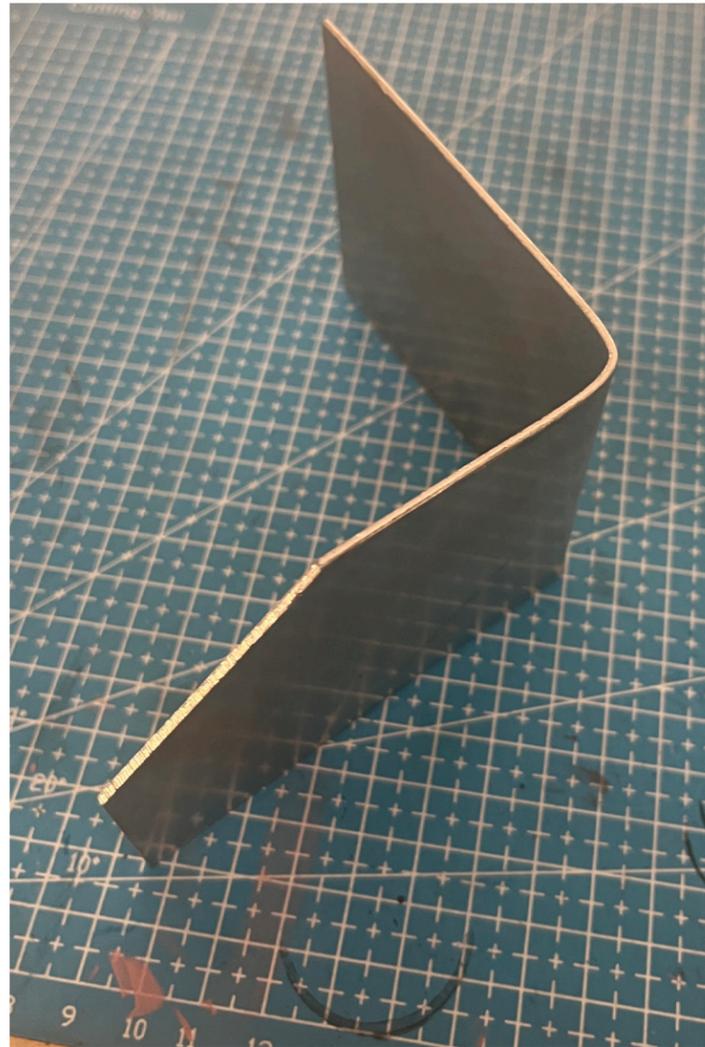
When rendering the shapes with slots i found it too clunky and would take away from the forms that i spent time creating.

Create uniform shapes and radii offer more play between each piece.
(0.5 inch radius and 45 or 90 degree angles)

