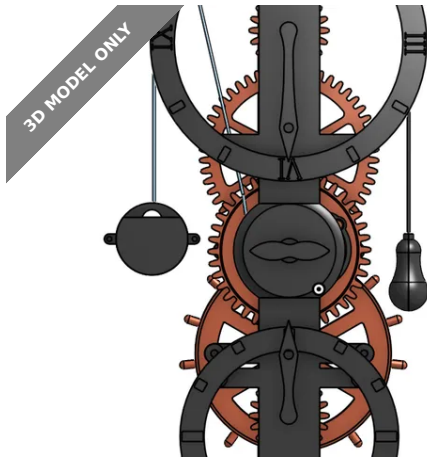




Da Vinci Clock



Praco

[VIEW IN BROWSER](#)

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Summary

A digital 3D recreation of the Da Vinci Clock

[Learning](#) > [Engineering](#)

Tags: [clock](#) [gears](#) [educational](#) [engineering](#) [historical](#)
[escapement](#) [davinci](#)

.Project Overview

This project presents a digital **3D recreation** of the historical **Da Vinci Clock**, (Or you could say Da historical Da Vinci Clock....haha..... sorry.) based on the 15th century conceptual sketches found in Leonardo da Vinci's Codex Atlanticus. The model was built to capture the dynamics of gears, ropes, and a gravity fed weight system. Da Vinci's works inspire me. And i hope this model is able to inspire you too :D

The design includes a series of gears and wheels powered by a falling weight. As the weight descends, it turns the gears at a controlled pace, which in turn moves hands or indicators to show the passage of time.

I haven't tested this physically myself since i do not own a 3d printer (yet) but it should be functional (though it might not be completely accurate time wise unless you tweak the weights) even if for a little amount of time! I made this because i was fascinated by the design and how it works, and i

hope i did it justice. Feel free to edit the parts to adjust anything and let me know if the model works for you! And if you find errors, then please let me know too :)

Made in Oneshape.

For visuals/Animation of how it works, you can take a look at this video ?
[fl=pl&fe=sh](#)

<https://vimeo.com/330334641>

Credits to **Douglas Bowman** for the video, this animation is not mine but simply a demonstration.

Extra Parts

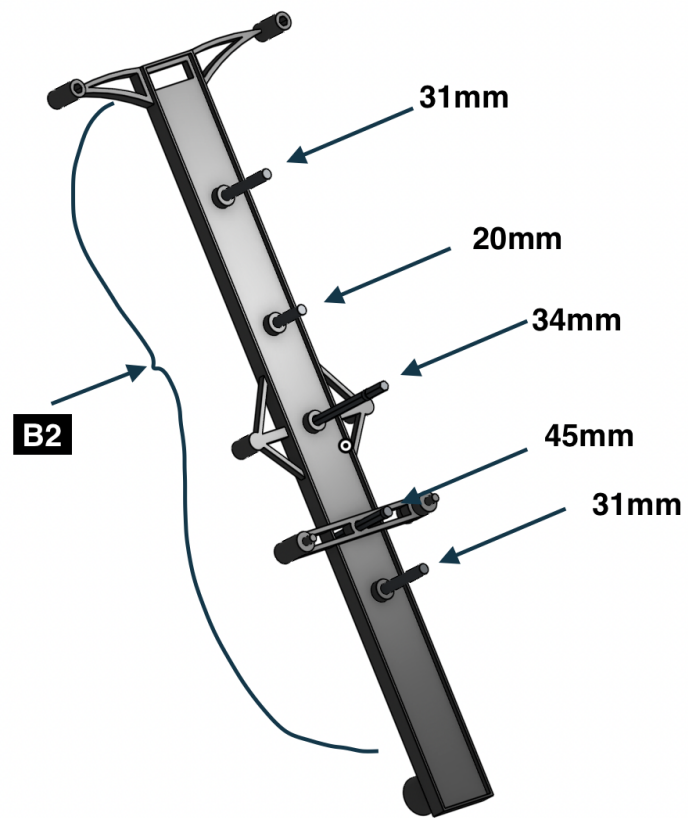
-For a better functioning model, you'll need the following to act as weights!

- 10/ 15 gram tear drop weight (for the weight on the right side)
- metal coins on the weight bucket at the left (2-3 coins should be enough)

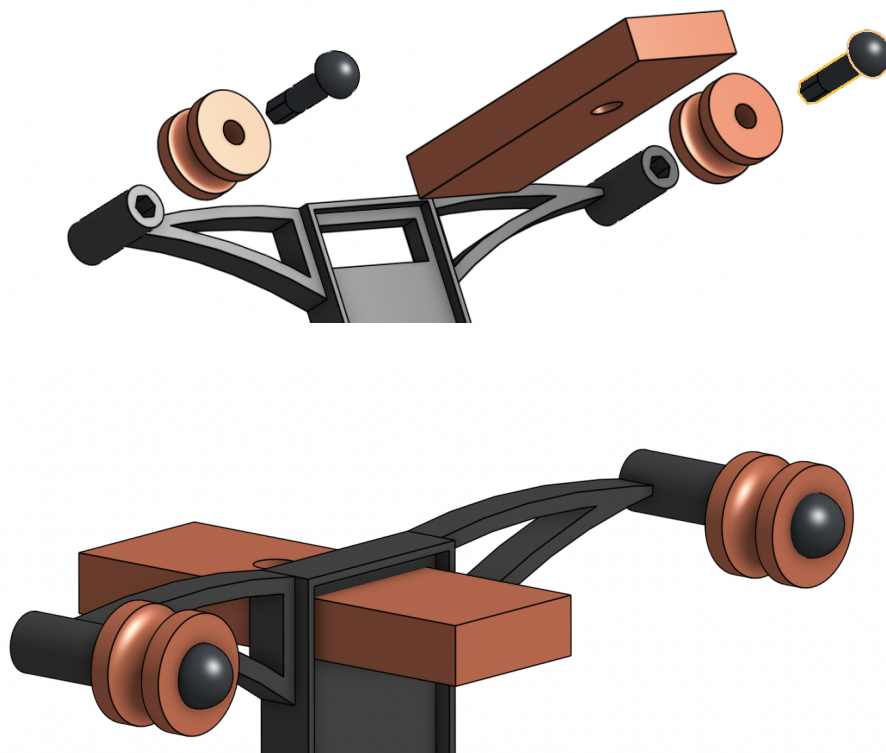
The strings shown in the model are for visual purposes! you'll need actual non-elastic braided nylon, polyester, or micro-cord (roughly 0.75 mm to 1.0 mm in diameter, similar to jewelry cord or lightweight craft/kite string).

Assembly instructions

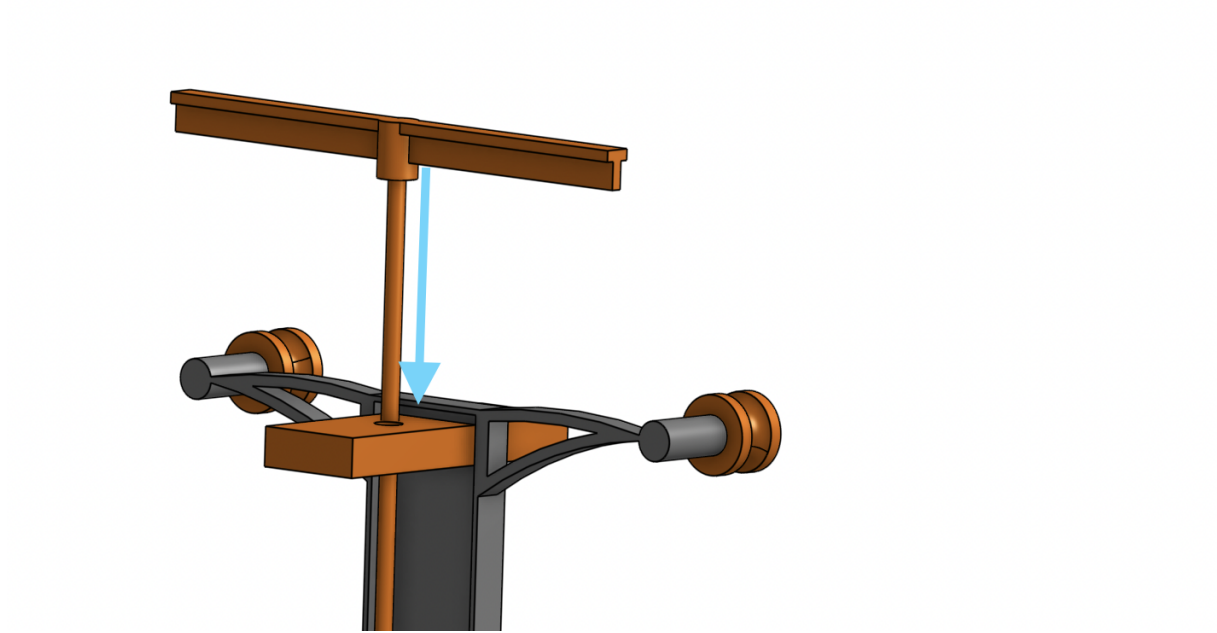
1. Assemble the shafts in the part B2



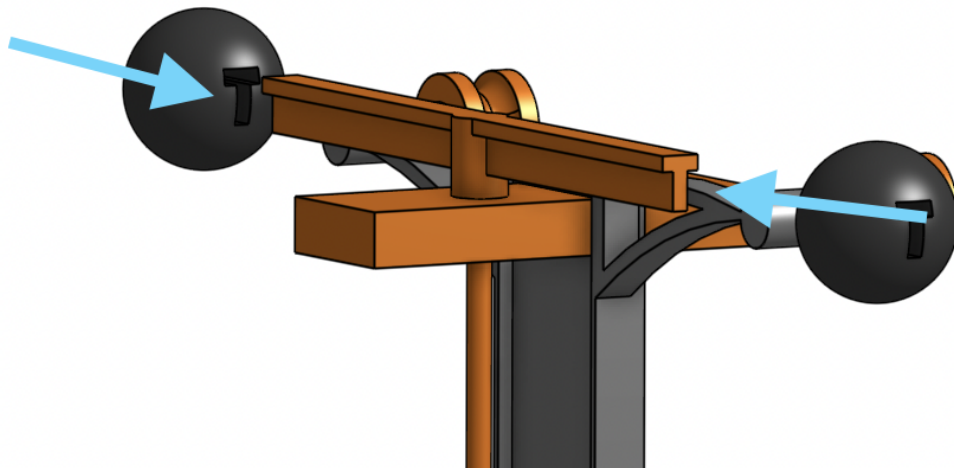
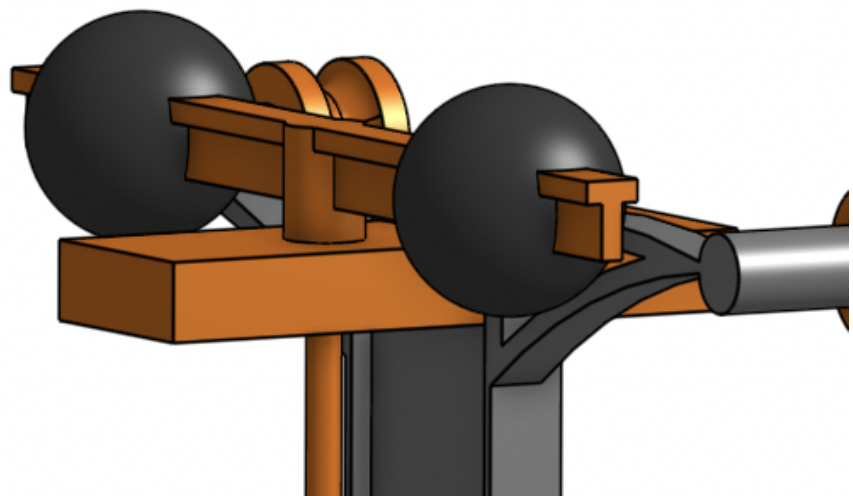
2. Assemble the pulley, studs and block on top of the part B2



