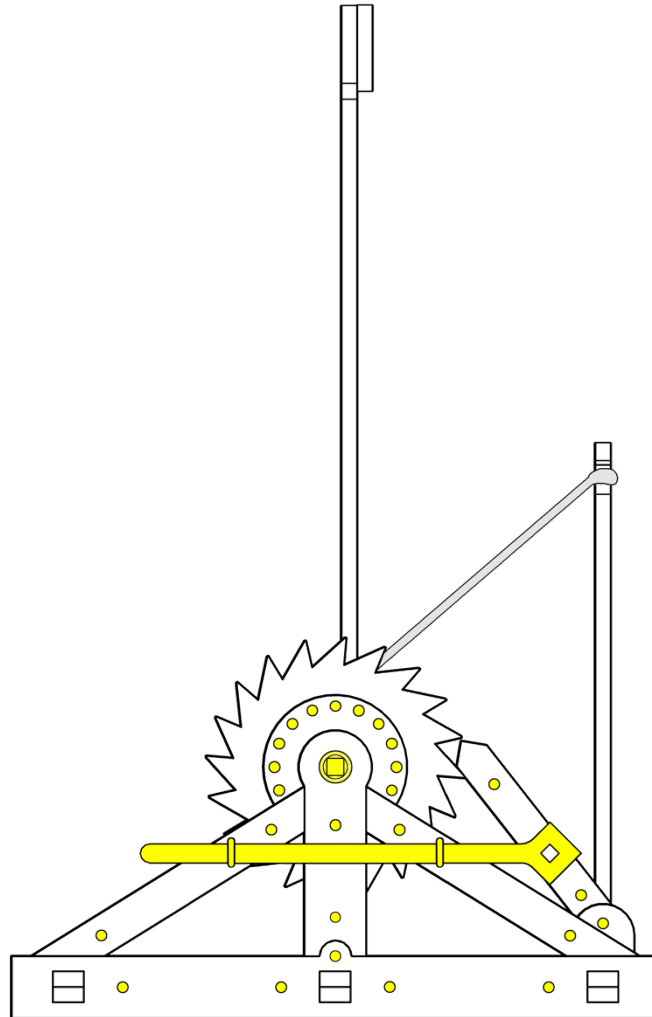


Da Vinci Catapult Instructions

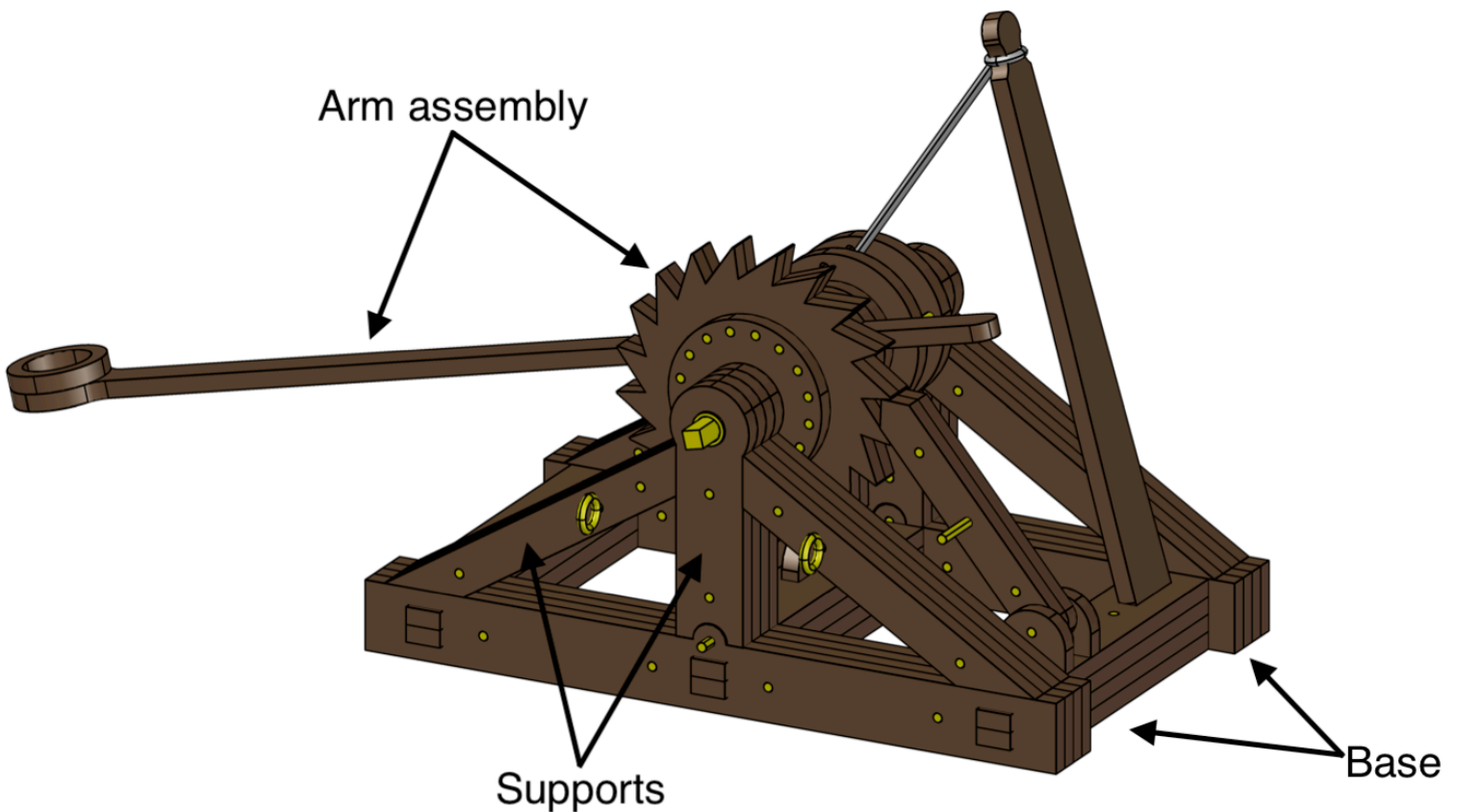


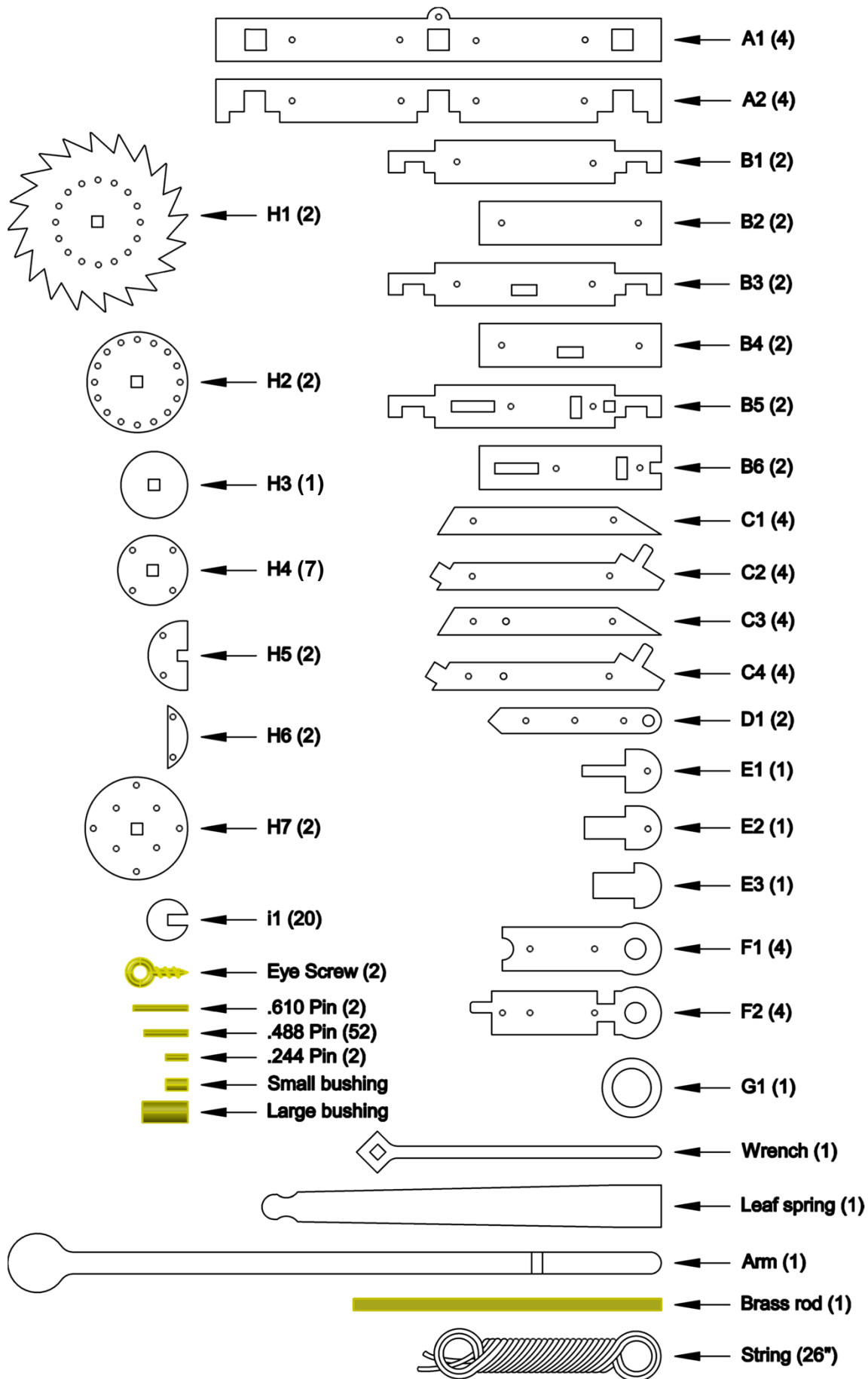
Required

- Da Vinci catapult kit v.1
- Scissors
- Hammer
- Superglue

Table of Contents

Section	Name	Est. Time	Page #
Section 1	– Base.....		6
Section 2	– Supports.....		10
Section 3	– Arm.....		13
Section 4	– Assembly.....		23
Section 6	– Operation.....		34





Tips Before Starting.

- Use a hammer to lightly tap brass pins in. (let the weight of the hammer do the work!)
- Brass nails and pins can scratch your table or workbench. Do not assemble on a nice table/bench.
- The edges of the wood may be sticky at first. This should go away with time. (Rubbing alcohol also helps)
- **Never** force two parts together if it seems to tight. Grab a file or sandpaper and **lightly** file/sand the part.

Warning

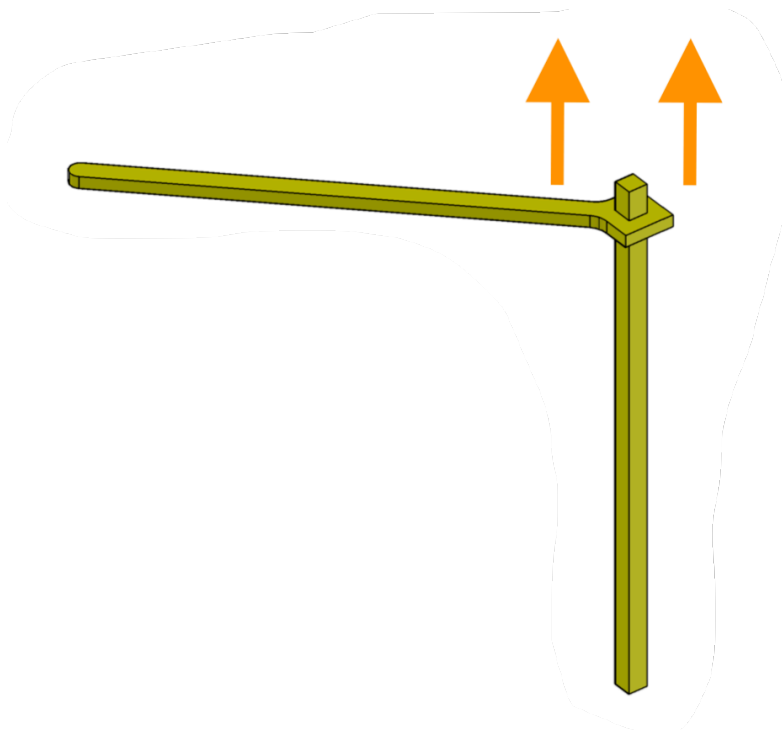
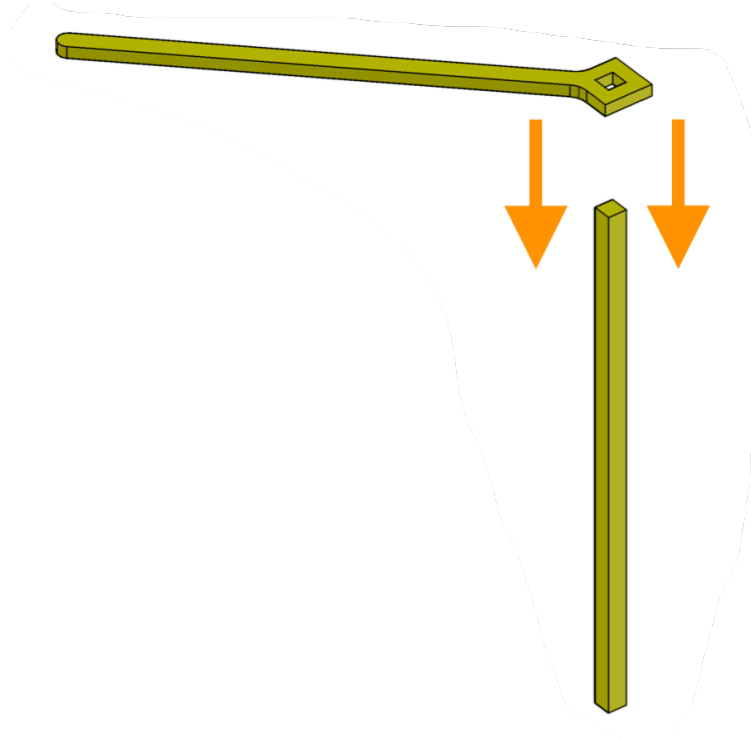
This kit contains small pieces. Keep away from children.

Do not aim at other people, pets, or yourself. Do not use this kit to launch sharp objects or any object that presents harm to you or anyone else.

Hand wrench

If your brass wrench is too tight, you can either:

- Work the wrench up and down the square rod.
- Use a micro hand file to remove a small amount of material.
- Warning: brass is a soft metal, try not to bend the wrench.



Section 1 – Base

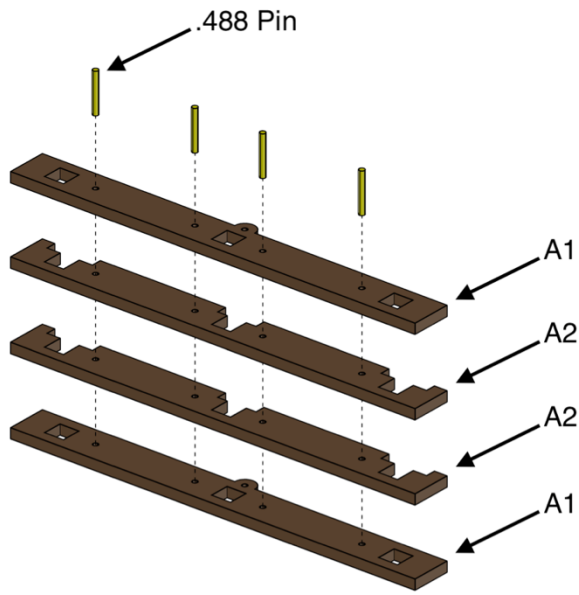


Fig. 1

Fig. 1

- Align Parts exactly as shown.
- Insert four .488 pins.
- The finished part is shown in Fig. 1 (right).

X2

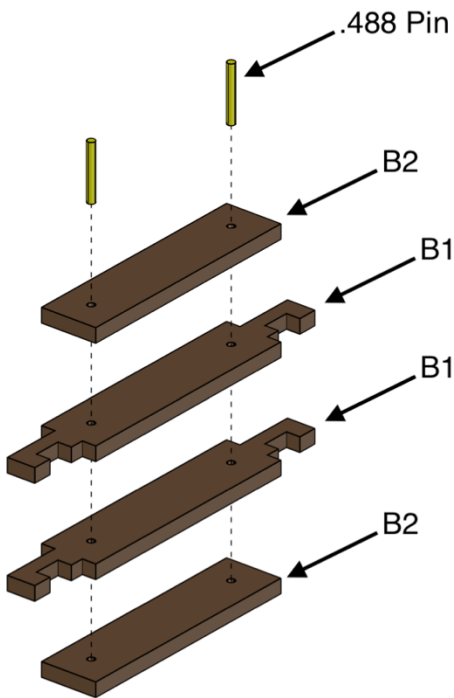
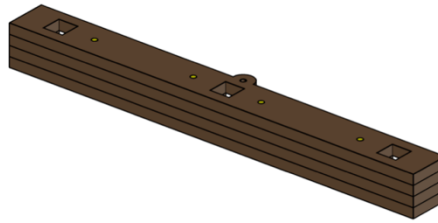
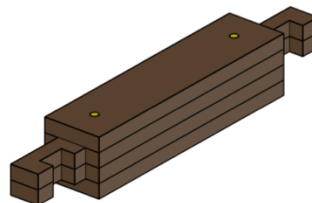


Fig. 2

Fig. 2

- Align Parts exactly as shown.
- Insert two .488 pins
- The finished part is shown in Fig. 2 (right).



