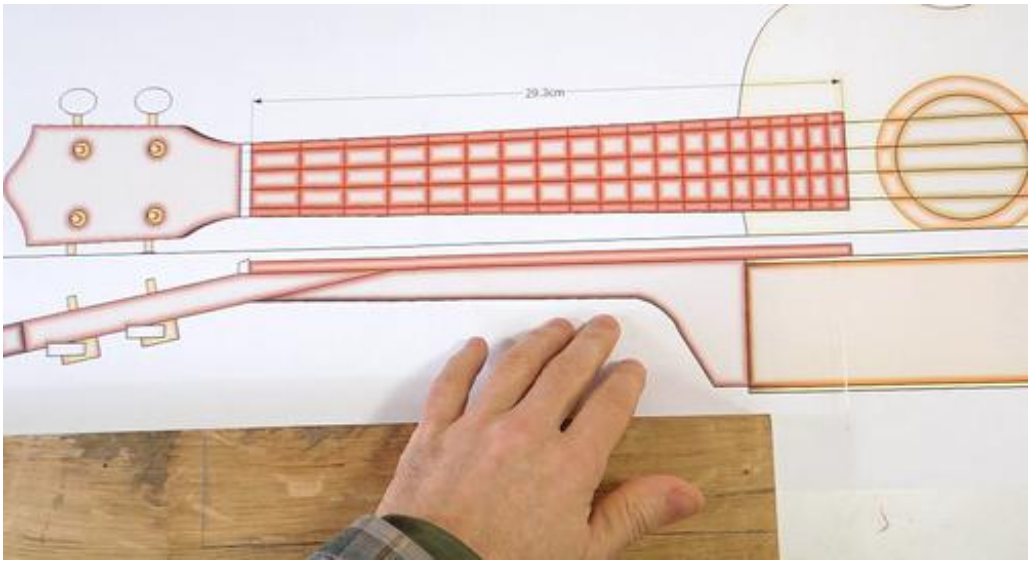
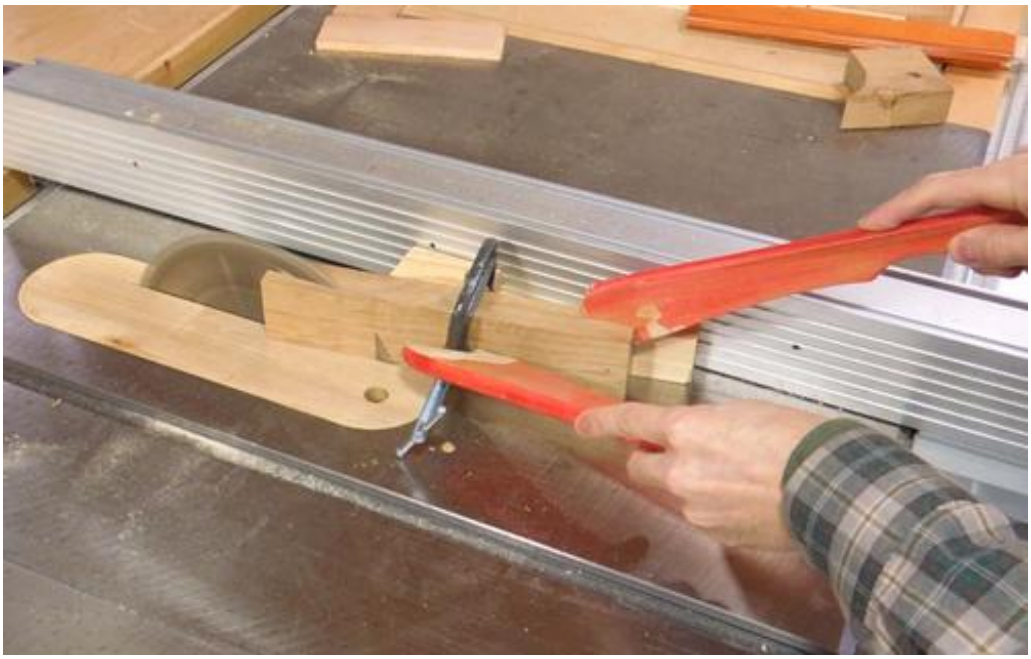
Making the neck for the ukulele