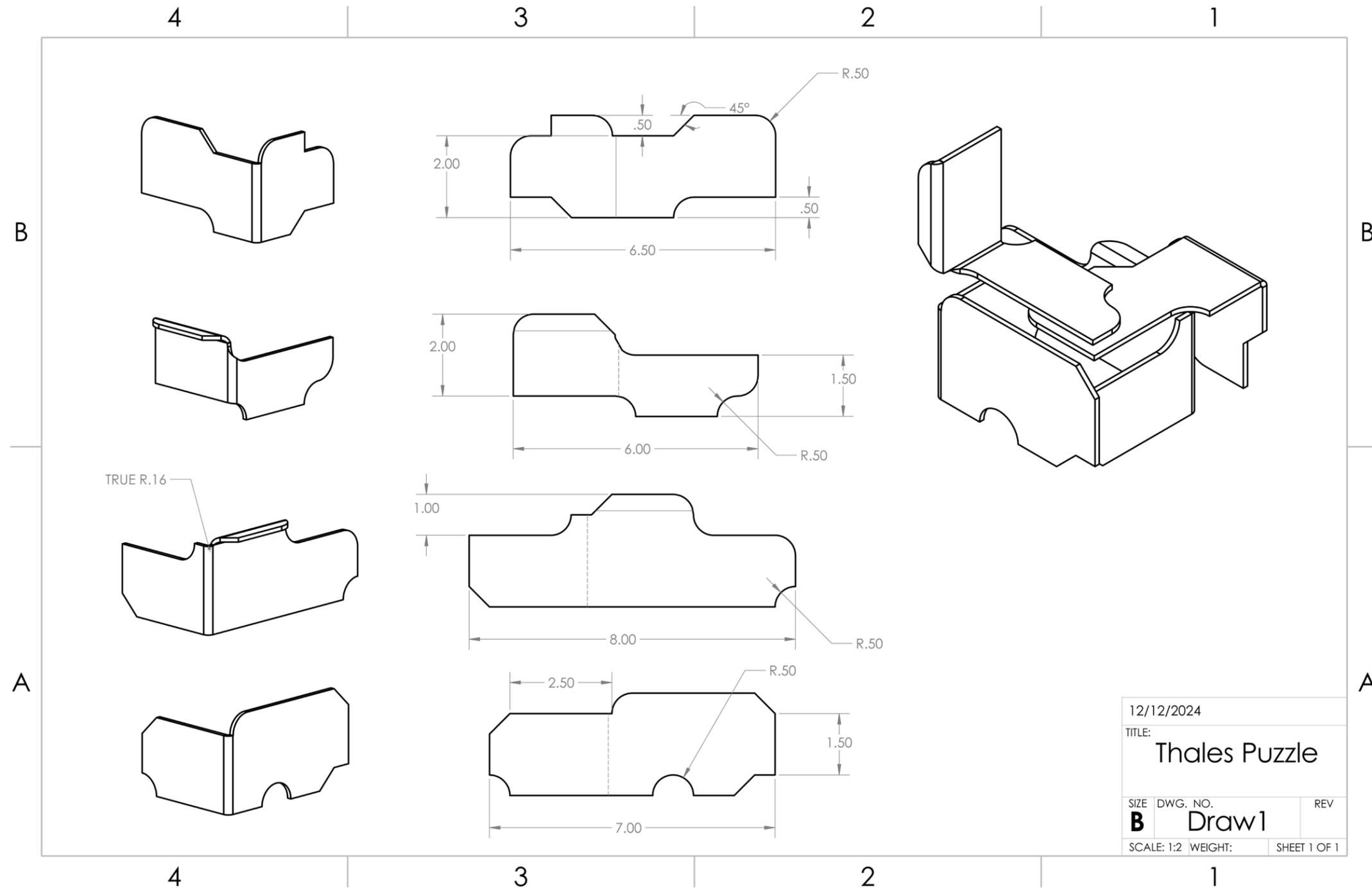


Material Expllloration

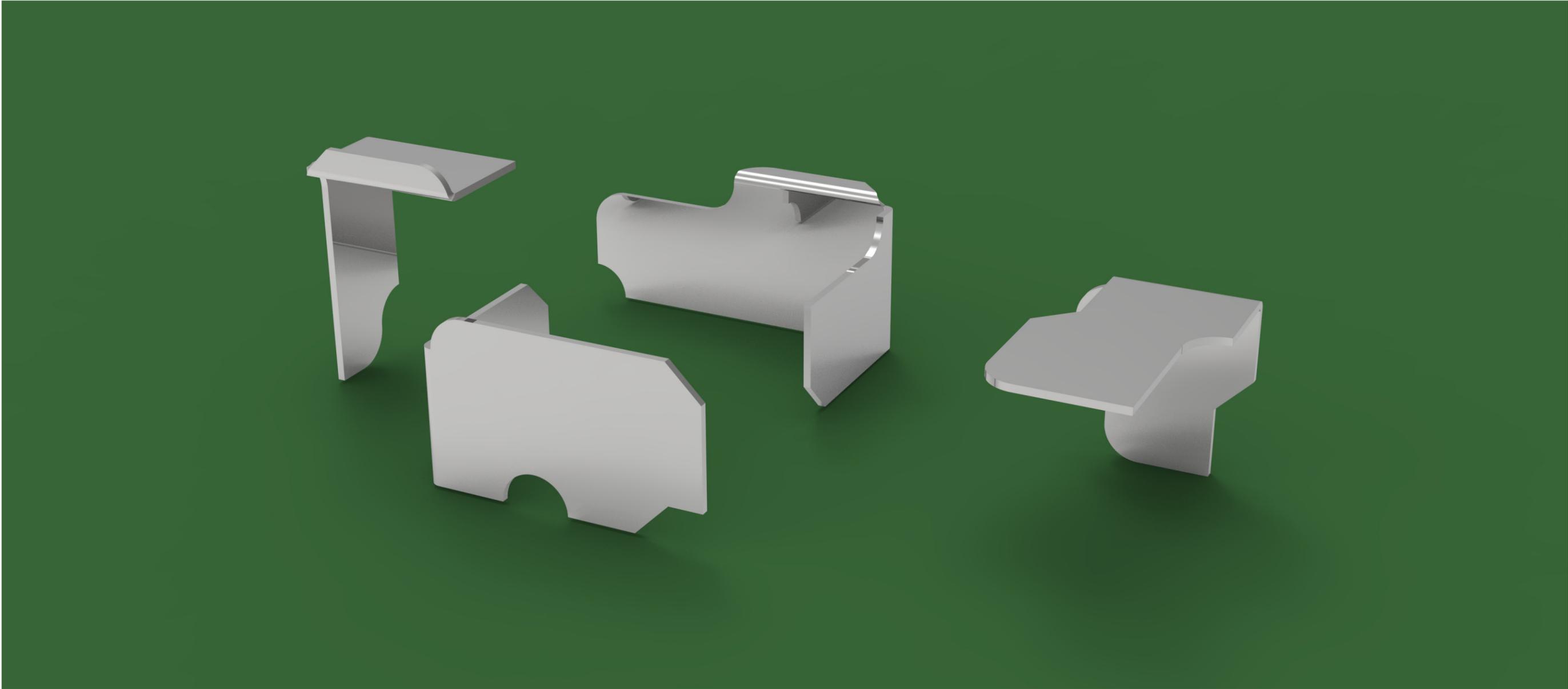
- 3003 aluminum - too thin
- 1/4 inch aluminum plate. too thick
- 12 gauge mild steel. Perfect. Thickest gauge that can bend on a break.