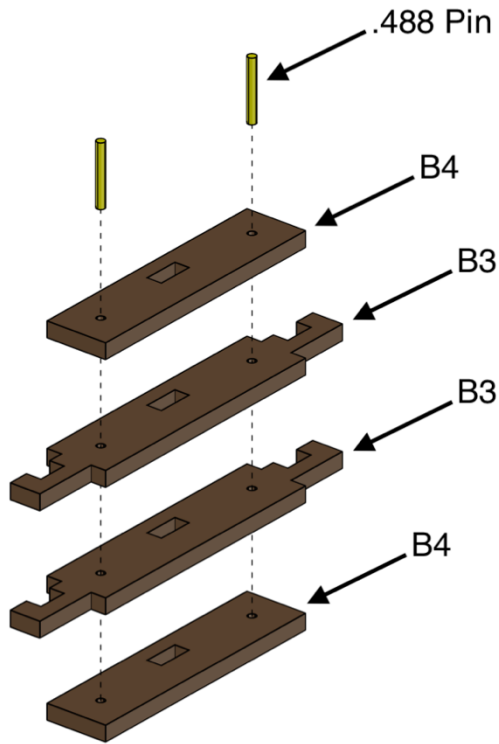


Fig. 3

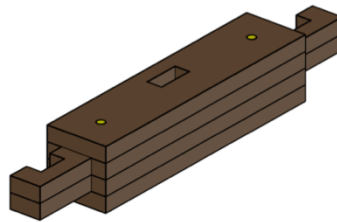


Fig. 3

- Align Parts exactly as shown.
- Insert two .488 pins.
- The finished part is shown in Fig. 4 (right).

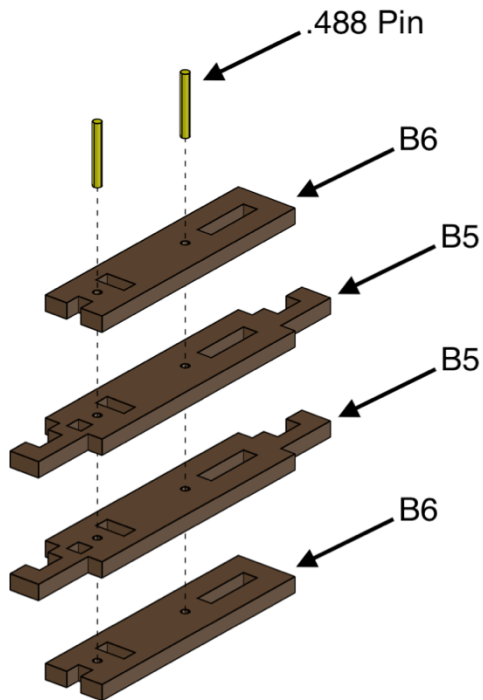


Fig. 4

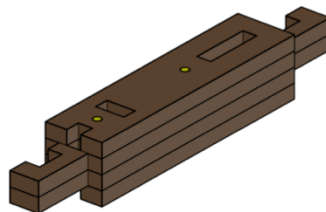


Fig. 4

- Align parts exactly as shown.
- Insert two .488 pins.
- The finished part is shown in Fig. 4 (right).

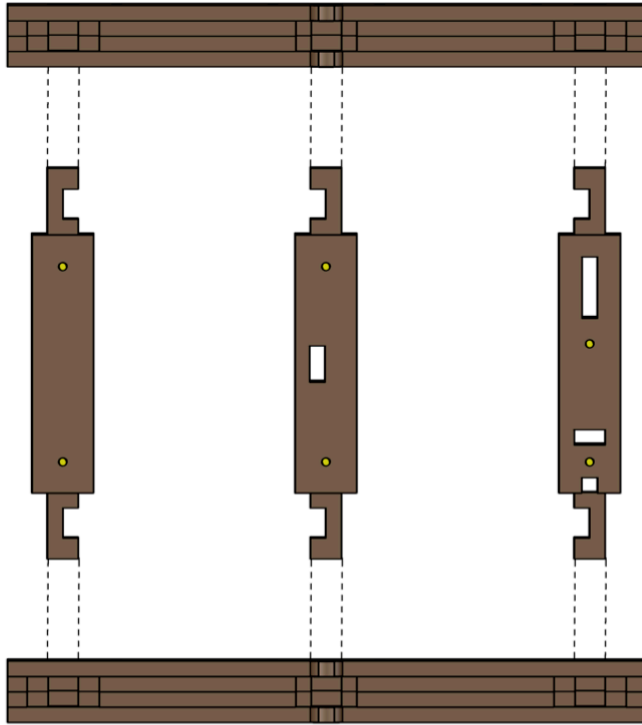


Fig. 5

Fig. 5

➤ Align parts
EXACTLY as shown.

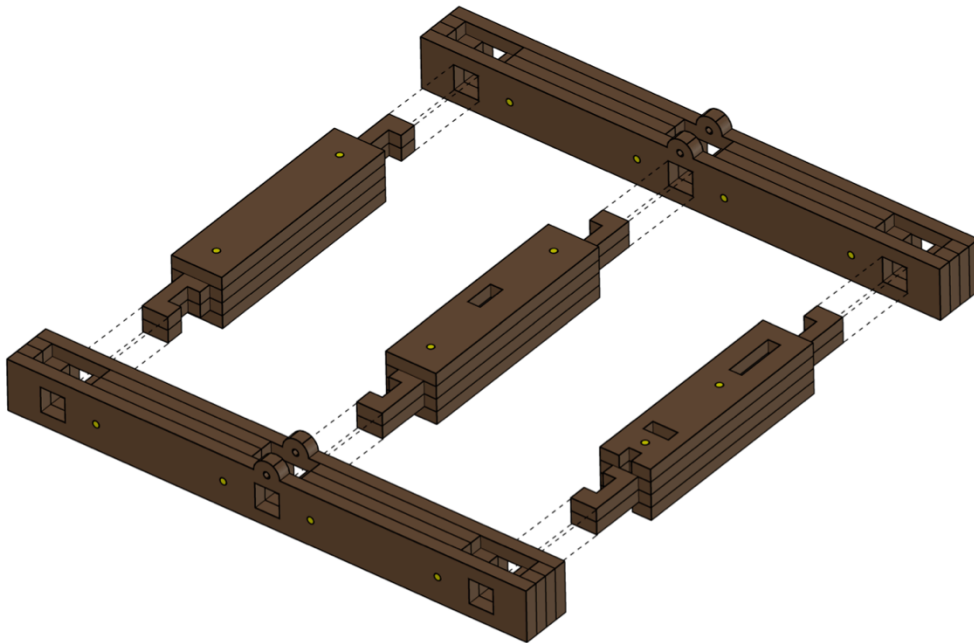


Fig. 6

Fig. 6

➤ Insert parts together.

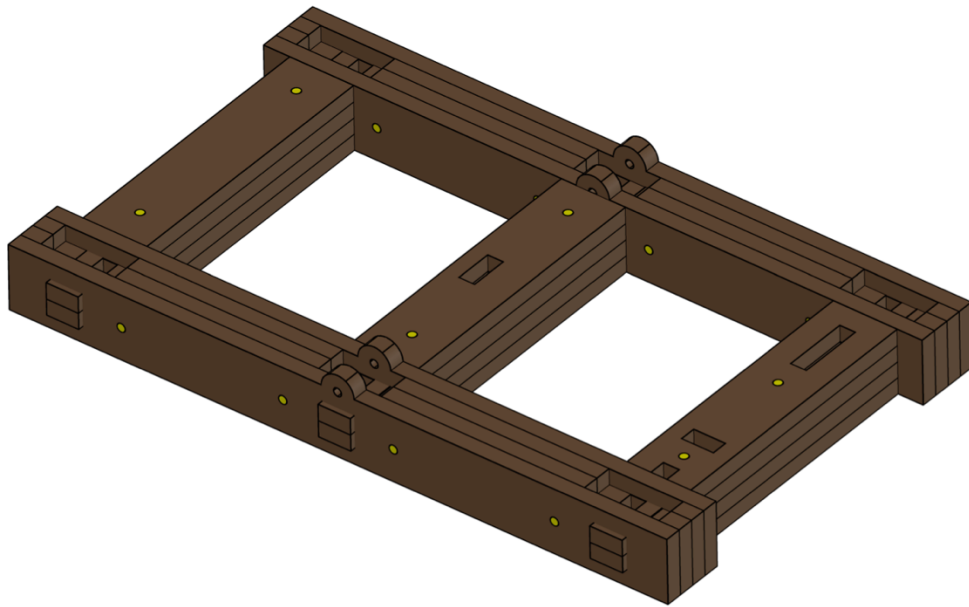


Fig. 7

Fig. 7

➤ Fig. 7 shows completed base.

Section 2 - Supports

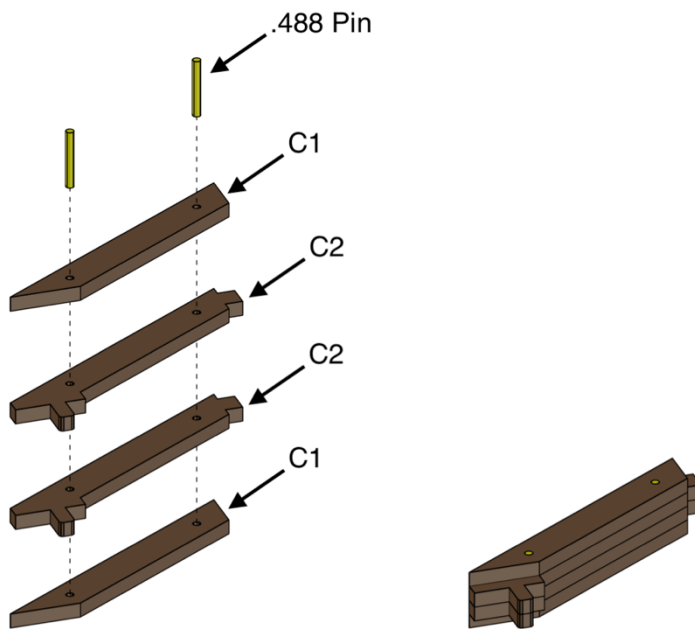


Fig. 8

Fig. 8

- Align parts exactly as shown.
- Insert two .488 pins.
- The finished part is shown in Fig. 8 (right).

X2

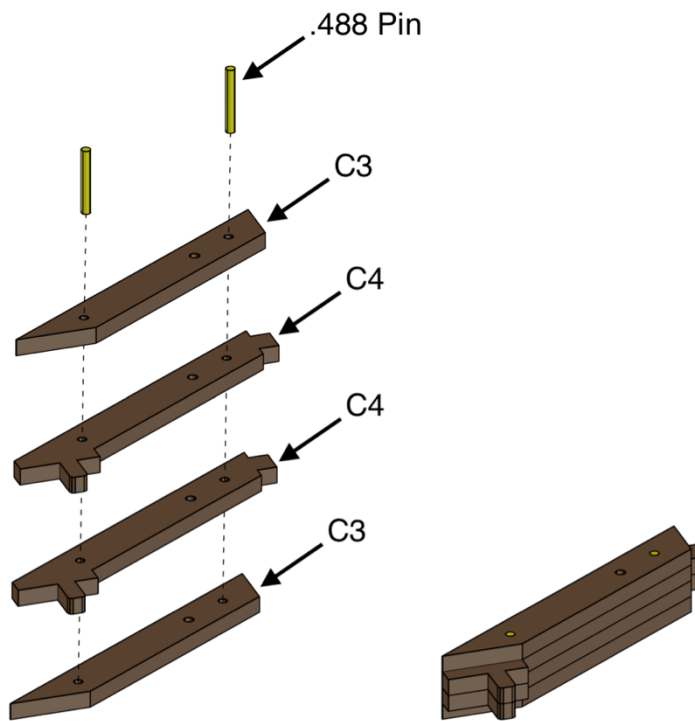


Fig. 9

Fig. 9

- Align parts exactly as shown.
- Insert two .488 pins.
- The finished part is shown in Fig. 9 (right).

X2

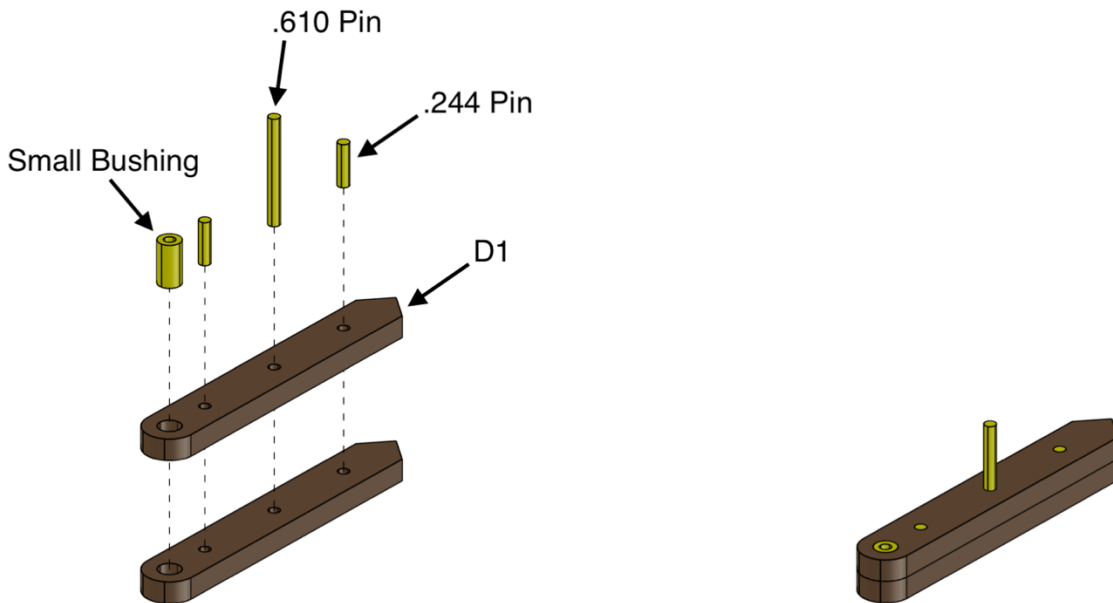


Fig. 10

- Align parts exactly as shown.
- Insert two .244 pins.
- Insert a small bushing and one .610 pin.
- The finished part is shown in Fig. 9 (right).

Fig. 10

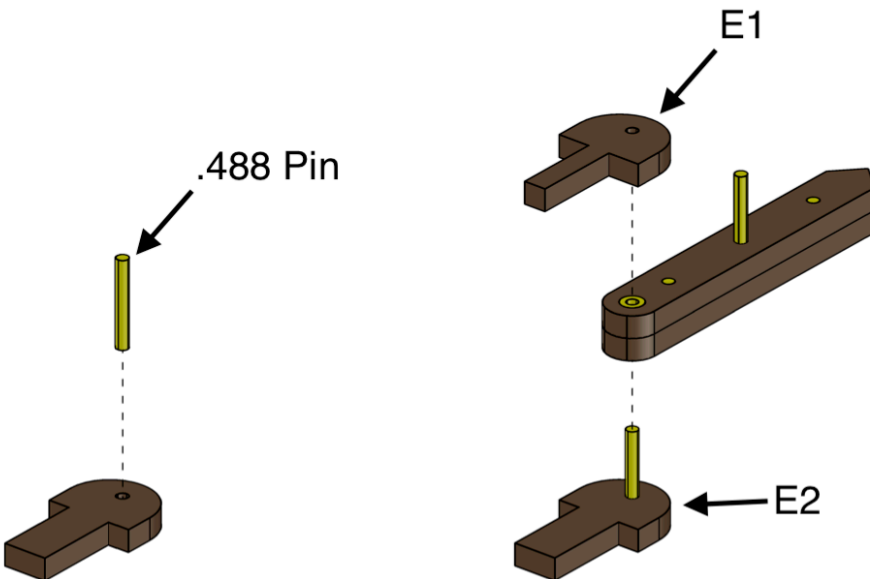


Fig. 11

- Align parts exactly as shown.
- Insert one .488 pin.
- Place the previous part (D1) on top of the E2 piece.
- Insert the E1 piece on top to finish the part.

Fig. 11

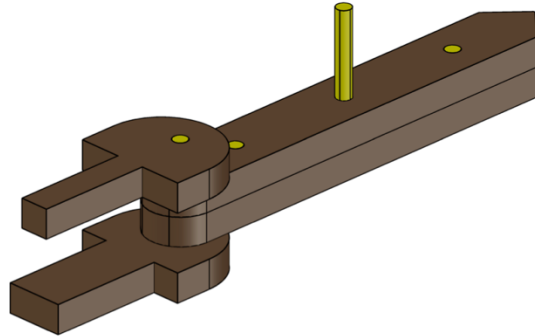


Fig. 12

Fig. 12

- Fig. 12 shows the completed part.

