Wooden hinges for boxes using the Leigh F3 template on the D4R Pro jig.

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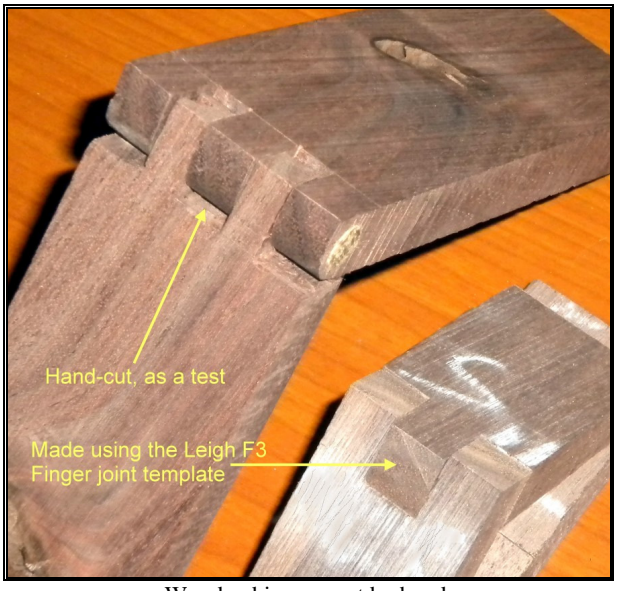
Part 1 – a simple prototype
Direct link to the original article: http://sandal-woodsblog.com/2010/12/06/wooden-hinges-for-boxes-using-the-leigh-f3-template/

I have been making small boxes. But I wanted a change in their looks, to incorporate wooden hinges to attach the lids to the box. So I made a little 3-inch long prototype that looks like this:

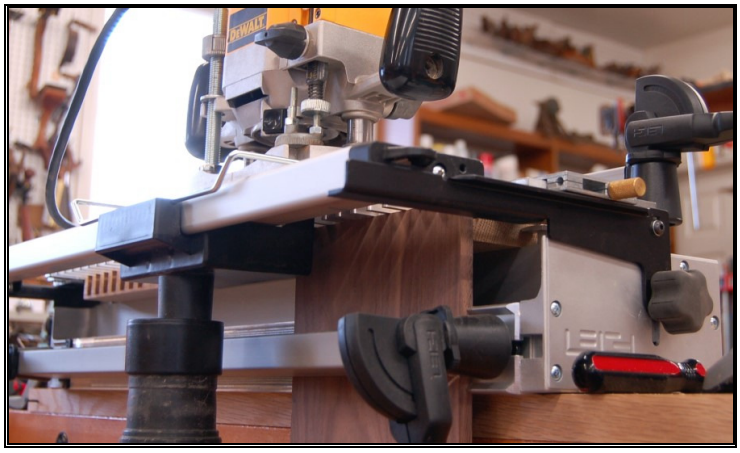
Prototype of a hinge for small wooden box.

I started the process by cutting some hinges by hand, and chopping out the waste. I wanted a more refined look, as a complement to the looks of the boxes. So I tried it using the F3 finger joint template on the Leigh D4R Pro — it was a *great* excuse to try the F3 on the D4R Pro:



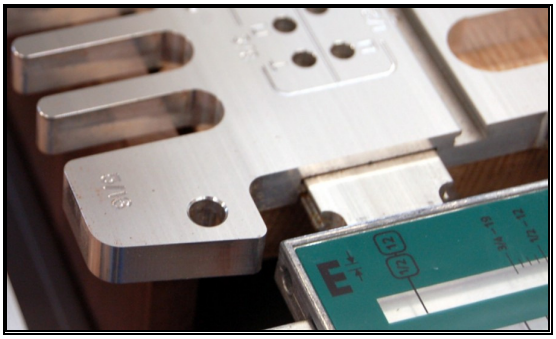
Wooden hinges - cut by hand,
and using the Leigh F3 template.