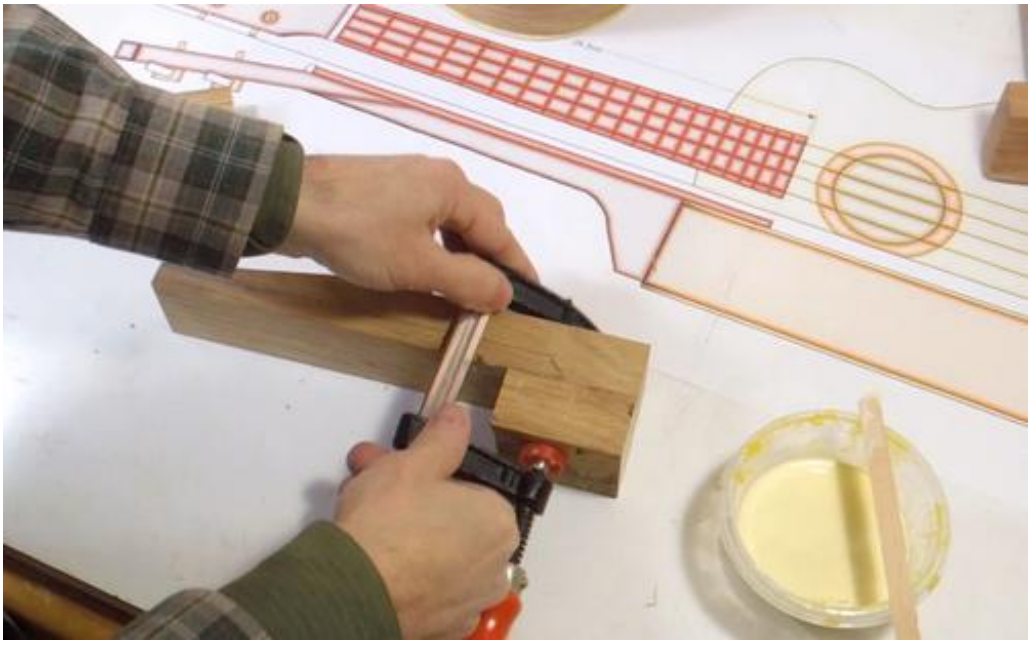


The next step in my build was to make the neck.
The head of a guitar or ukulele is usually attached to the neck with a scarf joint. People usually make this scarf joint on the head side, of the bend, but because I wasn't going to veneer the head, I made the joint on the neck side where it would be hidden by the fretboard.



Guitar makers typically have a jig for cutting the scarf joint on the table saw. I'm not a guitar maker, and for one-time use, it wasn't worth building a jig. So I just clamped the workpiece to a wedge and cut it like that.
I was initially going to have my workpiece facing the other way, but then I realized that