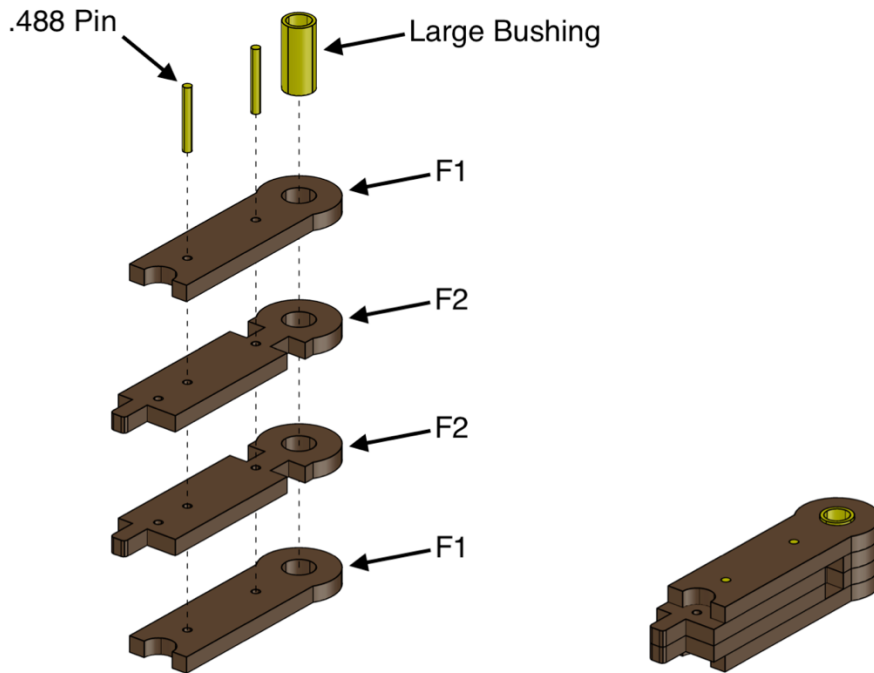


Fig. 13

Fig. 13

- Align parts exactly as shown.
- Insert two .488 pins.
- Insert one large bushing.
- The finished part is shown in Fig. 13 (right).

X2

Section 3 – Arm

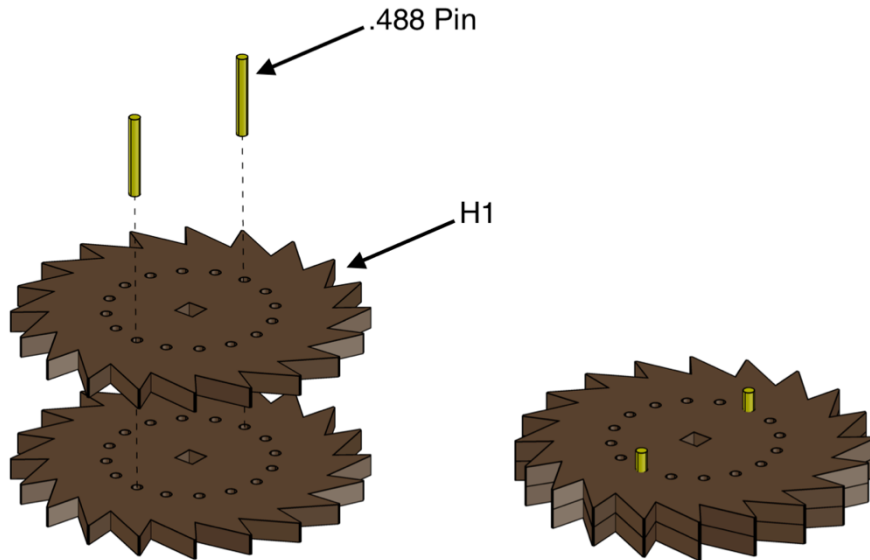


Fig. 14

Fig. 14

- Align parts exactly as shown.
- Make sure the wood grain and square hole line up.
- Insert two .488 pins.

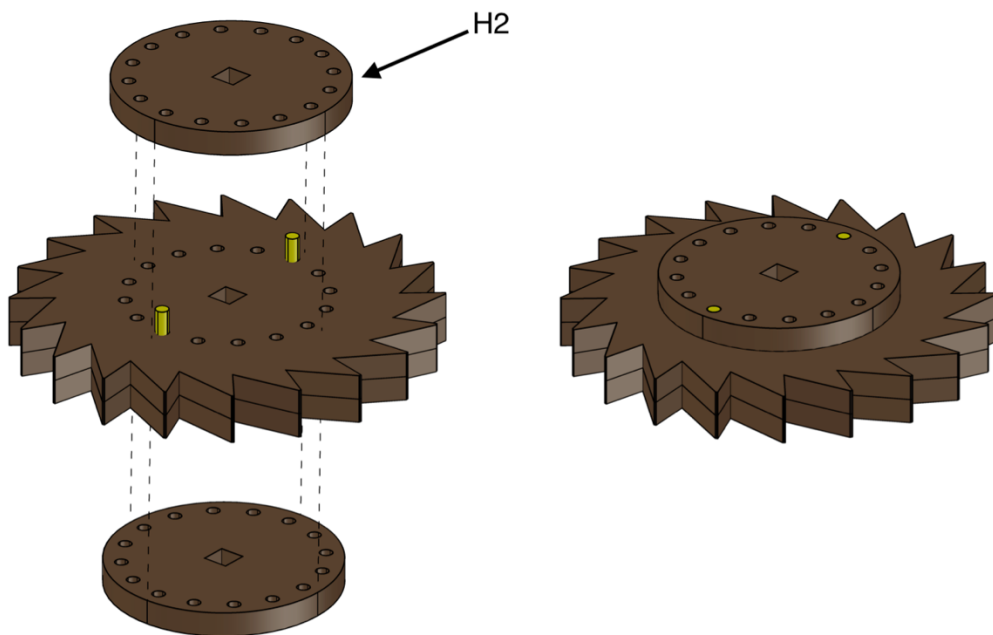


Fig. 15

Fig. 15

- Align parts exactly as shown.
- Make sure the wood grain and square hole line up.

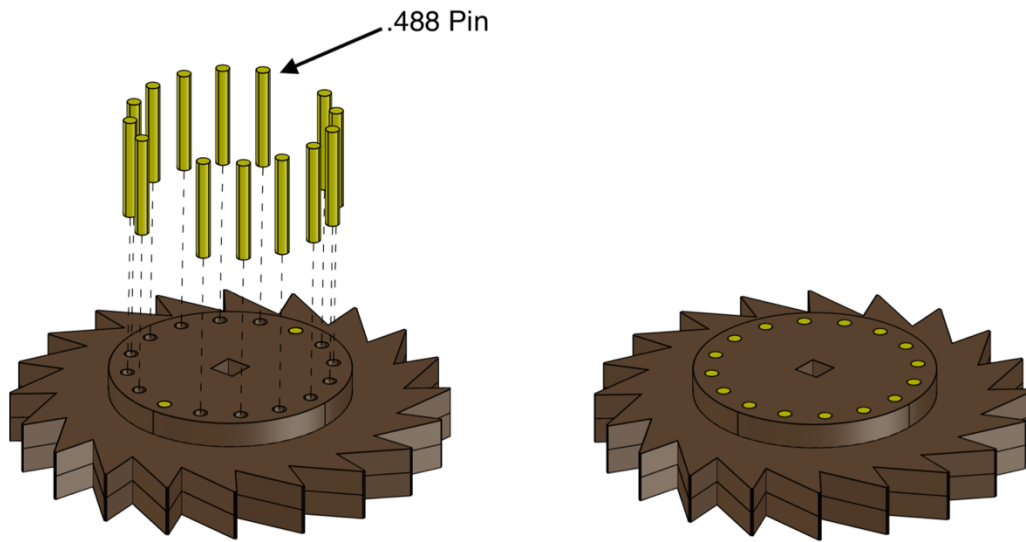


Fig. 16

Fig. 16

- Align parts exactly as shown.
- Insert fourteen .488 pins.

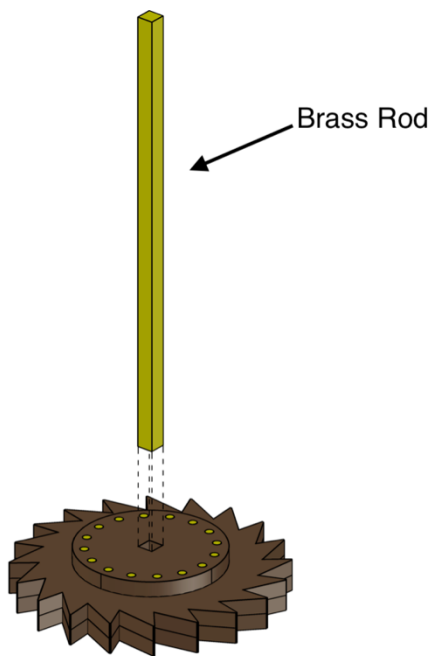


Fig. 17

Fig. 17

- Align parts exactly as shown.
- Insert the brass rod.

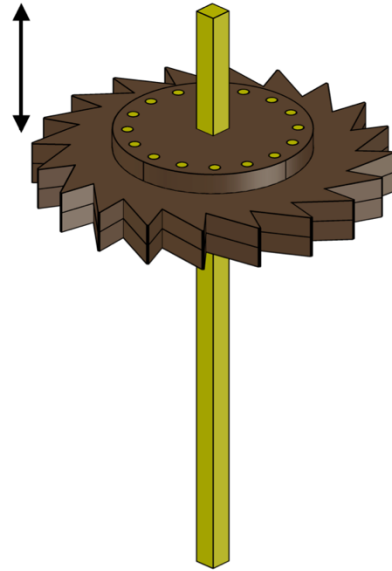


Fig. 17

Fig. 17

- The brass rod needs to stick out.
- This distance should be .73" or 18.5mm or the thickness of 6 pieces of wood.

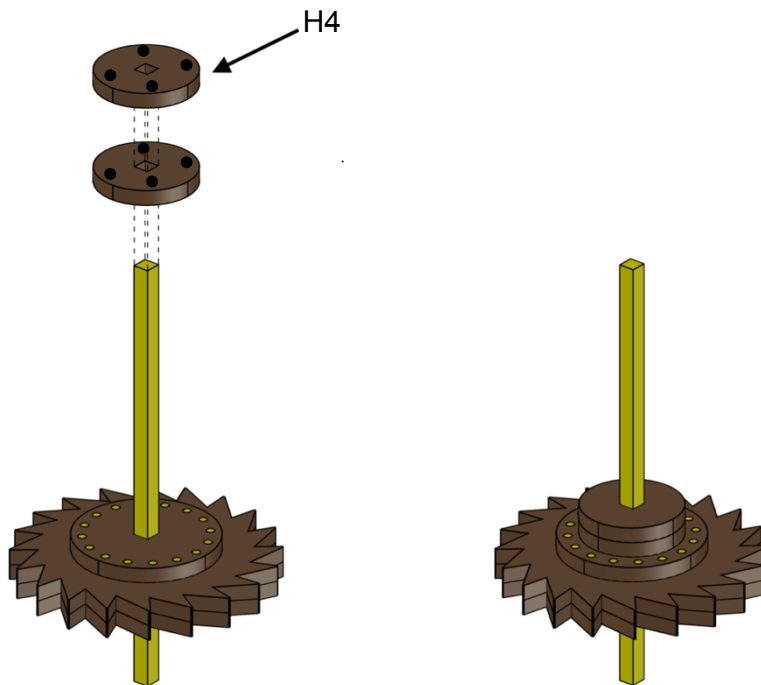


Fig. 18

Fig. 18

- Align parts exactly as shown.
- Insert two H4 pieces.
- Make sure the wood grain lines up with the others.

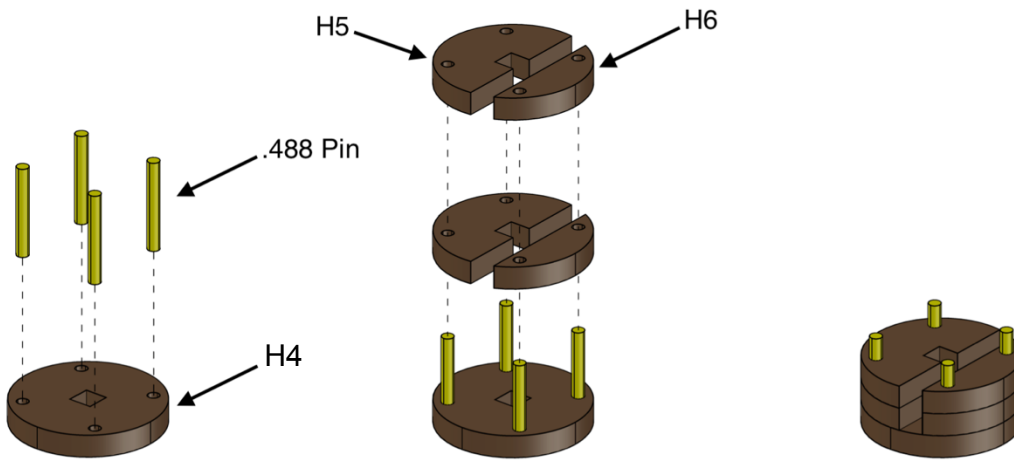


Fig. 19

Fig. 19

- Align parts exactly as shown.
- Insert four .488 pins.
- Place two H6 pieces and two H5 pieces on top of H4.
- The completed part is shown in Fig. 19 (right)

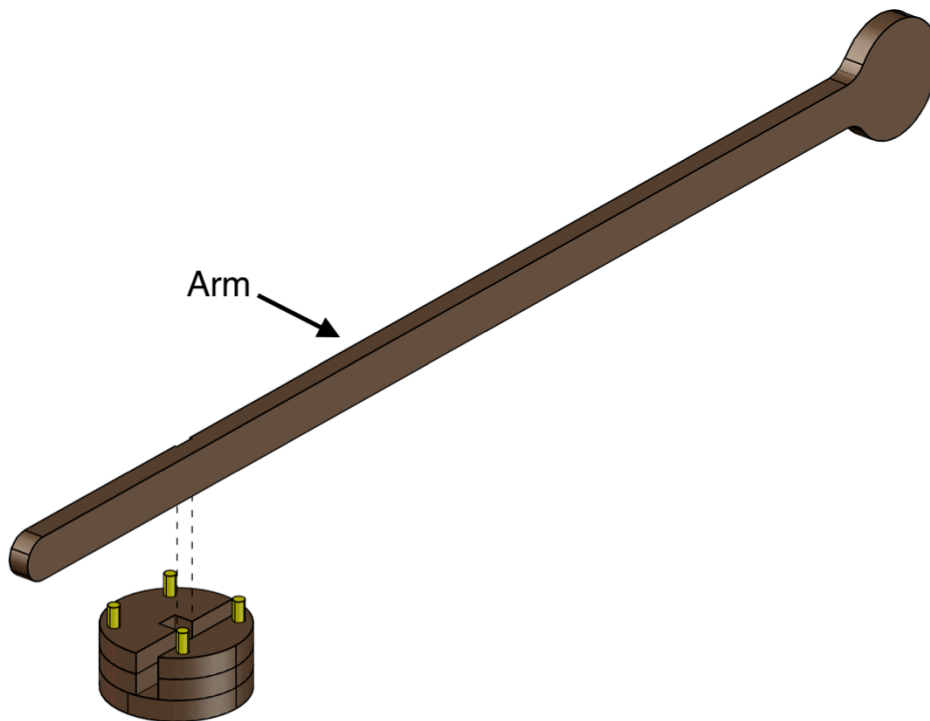


Fig. 20

Fig. 20

- Align parts exactly as shown.
- Continue to the next step.

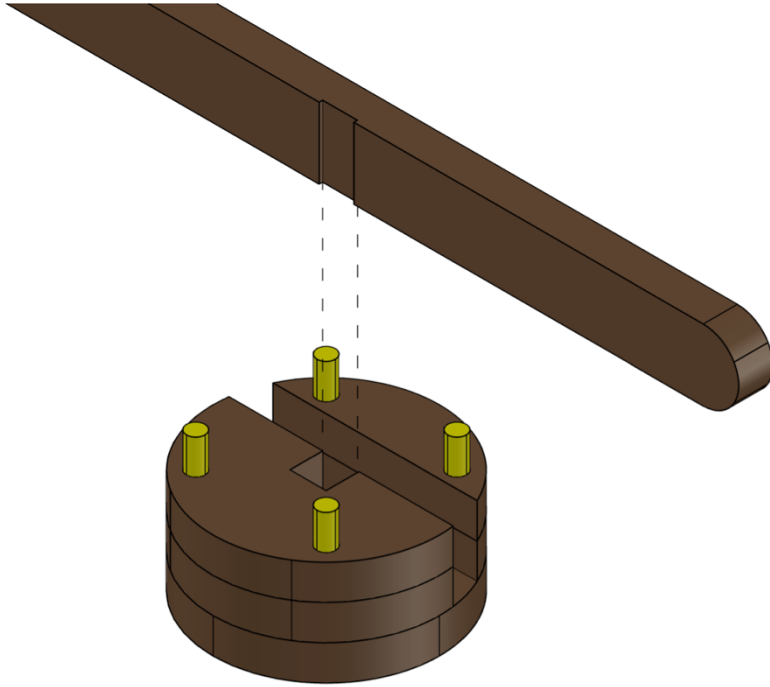


Fig. 21

Fig. 21

- Make sure your parts are aligned exactly like the ones shown in Fig. 21.

