

## Wooden Desktop Trebuchet

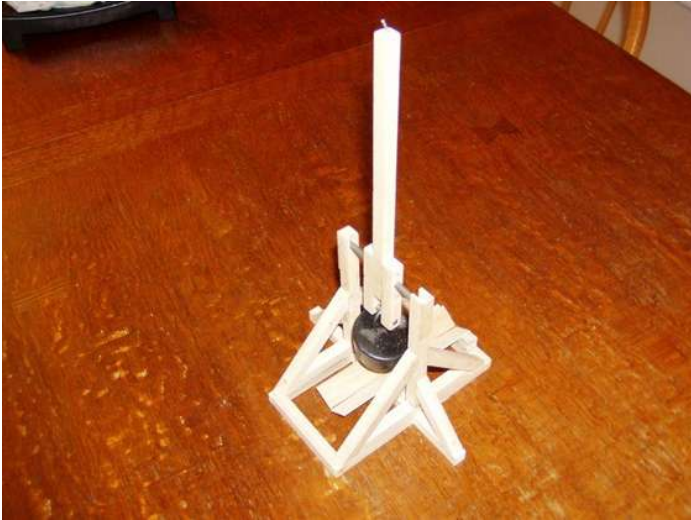
by [AcceptableRisk](#) on July 10, 2006

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## intro: Wooden Desktop Trebuchet

The trebuchet is a medieval invention originally designed to lay siege to fortresses and castles. The largest of them could hurl immense stones hundreds of yards. Now you can have one to play with in your own home. The whole device stands about foot tall when unloaded and flings various things ten feet or more. Moreover, this is a nice introductory woodworking project that you can do with mostly basic tools. Make sure to check all of the images. A lot of the details are in the notes there.



## step 1: Materials and Tools

### Materials

3/8" Hardwood Square  
1/8" Hardwood Dowel  
3/16" Metal Rod  
Jumbo Craft Sticks  
Wood Glue  
Heavy Stuff as a Counterweight

### Tools

Saw  
Miter Box  
Ruler  
Sharp Knife and/or Chisel(s)  
Drill with 1/8" and 3/16" Drill bits  
Clamps

You can really make this project out of just about any type of wood. I chose poplar because it's cheap and sturdy. Most big hardware stores will also have oak and occasionally maple. The design is stout enough that you could make it out of something softer like basswood. In fact, it's probably not a bad idea if you don't have a sharp narrow chisel and you're going to be carving the joints with a knife. These measurements call for just a little over six feet of it. Most 3/8" square is sold in three foot pieces. You might get away with just two if you adjusted the size of a couple of parts, but you'll almost certainly have to recut a couple of pieces so you might as well just get three sticks.



## step 2: Dimensions

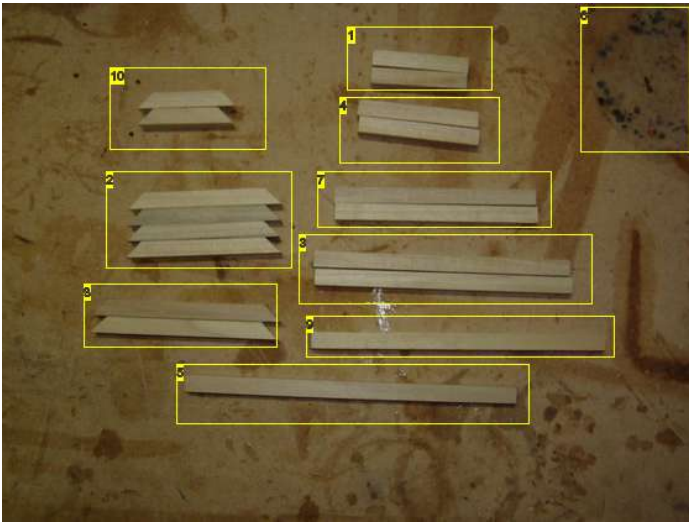
Time to start cutting up all of that wood. We're going to need pieces of the following dimensions:

- 2 x 6" Long frame side rails - Part A
- 2 x 3" Short frame sides - Part B
- 1 x 7" Frame crossmember - Part C
- 2 x 4.5" Frame extension rails - Part D
- 2 x 4.75" Uprights - Part E
- 4 x ~3.5" Long diagonal supports - Part F
- 2 x 2.25" Short diagonal supports - Part G
- 4 x ~1" Launch ramp support blocks - Part H
- 1 x 7.5" Upper Arm
- 2 x 2.25" Lower Arms

Parts D, F, and G need 45 degree miters cut on each end as shown in the picture. The length measurements are, of course, along the long side.

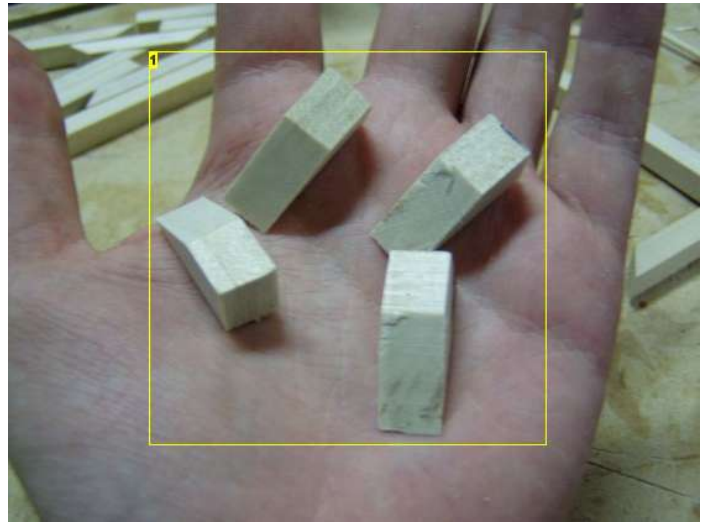
As for the long diagonal supports (Part F), you'll need to finely adjust the length of these in order to get them to fit nicely. Check the fourth image in step six to see what I mean. The given length of 3 1/2" should get you pretty close depending on how well you cut the frame extension rails.

The launch ramp supports (Part H) are just little bits of scrap that are angled to make a trough with craft sticks. A 45 degree cut isn't quite long enough to attractively cradle a jumbo craft stick so the angle on those is shallower. I just eyeballed it and got something that looked nice. Putting a protractor on it shows it to be about 35 degrees or so. If you don't feel like going through the trouble, you could just glue a couple of craft sticks flat on the frame to make a plank bottom and it'll work fine but won't be quite as pretty and you'll have a little harder time lining up consistent shots.



### Image Notes

1. Lower Arms - 2.25"
2. Long Diagonal Braces - Part F - ~3.5" along the long side - See the notes about adjusting the length
3. Long Frame Sides - Part A - 6"
4. Short Frame Sides - Part B - 3"
5. Upper Arm - 7.5"
6. Shop Tip: Don't leave a paper container of breadstick sauce unattended on your workbench while on vacation unless you really like fungus.
7. Uprights - Part E - 4.75"
8. Frame Extension Rails - Part D - 4.5" along the long side
9. Frame Crossmember - Part C - 7"
10. Short Diagonal Braces - Part G - 2.25" along the long side