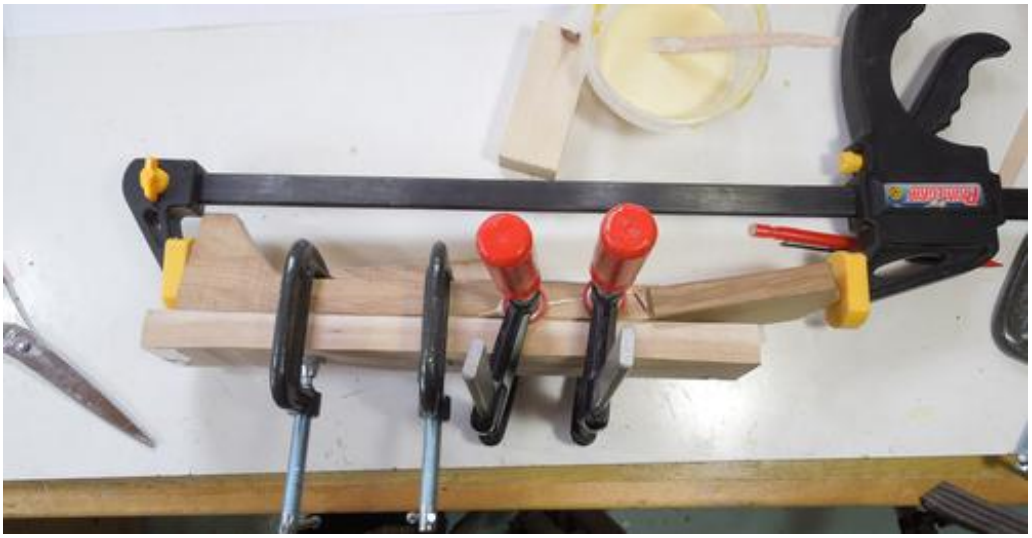
the wedge that I'm cutting off might jam itself between the saw blade and my support, so I changed the orientation so that couldn't happen.



Next, gluing the "heel block" onto the neck for where it attaches to the ukulele.

Once that glue dried, I cut some of the profile of the neck.

Then I glued the head onto the neck.
I clamped it by wedging it between the neck part and another piece of wood. I put a layer of packing tape onto the other piece to prevent glue squeeze-out from gluing the extra piece of wood onto the neck.



I added two small clamps between the neck and the head to keep the neck and head aligned.

Ready to start sculpting the shape of the neck.
In retrospect, it would have been easier to cut and fit the neck mortise first, before sculpting the neck. This is especially true if you don't have a Pantorouter.

I first cut the taper of the neck on the table saw. With the head slightly wider than the neck already, this conveniently put it at the right angle on the saw.
But, if you build one, I recommend making the neck as wide as the head initially, as that will make aligning things much easier when you cut the neck mortise.

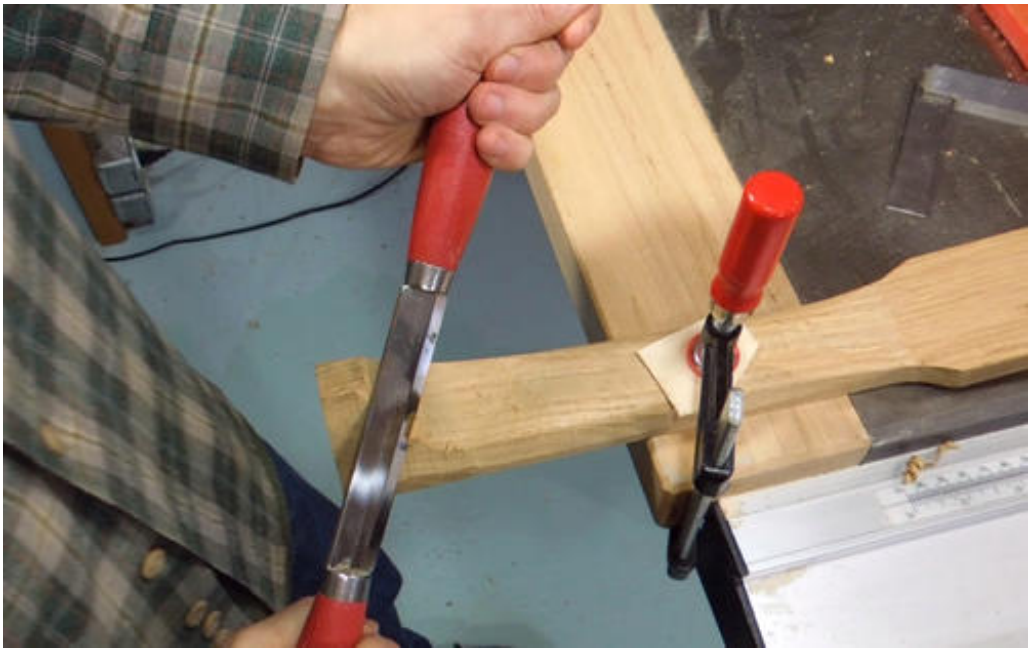
I moved the fence to the other side of the blade to cut the taper on the other side.