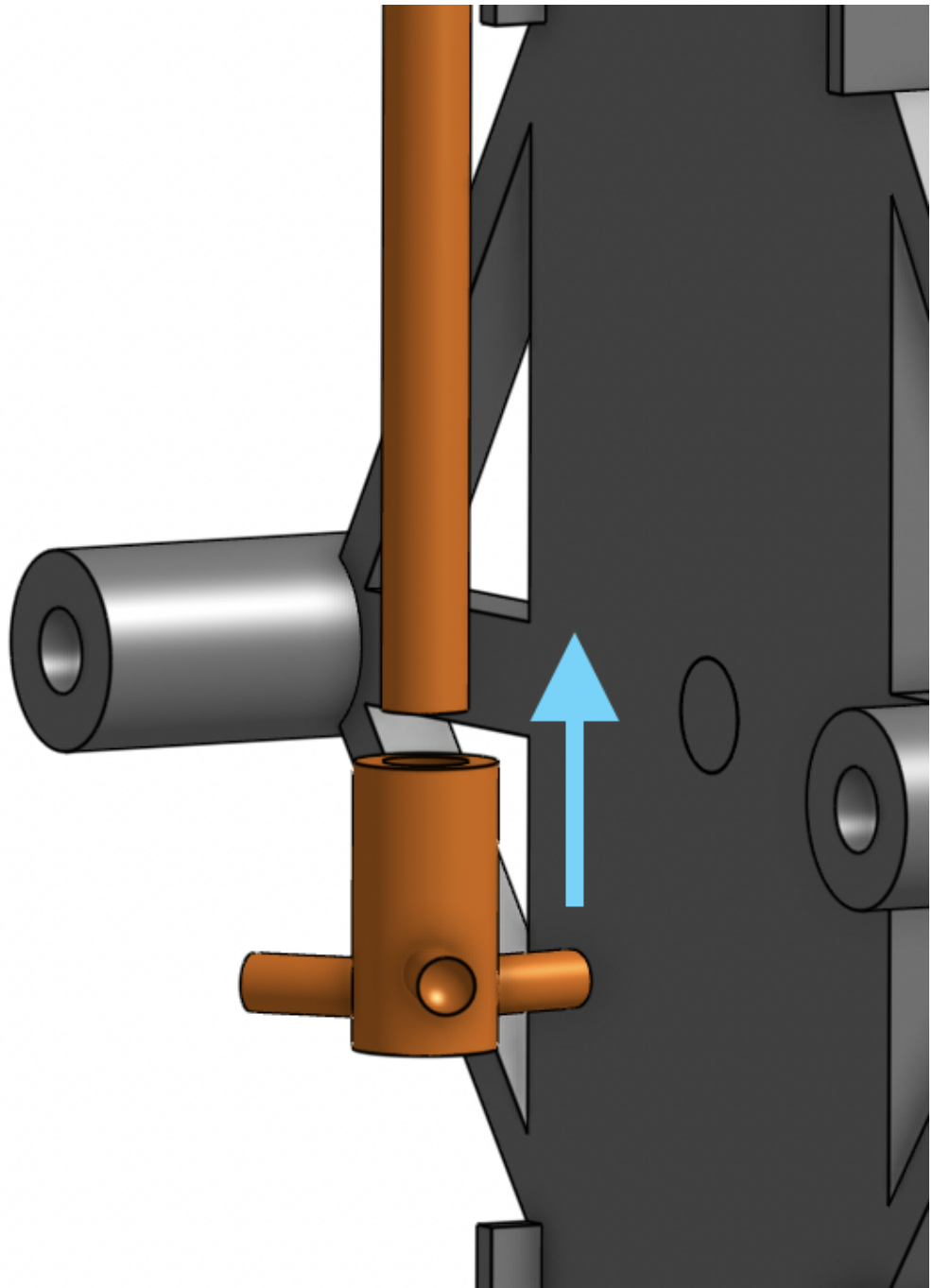
3. Insert T shaped rod in the block



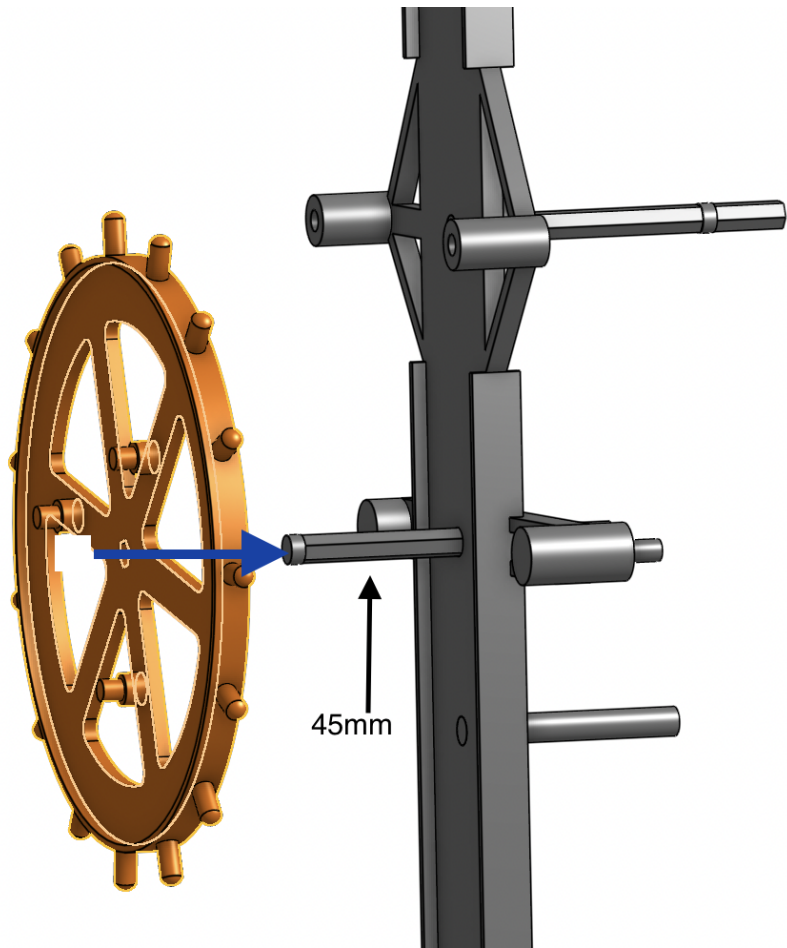
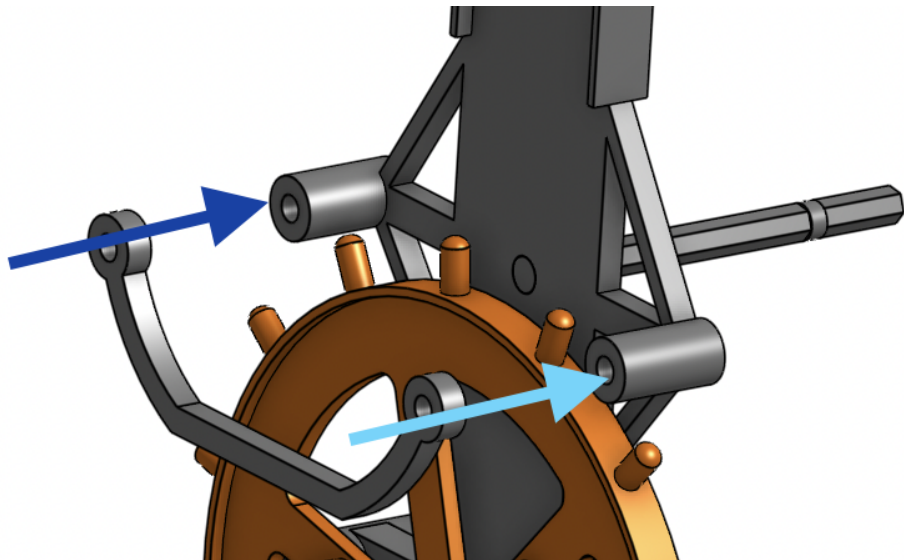
4. Insert T slot spheres in the T shaped part