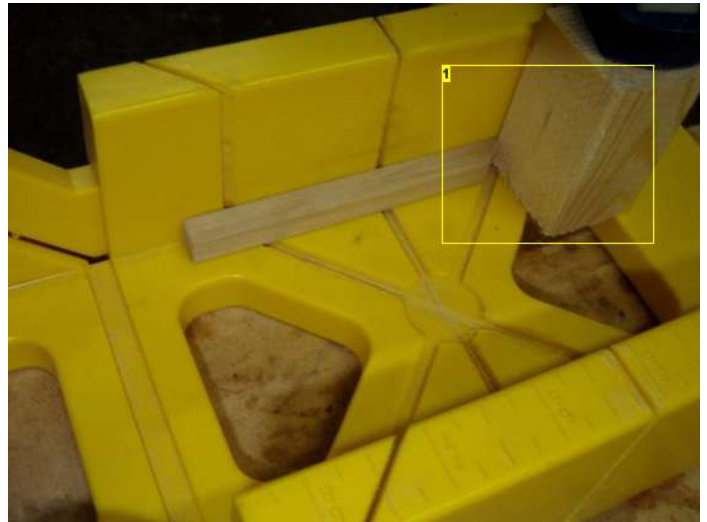
### Image Notes

1. Launch Ramp Supports - Part H



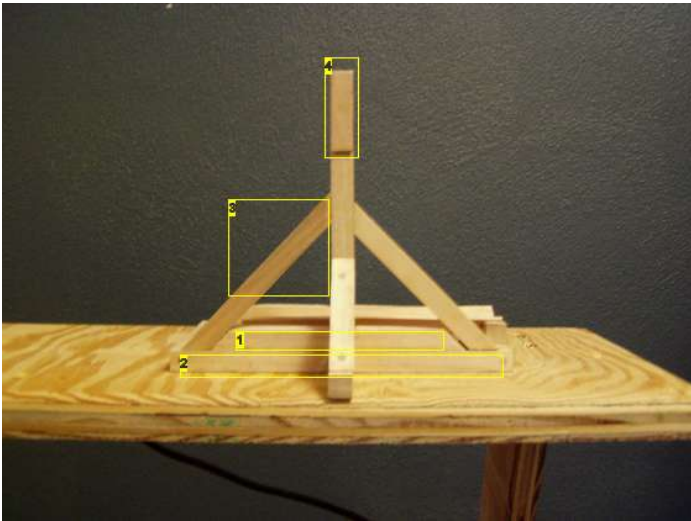
**Image Notes**

1. Careful, these things are sharp.



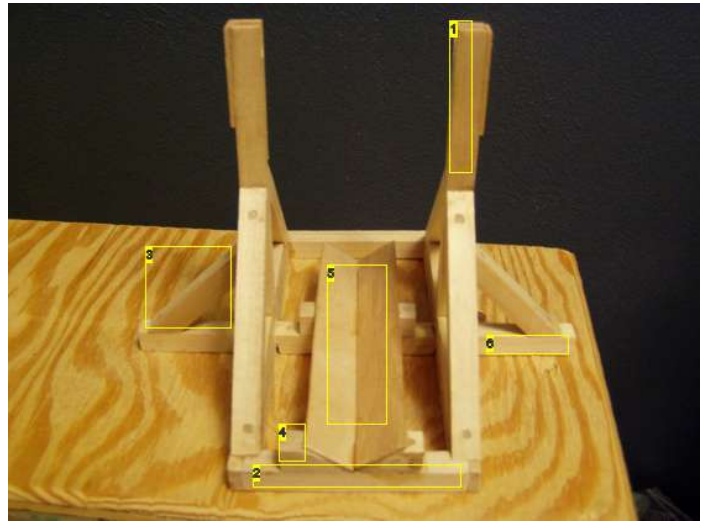
**Image Notes**

1. Clamping a stop block in the box is helpful to ensure that duplicate parts are all the same size, especially when cutting the 45 degree miters.



**Image Notes**

1. Frame Extension - Part D - x2
2. Long Frame Sides - Part A - x2
3. Long diagonal supports - Part F - x4
4. These blocks keep the axel from sliding from side to side. They're just little strips of craft stick glued to the sides of the uprights.



**Image Notes**

1. Uprights - Part E - x2
2. Short Frame Sides - Part B - x2
3. Short Diagonal Braces - Part G - x2
4. Ramp Support - Part H - x4
5. Launch Ramp
6. Center Frame Crossmember - Part C - x1 It goes all the way across.





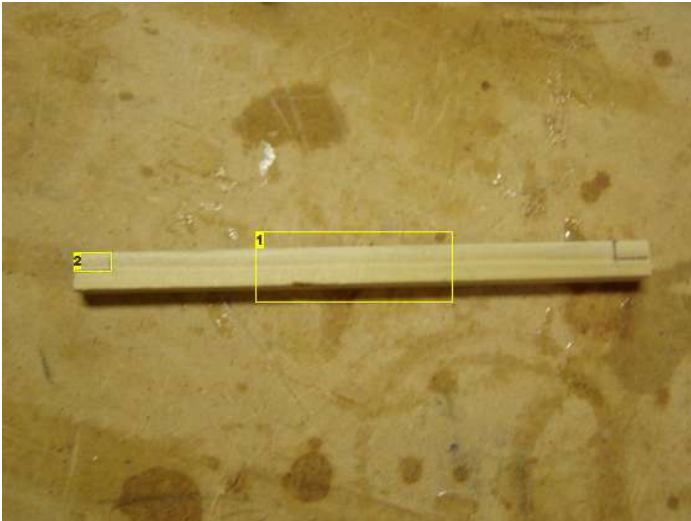
### Image Notes

1. Upper Arm x1
2. Lower Arms x2

### step 3: Cutting the Joinery - Part 1

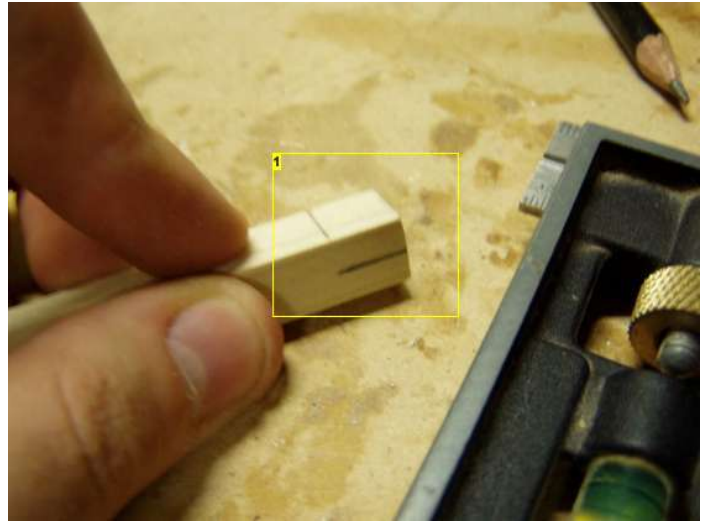
We're going to employ a lap joint in the long frame rails (Part A). That involves removing half the thickness of the wood at each of the ends so the short sides have something to notch into. Three-eighths of an inch from each end, saw half-way through the stick. Then, using your chisel or sharp knife, cut along the grain to remove the half of the material at the end. You may find it easier to take a little at a time off so you can get it just right. Do the same thing to the other end on the same side.

Parts A and D need cross-lap joints (as does part C, the frame crossmember, but it's a little different so we'll get to that in a minute). To do these, we need to cut out the same amount of wood but in the middle of the stick. Mark it out so it's right in the center. Check the photos to get the orientation right.



### Image Notes

1. Part A
2. We're aiming to cut out this section on each end. 3/8" x 3/16"



### Image Notes

1. We'll cut along the line on the top down to the line on the side. Then we'll cut along the line on the side to remove the chunk from the corner.



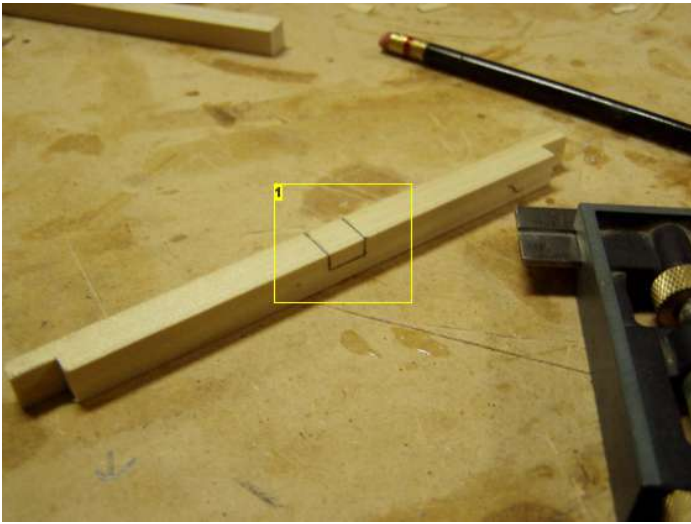
### Image Notes

1. You might want to cut a little ahead of the line so that you can come back with your knife or chisel and clean it up real nice.



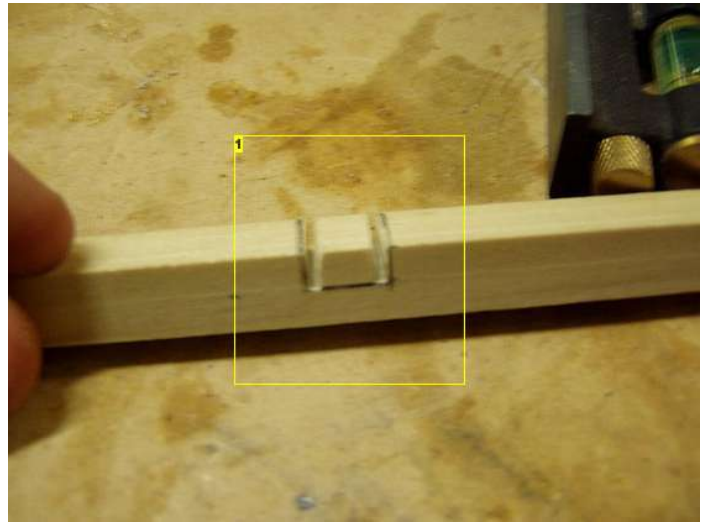
### Image Notes

1. Chop out the corner with a chisel or whittle it down with a sharp knife. Going a little at a time can help prevent splitting and ensure that you get it just right.



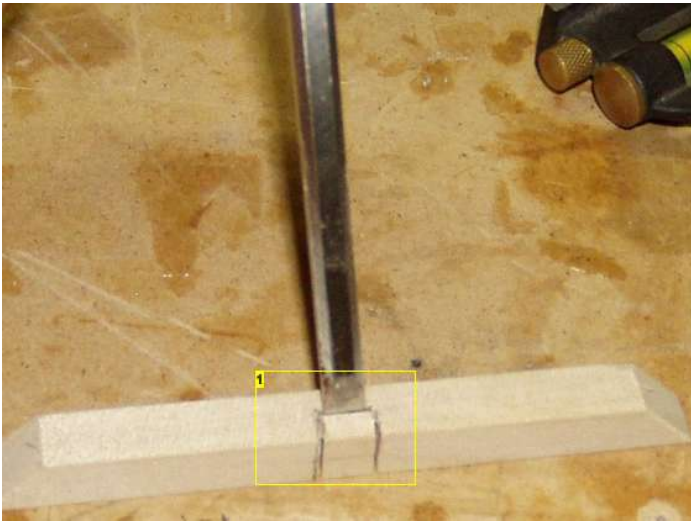
**Image Notes**

1. Now we're going for this section. It's centered in the middle on both this side rail and on the frame extension part. Make sure to get the orientation right.



