Box Bits #11

Wooden Hinges Part C - Reinforced Wooden Hinges on the Bandsaw by AlexS

Introduction
Members that frequent the Box Making forum will be very familiar with posts by AlexS, either WIP's, or advice to members, and answers to Box Making questions. In fact, I work on the principle that if Alex says its OK.....then its OK. If you haven't visited Alex's site (**http://web.mac.com/alexspringall/**) then do yourselves a favour and spend an hour or two on his site learning just what can be possible.

WIP
Alex has submitted a work in progress on the manufacture of Reinforced Wooden Hinges as shown on the box below.....

What you will Need

- Milled stock of the required width and thickness for two hinges.
- A Cutting gauge.
- A Marking gauge.
- A Bandsaw or,
    - a scroll saw or, If you don't drink coffee/ can do brain surgery/ and have very steady hands,
    - a fret saw.
- A Drill press.
- Barbeque Skewers for the Hinge Pins.
- Glue and,
- Various Grades of Sandpaper for smoothing/ rounding and finishing.

So away we go.....

Mill a length of stock to the desired width and thickness of the hinges, and divide this into two pieces, each long enough for two hinge leaves plus some spare. One piece will provide the “Male” and one the “Female” parts of a pair of hinges.
Set the cutting gauge to the thickness of the stock, and mark both ends of each piece. This is the line you will cut to on the bandsaw or your other chosen saw however, we will only refer to the bandsaw in this article. **Figure 1** refers.
While dressing the hinge stock,also dress a length of MDF to the same dimensions. This will be used as a gauge to set the bandsaw fence.

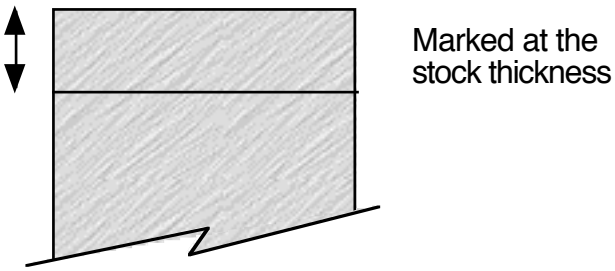


Figure 1

On the MDF gauge mark the width of the hinge tongues with a Marking Gauge and use a thin clutch pencil to emphasise these marks. The pencil line will show as a double line.
Figure 2 shows the marking on the MDF Gauge.
Now use the MDF gauge to set the bandsaw fence and set the fence for the first cut so that the cut is on the outside of the first line and bisects it.
This is where the “double” pencil line comes in handy.
Now on the stock you have chosen for the “Male” leaves cut to the marked line and then turn the piece end for end and make the same cut again.