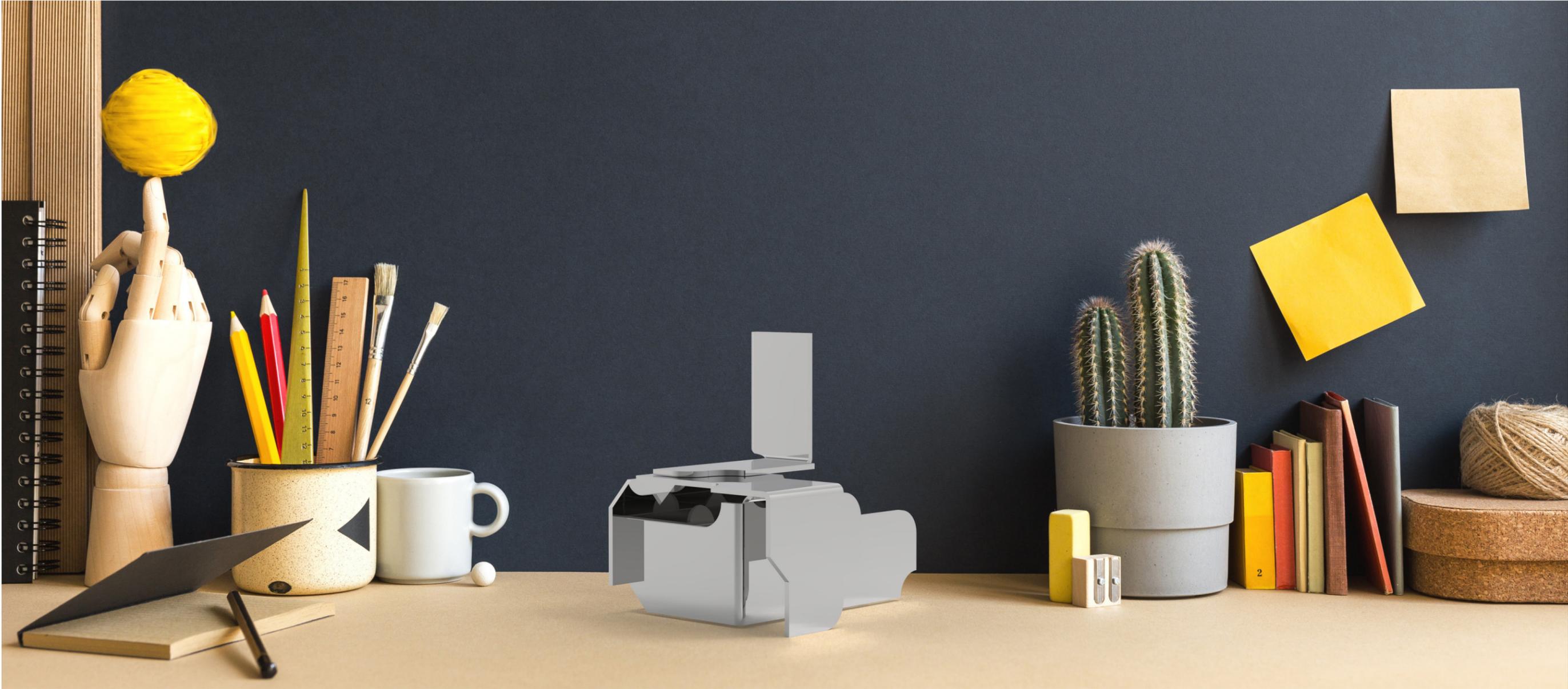
Solidworks Drawing



Rendering



Rendering



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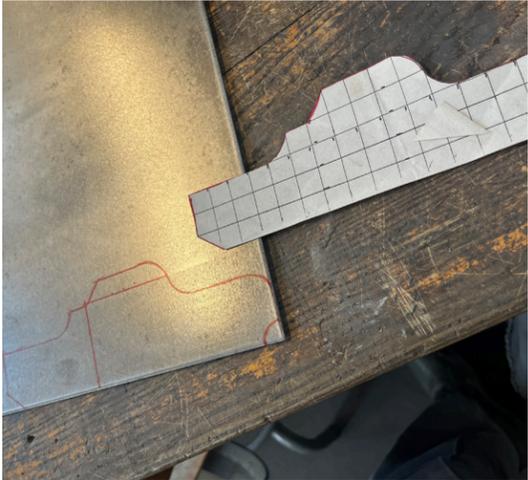
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Fabrication