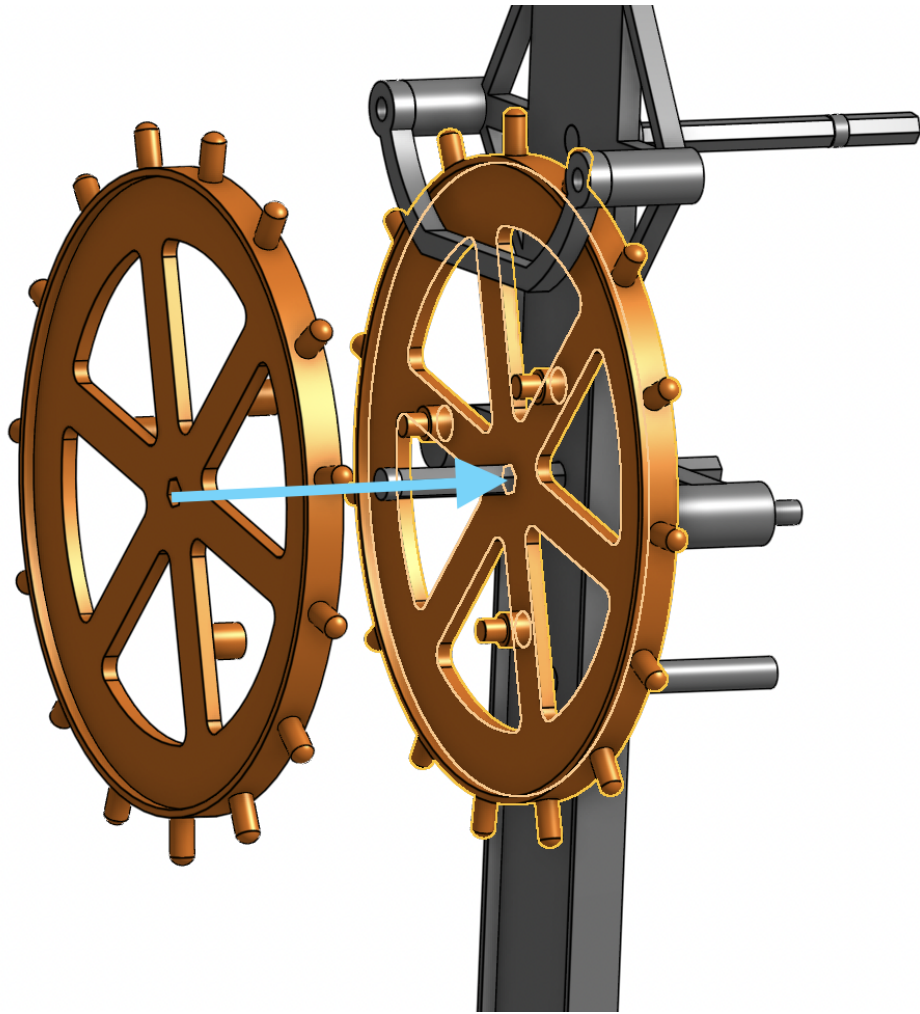


5.Insert rotating part at teh bottom of the T shaped part

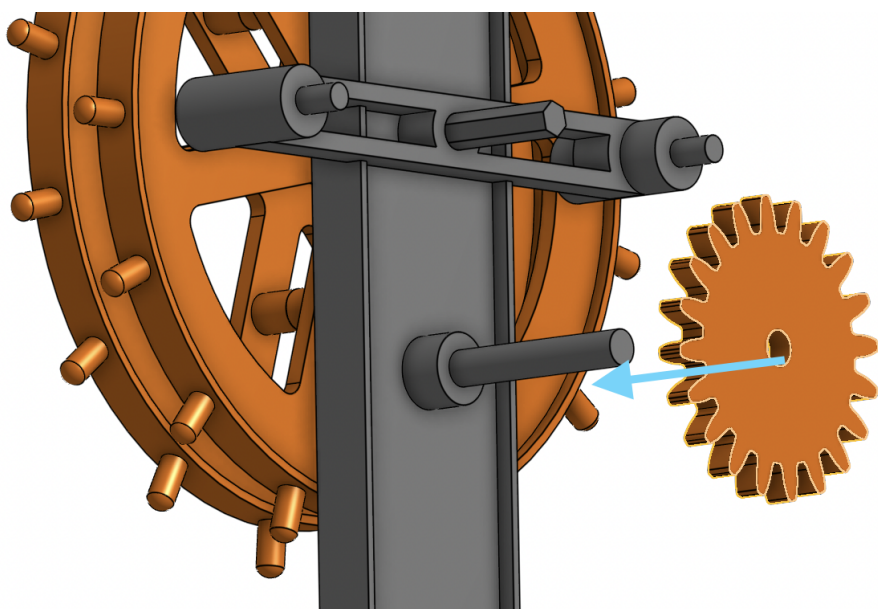
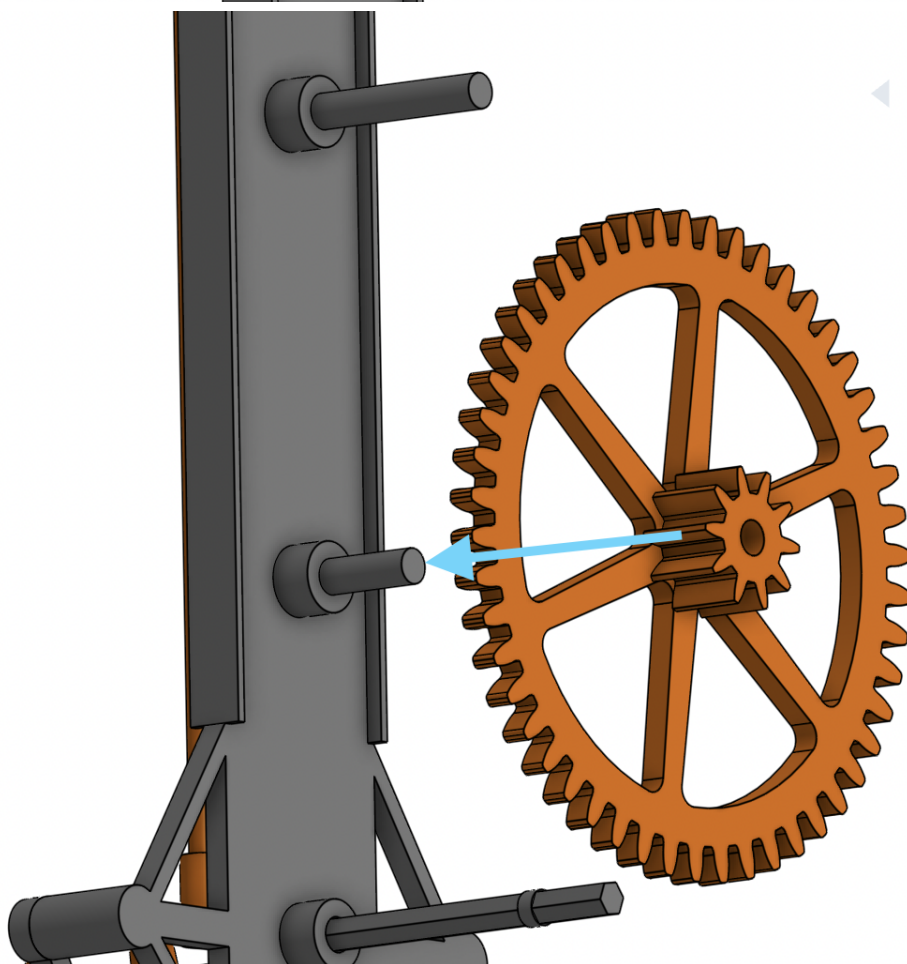
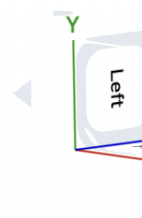


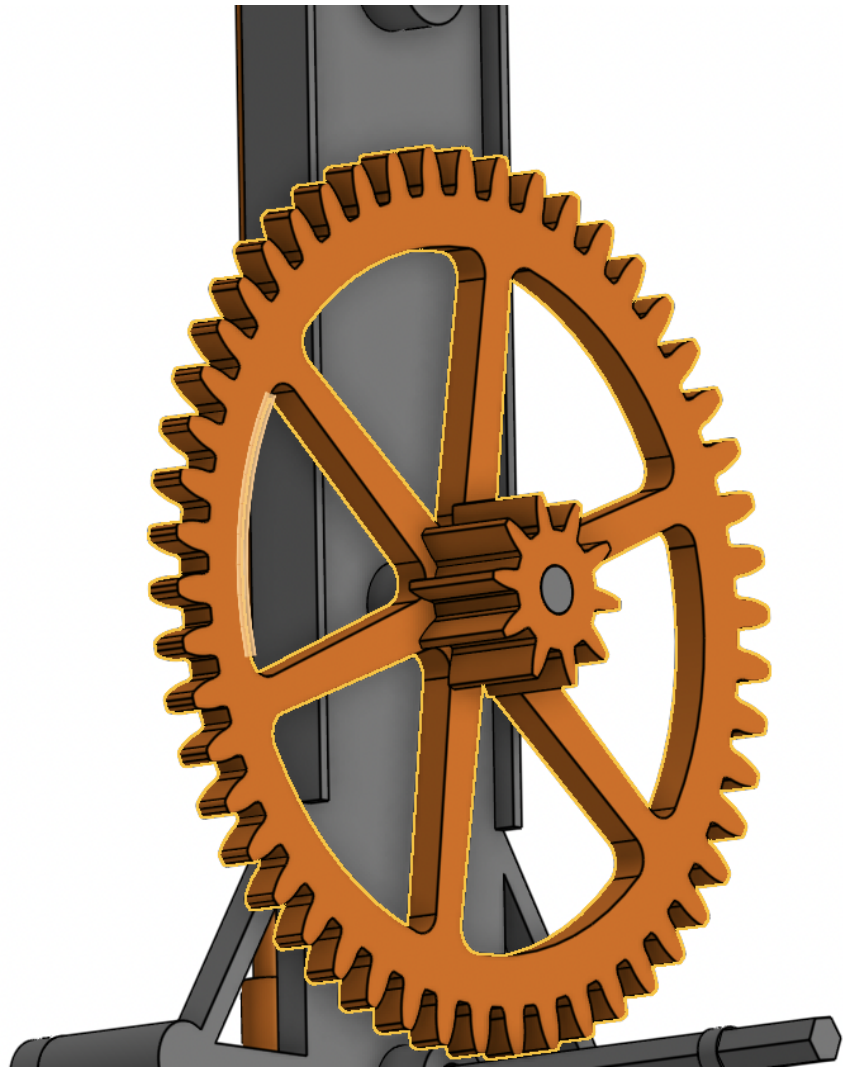
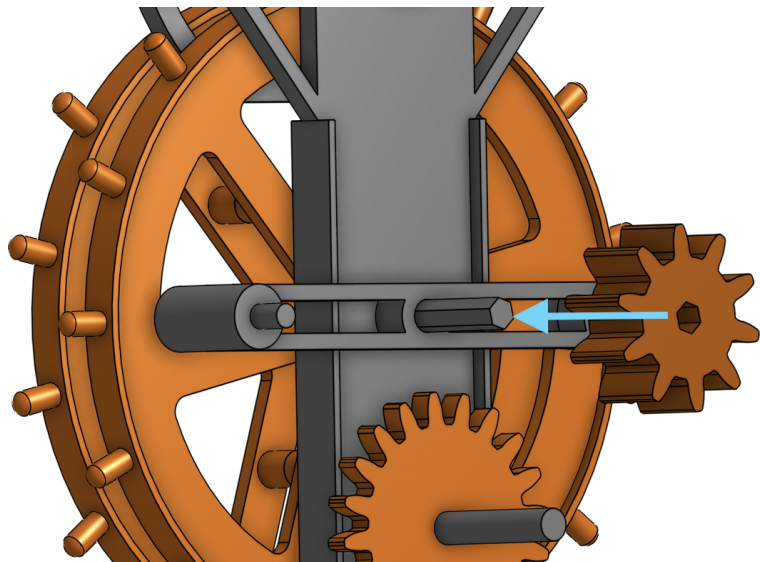
6. Insert 1st gear