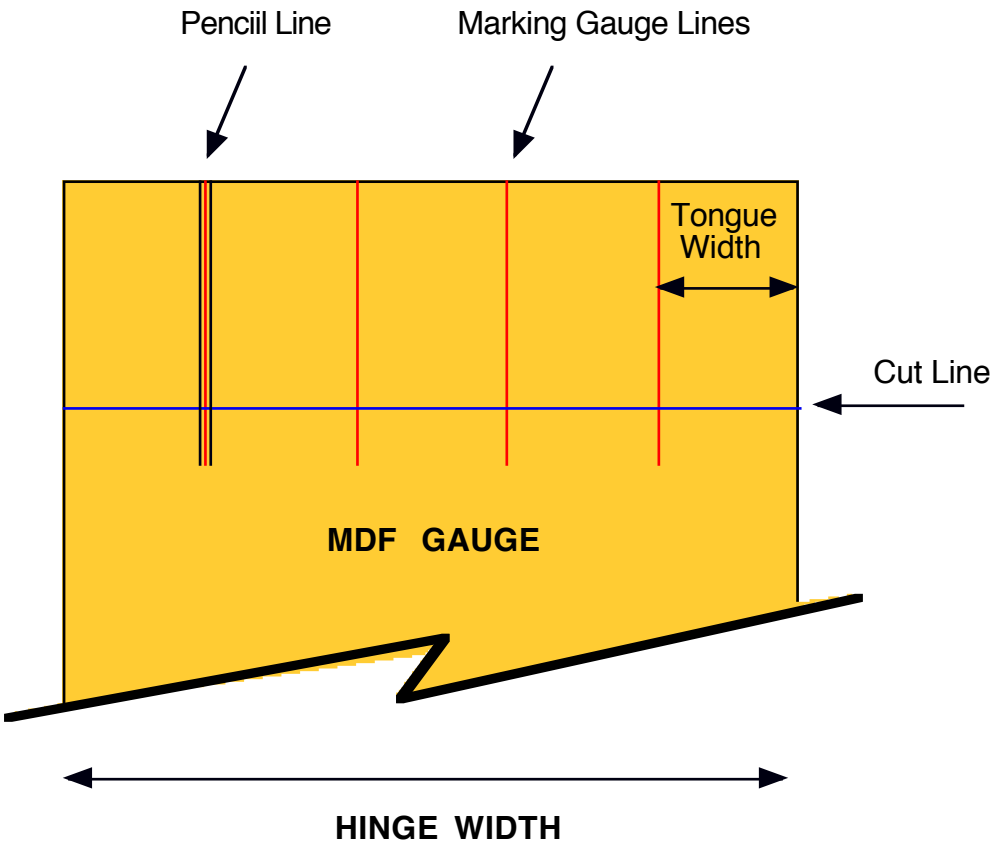


Figure 2

Put the “Male” piece aside and adjust the fence so that the cut now bisects the first line on the MDF Gauge from the other side.
On the “Female” piece make a cut at each end in the same manner as you did for the “Male” piece
Reset the fence so that the cut bisects the next line on the MDF gauge and then cut both ends of the “Female” piece.
Reset the fence as before and repeat the cuts with the “Male” piece.

Continue making cuts as per this procedure until all of the tongues are cut, then remove the waste.
Figure 3 shows the results..

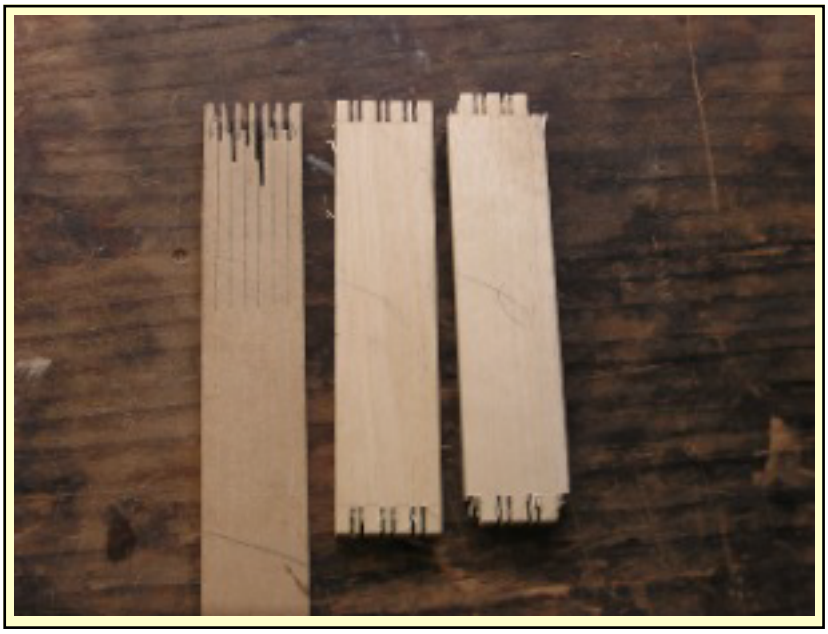


Figure 3

OK that’s the “Mind Numbing” bits over with, so stick your tongue back in your mouth and we’ll get on with it.