**Image Notes**

1. Cut just inside the lines so you can whittle it down for a nice tight fit.



**Image Notes**

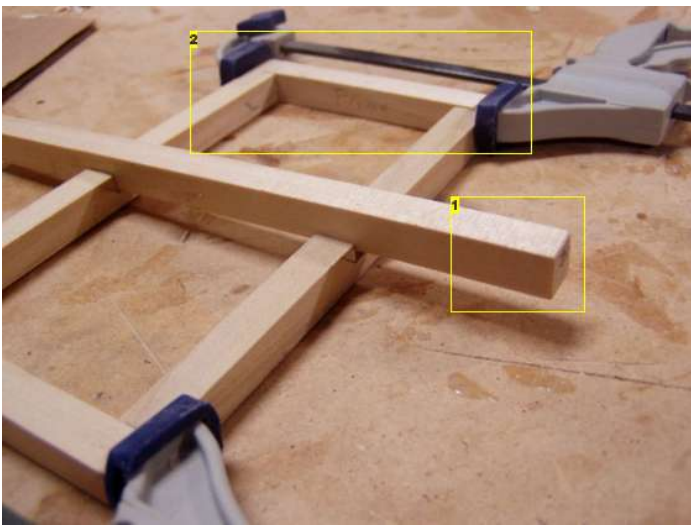
1. These are the frame extensions (Part D). This socket is where one of the uprights will attach.

**step 4: Cutting the Joinery - Part 2**

The frame crossmember (Part C) is going to seat across both long frame rails so it needs two sections removed. Rather than measure it all out, it's easier to just clamp the four sides of the bottom frame together and lay the crossmember in grooves in the long rails. Get it lined up by eye and mark out the sections where the rails intersect. That's where you're cross-lapping the crossmember just like the rails so mates up tightly and sits flat.

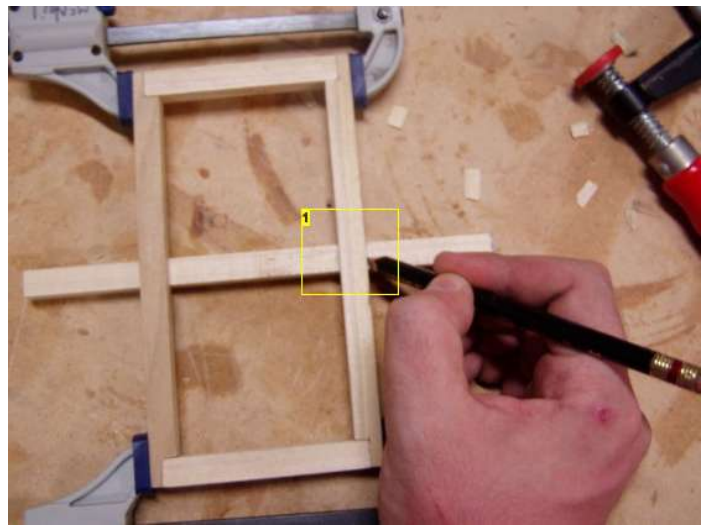
Now we're going to carve the uprights (Part E). One end will have a half-lap and the other end will have a groove carved in the end for the axle to ride in. The half-lap is just like the ones on the side rails. For the axle groove drill a 3/16" hole about half an inch or so from the end. The next step is to clear out the wood between the hole and the end of the upright. Cut a slot from the end to the hole so you can have a little room to get your knife in there and carve it out. Alternately, if you don't mind it being hard to get the arm out, you can just drill a hole a little bigger and thread the axle straight through the hole.





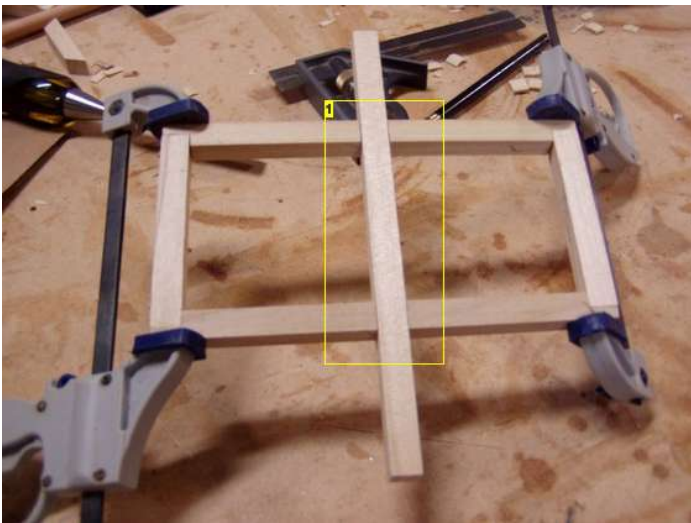
**Image Notes**

1. Part C
2. Clamp your frame sides together and lay the long crossmember in the grooves.



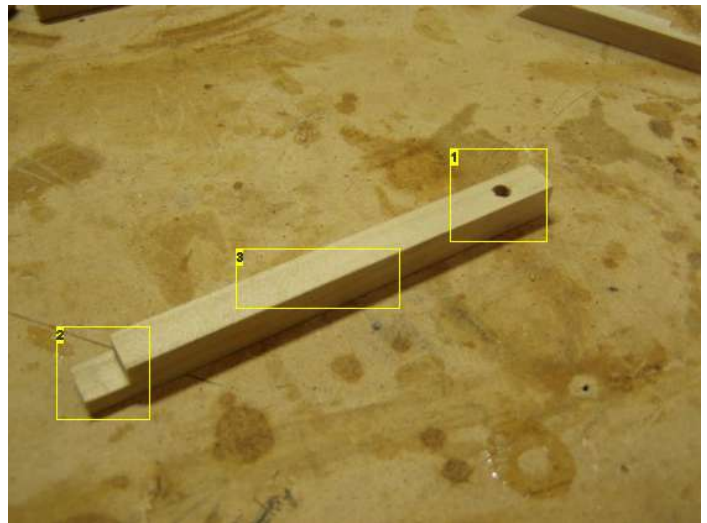
**Image Notes**

1. Then, mark along the intersections where you'll chop out two more grooves to mate with the ones in the rails.



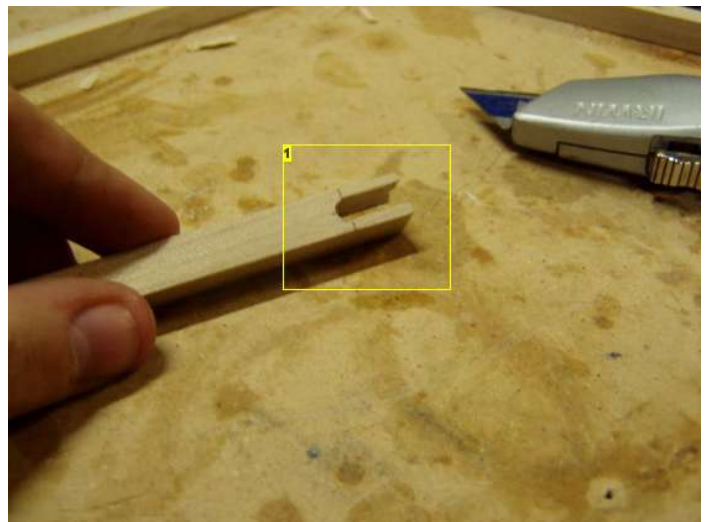
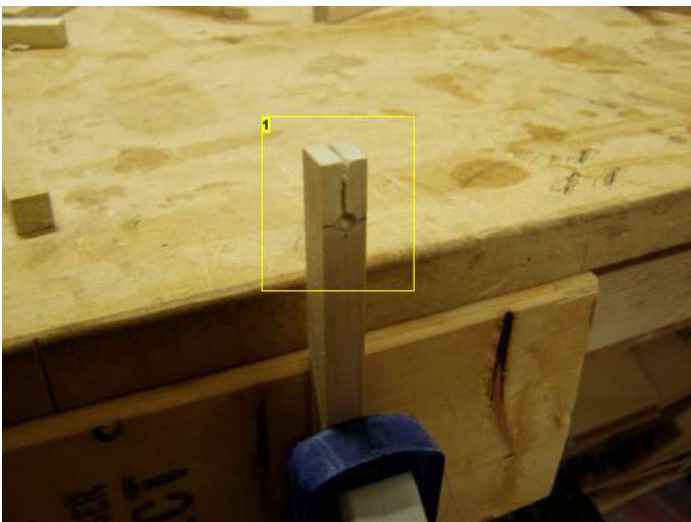
**Image Notes**