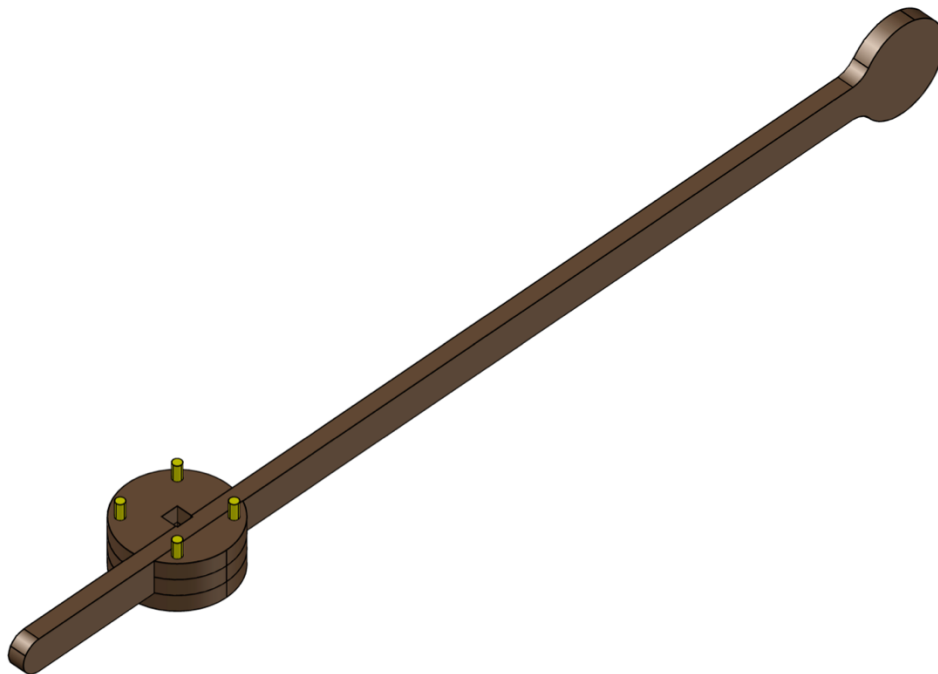


Fig. 22

Fig. 22

- Insert the arm into the part.

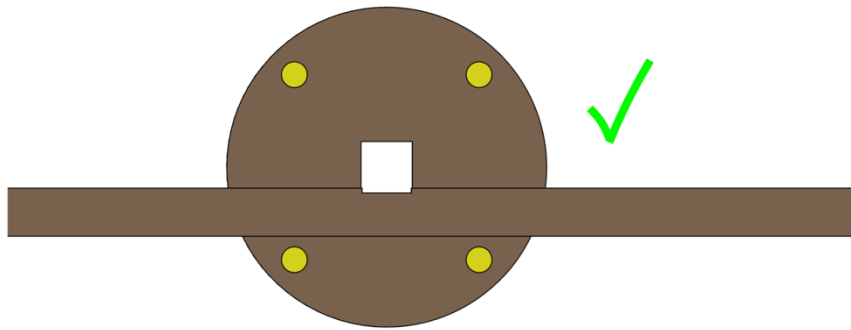
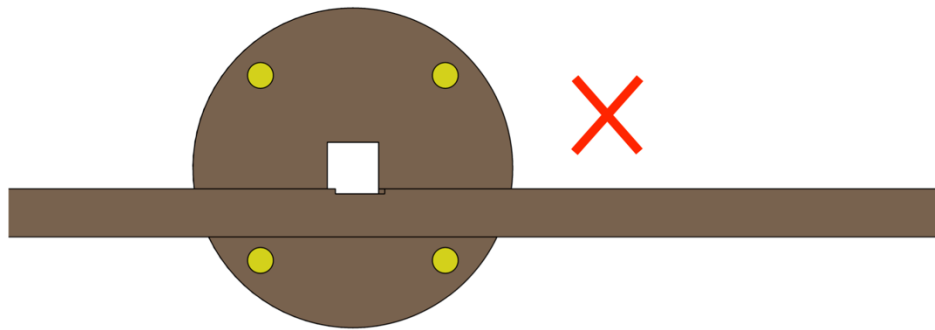


Fig. 23

- Make sure the engraved section lines up with the part.

Fig. 23

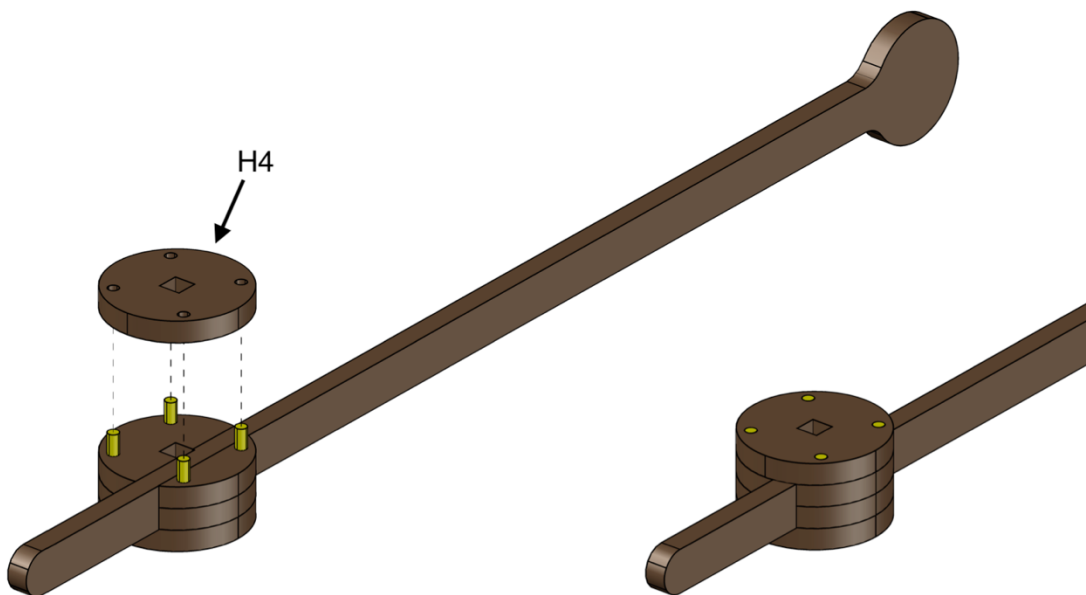


Fig. 24

- Insert a H4 piece on top.

Fig. 24

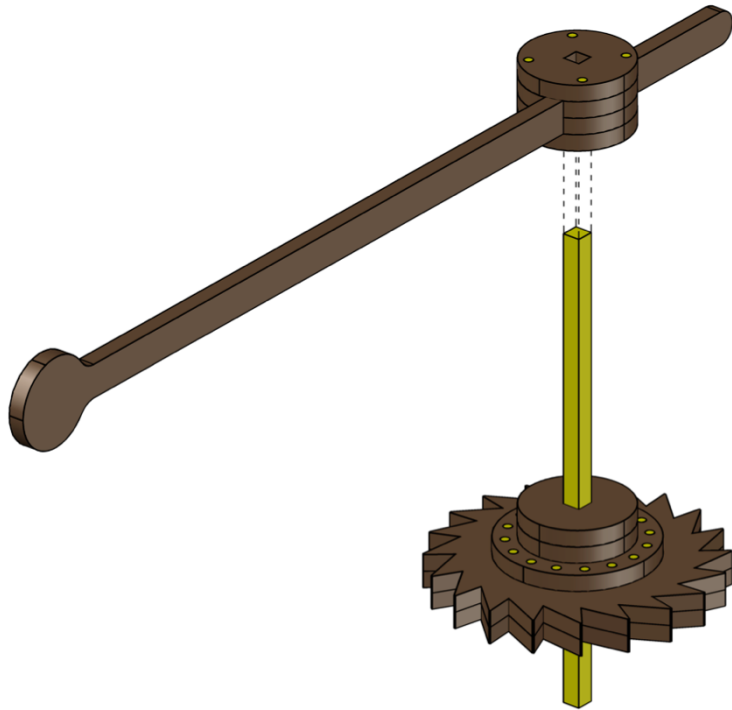


Fig. 25

Fig. 25

- Align parts exactly as shown.
- Continue to the next step.

This is the short end of the arm!

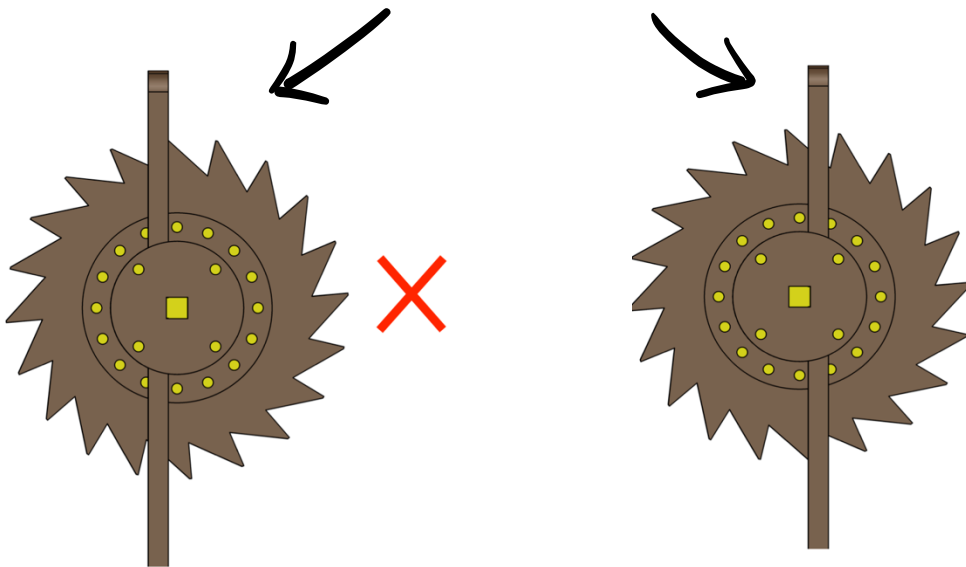


Fig. 26

Fig. 26

- Make sure your part is aligned exactly as Fig. 26.

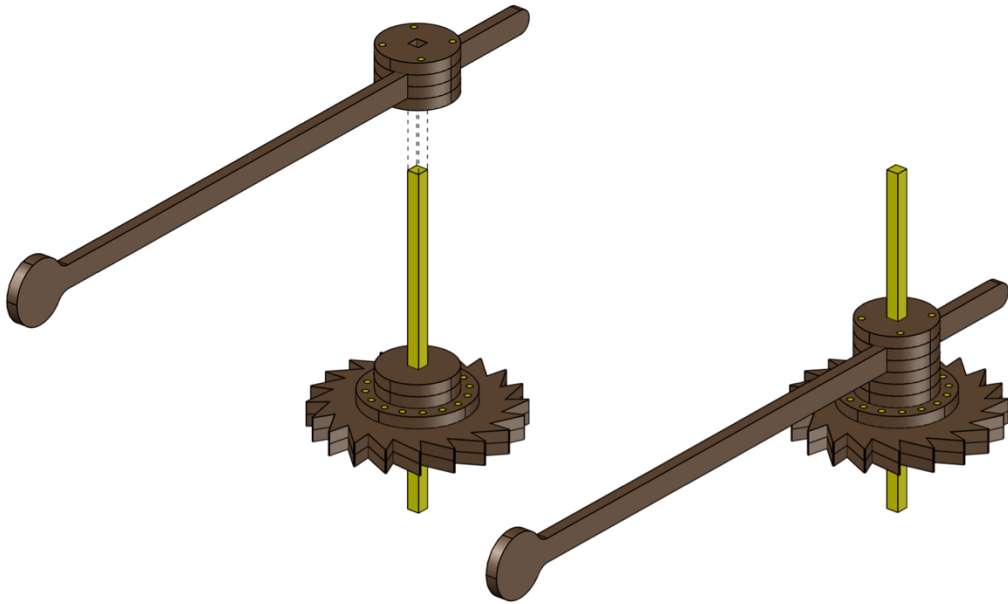


Fig. 27

Fig. 27

- Insert the arm assembly on the gear/brass rod part.

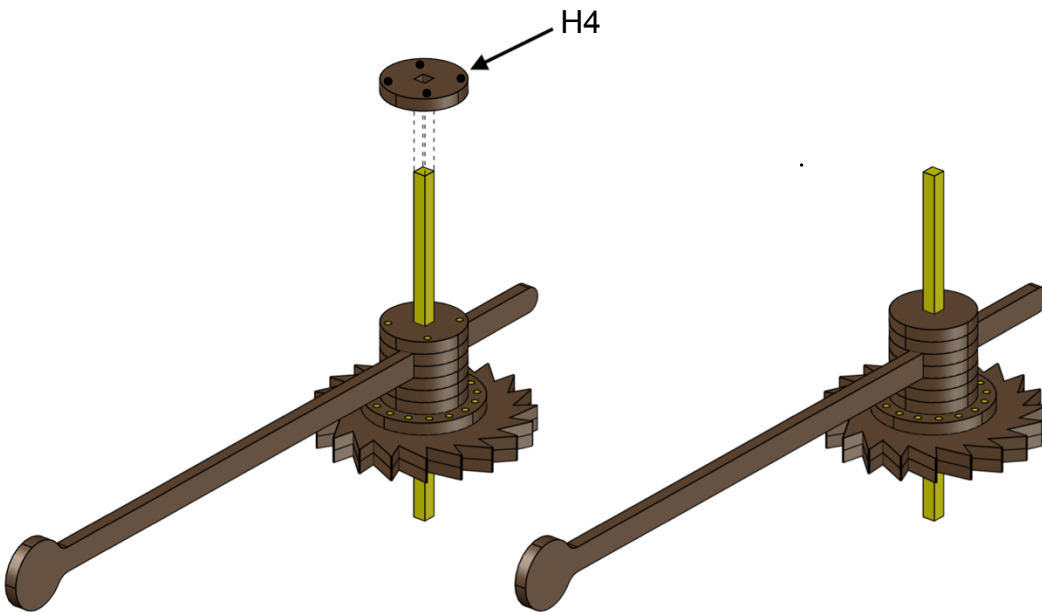


Fig. 28

Fig. 28

- Align parts exactly as shown.
- Insert one H4 piece.
- Make sure the wood grain lines up.

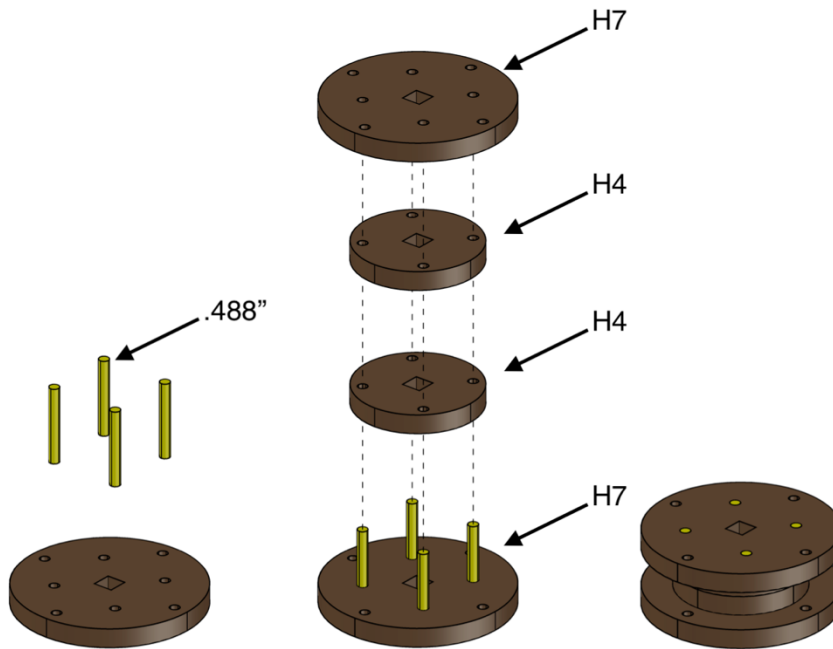


Fig. 29

Fig. 29

- Align parts exactly as shown.
- Insert four .488 pins into a H7 piece.
- Place two H4 pieces and one H7 piece on top of H7.
- The completed part is shown in Fig. 29 (right)

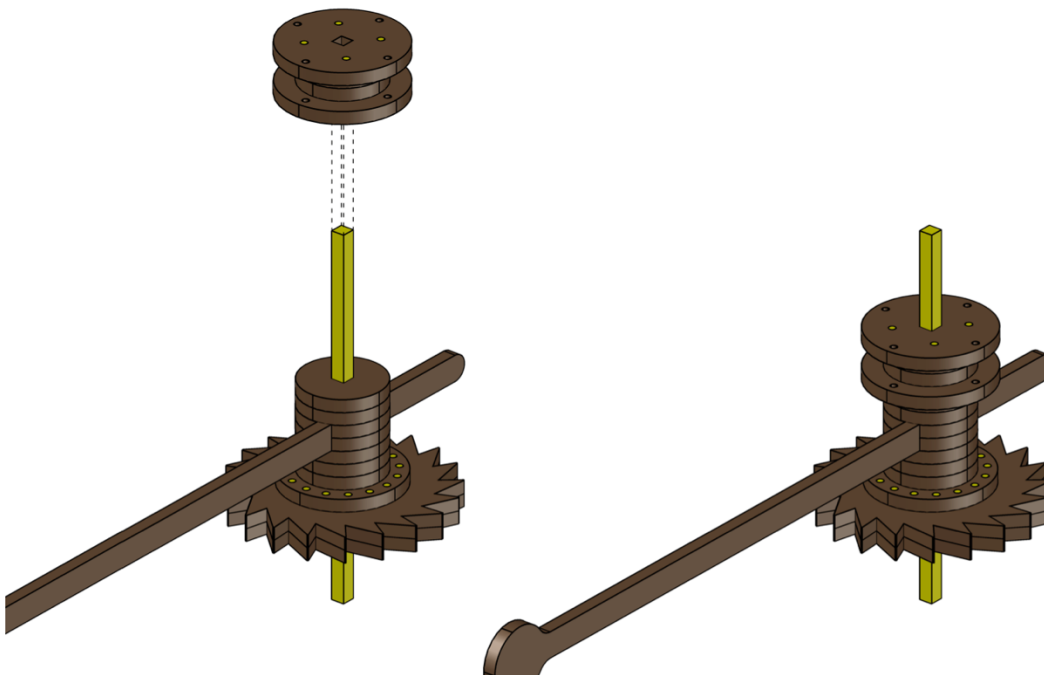


Fig. 30

Fig. 30

- Align parts exactly as shown.
- Insert the part onto the brass rod.
- Make sure the wood grain lines up.