Now cutting the transition from the head to the neck on the bandsaw. I put a block of wood under the neck to support it. It would have been easier to cut this front-side-down, but I marked the shape of the cut on the front.

I wanted to taper the neck to be slightly thinner towards the head.
So I clamped it against a large piece of wood. I clamped a small block of wood to the left side of the large block to put it at a slight angle, then cut the back of the neck with my old 18" bandsaw.

Finally, cutting a chamfer along the edges of the neck. I clamped a strip of wood to the table to act as a guide for the cut.

After that, I rounded the edges with a spokeshave...



... and a drawknife at the base of the neck.

Then I used my strip sander to smooth it all. I used the part of the belt that does not have a hard support behind it.

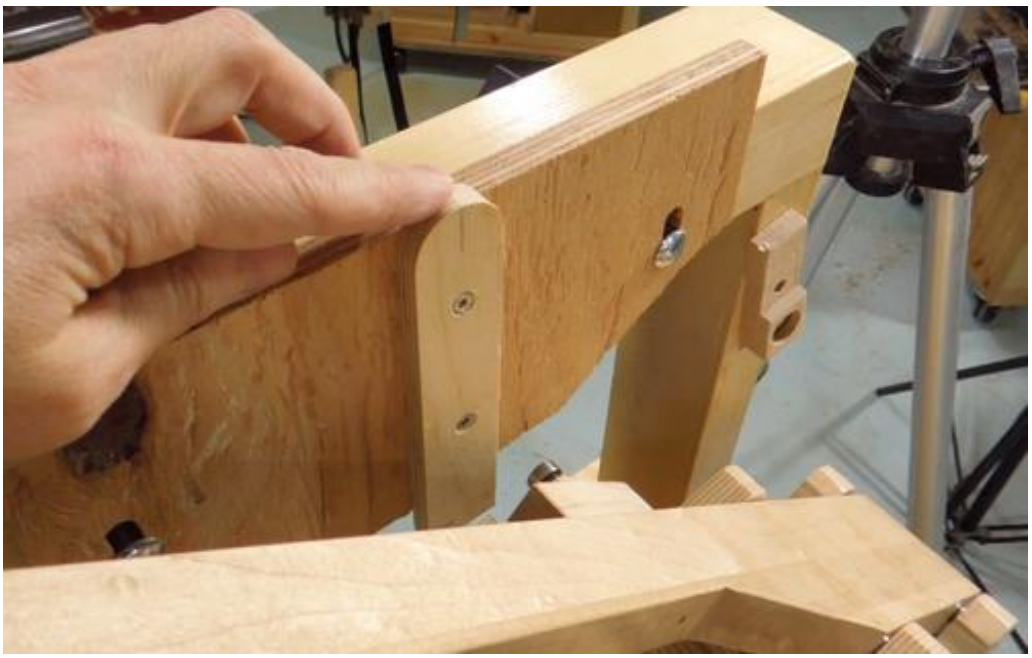
I cut a flat spot in the ukulele body where the neck mounts.
I should have been more careful when I did this. I ended up cutting away a little bit too much.

A disk sander would have been a better tool to do this with.

Next, clamping the body of my ukulele onto my pantorouter for cutting the neck mortise.