1. Hey, this is starting to actually look like something.



**Image Notes**

1. 3/16" hole about half an inch from the end. A drill press is handy here but you can get by otherwise.
2. Half-lap just like with the side rails.
3. These are the uprights (Part E)

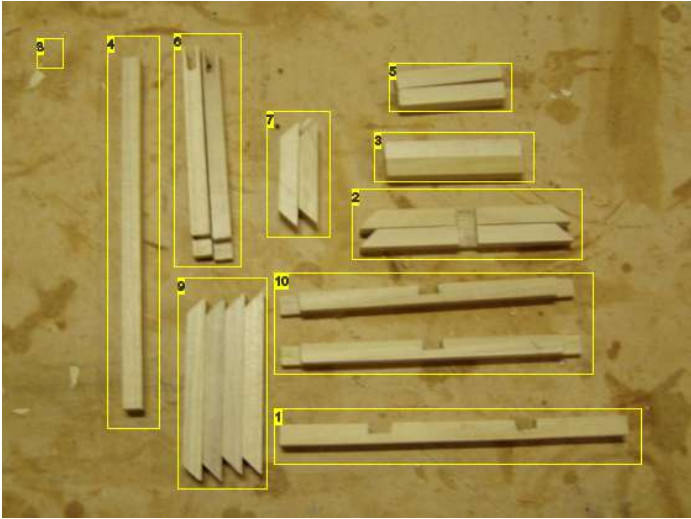


### Image Notes

1. Cut a slot in the end to give your knife or chisel a little room to clear out the rest.

### Image Notes

1. This is what you're aiming for. A nice U-shaped channel.



### Image Notes

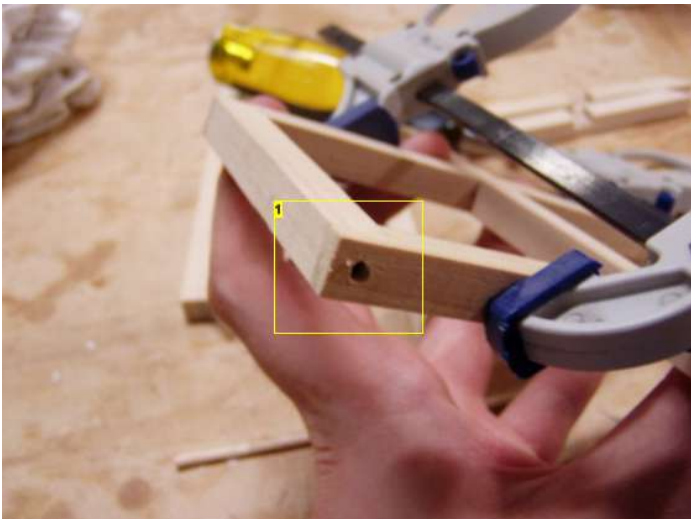
1. Frame Crossmember - Part C - Two grooves for cross lap joints with frame rails.
2. Frame extension rails - Part D - Cross lap groove in the center.
3. Short frame sides - Part B - No fancy cuts
4. Upper arm - Nothing fancy
5. Lower arms - No funny business
6. Uprights - Part E - Half lap on the bottom end, 3/16" wide U-shaped channel on the top
7. Short diagonal supports - Part G - Mitered corners
8. This is what your parts should all look like once you've finished the cutting.
- Not shown: Ramp supports - Part H
9. Long Diagonal Braces - Part F - Just mitered corners
10. Long frame sides - Part A - Half lap on each end and a cross lap groove in the middle.

## step 5: Frame Assembly - Part 1

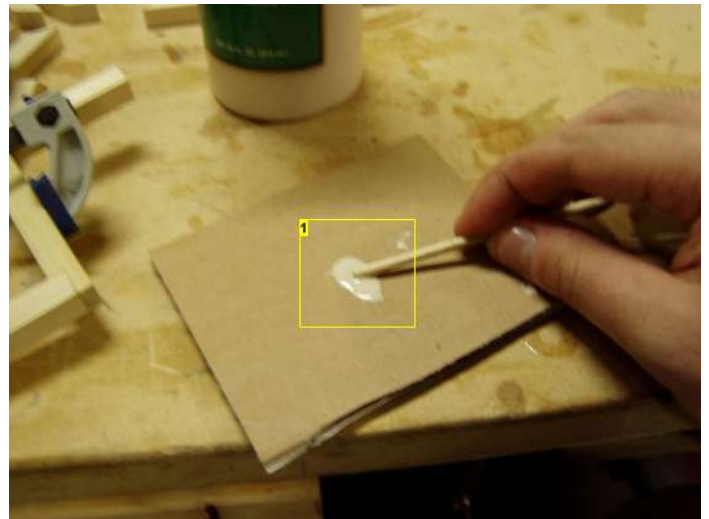
You might be able to get away with just gluing all of the parts together but I pinned it all together with glue and poplar dowel; it's not likely to ever come apart and it adds a nice visual element. Clamp together the bottom frame and drill through where ever they overlap. Get a little glue on the joint surfaces and then put a little on the end of your dowel. and work it into your hole and cut or break the dowel off. Once it firms up a little you can shave the leftover nub off with your knife or sand it down. I suppose if you're really bored, you could precut a bunch of little 3/8" and 3/4" lengths of dowel and tap them in. Then you wouldn't need to come back and cut them off.

Pin the uprights to the frame extension rails as shown in the picture. Now is also the time to attach the ramp supports if you've got them. My craft sticks weren't long enough to get all the way across bottom frame, so I supported it in the middle and at the rear.

Once that's all together, you can mount the uprights to the rest of the frame. The frame extension rails run right along on top of the main frame rails. Just glue and pin them in place. Things are starting to shape up.



### Image Notes

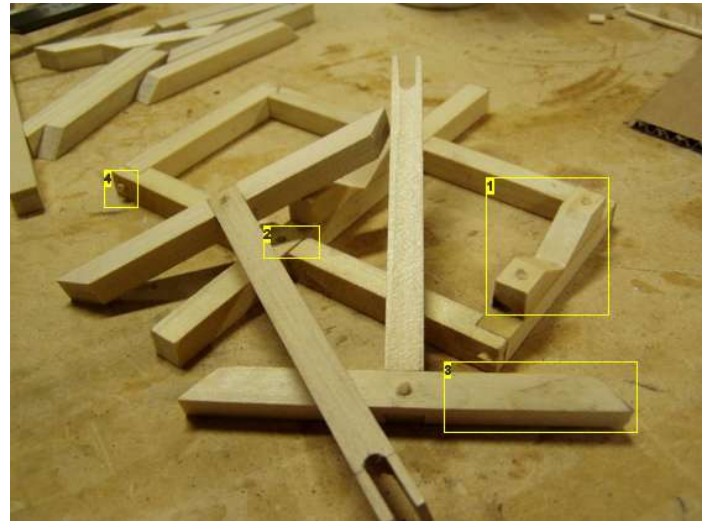
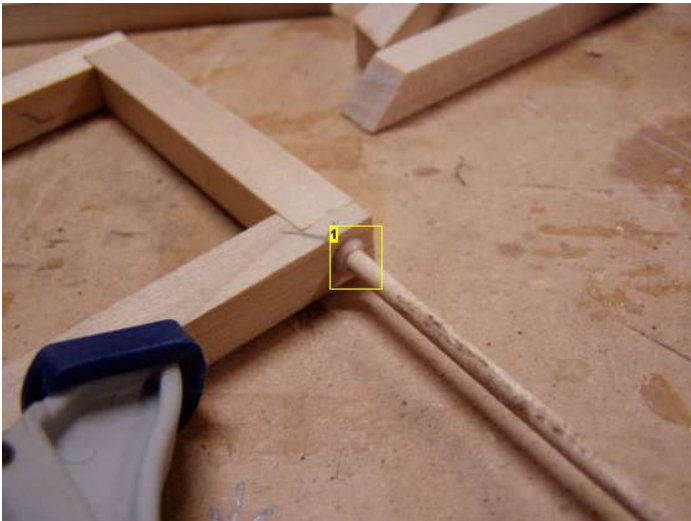


### Image Notes



1. These 1/8" diameter holes are a little more than half an inch deep. For the cross-lap joints, just drill straight through.

1. Titebond III - "The ULTIMATE wood glue."

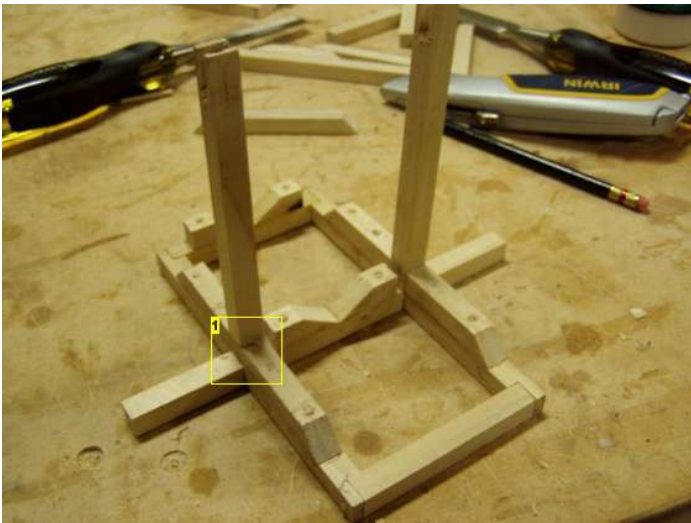


**Image Notes**

1. This squeeze out can be cleaned up with a wet rag.

**Image Notes**

1. This will be the rear of the trebuchet.
2. It doesn't really matter which side of the frame is the top but this joint will have another piece stacked on top of it so putting the crossmember on top will make the joint look a bit nicer from the bottom.
3. Part D
4. These little nubs can be shaved off with a sharp tool or sanded down.