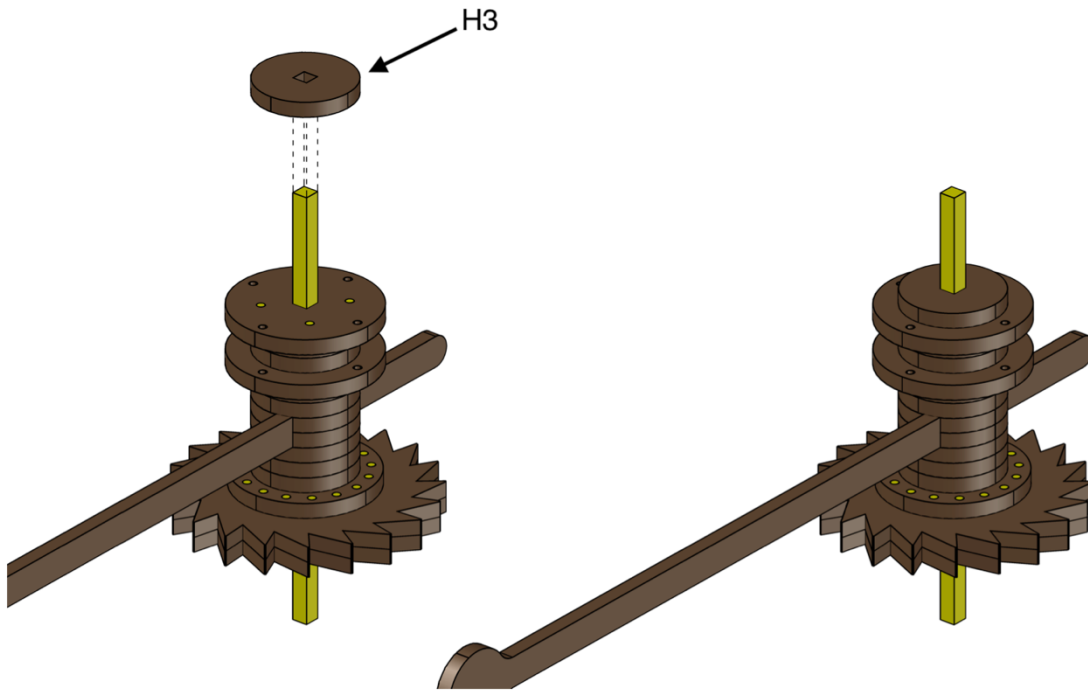


Fig. 31

Fig. 31

- Align parts exactly as shown.
- Insert a H3 piece onto the brass rod.
- Make sure the wood grain lines up.

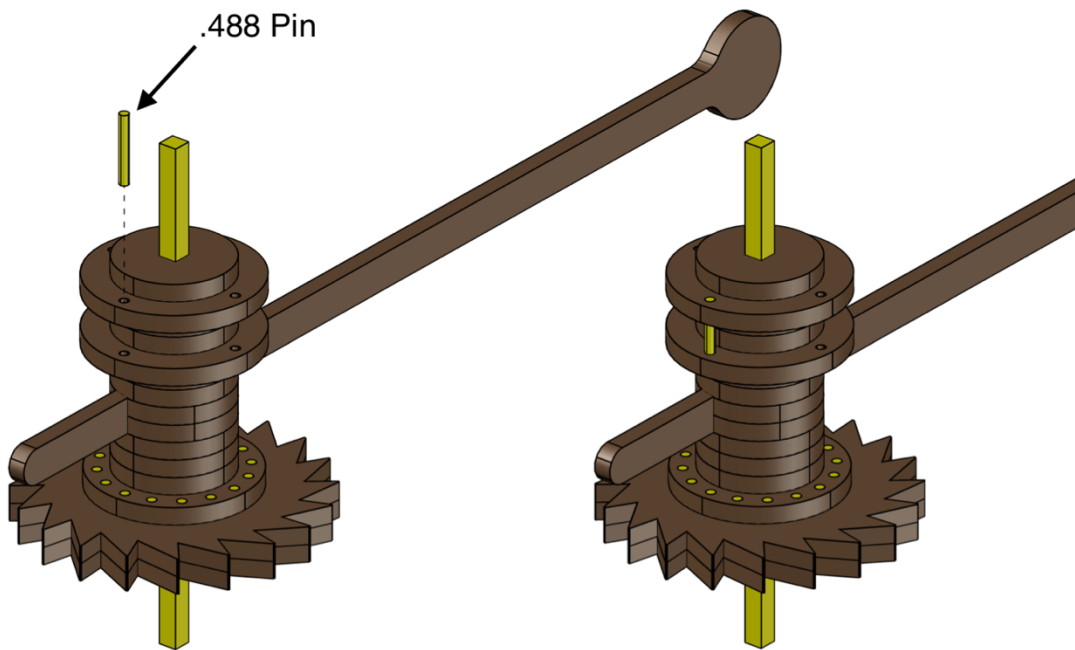


Fig. 32

Fig. 32

- Align parts exactly as shown.
- Insert a .488 pin.

Section 4 – Assembly

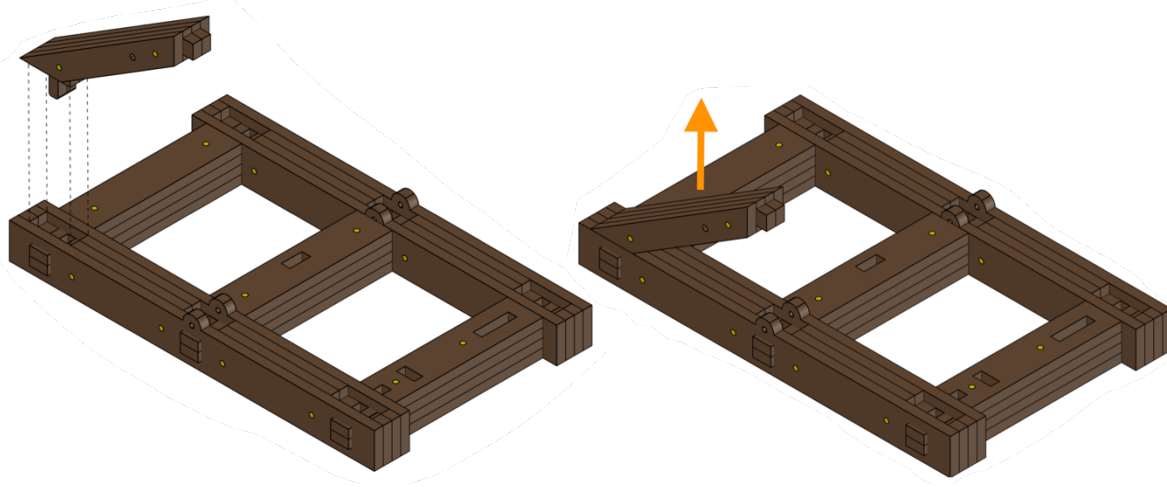


Fig. 33

- Insert each part into the base.
- Remove the part.
- Do this for all 6 parts.
- Doing this will loosen the connections. This makes the next steps easier.

Fig. 33

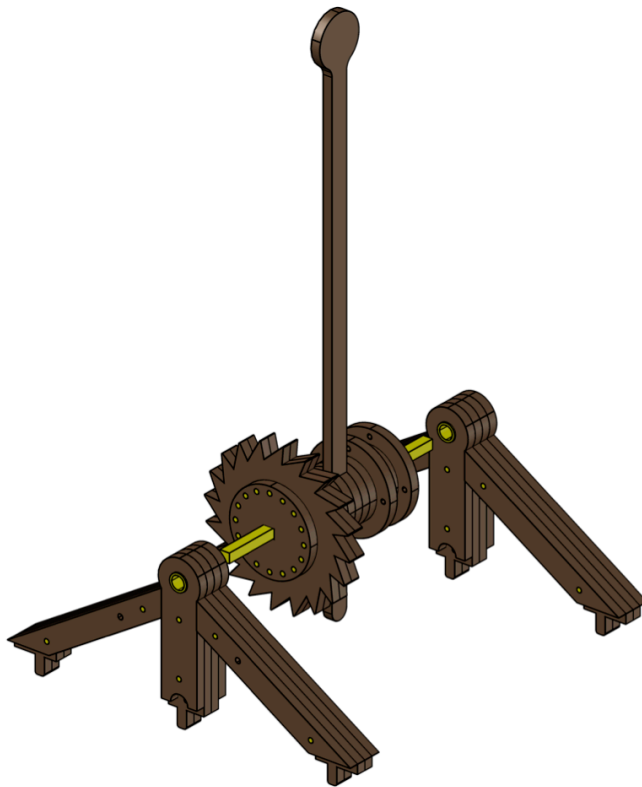


Fig. 34

Fig. 34

- Align parts exactly as shown.

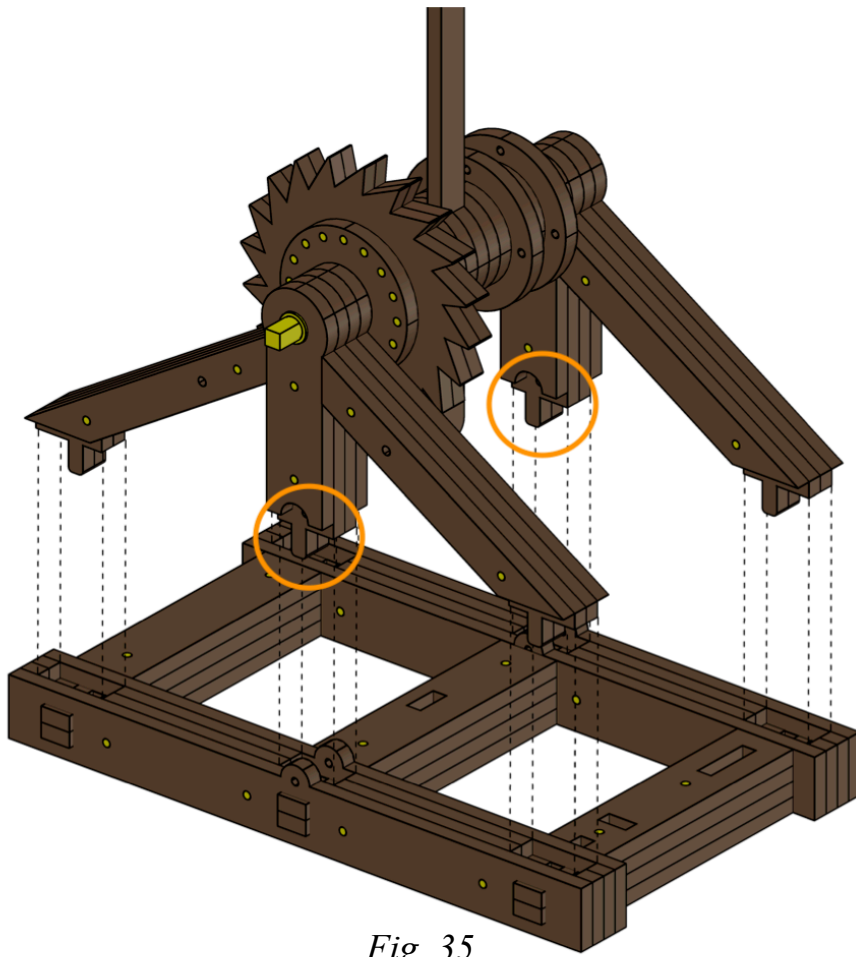


Fig. 35

Fig. 35

- Before joining the supports to the base, check to make sure the connections line up. (See fig. 35 and 36.)
- The orange circles highlight correct orientation.
- Once you have confirmed all the pieces line up, insert the parts in place.

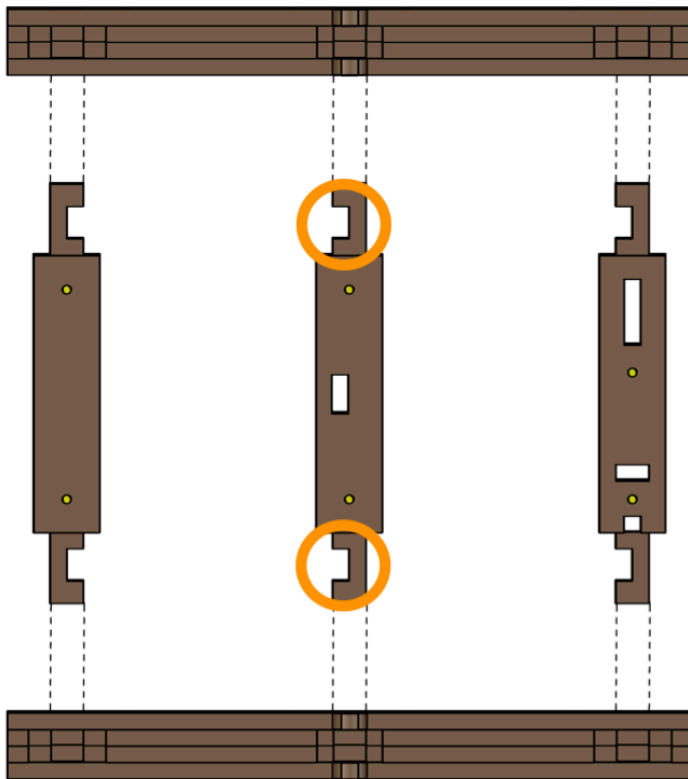


Fig. 36

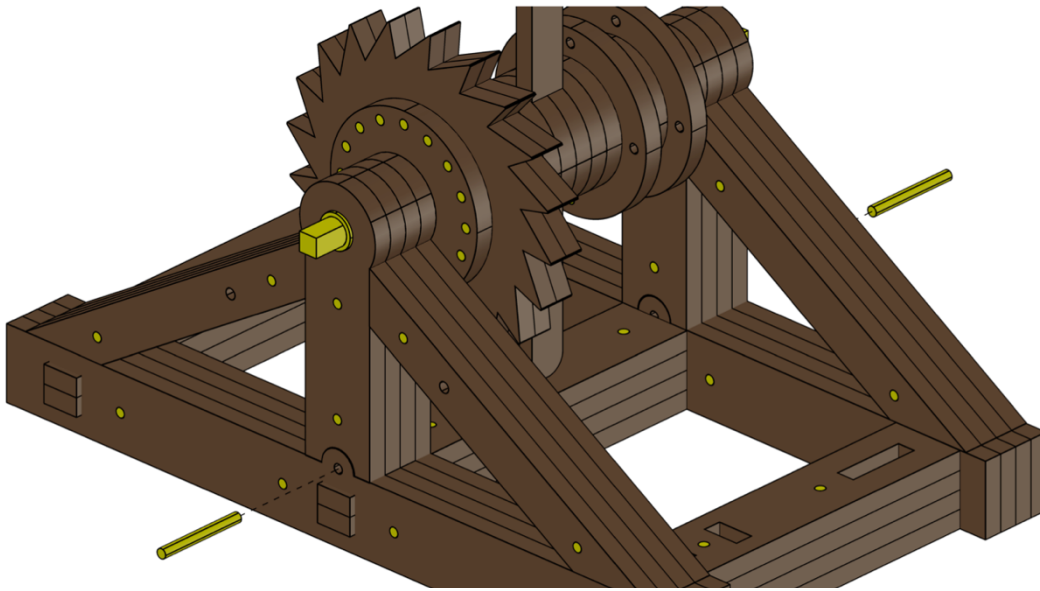


Fig. 37

- Align parts exactly as shown.
- Insert two .610 pins.
- These pins lock the supports in place.
- The pins are oversized so if needed, they can be removed using pliers.

Fig. 37

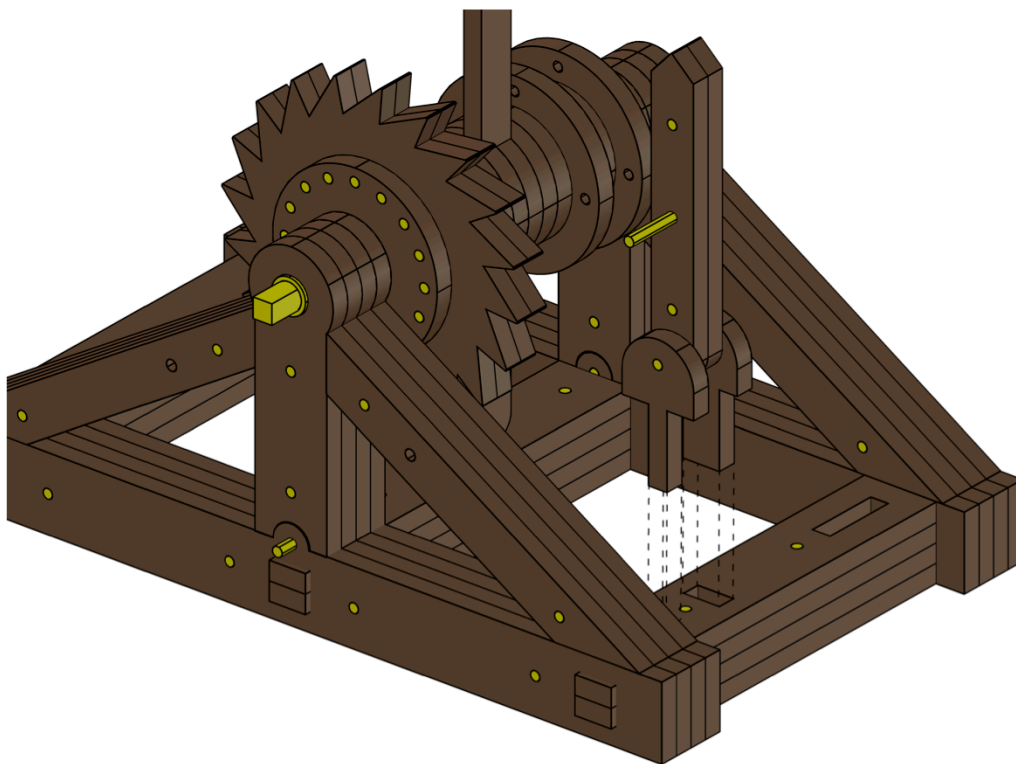


Fig. 38

- Insert the trigger assembly into the base.
- The part should rotate freely.