Lets have a bit of a test fit as shown in **Figure 4**, and both ends of the leaves should fit snugly together.
Mark each pair of ends as pairs, and also mark the centre of the Hinge Pin holes

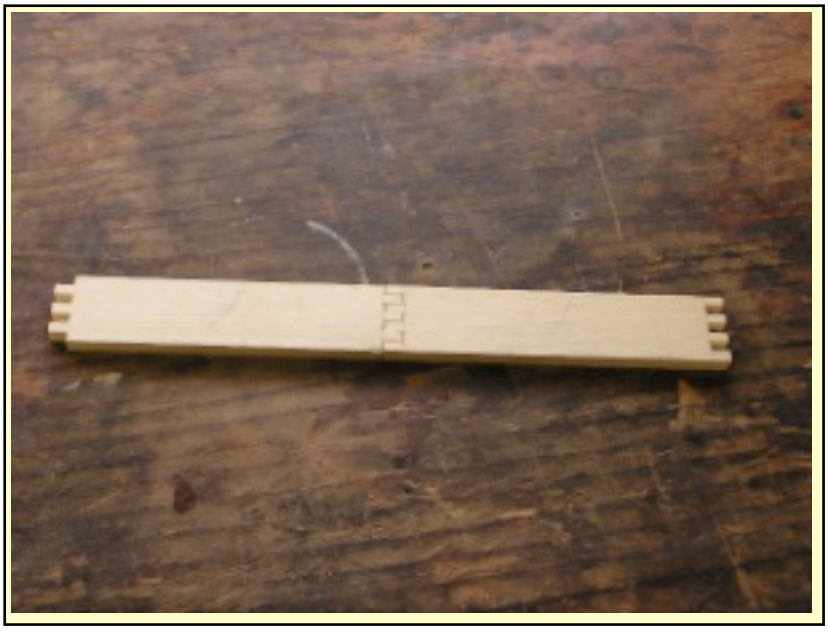
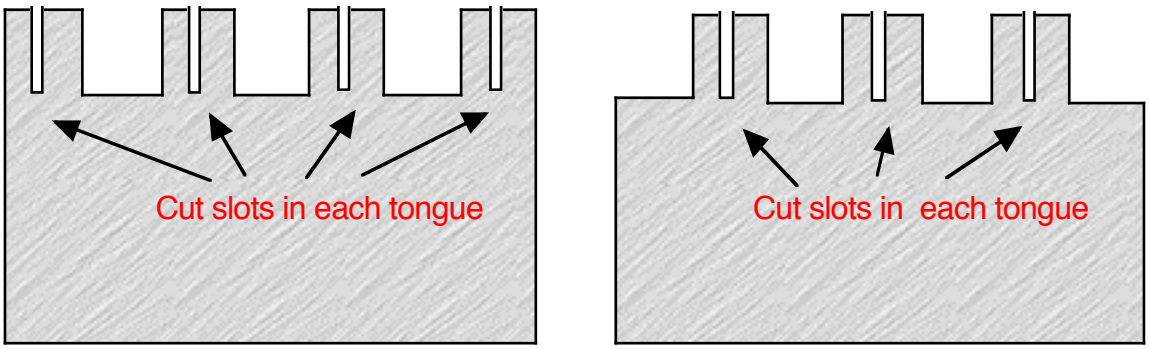


Figure 4

Strengthening the Tongue
To strengthen the tongues of the hinges, Alex made a cut into each tongue and inserted slivers of veneer across the grain with respect to the grain of the hinge components**. Figure 5** shows this procedure, and just to prove that it all happened, there's a Picture at **Figure 6.**



The slivers of veneer should be larger than the thickness and height of the tongues to enable finishing of the veneer flush with the tongues in the next operation.