Now that I knew what I wanted, I went about setting up and making a "production run" of several hinges. I start with a wide walnut board in the D4R Pro:



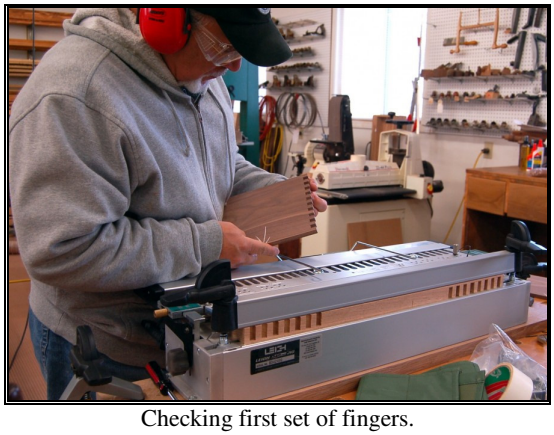
Setup to cut finger joints – these will become wooden hinges.

I tried finger joints in various widths, and finally settled on 5/16-inch wide fingers:



Settled for 5/16" finger joints.

I made sure that the fingers looked good, and that the cut was to the base line:



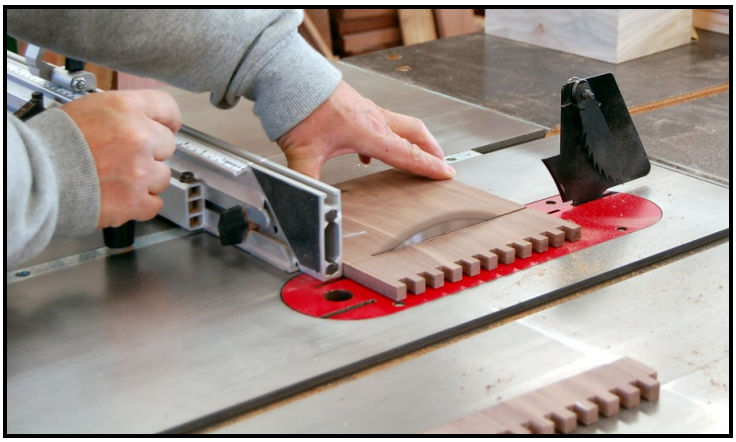
Checking first set of fingers.

Then I cut the sockets on a second board, and checked the fit. The first cut was a bit tight by about 0.005" (I use calipers to determine how close I am to the proper fit). So I cut off the fingers, adjusted the eBush to enlarge the sockets and reduce the thickness of the

fingers to obtain a better fit. One adjustment, and I dialed in the perfect fit; it is a little loose, by 0.004" — a perfect fit that allows proper rotation of the hinge:

Dialed in the fit - it is 0.004" loose, and perfect.

I then cut the fingers and sockets on both boards to approximate length at the table saw:

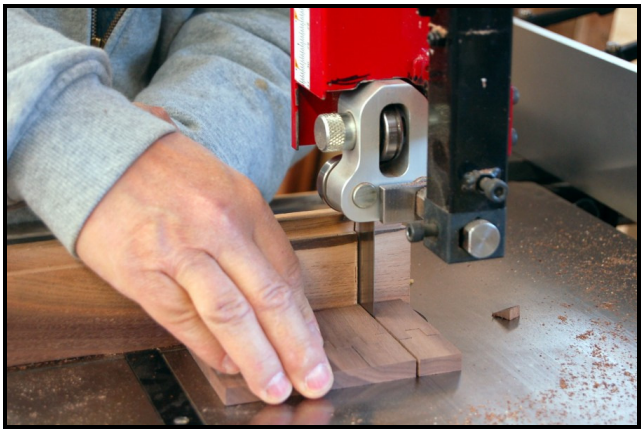


Trimming the fingers to length.

At this point I start to get an idea of the "look" of the hinges:

How will they look?