Fig. 38

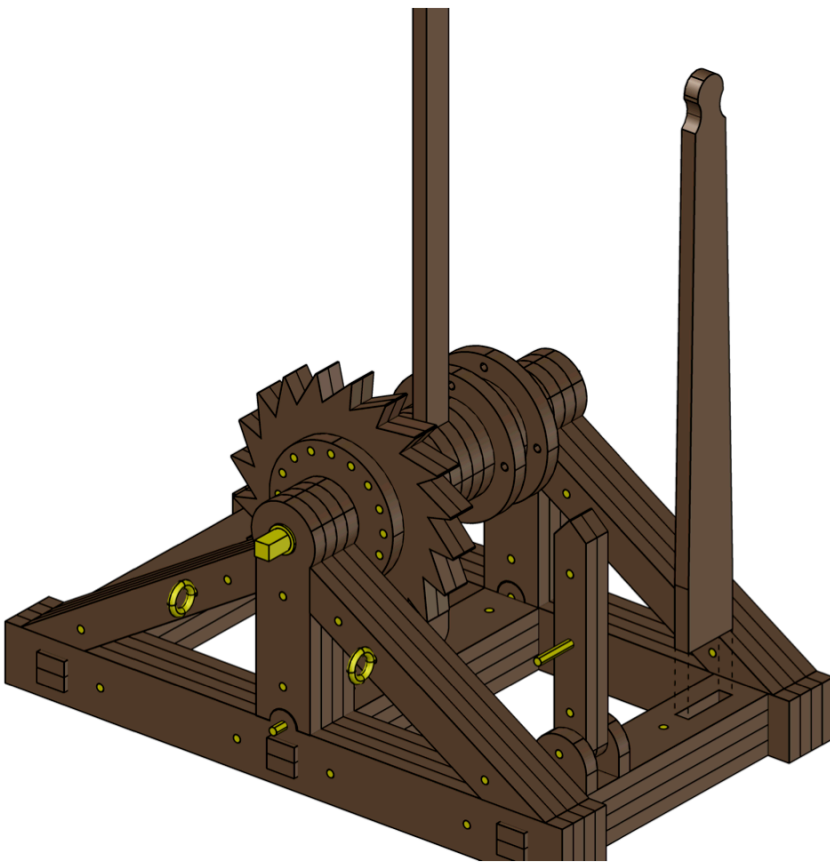


Fig. 39

Fig. 39

- Insert the leaf spring into the base.

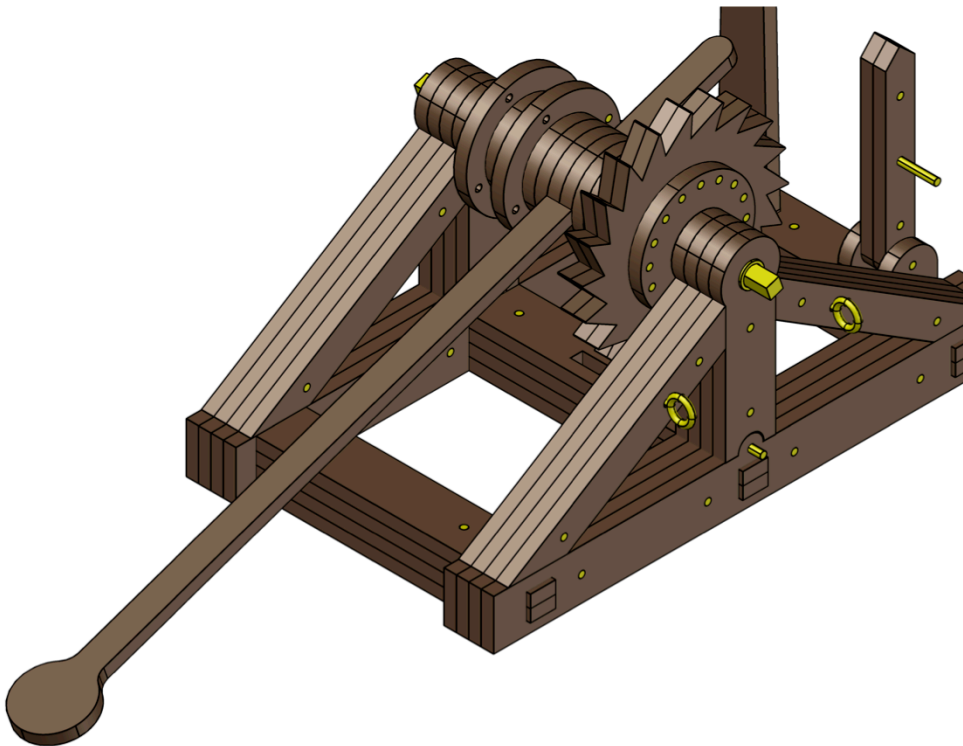


Fig. 40

Fig. 40

- Move the arm back into the firing position.
- This is important for the next step!

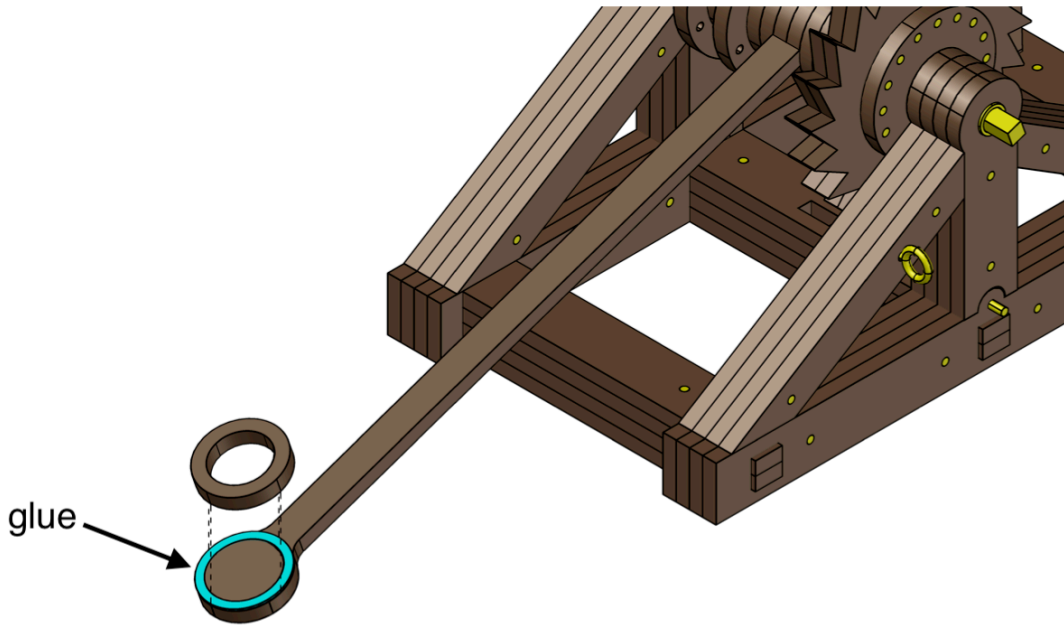


Fig. 41

Fig. 41

- Apply superglue to the arm piece and glue G1 into place. Do not glue the wrong side!
- Fig. 42 shows the completed step.

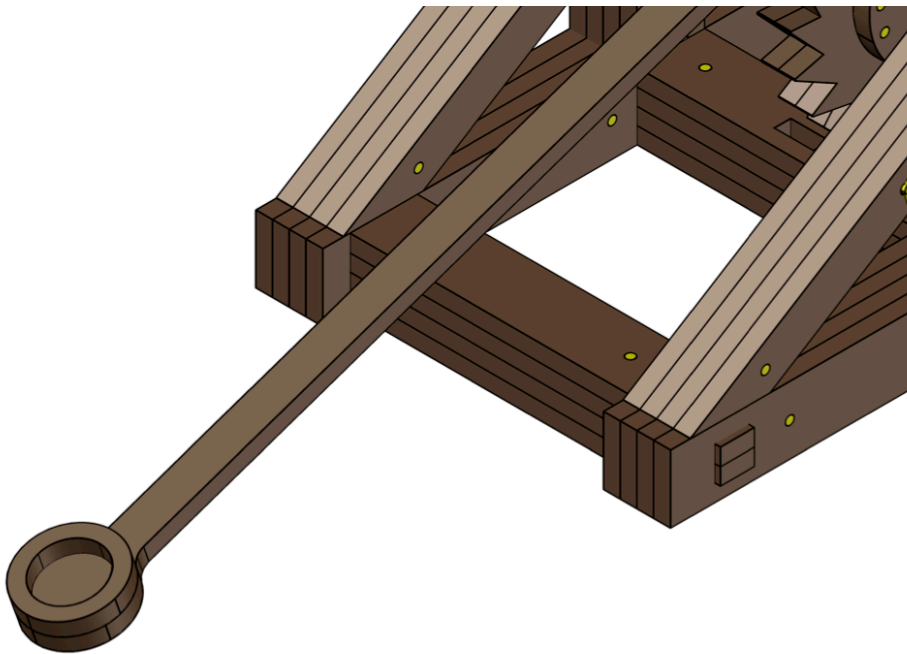


Fig. 42

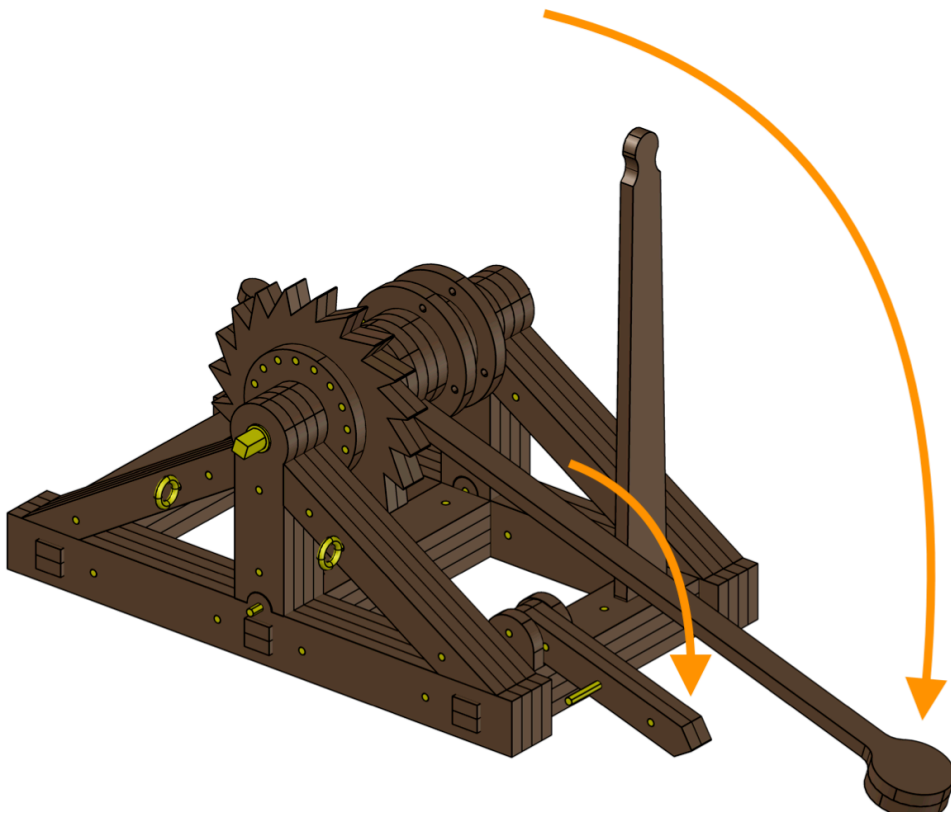


Fig. 43

- Rotate the arm to the other side.

Fig. 43

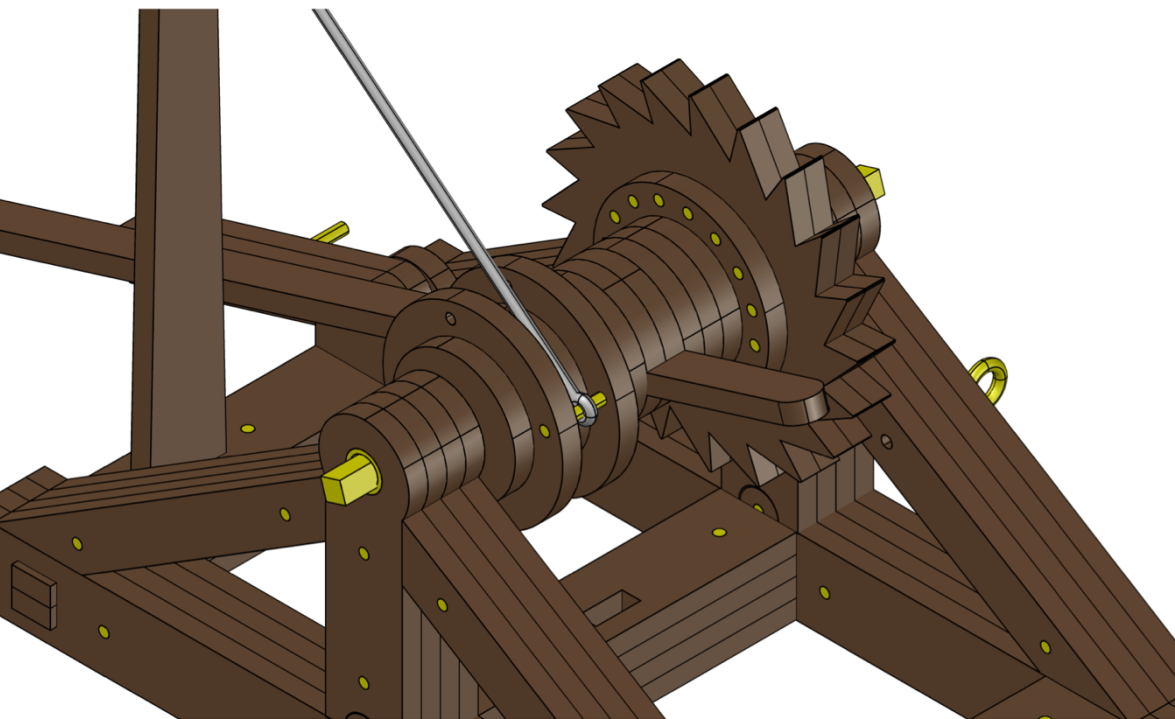


Fig. 44

- Using the string provided, tie a knot around the .488 pin.
- If needed, secure the knot with a small amount of superglue.

Fig. 44

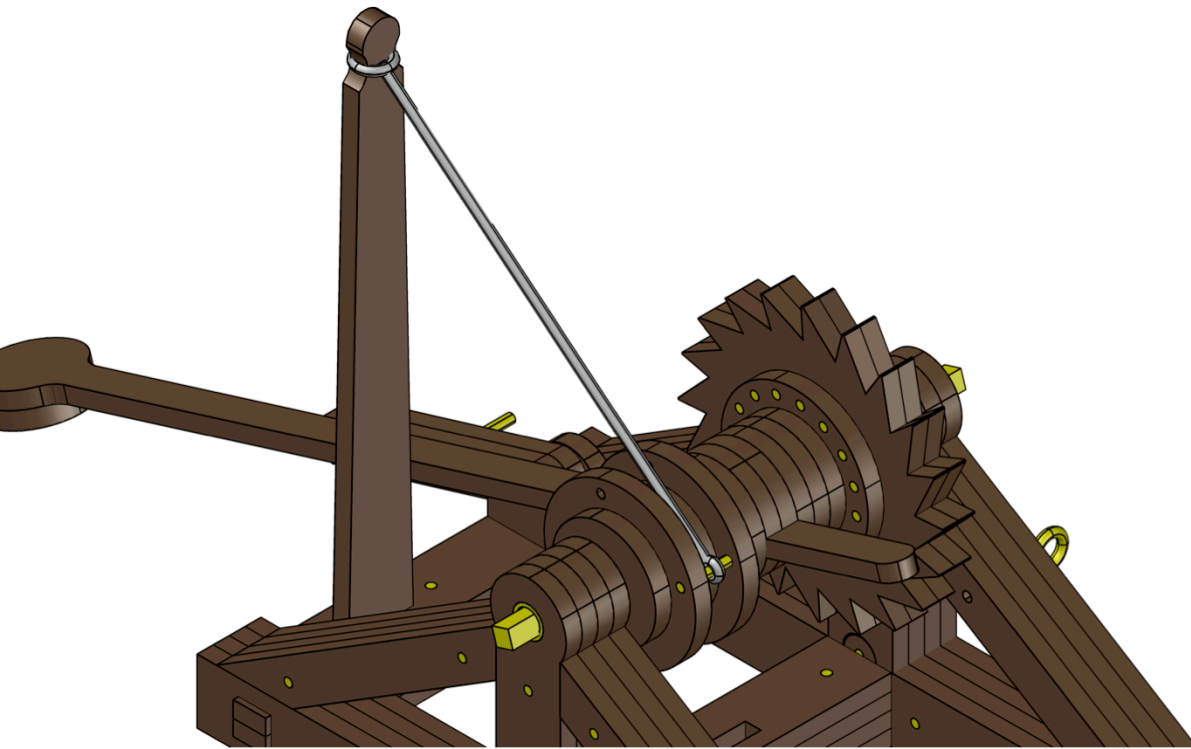


Fig. 45

Fig. 45

- Tie the other end of the string to the leaf spring.
- Make sure there is no slack. You need a small amount of tension.
- If needed, secure the knot with a small amount of superglue.
- If needed, the string can always be cut and redone.