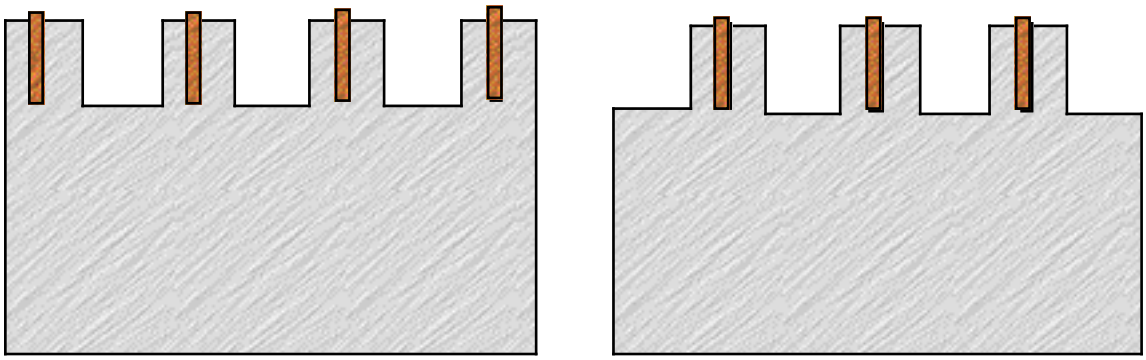


Figure 5

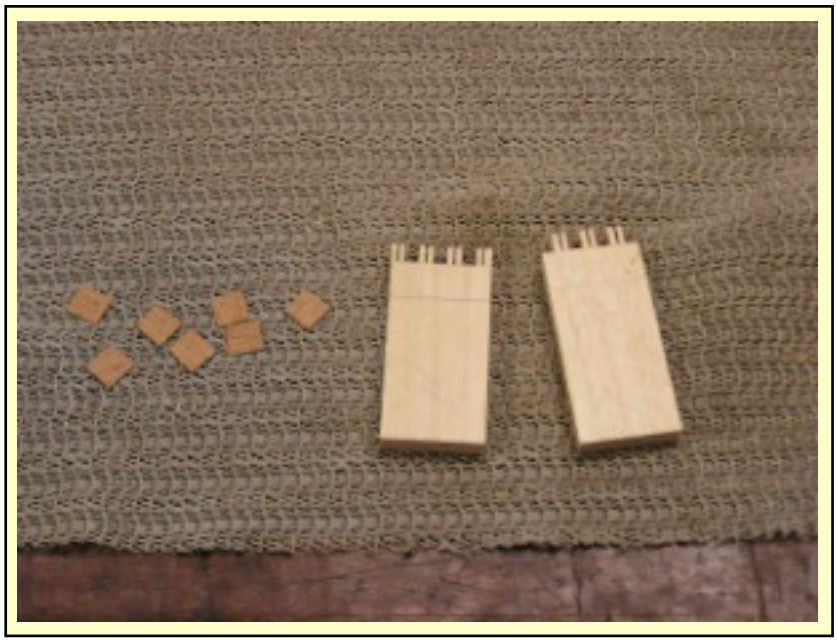


Figure 6

All glued up nicely ready for smoothing the veneer.

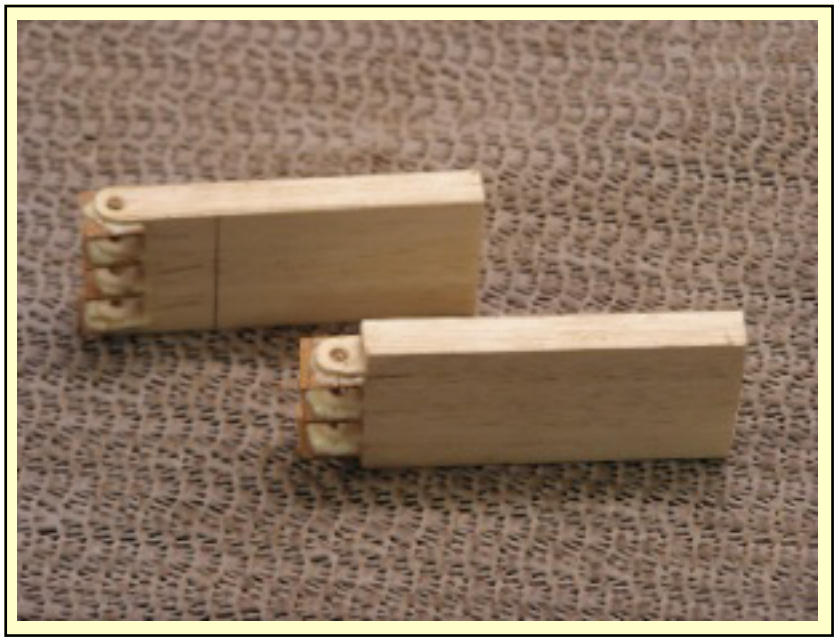


Figure 7

Smooth the veneer flush with the tongues and then test fit as shown in **Figure 8**