Another decision: Two sockets and one finger define the short side of the hinge; the short side will be placed on the top surface of the lid:



Trimming individual hinges.

Several blanks are now ready to drill the 1/8" hole that will accept the oak dowel:

Hinge blanks ready to finish machining.

I made sure the holes are centered edge-to-edge, and along the length of the fingers:

Drilling for hinge pins.

The gnomon in this next photo is 6 inches long:

Ready to shape.

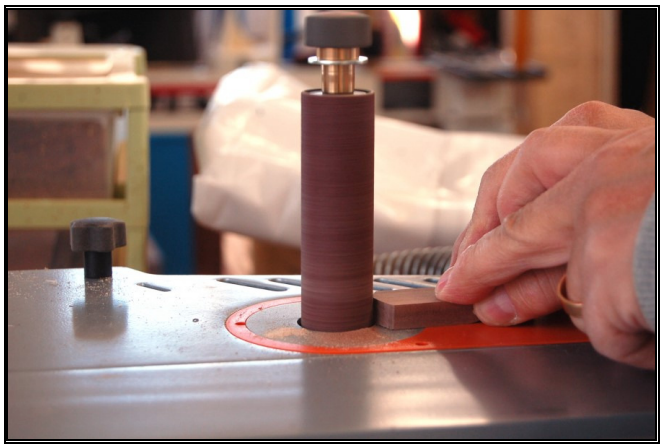
The curvature on the fingers must be smooth and consistent. I achieved this with a cheap four-way file (**Note to self:** get better files!):

Fine-tuning curvature, to provide turning clearance.

Once assembled with an oak dowel, I rough-shape the ends of each side of the hinge on the band saw:

Trimming to rough shape.

And I refine the shape using the spindle sander:



Getting the curves just right.

Following some refinement of the shape to achieve a pleasing look, I use the prototype to get similar curves. The process worked! Here is the little prototype again:

The prototype worked!

I have been playing with the shape, but like this one best of all. I will try making some hinges with natural edges, for a more rustic look. Please stand by, as I will be showing the hinges on their respective boxes in future articles.

— *Al Navas*

Part 2 – a different hinge form

Direct link to the original article: http://sandal-woodsblog.com/2010/12/06/a-new-wooden-hinge-form/

This article continues with the wooden hinge theme. I made some changes to the simple form I showed earlier. My thanks to Julio, in Spain, for the inspiration to develop a new hinge form. The business part of the hinge is now rounded. What follows is how I went about doing this.

I used walnut boards for the new hinges; in fact, I used the remains of the the boards I used for the first set of wooden hinges. This time I simply used a 3/16" roundover bit on both edges at the router table:

Creating a round-over on the walnut stock.

After rounding over both edges on each board, I got a stepped edge along the entire length of the boards. But after a minute or two with sand paper, the step disappeared and I had a nice, smooth round edge:

The rounded walnut, after a bit of sanding.

The rounded edges of the boards went under the finger assembly of the F3 finger joint template. I cut the fingers and sockets on the Leigh D4R Pro jig — the results were great. I had enough material to make new hinges for 3 boxes:

A very large rounded "hinge" – these boards will become hinges.

I outlined a shape on the edges of two of the new hinges, and then spent a little time at the spindle sander removing wood to that outline. Soon I had the following form:


The prototype rounded hinges, as I tried a dry-fit on a box. A little refinement, and it will be ready.

Note: I was worried about completely rounding over both sides of the hinges; depending on the design of the hinge, a complete roundover may allow the lid to open fully; the lid may even touch the surface where the box is resting. In this case, the lid will open a bit beyond 270°. I will be able to determine the exact angle once I secure the hinges to the lid and the box; I will report on this, as it is an important issue. Normally we want the lid to open to 95°, and (almost) never beyond 110°. Additional details will appear in follow-up articles on the blog.

— *Al Navas*