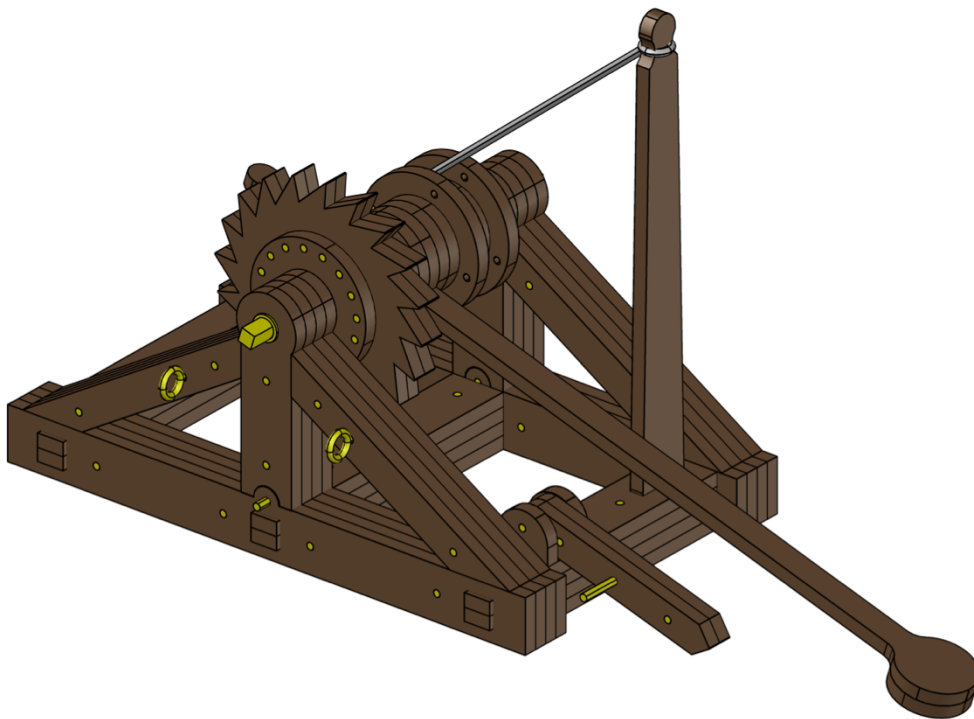


Fig. 46

Fig. 46

- Fig. 46 shows correct string assembly.

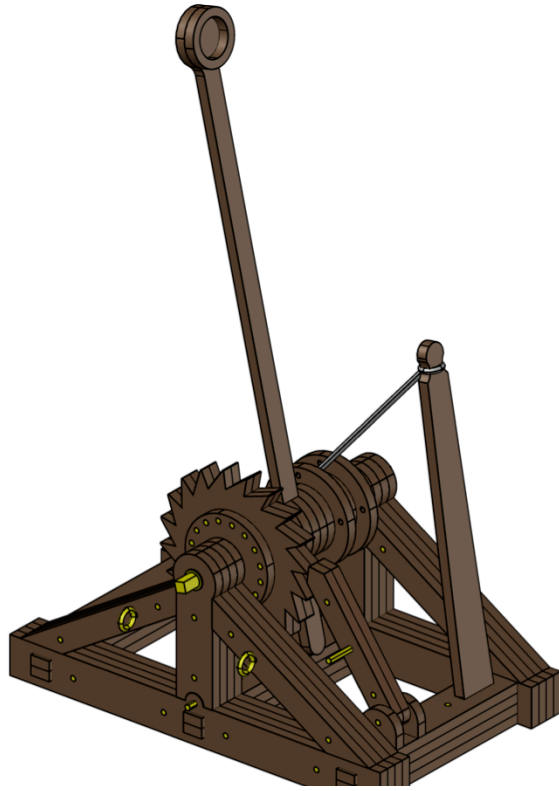


Fig. 47

Fig. 47

- Rotate the arm back towards the firing position.

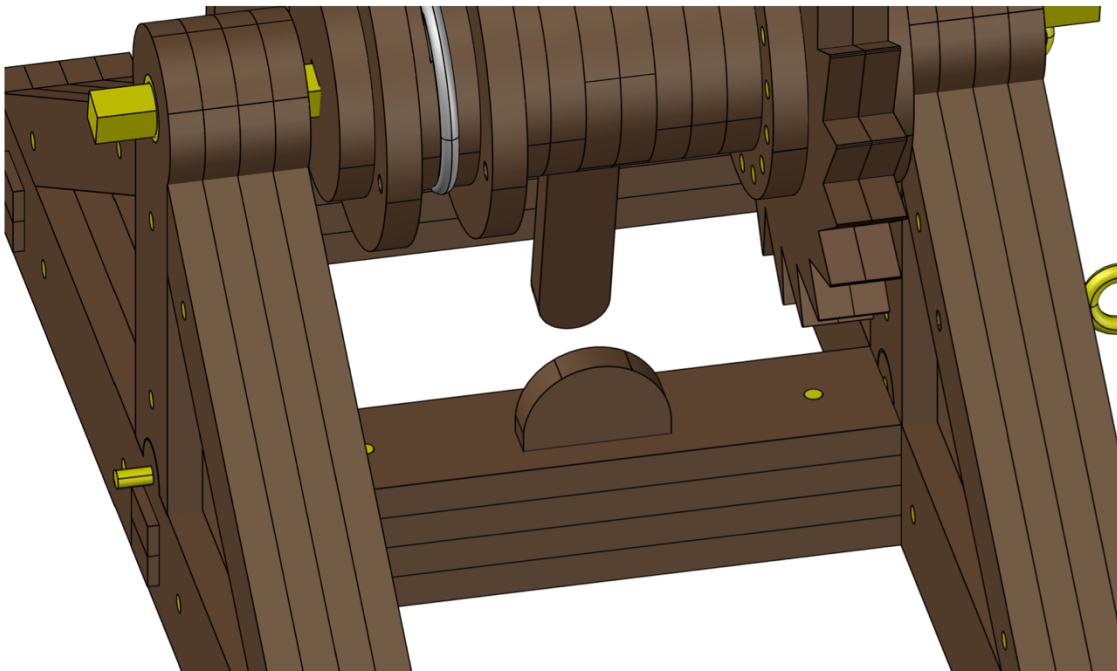


Fig. 48

Fig. 48

- Insert E3 into the base.
- This piece will block the arm from moving forward.

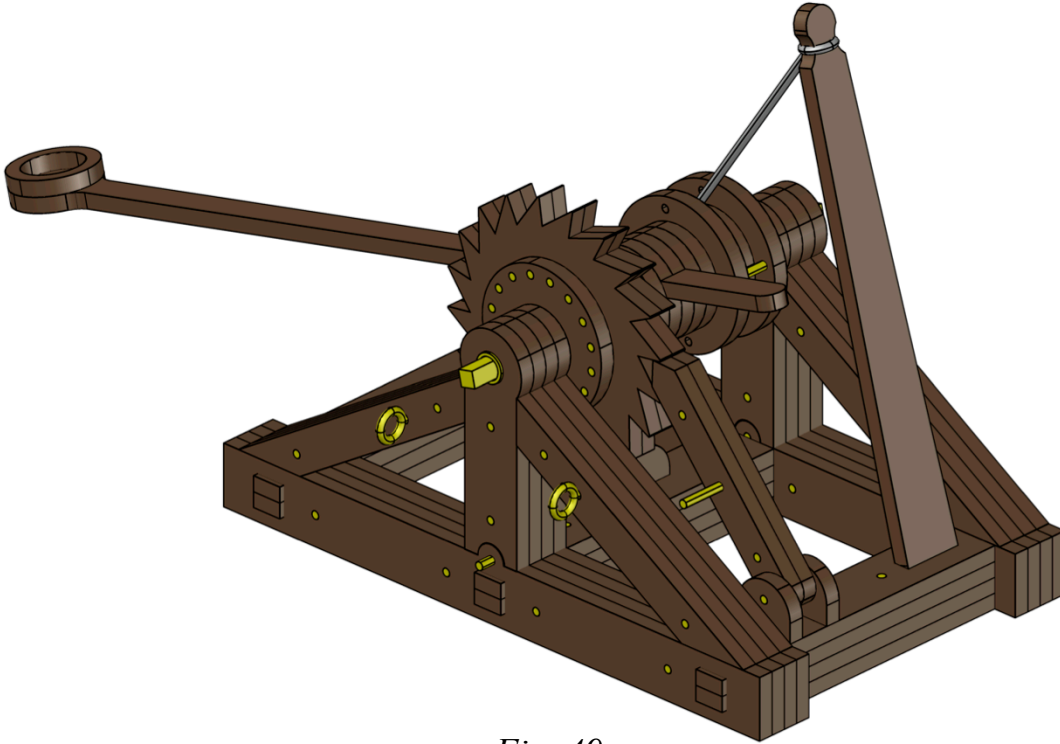


Fig. 49

Fig. 49

- With the trigger engaged, rotate the arm all the way back.

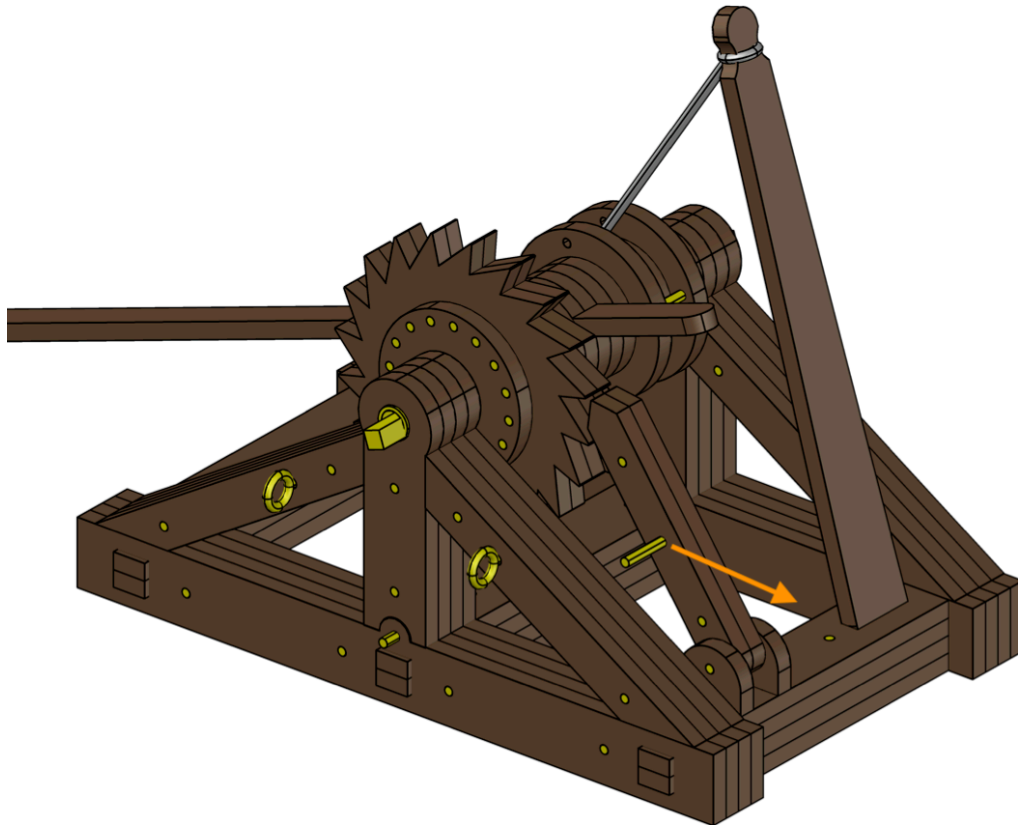


Fig. 50

Fig. 50

- Push on the trigger to release the arm and fire the catapult.

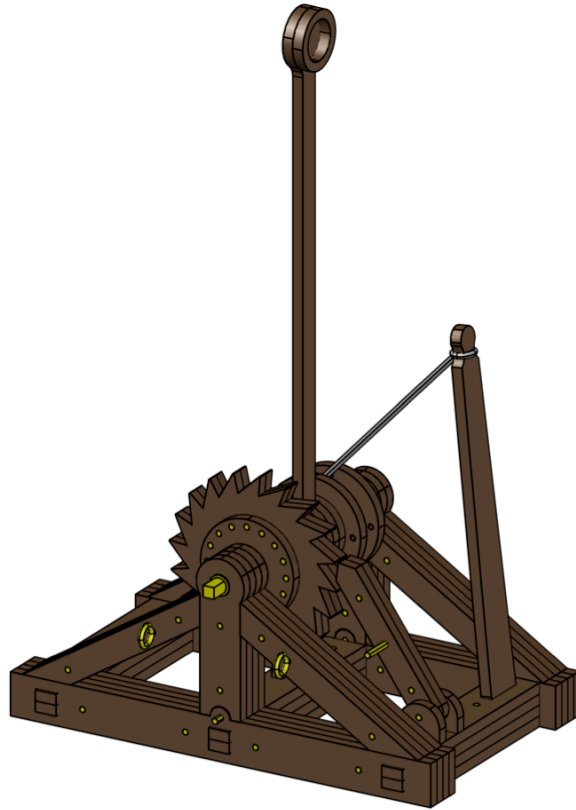


Fig. 51

Fig. 51

- After firing, your catapult arm should rest vertical at a 90-degree angle.

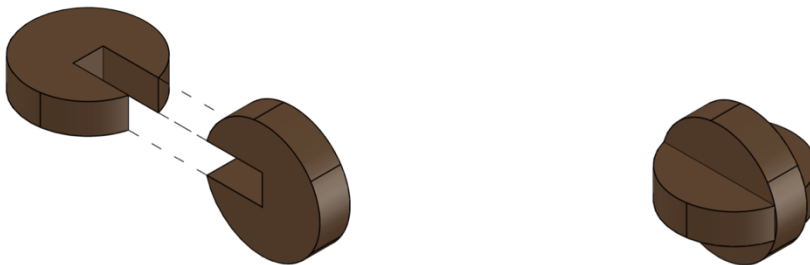


Fig. 52

Fig. 52

- To make a projectile, push two il pieces together.

X10

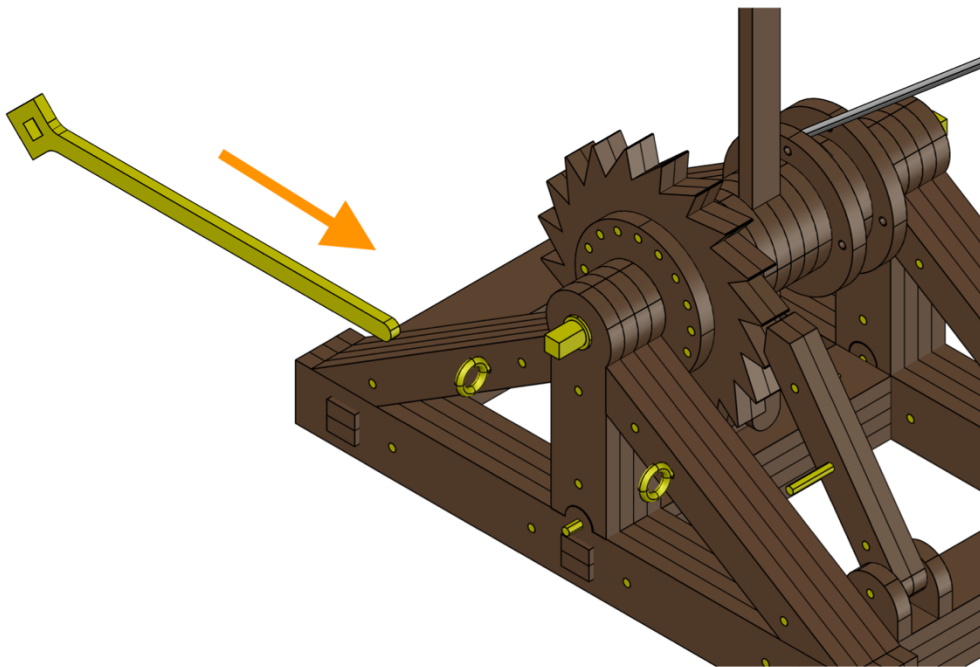


Fig. 53

- Insert the brass wrench into the eye screws.