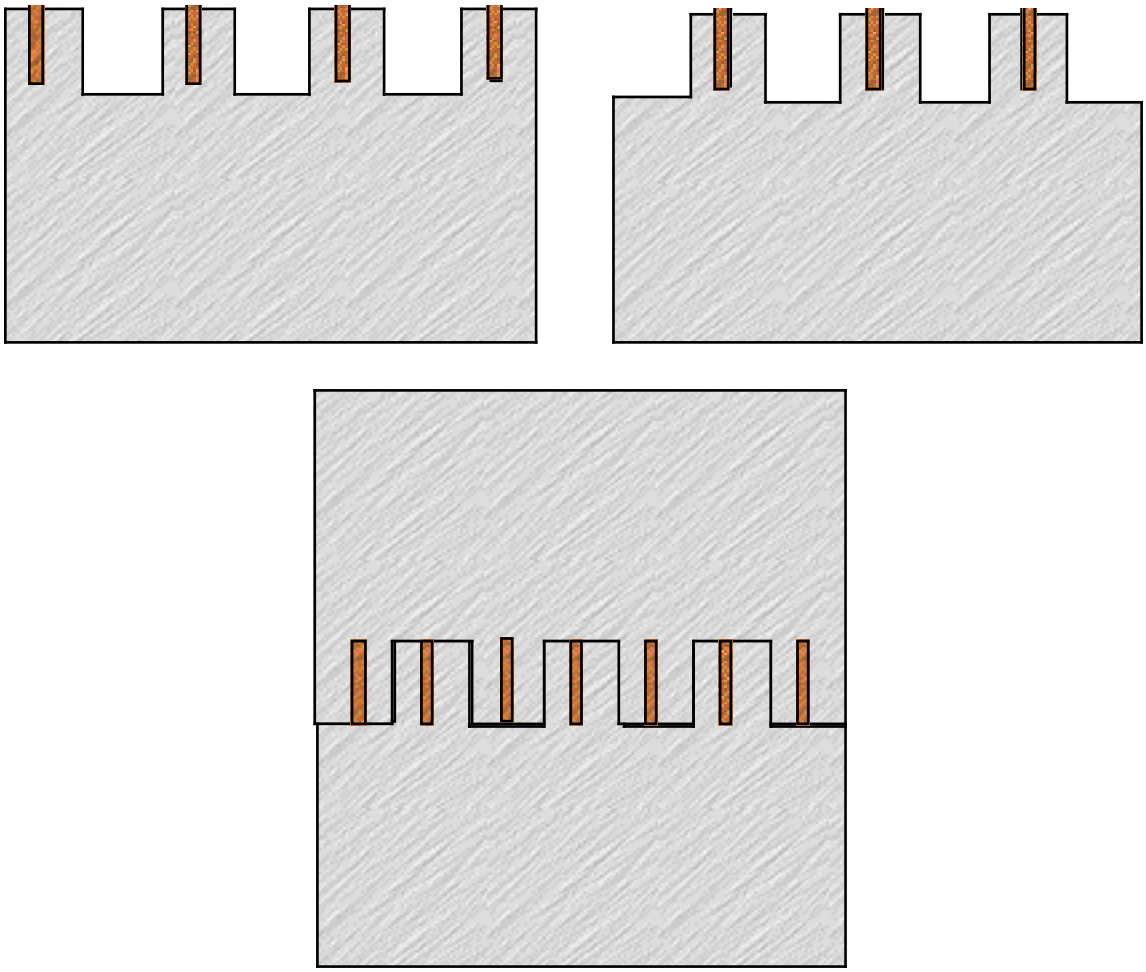


Figure 8

Drilling the Pivot Holes
Now fit the leaves together and prepare to drill the holes. It is important that the drill and vice are set-up accuarately. The drill bit is sized to snuggly fit the barbeque skewers.
Reverse the ends of the leaves and fit the opposite ends together and drill the holes again.
Figure 9 shows the set-up used by Alex.