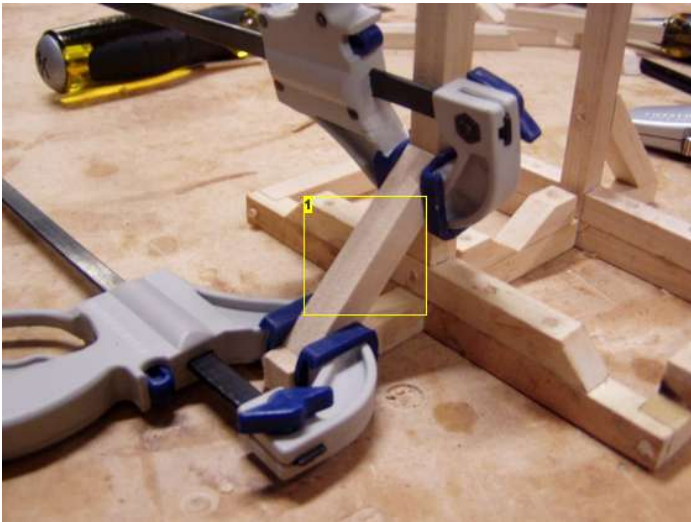


**Image Notes**

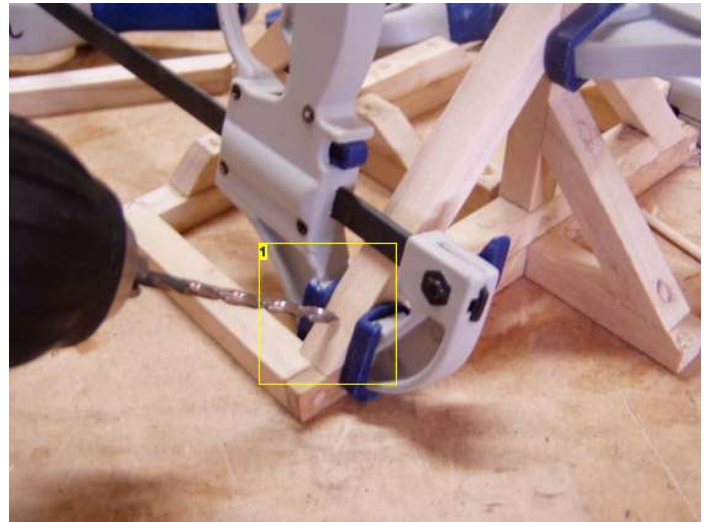
1. You're going to need to make sure that your pin in the bottom frame here is cut or sanded flush before this step or else the frame extension rail won't sit properly.

**step 6: Frame Assembly - Part 2**

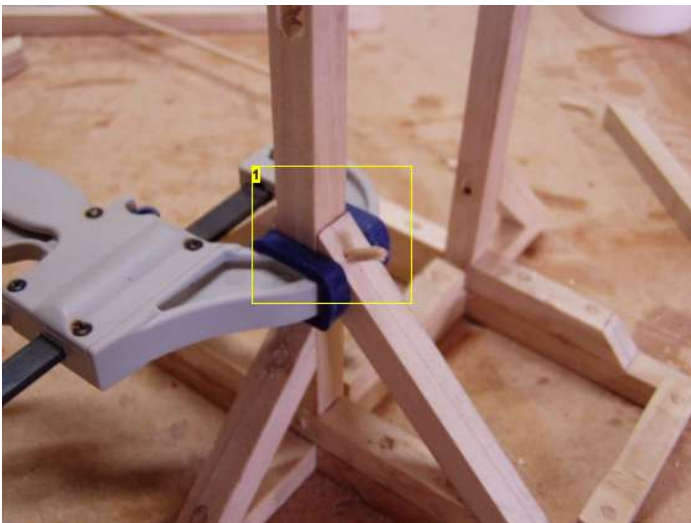
Now here's the tricky part: drilling and mounting the diagonal braces. It helps here to employ the buddy system in order to get a couple of extra hands or to use a bunch of clamps. Either way, try to get your pieces sturdily affixed in a temporary fashion and just drill carefully and slowly. Don't use a lot of pressure or you're likely to force it out of whack. If you've got some patience, you could glue the parts in place and let it dry before pinning.



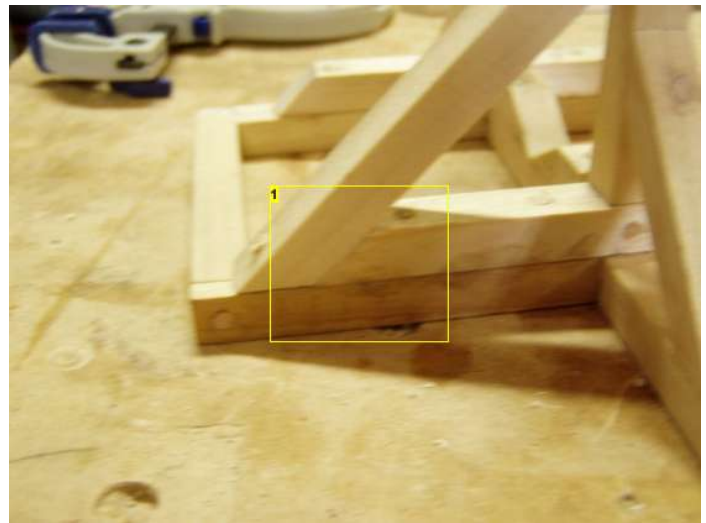
**Image Notes**  
1. Short Diagonal Brace



**Image Notes**  
1. Drilling the bottoms first, especially of the long braces, seems easier.



**Image Notes**  
1. Can you tell I like these clamps?



**Image Notes**  
1. The picture's a little blurry, but you can see that if you get the lengths right, you get a nice tight fit down in this corner. If your diagonals are too long there will be a bit of a gap but if they're too short, they won't fit at all.



**Image Notes**  
1. A little sandpaper and a some knifework gets things looking pretty nice.

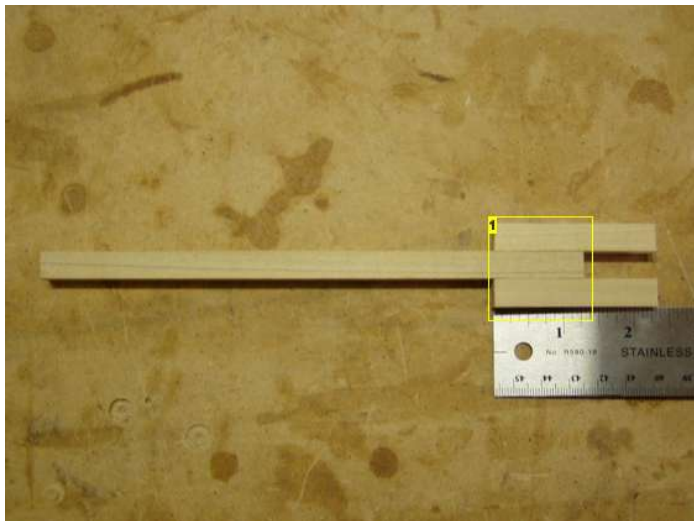


## step 7: Throwing Arm Assembly

The arm is easy. The lower arms overlap the upper arms by about an inch and a quarter. You just need to line it up and glue it together. Then you need to drill out the axel holes. The axels will be about an inch and a half apart. It's important that you try to get them straight up and down as much as possible. If you have access to a drill press, I recommend you take advantage of it. You should have a little more than six inches of arm above the main axel depending on how close to the end of the lower arm that you drilled the holes for the lower axel.

The main axels are made from 3/16" steel rod. You could use aluminum if you'd like. It'll be easier to cut but usually costs more. I suppose you could even use a wooden dowel but you'll get a bit more friction. Check the distance between your uprights and cut an appropriate length of rod to serve as your primary axel. Tap it through the hole in your throwing arm. Cut another short piece to go between the lower arms to support your counterweight.

Then it's time to add the release pin. This is the business end of the trebuchet and it's important to mount the pin securely. I used a little length of wire from a jumbo paper clip as my pin. The 1/16" hole I originally drilled to accommodate my pin proved too large. Forcing a bit from a smaller paper clip into the hole along with it made for a nice tight fit. You may even get away with chucking a bit of wire right into your drill and trying to drive it directly into the end of the arm.