Fig. 53

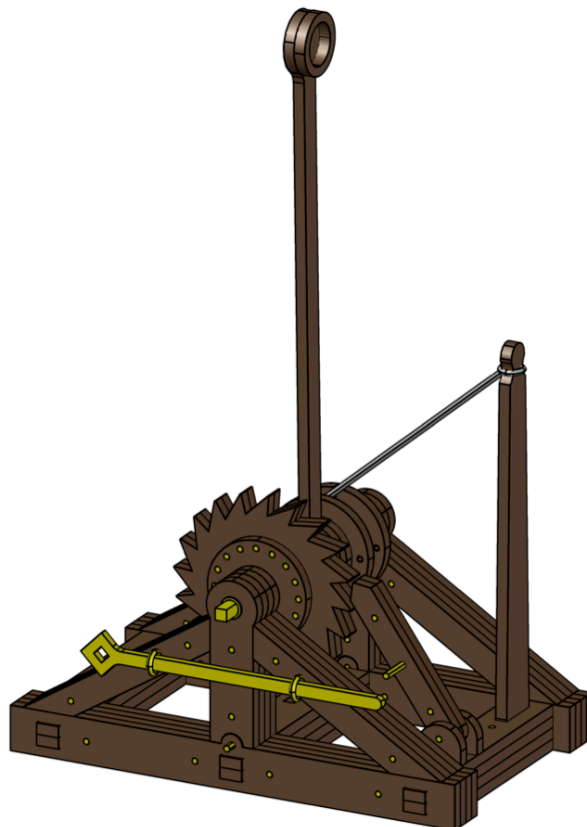


Fig. 54

- Fig. 54 shows the completed catapult.

Fig. 54

Section 5 – Operating

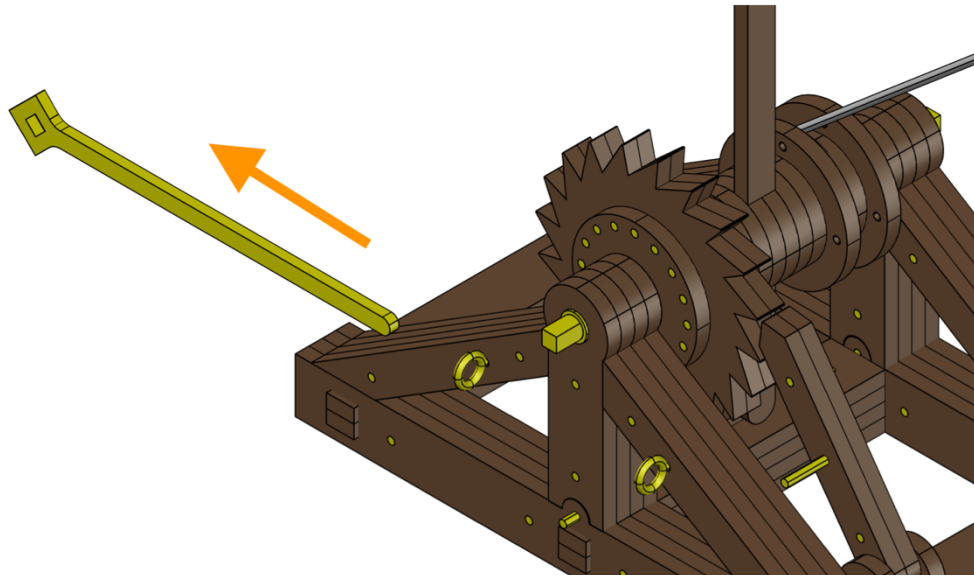


Fig. 55

- Remove the hand wrench. (optional)

Fig. 55

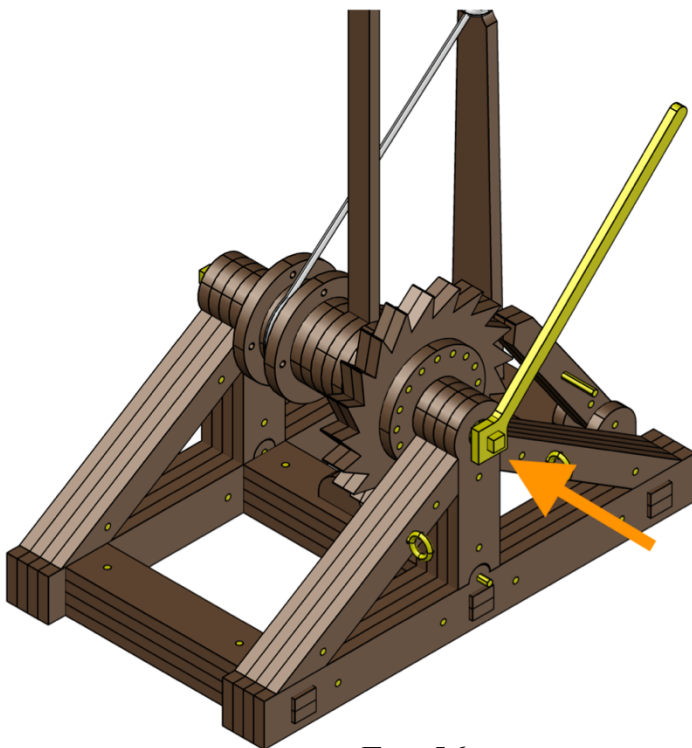


Fig. 56

- Insert the wrench onto the square rod.

Fig. 56

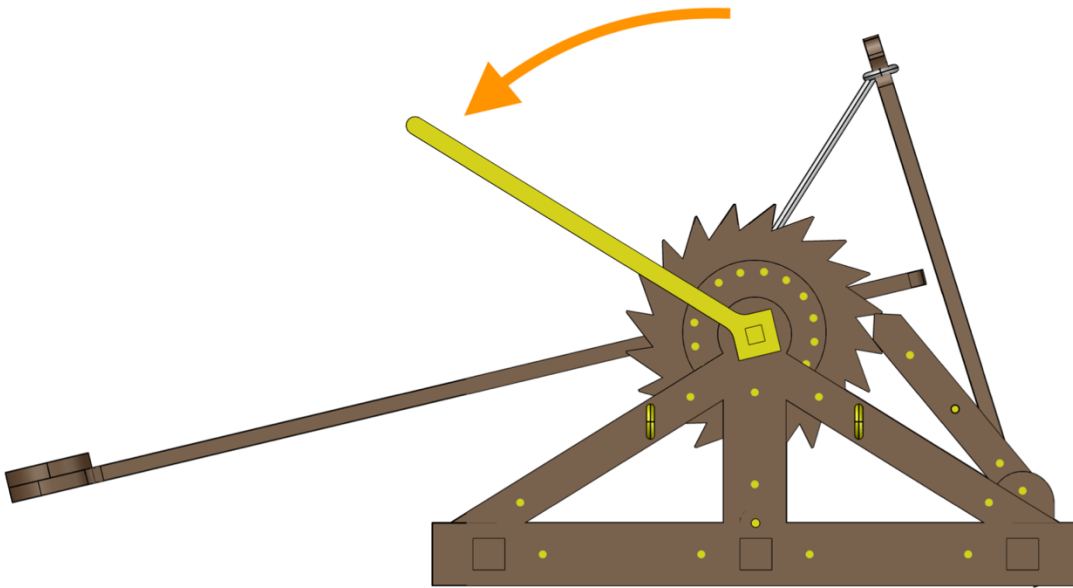


Fig. 57

Fig. 57

- Using the wrench, rotate the arm back. (optional)

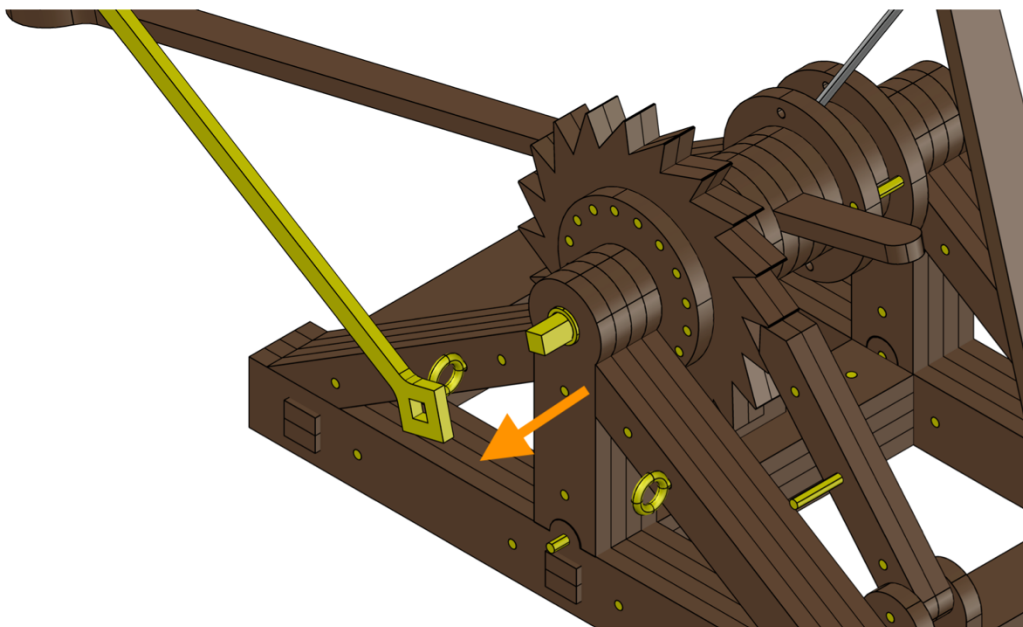


Fig. 58

Fig. 58

- Remove the wrench before firing.

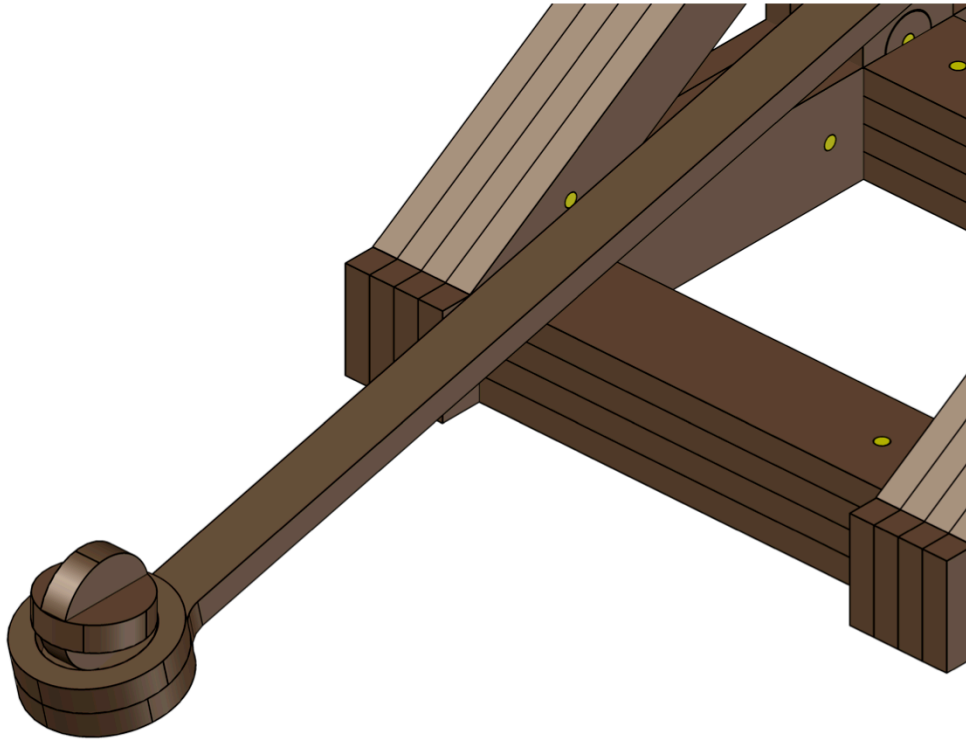


Fig. 59

- Load the catapult with a projectile

Fig. 59

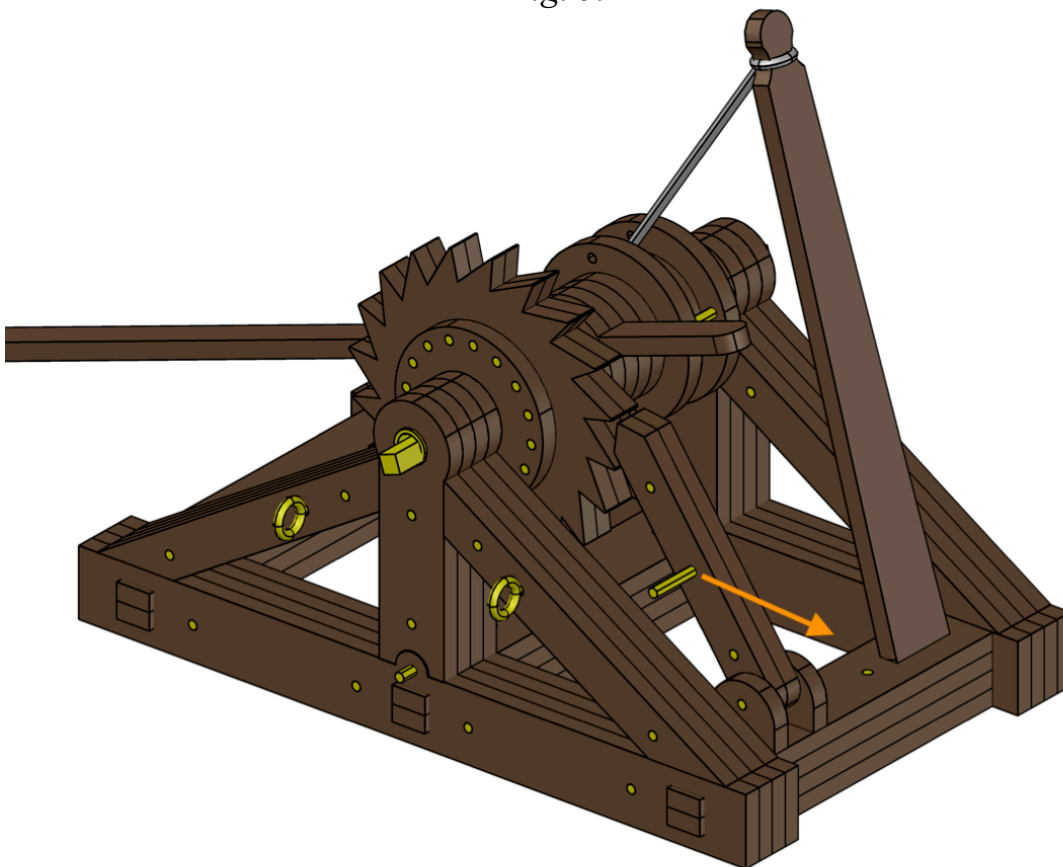


Fig. 60

- To fire the catapult, push on the trigger/gear pawl.
- Never store the catapult loaded. It puts too much stress on the leaf spring.

Fig. 60

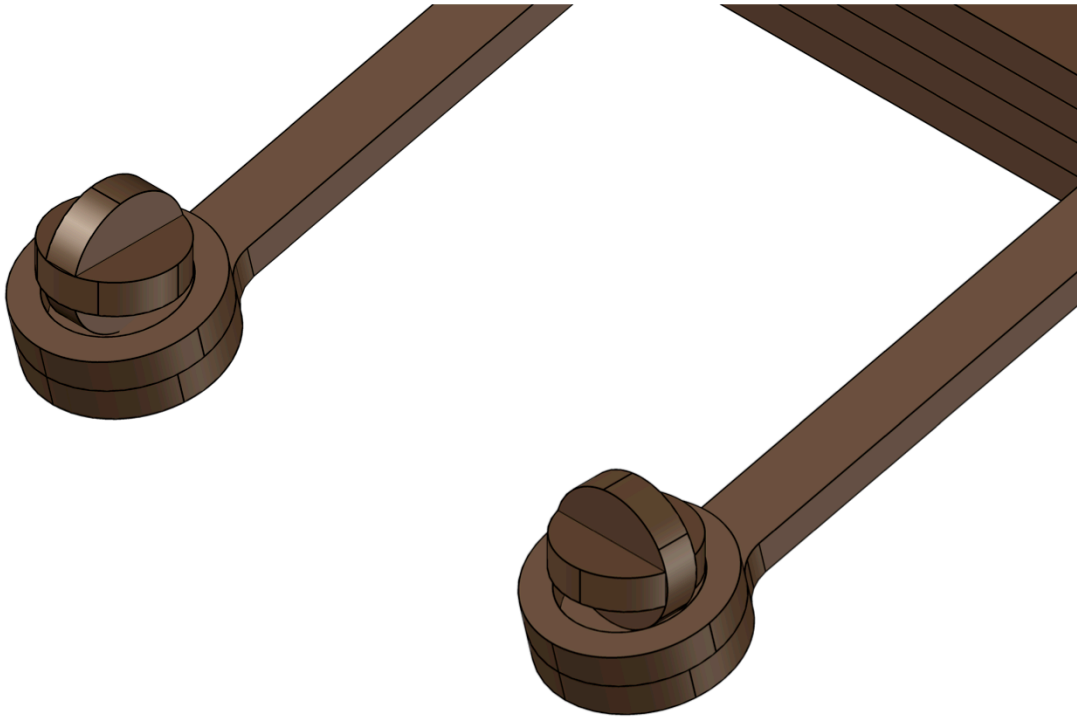


Fig. 61

- Experiment with different projectiles.
- The wood projectiles included in the kit have a max distance of around 15 ft.
- Fig. 61 shows the two different ways you can launch the wood projectiles.

Fig. 61

Warning

Do not aim at other people, pets, or yourself. Do not use this kit to launch sharp objects or any object that presents harm to you or anyone else.