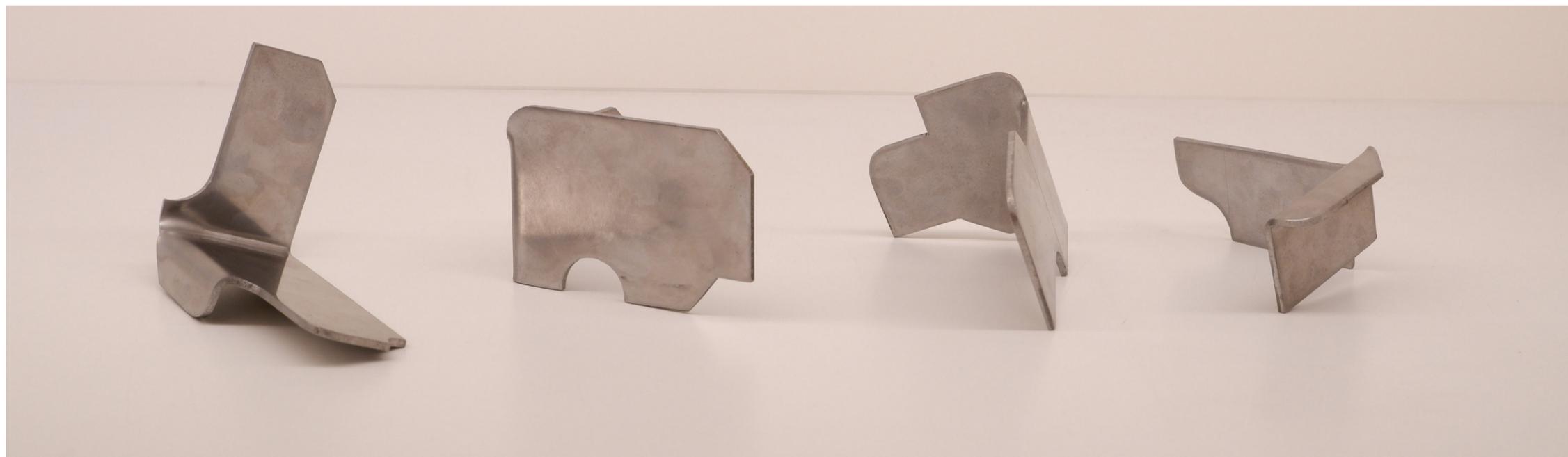
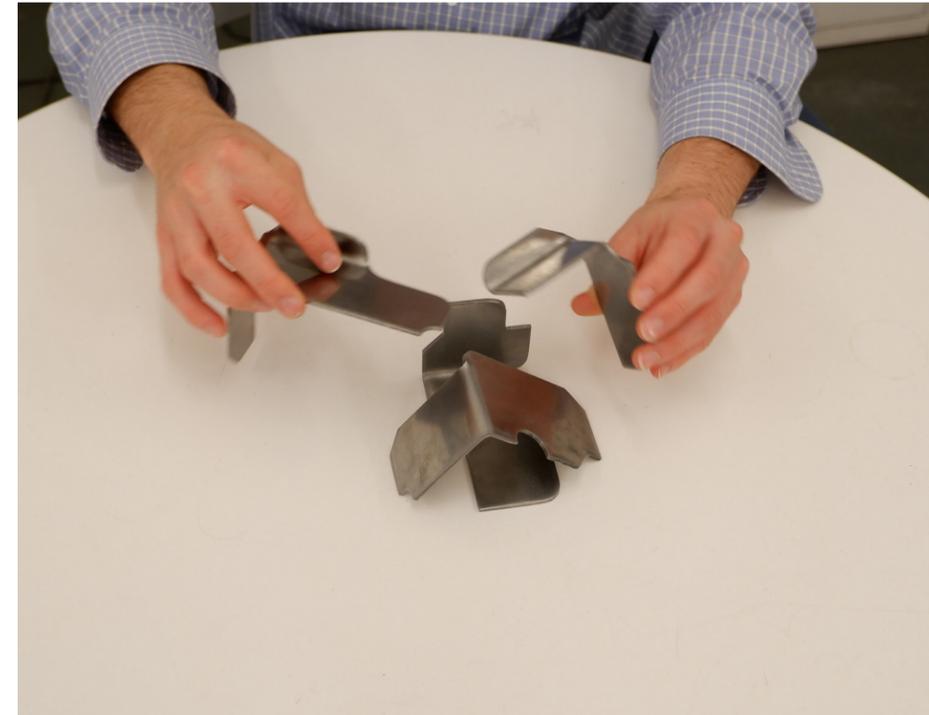
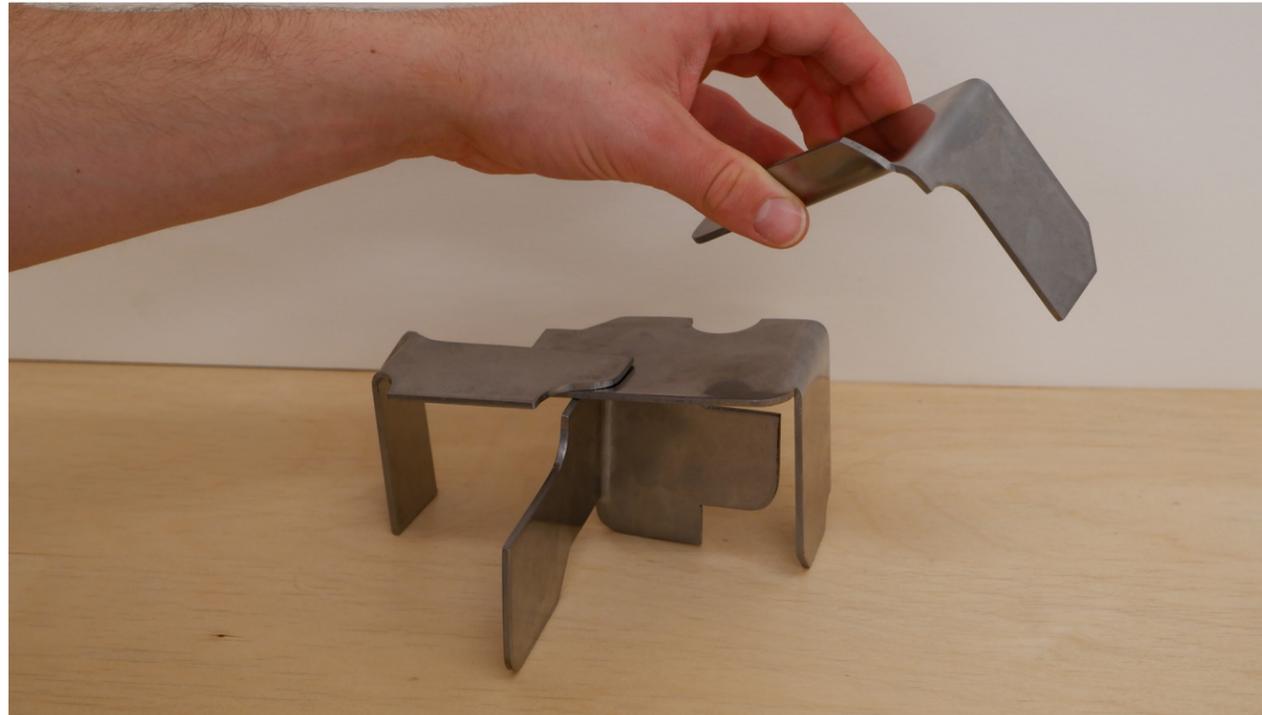
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Final



Potential Configurations



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Thank you