### Image Notes

1. The overlap here is about 1 1/4". The alignment isn't crucial, but get it close.



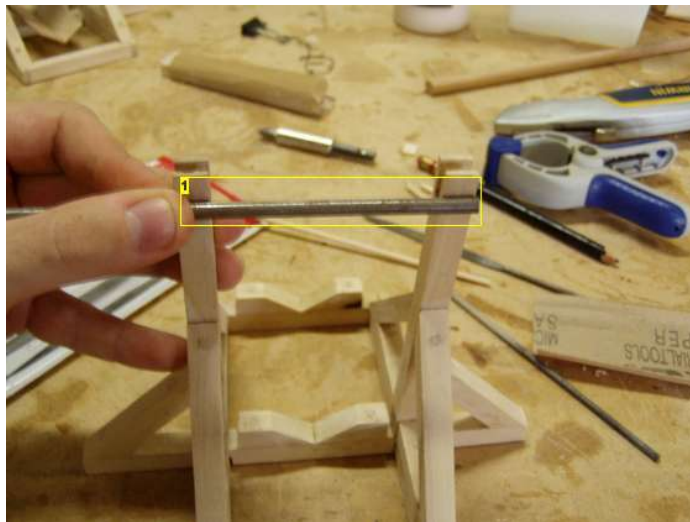
### Image Notes

1. More on this later.



### Image Notes

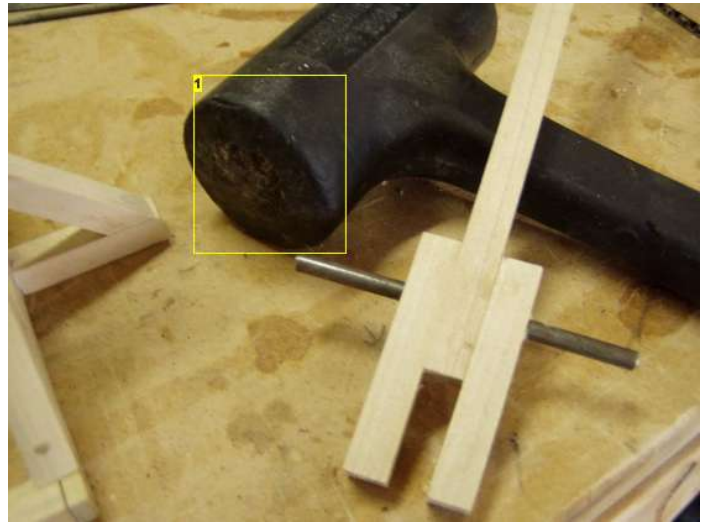
1. These 3/16" holes are about 1 1/2" apart.



### Image Notes

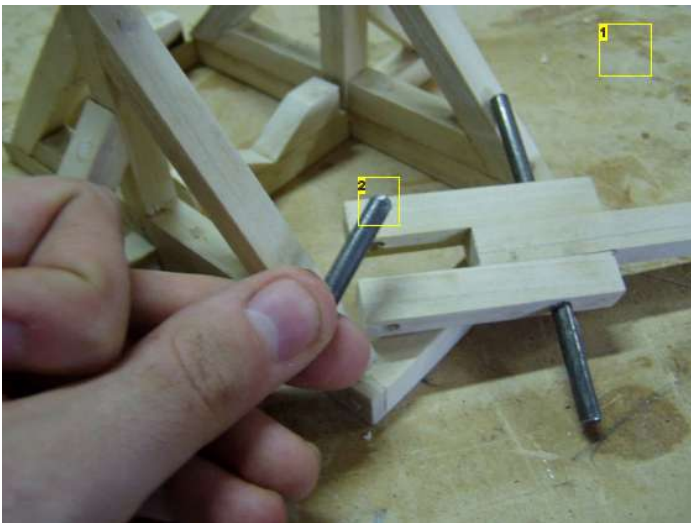
1. This should be 3 3/8" or so, but go ahead and just match it up so you get a good fit. If it's just a bit short, it'll be less likely to bind once the side blocks are in place.





**Image Notes**

1. Chances are you'll need some kind of blunt instrument to get the axel through.



**Image Notes**

1. Jumbo paper clip. The shiny bit to the left is a piece of a smaller paper clip jammed in there since the hole I originally drilled was too big.

**Image Notes**

1. I'm not really sure why this picture turned out so blue. It's kind of weird.
2. If you have the means, certainly soften the edges to get rid of any burrs.

**step 8: Finishing It Up**

Cut two little strips of craft stick to glue to the sides of the uprights. This will block out the main axel and keep it from sliding from side to side. Make them a little wide so you can trim them down just right.

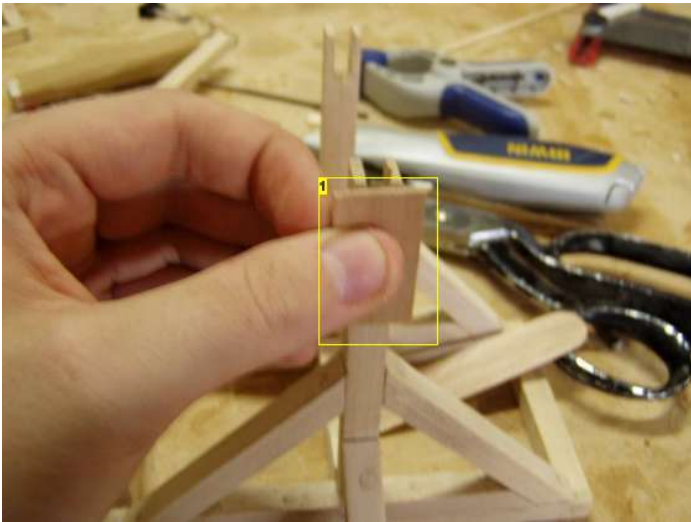
Then glue down two more sticks to the ramp blocks to make a channel for your payload. If you didn't do the blocks, at least glue a couple of sticks down flat so your projectile doesn't get caught in the frame during launch.

You'll need a weight. It can be just about anything, coins, batteries, stones, etc. What I've found works well, though, is lead fishing sinkers. Specifically, I melted down a bunch of them and put a loop of picture wire in it to make a tidy little weight. Then I sprayed it with a spray-on rubber coating to protect it and make it look nice.

The size of your weight will determine how far your trebuchet will throw. With an eight ounce weight, it'll throw a small binder clip about ten or twelve feet at a height of about four and a half feet. A twelve ounce weight gets a height of about six feet or so with a comparable increase in distance. At a pound or more, it gets to be more than you can practically use indoors unless you're throwing things that are potentially painfully heavy or you have very large rooms. Of course, with a heavier payload, you'll need a heavier counterweight to get the same distance.

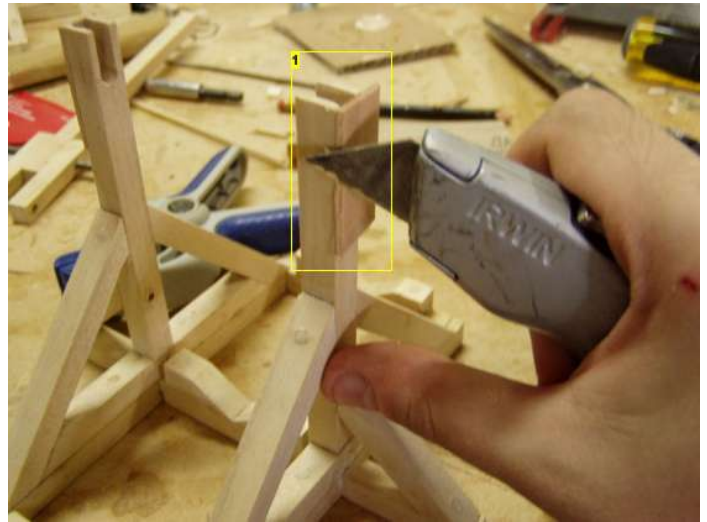
Once you get something together, hang your weight from the the axel between the lower arms of your trebuchet.

Finally, find something to shoot. I haven't found a design for a sling that works well at this size so I just tie a cord to whatever it is I want to chuck. A good length to start with is about four or so inches. Experiment to find what works best with what you're trying to throw.



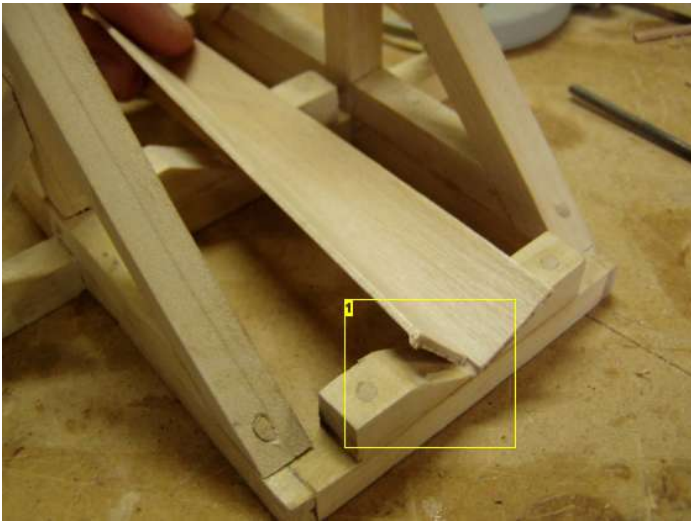
**Image Notes**

1. Glue a little section of craft stick to the outside edges of the uprights. This will keep the primary axel from sliding back and forth.