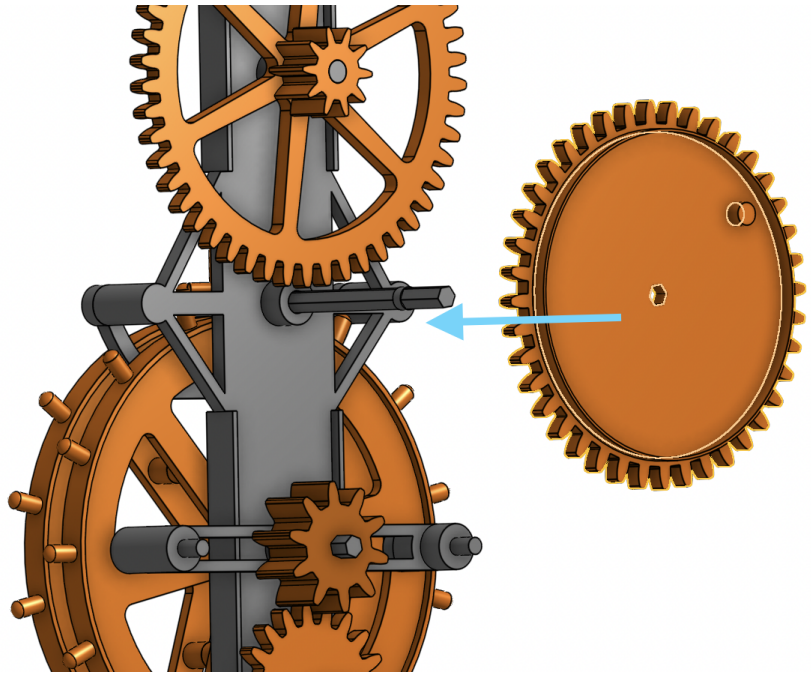
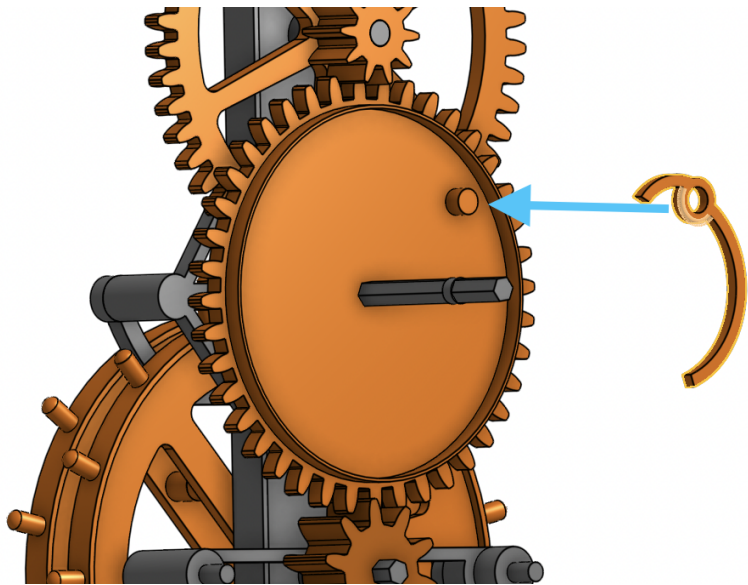


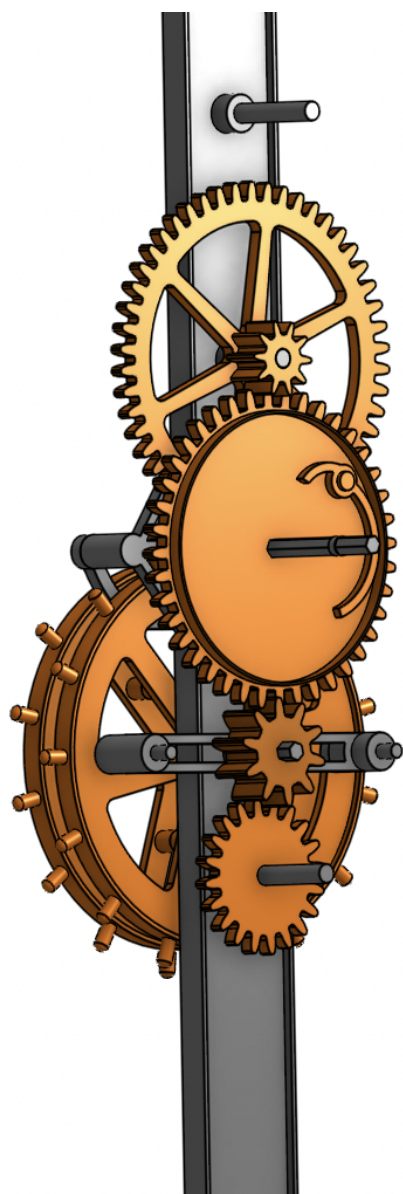


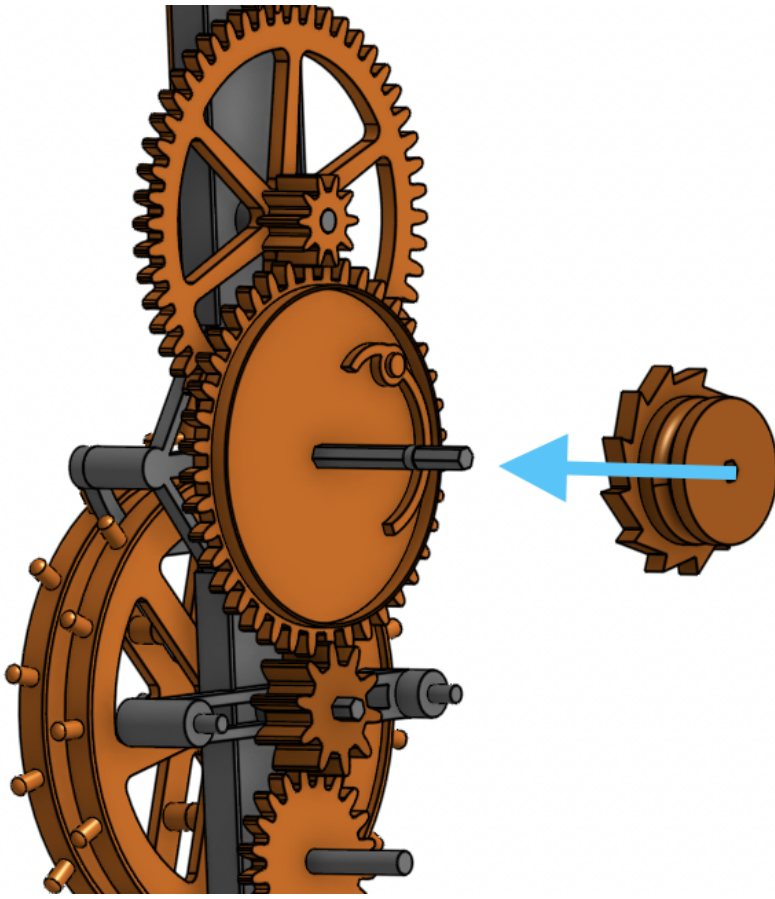
1. insert the other gears and ratchet as shown on the other side of B2