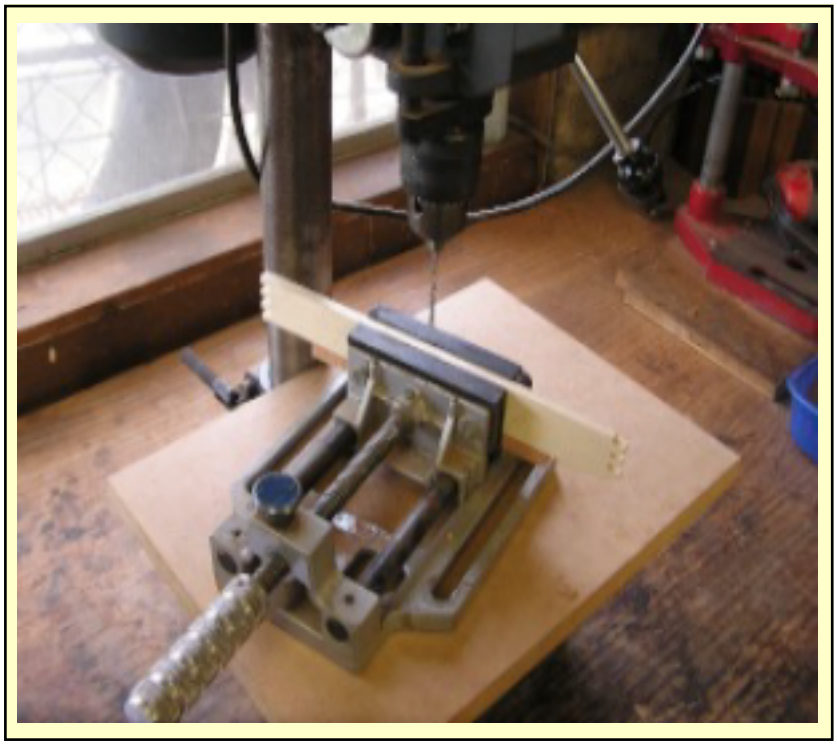


Figure 9

Test both ends of the leaves with a skewer as seen in **Figure 10.**

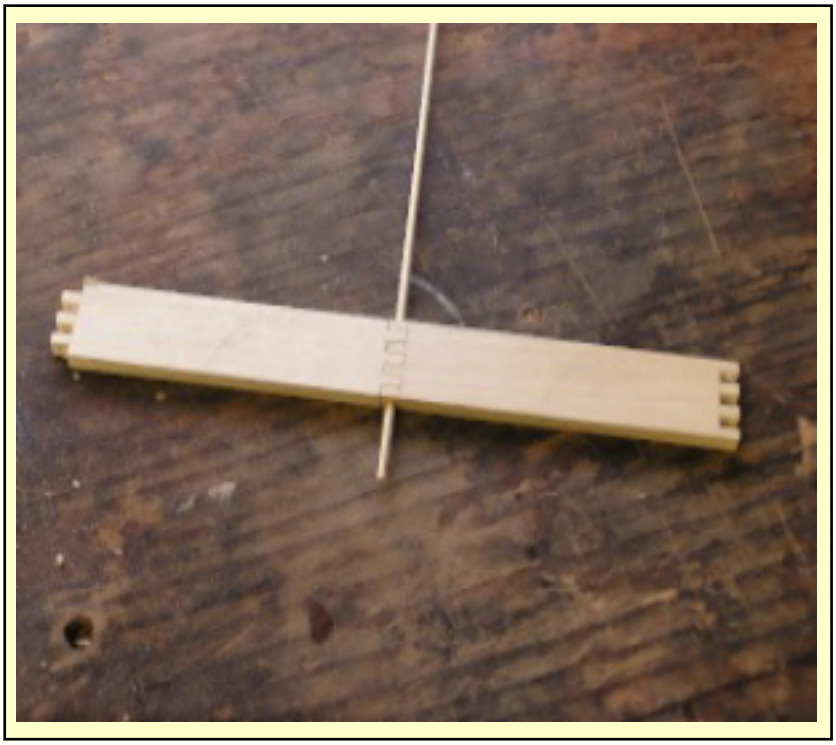


Figure 10

Figure 10

Rounding & Final Check
Round off the tongues of both ends and ensure that the hinge will fold through 90º. Test both ends with the Hinge Pin. **Figure 11** refers.