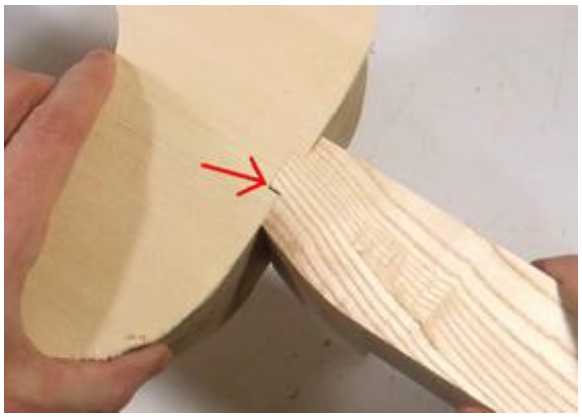
I made a mortise template from a scrap of plywood and mounted it above the router on my pantorouter.

Cutting the neck mortise.



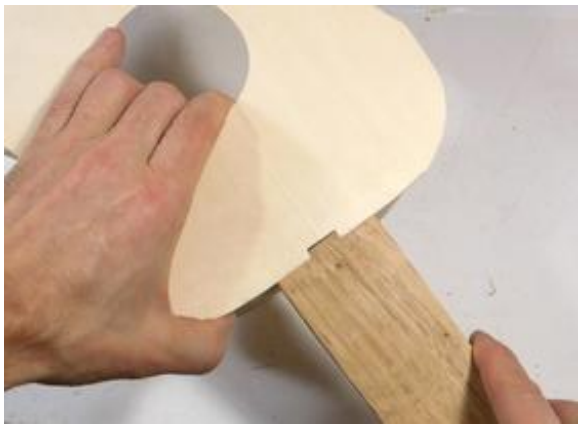
Next I switched to a template for a neck tenon.

I wasn't sure if I would get a perfect fit, so I first used the template to cut a test tenon into a scrap of wood. As it turned out, the neck mortise was about 0.75 mm (.030") too narrow. So I made a wider neck mortise template.



I was confident that the wider template would make for a good fit, so proceeded to cut the tenon in the end of the neck.

A perfect fit.



Attaching the neck

It was tempting to mount the neck with just a few drywall screws from the outside, but it

would have been tricky to drill the holes and countersink holes cleanly in the neck that I had already sculpted. So I used hanger bolts, like many guitar makers do.
Here's drilling the holes for the hanger bolts in the neck block.

I then transferred the hole locations onto the neck by placing a drill in the hole and tapping it into the neck with a hammer.

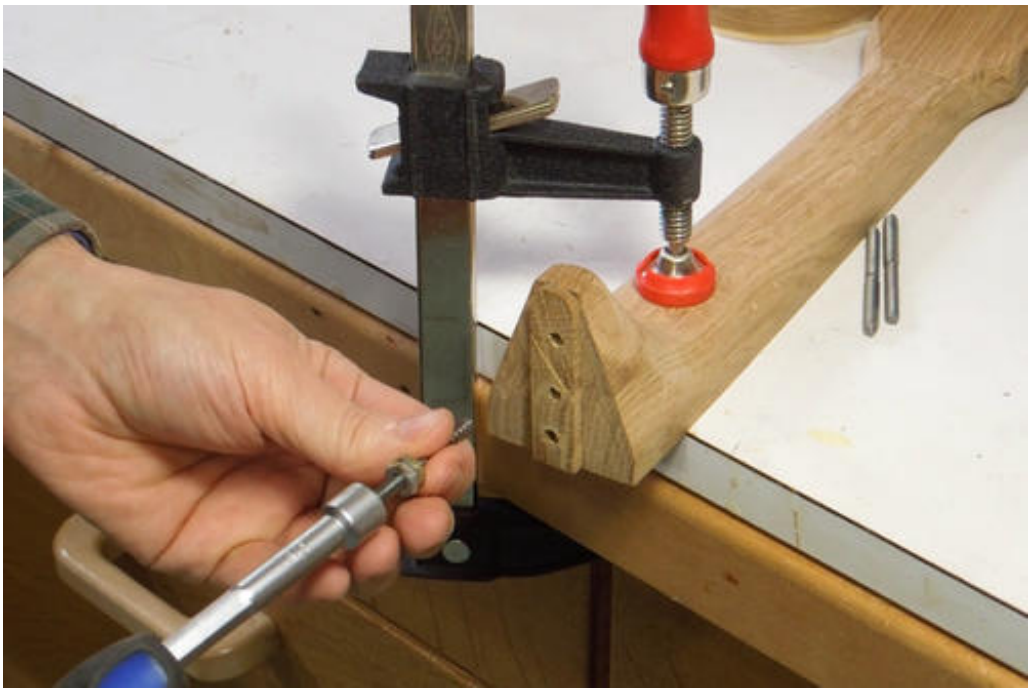
A complicated jig-up to drill the holes in the neck. A hand drill would have been simpler, but adds the risk of drilling crooked.