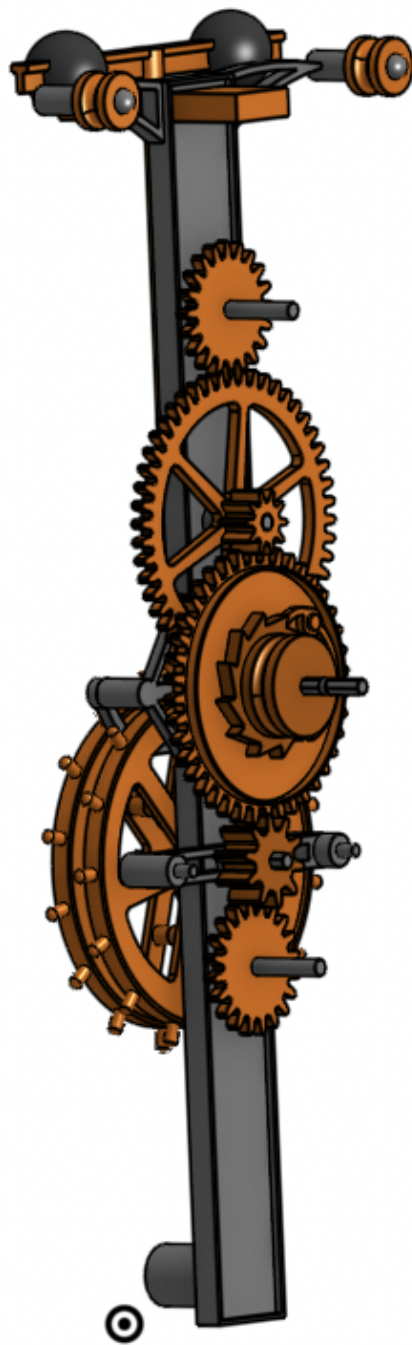






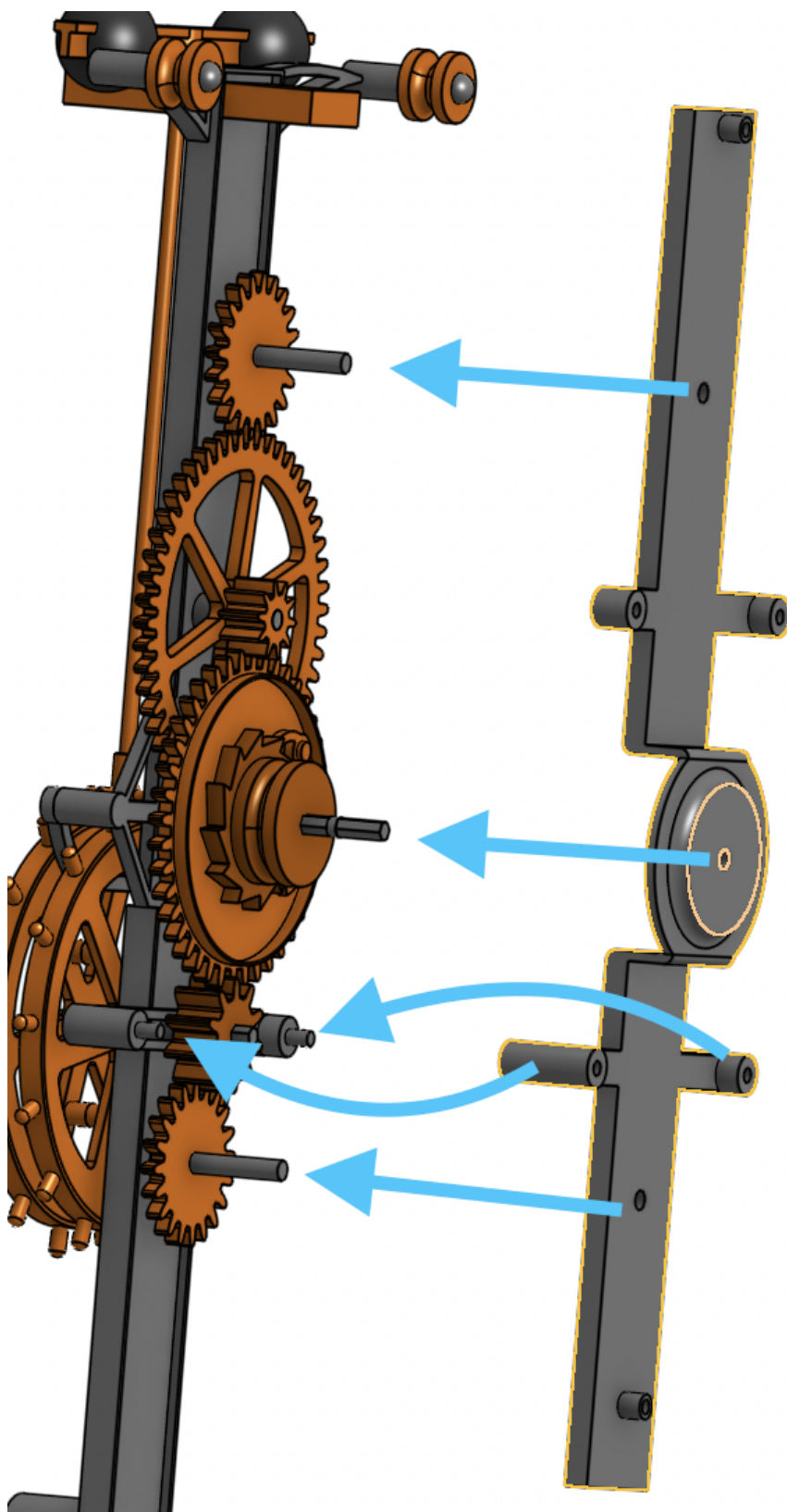




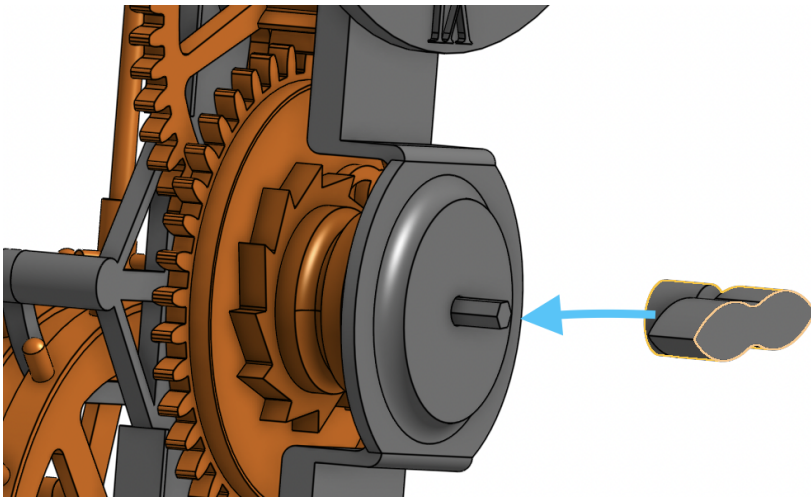


It should look like this!

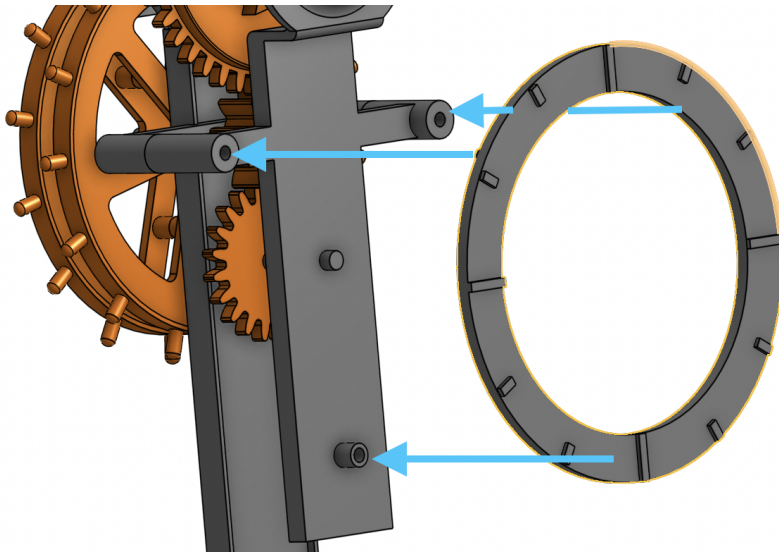
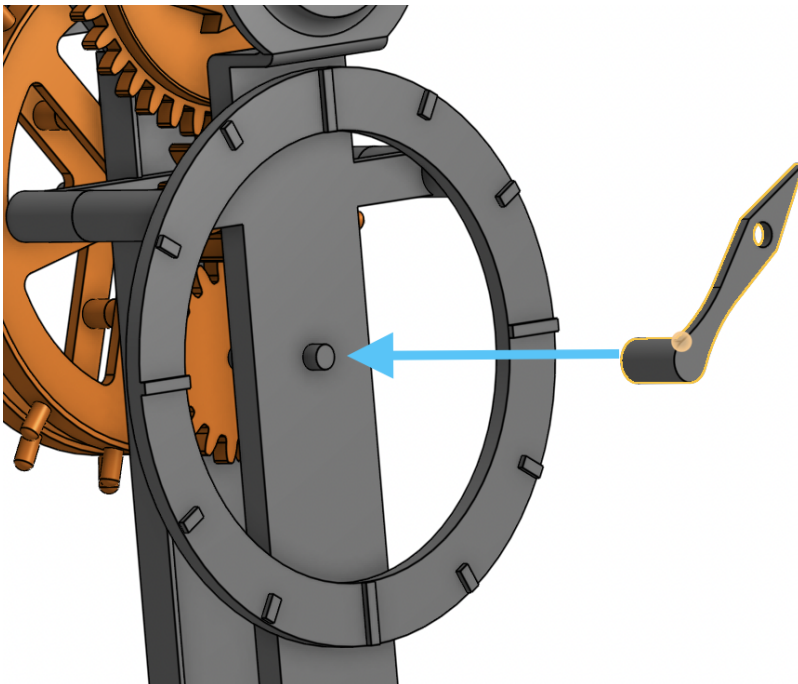
2. Put the part B3 on top