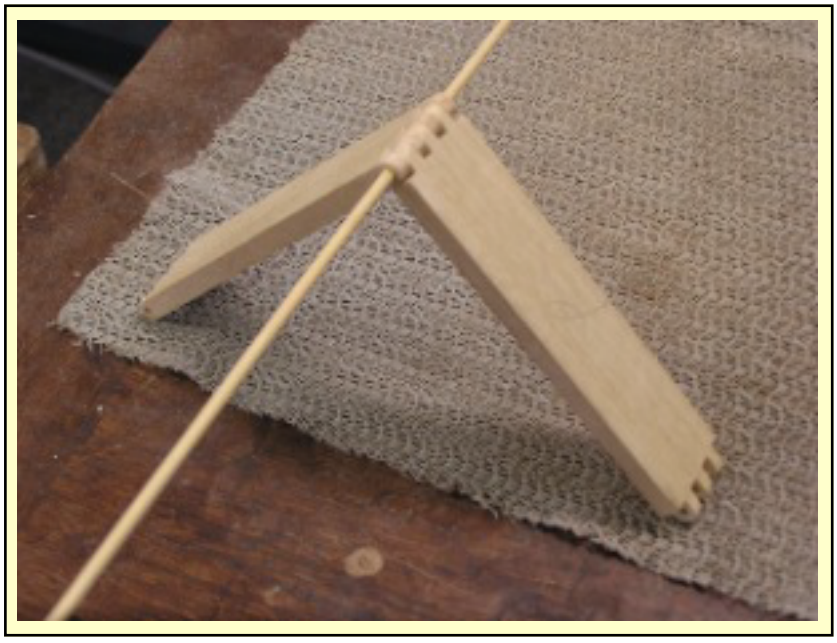


Figure 11

Cut all the matching ends of the hinge components to the appropriate size, and test all fitting again complete with the Hinge Pin.

Securing the Hinge Pin
Wax the sides of the tongues to prevent glue sticking and lubricate the hinge.
The pin is secured by pushing it through all but the last tongue and putting a dob of glue inside the last tongue and on the pin next to the hinge.
Push the pin home, and after the glue has dried, cut it flush with the side of the hinge.

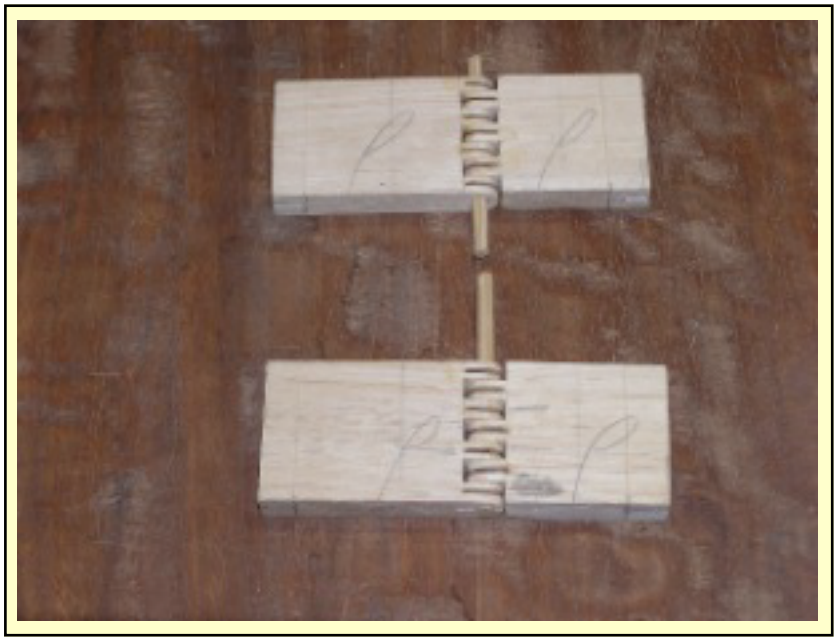


Figure 12

So there it is.....

How to make Reinforced Hinges on the Band Saw.

Now, just a note.....some of the pictures may appear to be out of sequence, as the holes appear to be drilled before the veneer is glued in etc. Well, after consultation with Alex, the sequence laid out in the article is probably the best way to achieve a great result from this WIP, so just follow the sequence.....and Robert is your Mum's brother.

Please join me in offering AlexS a big

Thank You!!

for his excellent WIP on Constructing Reinforced Wooden Hinges on The Bandsaw.