This would have been the prefect job for a horizontal boring machine, but I wanted to focus on building this without a lot of special equipment. (except for the pantorouter, but everyone should have one of those :))

I drilled relatively small pilot holes for the screw ends of the hanger bolts. To avoid splitting the neck with the hanger bolts, I made a sort of wood screw tap from an extra hanger bolt.

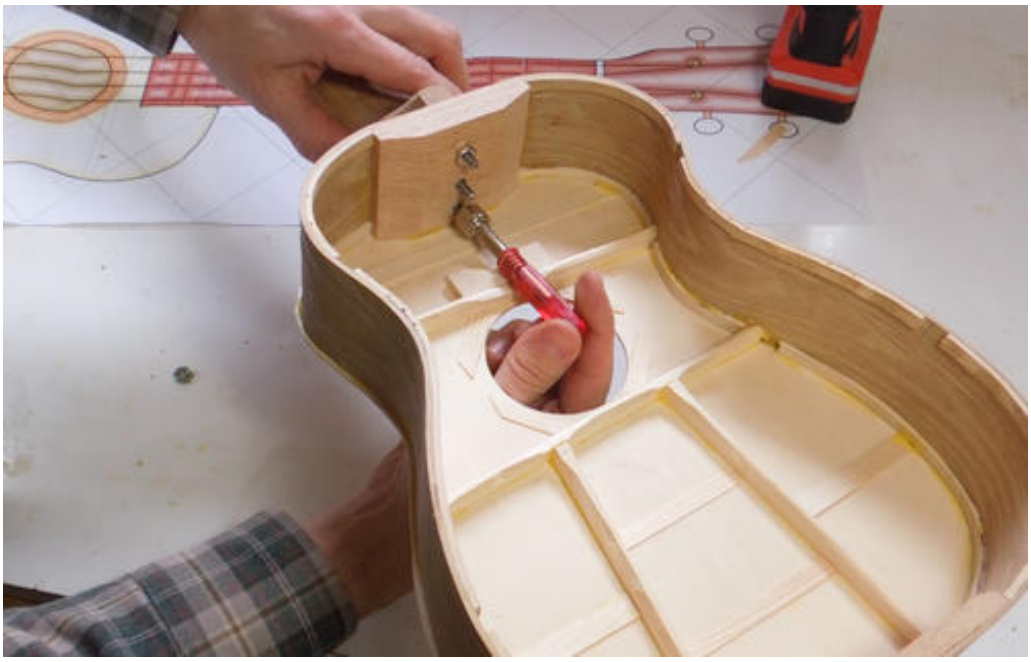
I made that by grinding a notch out of the threads on two sides with an angle grinder.

I then mounted the tap in a small drill and used it to cut threads in the holes.



After that, installing the hanger bolts. I jammed two nuts against each other on the machine screw end of it, then turned those with a nut driver.

Three hanger bolts mounted. Maybe three bolts is overkill, but I don't really know what I am doing, so better safe than sorry.



Getting the nuts on the hanger bolts will be tricky once the back of the ukulele is glued on. Fortunately, I have a small nut driver that I can insert through the hole. If you don't have a small nut driver, you can use a socket set socket, plus an extension piece as a handle.

See also: Pat making a ukulele neck

Next : Making the fretboard