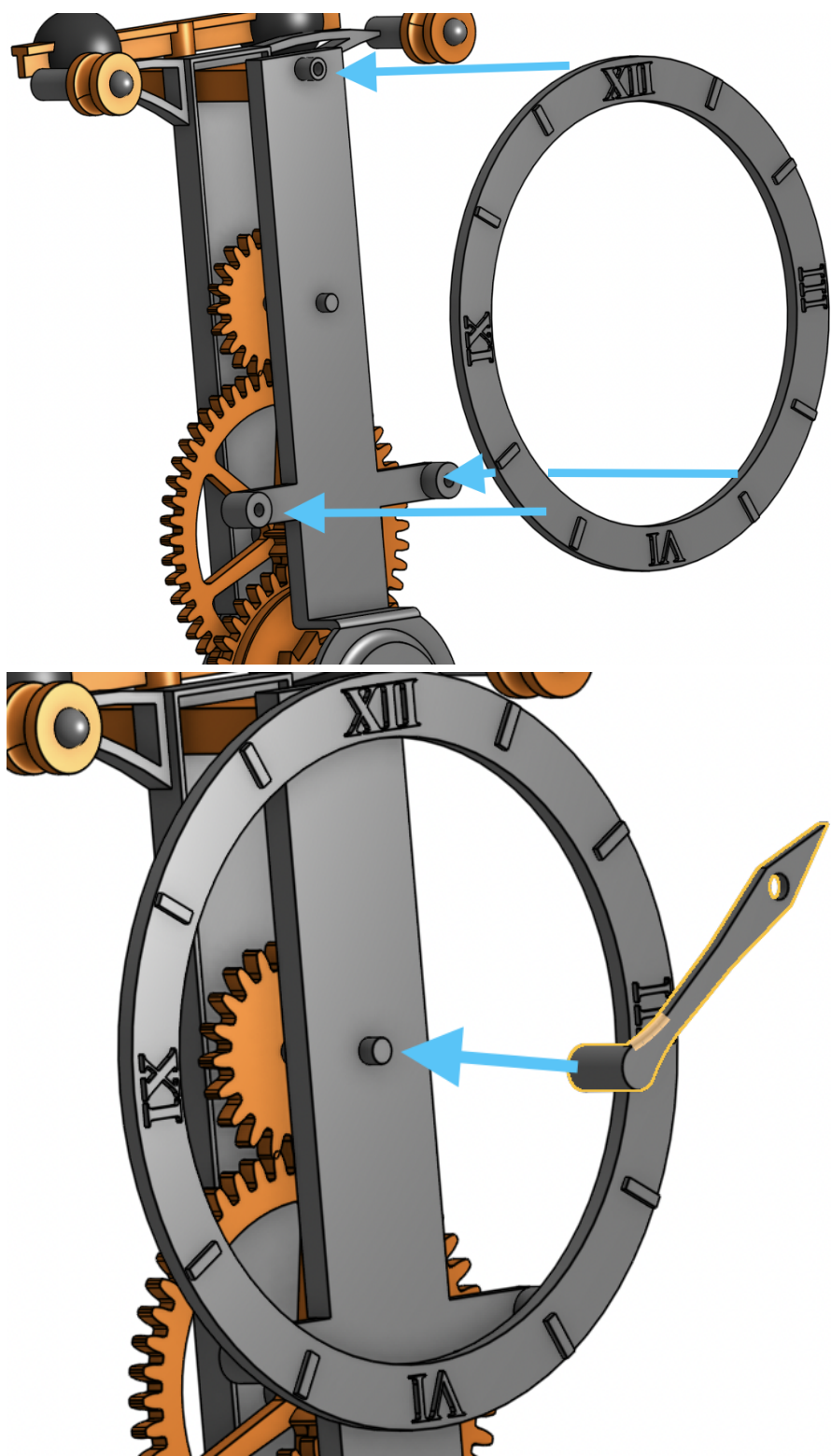


3. Lodge the key

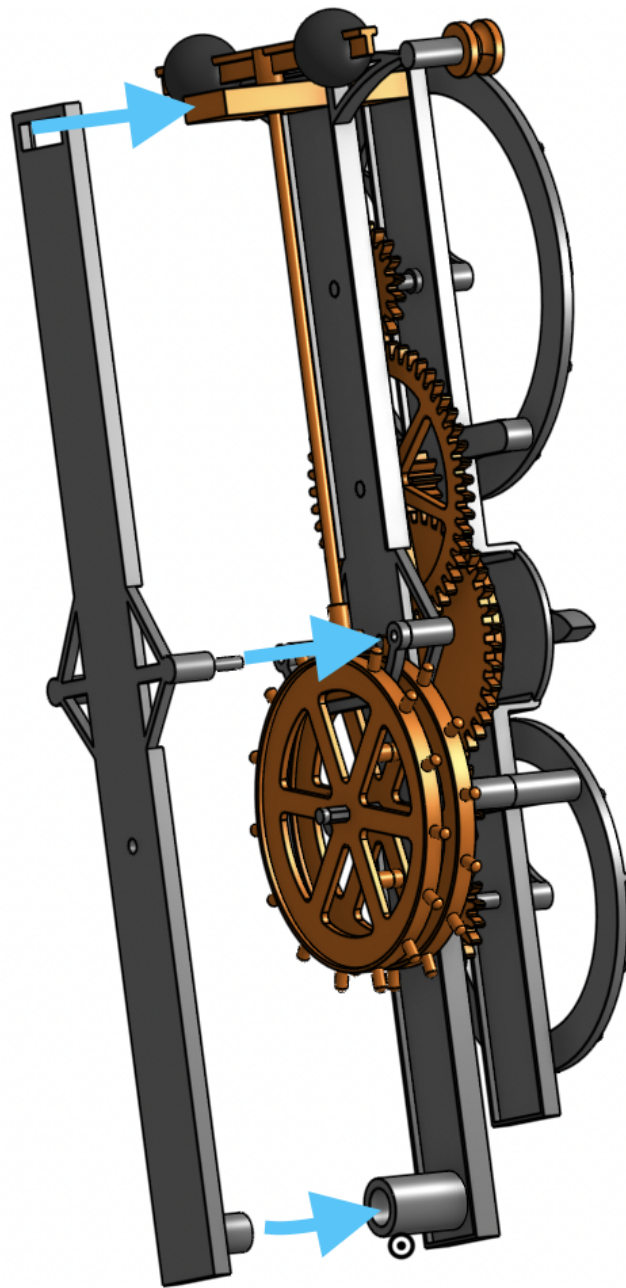


4. insert the Hour/minute dials and hands

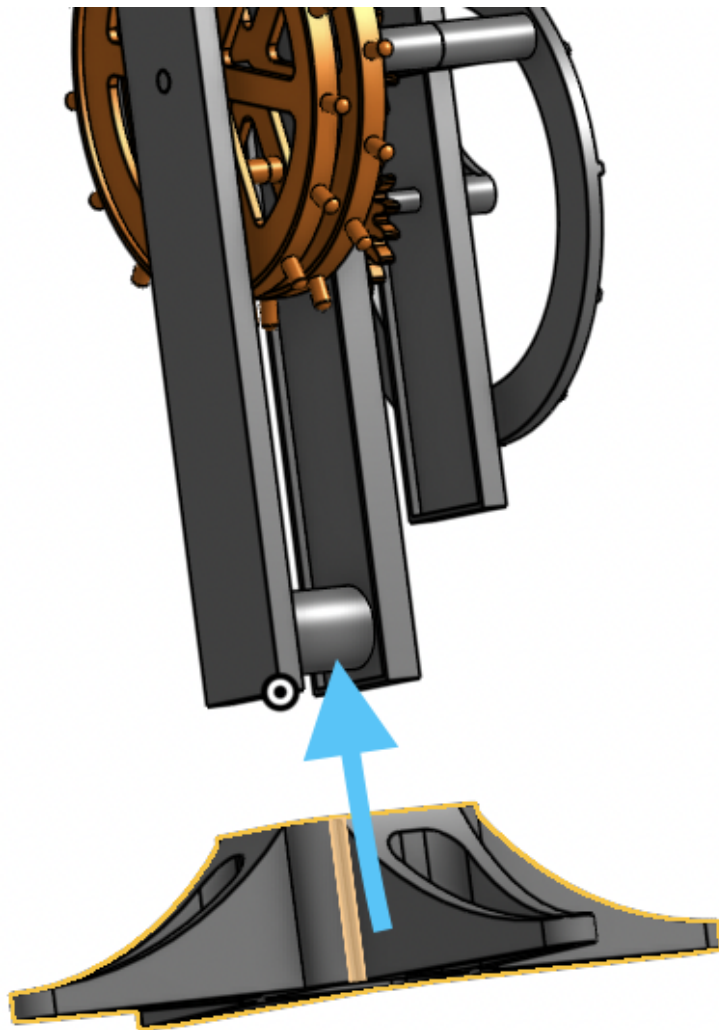




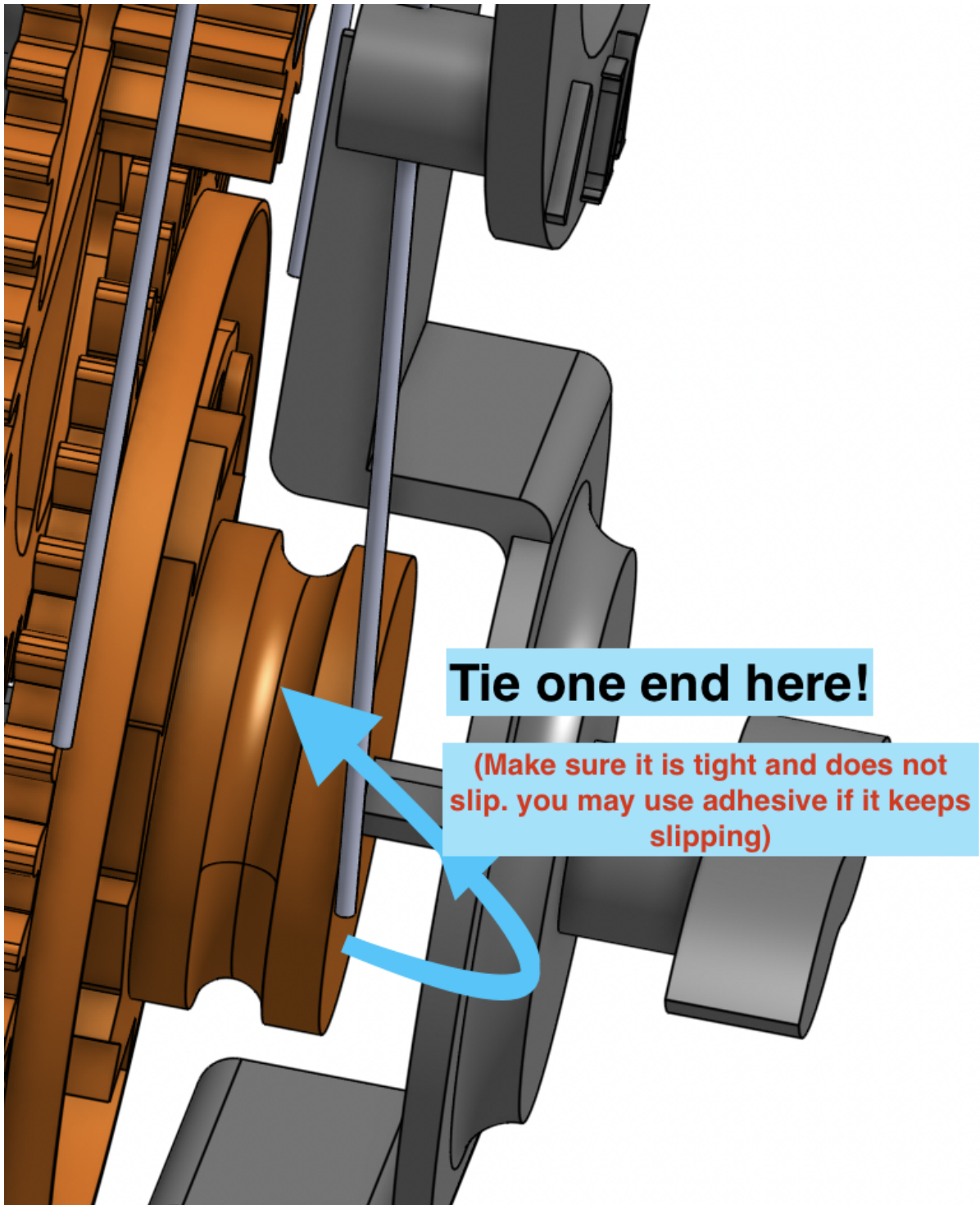
5. Connect the other side of B2 to B1

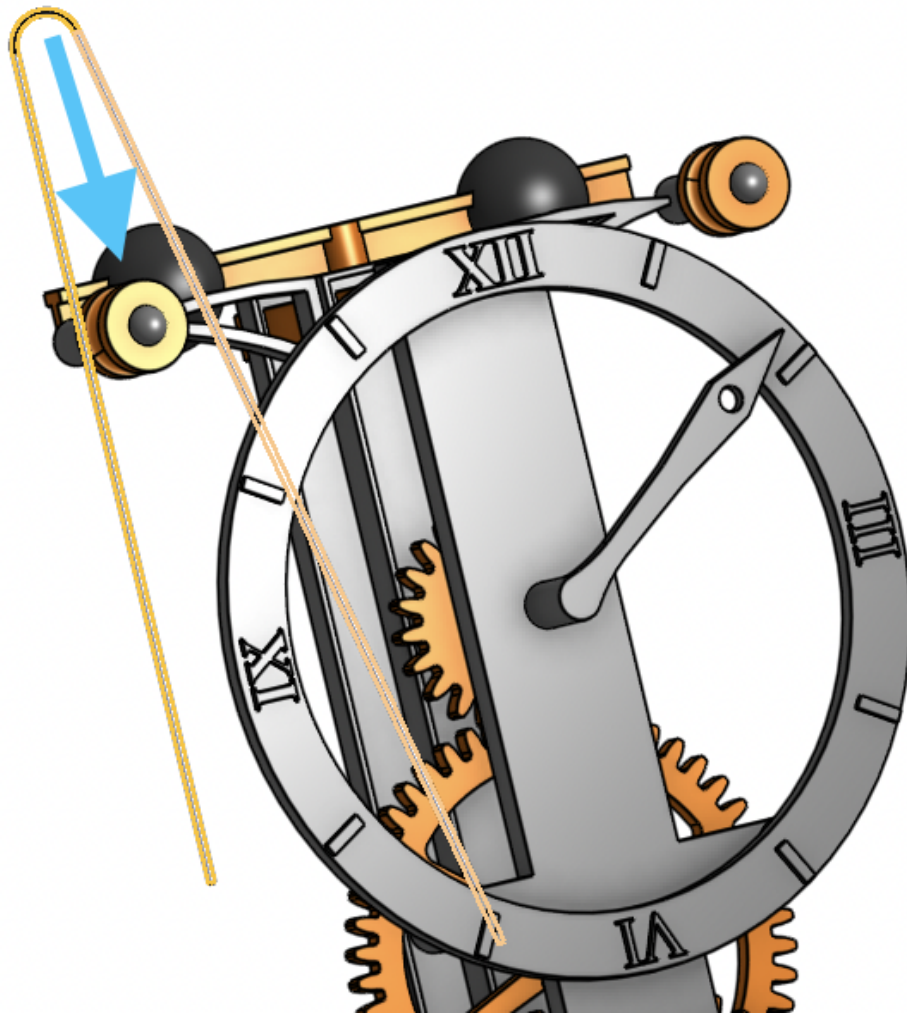