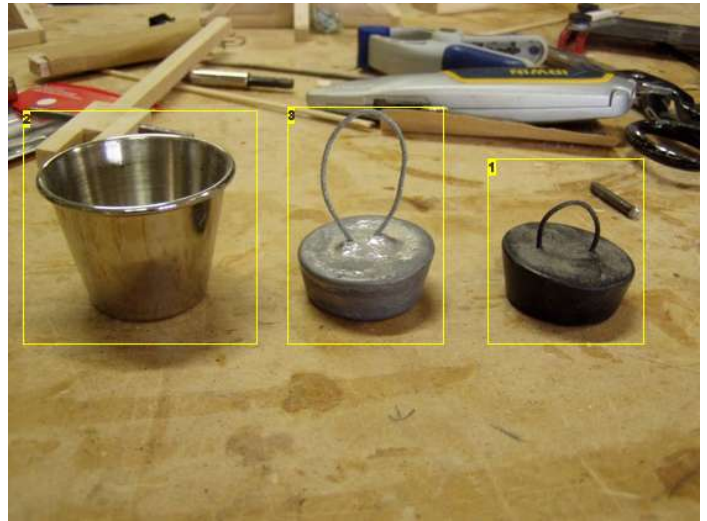
**Image Notes**

1. Trim the overhang to size.



**Image Notes**

1. Glue down two craft sticks to make the launch ramp or just glue a couple of sticks down flat if you decided to forgo to support blocks.



**Image Notes**

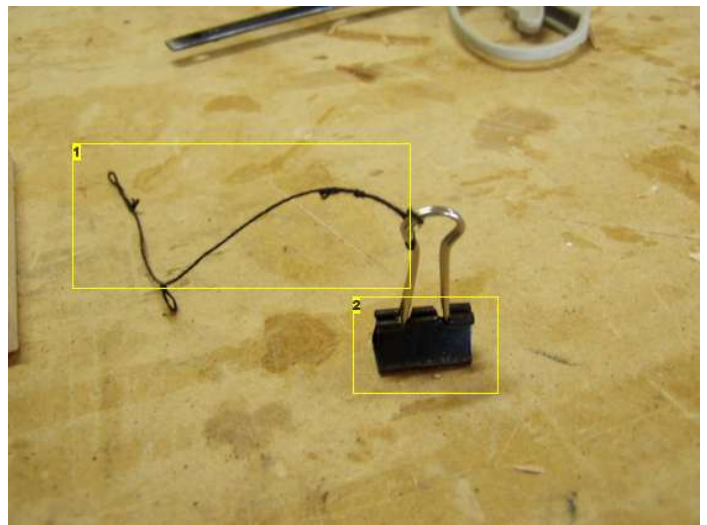
1. This is another 8 oz weight sprayed with a rubber coating and sporting a more accomodating hanger.  
 2. I got four or five of these little chrome condiment cups at my local giant retail conglomerate for around a dollar. They work well for sorting parts and melting down various whatever.  
 3. This is 8 oz of lead fishing weight melted down with a loop of picture wire sunk in it. The loop on this particular weight proved to be too long for this trebuchet.





**Image Notes**

1. They aren't kidding. This stuff is very hot. Incidentally, propane will also work just fine for melting lead.



**Image Notes**

1. About four inches. You'll need more or less to get the maximum out of your treb but this is good to start with.  
 2. I'll admit, using a binder clip for a projectile instead of something fancier is kind of lame but it was the first smallish thing at hand that I could tie a string to.

**step 9: Fire!**

To fire your trebuchet, drop your arm into the uprights and hook the loop at the end of your projectile over the pin at the end of the throwing arm. Pull the arm down and place the projectile in the trough. When you're ready to fire, release the arm.

If everything is well, your whatzit will go launching off into the near distance. If your launch didn't go so smoothly, you may be able to do a few things to help it. If your launch is too high or too low, you can adjust your pin or the length of the cord on your projectile.

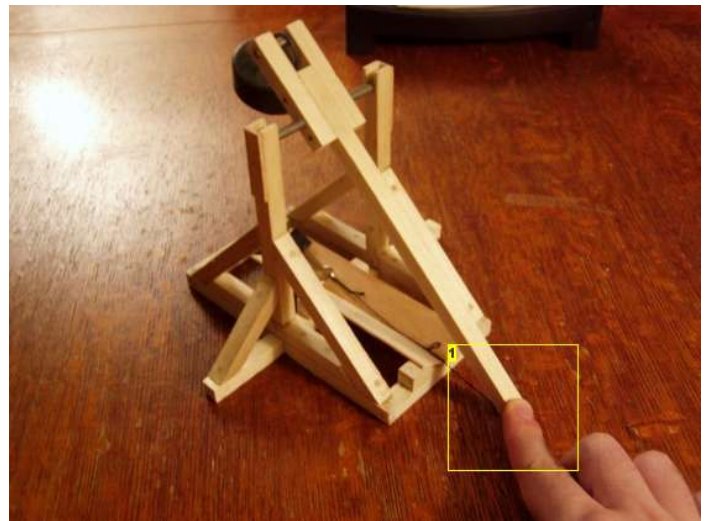
And there you have it. The whole thing is probably over engineered but it looks nice and works well. In fact, if you wanted to get crazy, the thing could probably hold pretty much as much weight as you could fit though the uprights, easily five pounds or more.

Thanks for looking. This is my first Instructable so I hope it's clear enough for you to make one for yourself if you like it. Please post your comments with any feedback.



**Image Notes**

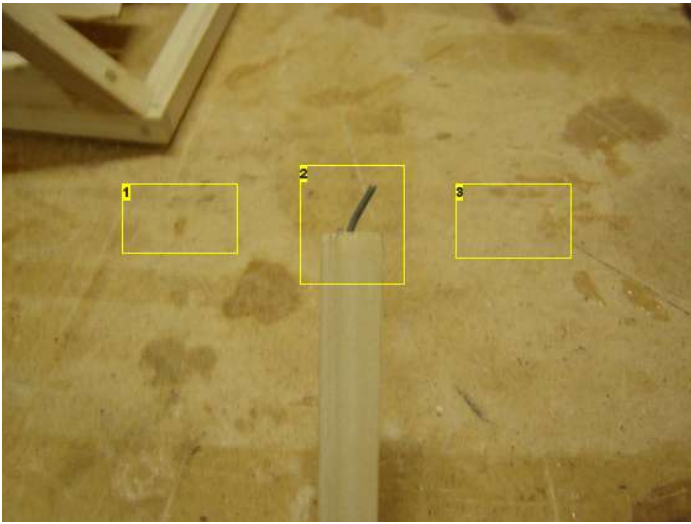
1. Keep your sensitive bits away from this end when the machine is in motion. It'd be bad news if you snagged an eyelid on this thing.



**Image Notes**

1. Release quickly for the most consistent launch.





**Image Notes**

1. <---- Bend the pin a little this way to increase the release angle and create a higher launch. Do this if your payload is shooting into the deck a foot from the device.
2. You can adjust the pin to fine tune launch angle. A release angle of 45 degrees will give you the best distance.
3. ----> Bend the pin a little this way to lower the angle of release. Do this if your payload is hitting the ceiling before it gets its full distance.

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**Comments**

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**Guyra** says:

I was just wondering, are all those wooden pins really necessary, or can I just glue all the parts up? Obviously it would be a glue made for wood use.

Nov 1, 2008. 2:31 PM [REPLY](#)



**blugyblug** says:

Oct 27, 2008. 1:08 AM [REPLY](#)

With your trebuchet you use your finger to hold the throwing arm down.

My TAS (Technology and applied studies, basically Metalwork, Woodwork etc) has a trebuchet maybe 3 times bigger than this and there is a pin attached to a string which is fixed down somewhere.

On the bottom on the back (where the throwing arm is when you are about to fire) there are two little circles coming out. On the throwing arm there is a circle as well. So when you put the throwing arm down, you put the pin through ALL 3 circles. So the circle on the throwing arm is between the two other circles with a pin in between, so it cant go up.

Just pull the pin and throw it at somebody!.

Wait nvm, pull the pin and kill someone



**TjT** says:

Jan 22, 2008. 6:22 PM [REPLY](#)

Theres one on thinkgeek.com that is kool 2!



**jillg** says:

Oct 11, 2008. 5:08 AM [REPLY](#)

i love thinkgeek .com, although if you tried you could build half the stuff on ther instead of buying it



**marc92** says:

Nov 13, 2007. 7:32 PM [REPLY](#)

Great Instructable, I love the joinery techniques.

I am building one right now. (the glue is drying)

One Important thing to be careful of:

Lead is a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Melting lead creates lead fumes which are also toxic.

Be Careful

For my weight I took a fishing weight (unfortunately lead) and wrapped it with a lead sheet and hammered it together. I plan to encase it in Plasti-Dip when it is finished.



**mmmma** says:

Apr 30, 2008. 3:05 PM [REPLY](#)

Fishing weights ('sinkers') can be found that are made of steel or tin - lead is forbidden in NH waters.

FWIW, a scrap padlock (you lost the keys or forgot the combination) should be fine. Folks with some enough space could simply fill a milk jug with rocks and sand and water. Some older men used to collect nuts and bolts... galvanized steel piping could work, Plaster of paris....