6. Insert this in the base

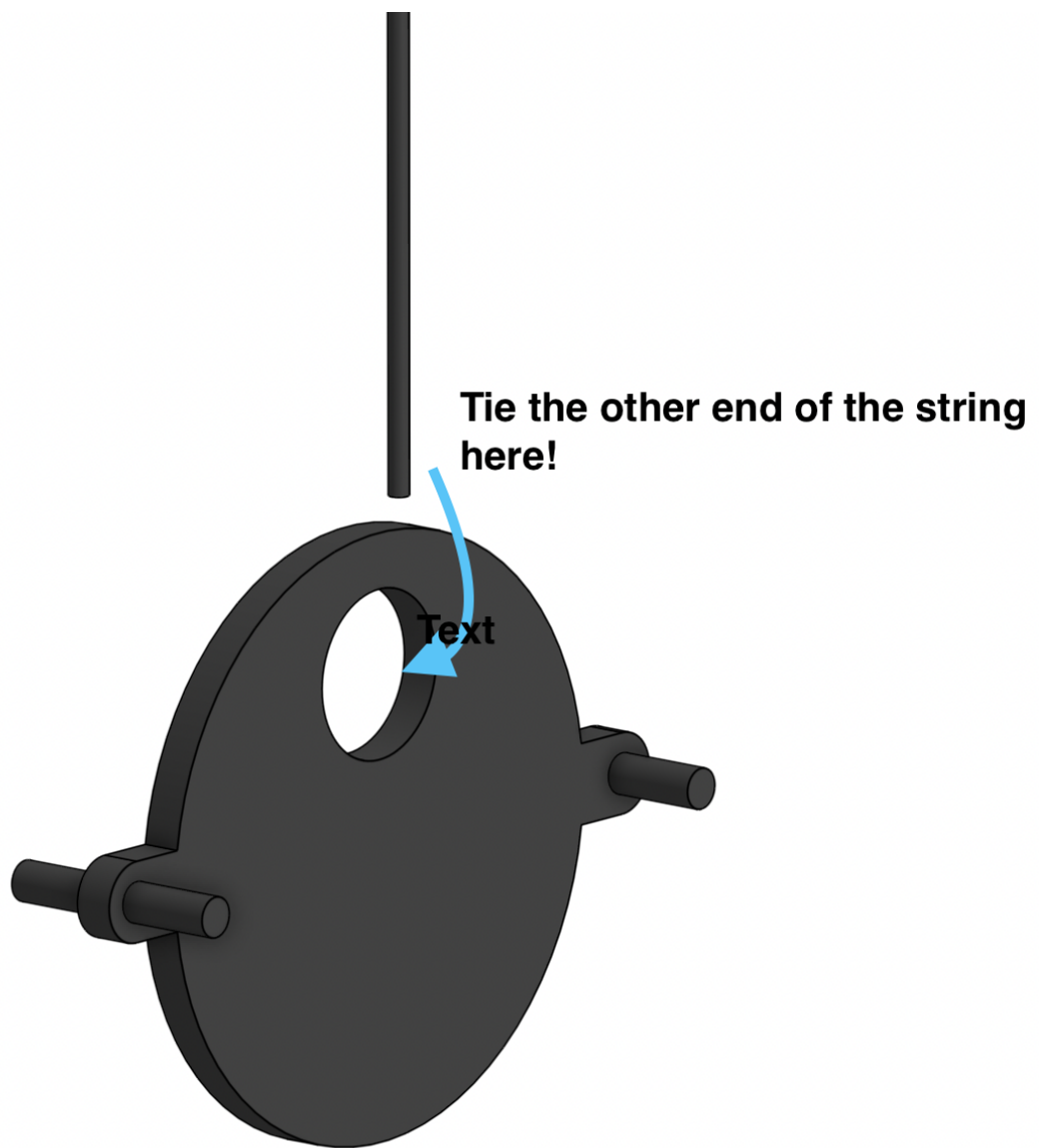


7. Wrap a string about the left side pulley, and tie one of its ends to the ratchet





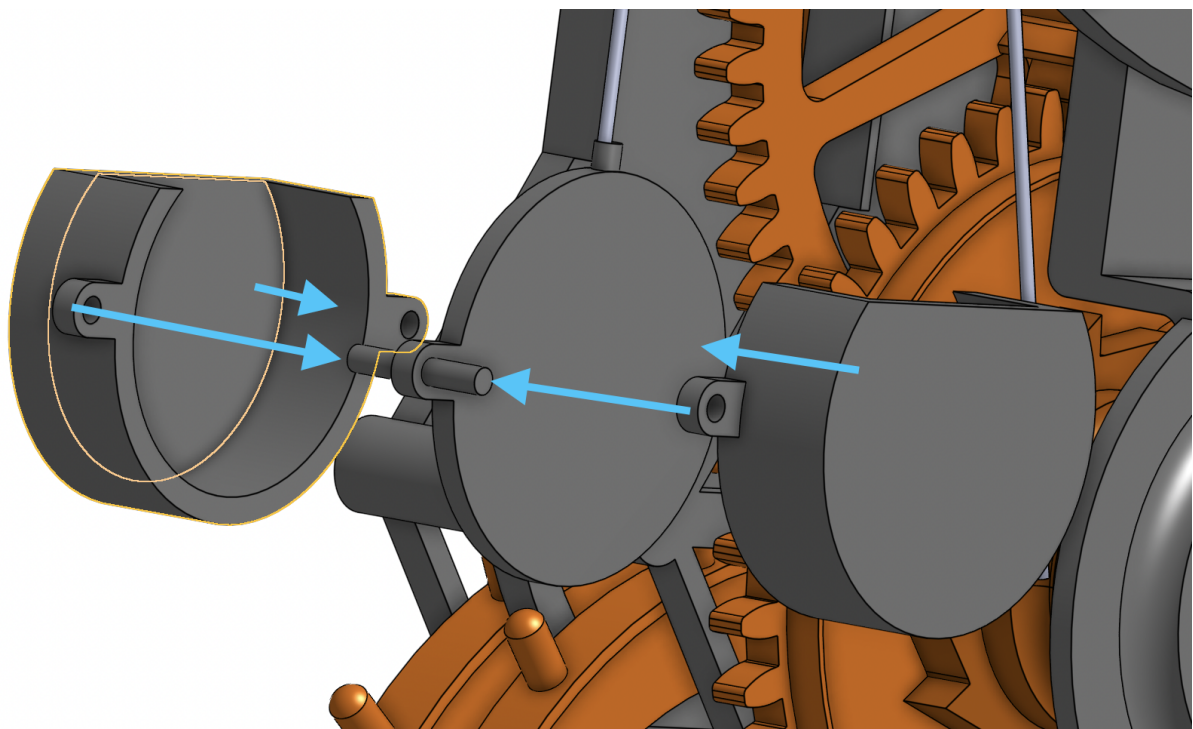
1. Tie the other end of the thread on the right side to the given part and enclose it with the weights



Part Studio 3

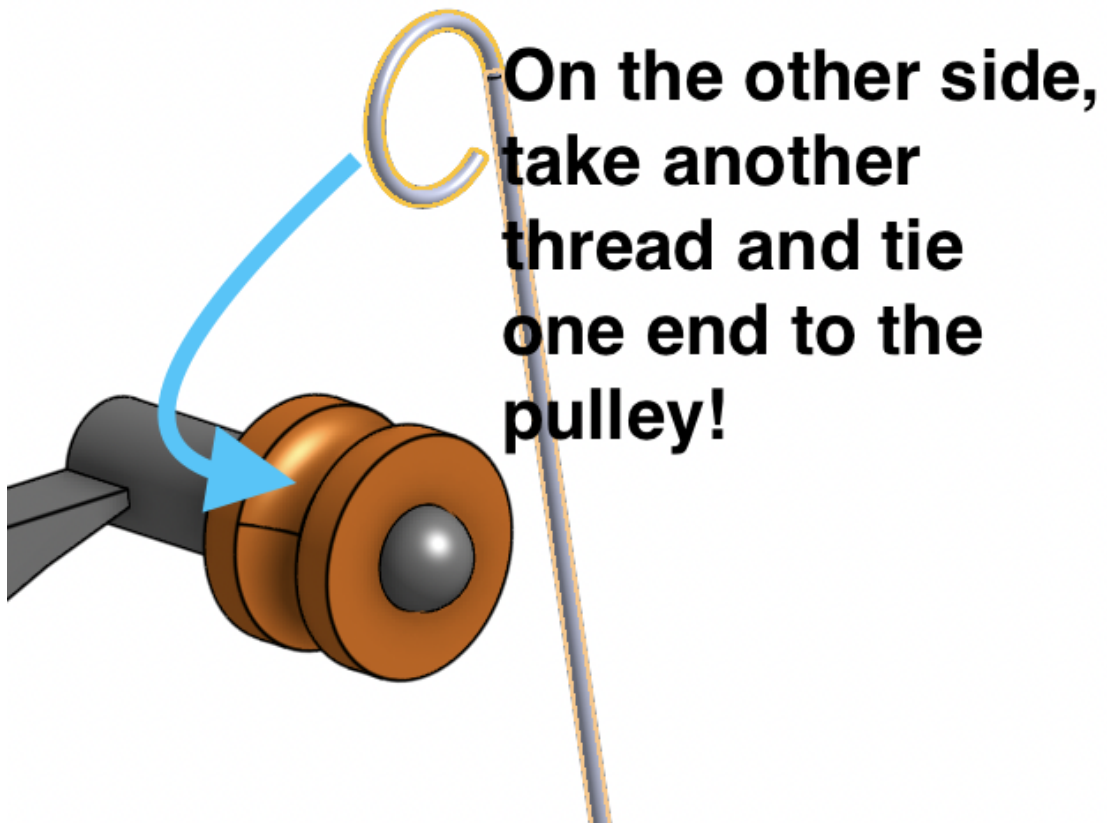
Part Studio 4

Part Studio 5

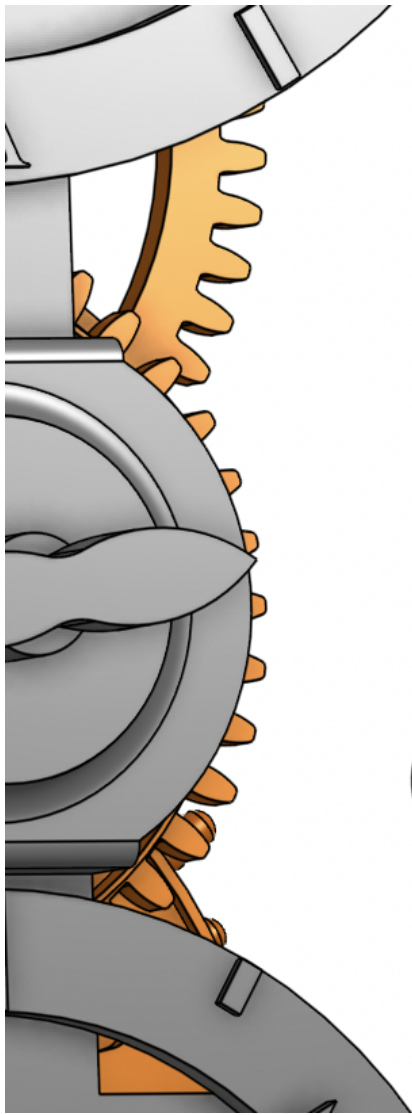
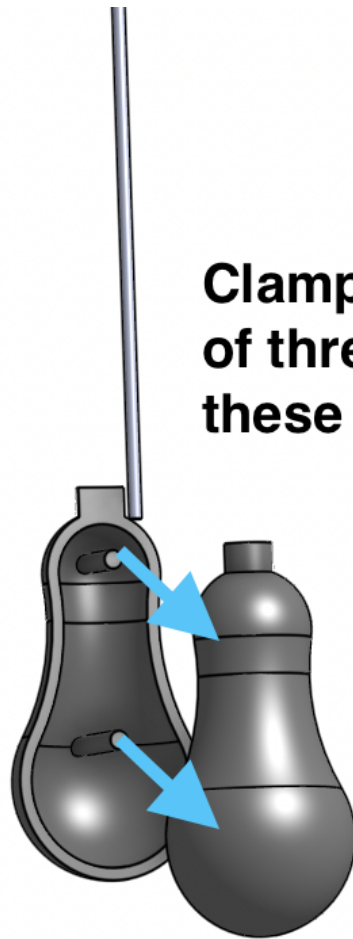


This bucket like structure is designed to be loaded with small coins or small metal bearings/BBs as ballast. You add or remove coins inside the bucket to calibrate and fine-tune the driving power. Usually, 2 coins are enough for the model to move at an accurate speed.

1. On the left side pulley, tie another string.

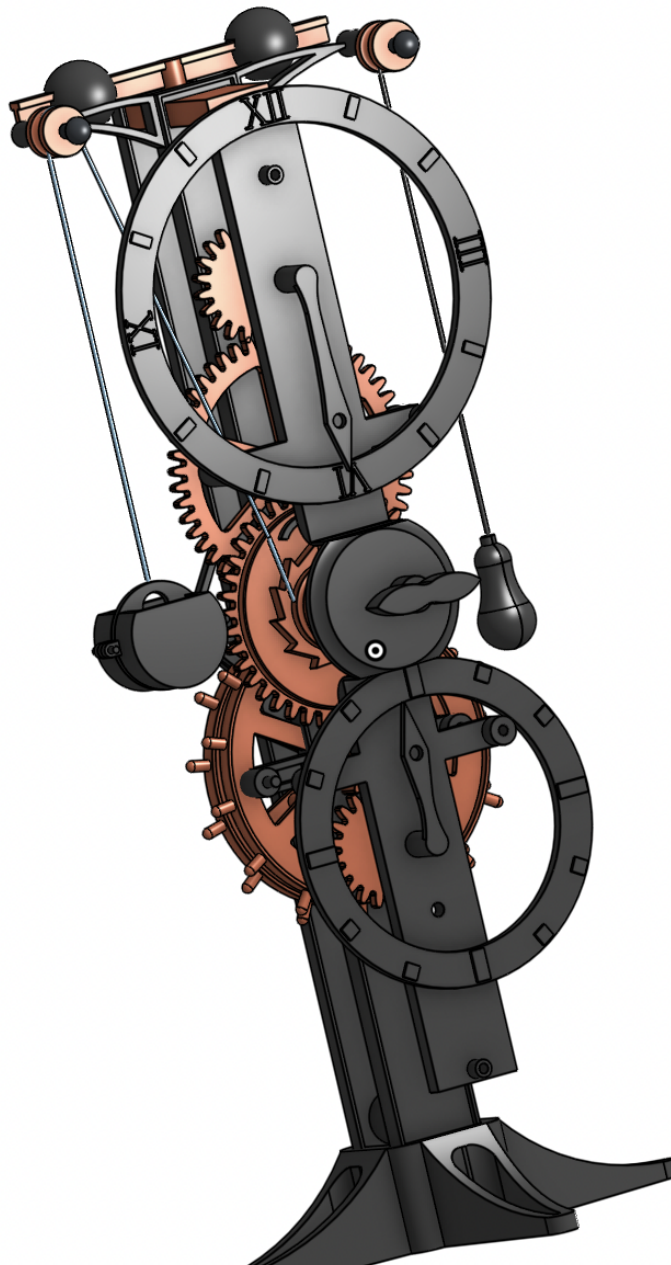


2. Clamp the right side thread between the given parts, For a functional model, if you're adding coins to the bucket in the previous step, you can replace this plastic part with a tear drop weight of about 10 to 15 grams



**Clamp the other end
of thread in between
these two parts**

Congrats! You've made a Da Vinci Clock



io 3

 Part Studio 4

 Part Studio 5

 /

Model files



STL

39 files



da-vinci-clock.stl



assembly-1-20mm-shaft.stl



assembly-1-a1.stl



assembly-1-a3.stl



assembly-1-45mm-shaft.stl



assembly-1-hour-hand.stl



assembly-1-34mm-shaft.stl



assembly-1-t-shape.stl



assembly-1-b1.stl



assembly-1-minute-dial.stl



assembly-1-key.stl



assembly-1-10t-gear.stl



assembly-1-31mm-shaft.stl



assembly-1-a2.stl



assembly-1-hour-dial.stl



assembly-1-weight.stl



assembly-1-minute-hand.stl



assembly-1-base.stl



assembly-1-g3.stl



assembly-1-partition.stl



assembly-1-g2.stl



assembly-1-stud.stl



assembly-1-pulley.stl



assembly-1-b2.stl



assembly-1-t-ball.stl



assembly-1-g1.stl



assembly-1-ratchet.stl



assembly-1-a42.stl



assembly-1-a41.stl



assembly-1-a5.stl



assembly-1-g4.stl



assembly-1-g5.stl



part-studio-4-weight-2.stl



part-studio-1-31mm-shaft-1.stl



part-studio-2-g3-2.stl



part-studio-4-t-ball-2.stl



part-studio-2-pulley-3.stl



part-studio-1-stud-1.stl



part-studio-3-b3-fixed.stl



STEP

39 files



assembly-1-31mm-shaft.step



assembly-1-a42.step



assembly-1-a41.step



assembly-1-a3.step



assembly-1-31mm-shaft-1.step



assembly-1-a1.step



assembly-1-45mm-shaft.step



assembly-1-a2.step



assembly-1-34mm-shaft.step



assembly-1-20mm-shaft.step



assembly-1-b1.step



assembly-1-t-ball-1.step



assembly-1-a5.step



assembly-1-t-ball.step



assembly-1-minute-hand.step



assembly-1-stud-1.step



assembly-1-hour-hand.step



assembly-1-partition.step



assembly-1-stud.step



assembly-1-weight-1.step



assembly-1-t-shape.step



assembly-1-key.step



assembly-1-ratchet.step



assembly-1-pulley-1.step



assembly-1-weight.step



assembly-1-pulley.step



assembly-1-10t-gear.step



assembly-1-b3-final.step



assembly-1-g4.step



assembly-1-g5.step



assembly-1-b2.step



assembly-1-base.step



assembly-1-minute-dial.step



assembly-1-hour-dial.step



assembly-1-g3.step



assembly-1-g1.step



assembly-1-g2.step



assembly-1-g3-1.step



part-studio-3-b3-fixed.step

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