**jillg** says:

Oct 11, 2008. 5:05 AM [REPLY](#)

and i think tin has a lower melting point so it should be easier to melt it



**deathmango** says:

Dec 29, 2007. 8:07 PM [REPLY](#)

Because I was worried about children potentially playing with the trebuchet I constructed (using this excellent tutorial, BTW), I ended up encasing my lead counterweight. I didn't have anything like Plasti-Dip on hand. Instead, I took an old steel padlock and placed it in the bottom half of a small tomato paste can. My PIC (Partner in Crime) and I placed lead fishing weights in the spaces around the lock and melted them with a propane torch (adding more weights as needed). I then cut and folded in the edges of the can, and melted wax over the remaining space above the lead. So the whole set up is sealed in steel can and wax, with the loop of the lock sticking out the top. The only issue that remains is that the folded can edges are a bit sharper than I'd have liked.

I think that having some sort of plastic or rubber sealing material is ideal, but if I make another trebuchet, I'll be going back to the Bowl of Abandoned Locks as well.



**wittzo** says:

Dec 12, 2007. 11:57 PM [REPLY](#)

You wuss, lead was in paint and gasoline for ages and it didn't do any harm to W when he ate it and drank it...wait a minute...)

But really, I melted tire weights to make bullets and cast miniatures lots of times, as long as you don't get it on your skin (youch melted lead!) or wash your hands regularly and wear a mask while you're melting it, you'll be fine. Most of the damage is done when a child is exposed to it...If you're 18, your brain is almost finished, alcohol will do more damage..







**marc92** says:

Wow. Thats really cool. I wouldn't mind reading 40 pages of instructions if the result was that.

Apr 30, 2008. 3:14 PM [REPLY](#)



**necss** says:

Contact me at necss03@comcast.net and I will arrange to send you a CD of the instructions free.  
Joe

Sep 17, 2008. 1:04 PM [REPLY](#)



**JellyWoo** says:

cool! can you send me a copy?

Oct 1, 2008. 6:29 PM [REPLY](#)



**marc92** says:

Thanks, but I doubt that I would have time to complete that now that school has begun. Maybe during the summer I will contact you.

Sep 17, 2008. 1:15 PM [REPLY](#)



**blugyblug** says:

Damage pics plz. Or specs (distance, ammo etc etc)

Aug 20, 2008. 1:40 AM [REPLY](#)



**blugyblug** says:

You should tell us how it works, beginner "trebucheteriers" might be interested

Aug 1, 2008. 1:34 AM [REPLY](#)



**robocrazy155** says:

the weight of the aptly named counter weight causes the short end of the arm to drop, then the other end swings up until the sling slides off the launch pin (final pic. in step 9) releasing the ammo and firing it at the enemy fortress.

Aug 3, 2008. 11:41 AM [REPLY](#)



**robocrazy155** says:

Made it, the thing is awesome!

It can shoot about 30 feet, I use small wooden beads with string threaded through and a piece of wooden doling jammed into the hole as ammo. Then just paint like a rock a tie a loop on the end of the string and FIRE!

Aug 3, 2008. 11:37 AM [REPLY](#)



**ken247113** says:

just wondering but could you scale this trebuchet up?

Jun 22, 2008. 1:01 PM [REPLY](#)



**TheMoonMaster** says:

Soon I will be posting pics of my pwning trebuchet that my dad and I built. It flings golf balls 150 feet and when the arm is up its something like 6 feet tall.

May 24, 2008. 10:29 AM [REPLY](#)



**Jr Hacking kid** says:

can you post the video on youtube or at least enable it

Apr 1, 2008. 8:19 PM [REPLY](#)



**Carnalvana** says:

it is chouette though!!!

Mar 9, 2008. 9:48 AM [REPLY](#)



**Carnalvana** says:

why didnt u just use a tack nail gun

Mar 9, 2008. 9:47 AM [REPLY](#)



**tanmaker** says:

This is absolutely brilliant! I've made larger versions before for middle school competitions, so this will be a fun little project to show off.


Feb 25, 2008. 6:37 PM [REPLY](#)




**Ganonman** says:


i built one for tech class...not this one but i drew up my own...it was called "The First" be cause me and a partner helped ovr teacher make tech more fun, more chalenging and have more freedom in what you make...in other words...we were the only ones that could make a trebuchet instead of a simple catapult....we also got exta points cuz we drew it for classes later the next year:)


Jan 19, 2008. 10:18 AM [REPLY](#)


 **darkmuskrat** says: Jan 7, 2008. 3:39 PM [REPLY](#)  
Lol, i was just going to build one with my own drawings but now i can have 2. Trebuchet wars :D


 **halomaster007** says: Jan 5, 2008. 8:05 PM [REPLY](#)  
I built one, and it rocks!!!!!! Wahoo!!!!!!


 **brainspater** says: Dec 22, 2007. 10:00 PM [REPLY](#)  
Me i use a cannon.


 **Visitor** says: Jan 25, 2007. 2:21 PM [REPLY](#)  
The diagonal braces do not have a functional purpose. The trebuchet will work just fine without them and will not fall over. We have three different sized desktop trebuchets at work (all larger than this and being fired almost every day) and we have never needed diagonal braces. All you really need is the square base and the vertical supports.


 **TheDevilsDue** says: Dec 9, 2007. 11:29 AM [REPLY](#)  
While they may not be necessary, I prefer the look. I've seen a few trebs that were nothing more than a square base and two uprights. They worked, but were ugly as sin.


 **Sergeant Dotson** says: Nov 21, 2007. 6:27 PM [REPLY](#)  
Extremely well engineered! I made this in 2 days but it was well worth the time and effort. It was also a well done instructables page! Keep up the good work!


 **markevans** says: Nov 8, 2007. 2:06 PM [REPLY](#)  
Nice treb. I've got a 5 footer that can hurl a water bottle 250 feet.  
Anyone intrested in building or learning more about catapults of all kinds, (ballistas, onagars, trebuchets, FATs, F2Ks, whippers,) should check out thehurl.org. Lots of discussion boards to help aspiring engineers with ideas designs and building techniques as well as numerous photo galleries, articles, papers, videos, or whatever else you can think of.

 **philreper13** says: Sep 10, 2007. 10:03 PM [REPLY](#)  
hey i think this instructable is awesome. i have always wanted a trebuchet. i have just two questions how does it hold the projectile, and how does it release the projectile.


 **scotchtapebuddy** says: Nov 6, 2007. 9:35 PM [REPLY](#)  
awesome project almost fished with one I am building very very well build A+++++!!!!!!

 **TomMcKiller** says: Apr 7, 2007. 6:36 PM [REPLY](#)  
you should use water for weight cause it can be taken out and put back in after you move it

 **\_soapy\_** says: Jul 4, 2007. 6:09 PM [REPLY](#)  
Water only weighs 1Kg per 10cm cube. Even the lightest bricks are near twice that, and the densest are near 3. Lead ore is over 7 times, lead itself is over 11 times, and tungsten is almost 20 times denser.  
Only use water to fill the air gaps, and even then, only do it if you are sure you want the extra hassle.  
I'm sure someone else here can say why a bulk water mass as a counterweight would be dodgy? (Hint: It's a liquid)

 **moomoocows** says: Nov 3, 2007. 11:06 AM [REPLY](#)  
I think he means it would slosh around for a rough release

 **John Smith** says: Sep 2, 2007. 1:14 PM [REPLY](#)  
It would leak? Wild guess.

 **SuperTails** says: Oct 19, 2007. 9:37 PM [REPLY](#)  
I think the picture on the intro page looks like a candle stick to me. I don't know if you meant that or not but I think this would be great toy for anyone interested in office toys. I am very interested in them. I love them all form Newton's Cradle to Galaxy Kinetic Art. This would be awesome to have. Good Job.



**Itsgoofytime** says:

Sep 13, 2007. 3:45 PM [REPLY](#)

I have built a 5 ft tall Trebuchet (full length) and it could shoot a tennis ball about 200ft and a golfball about 350 ft.

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**SFHandyman** says:

Aug 25, 2007. 2:36 PM [REPLY](#)

Really beautiful machine. I love that you are teaching wood work and joinery also. My dad's a carpenter and I loved learning those skills when I was a kid. I'm now in an apartment and got rid of my big tools :(

This is so well made, I'm sure it could handle more weight and even an extension to the throwing arm.

I made a Quick-n-Dirty - no tools, no plans, no cutting, no drilling, no lumber, no hardware trebuchet. Many people will have the supplies in their house right now.

It consistently throws 12-15 feet. With a heavier weight it hits the wall at 20' and that's my biggest room. I'll have to find a bigger space to check the range.

It's made of 9 chopsticks, 2 toothpicks, two rubber bands, 3 paper clips, a weight, some string and masking tape.

I published it last night but it doesn't seem to be available yet.

<http://www.instructables.com/id/ELS7AFBF5R8MQQU/>

The videos are already available at Google. First one is the machine firing close up. Second video is the machine firing, where you can watch the projectiles land about 13 feet away.

<http://video.google.com/videoplay?docid=7177348096653267453&pr=goog-sl>

<http://video.google.com/videoplay?docid=-3765857587744240299&pr=goog-sl>

It's not pretty but I wanted it to be something anyone could build for almost no money and without tools.

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