Constructing a Floating Base - Table Saw Technique #2 by Kevin Neelley

Photo 1 – Segmented base ring with floating disc. The slot (or dado) for the floating disk was made using a table saw. Base ring and floating disk were finished with lacquer prior to assembly. The desired final segmented ring was 5-1/2" OD and 2-1/2" ID by about ½" thick. The floating disk is about 1/8" thick. Calculated dimensions: Segment Edge Length 1.474", Board Width 1.543", Board Length 15".

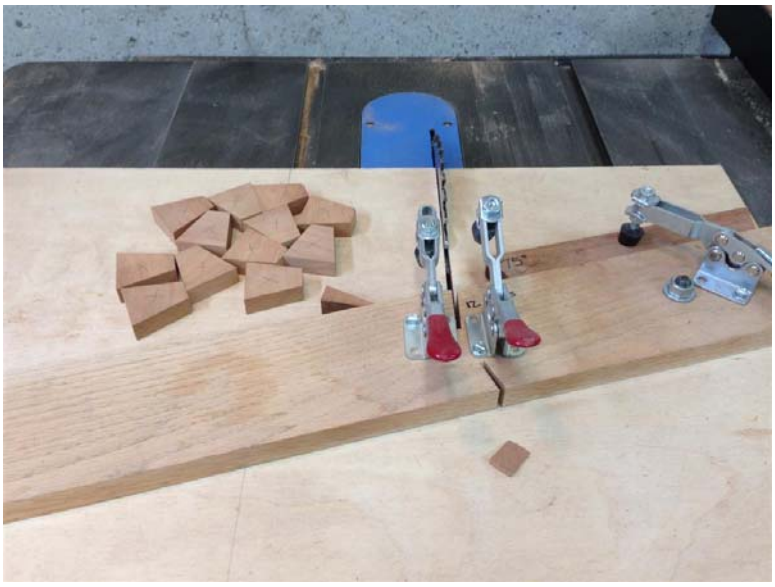

Photo 2 – The twelve segments were cut on my sled. I chose top and bottom of each segment and marked them with an X.

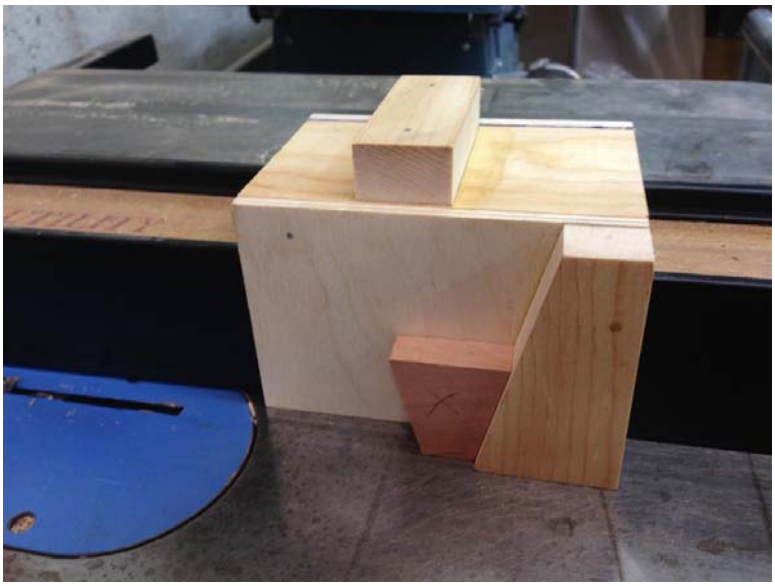

Photo 3 – I made a table saw fence fixture for holding the segments upright and securely while running through the table saw blade. A larger and more stable segment might not need a fixture, but this one did. A holding clamp for the segment is shown later. The fence is angles 15 degrees for a 12-segment ring. Fences for other angles could certainly be installed. The fence should be attached to the fixture with several screws because the clamp (when installed) will put some pressure on it. All segments were cut with the X facing outward to make sure the segment slots lined up correctly at assembly time.

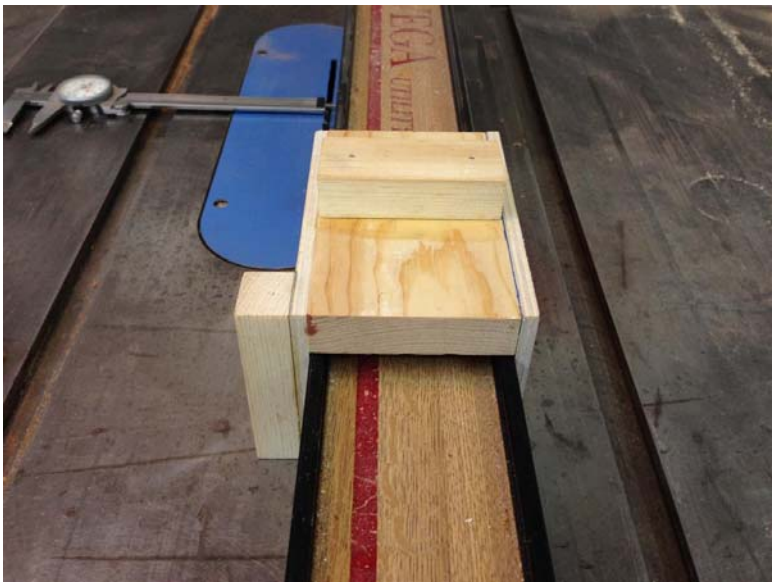

Photo 4 – Another view of the table saw fence fixture. The fixture was made with scrap pine lumber and ¼" plywood. The top block is the pushing handle.

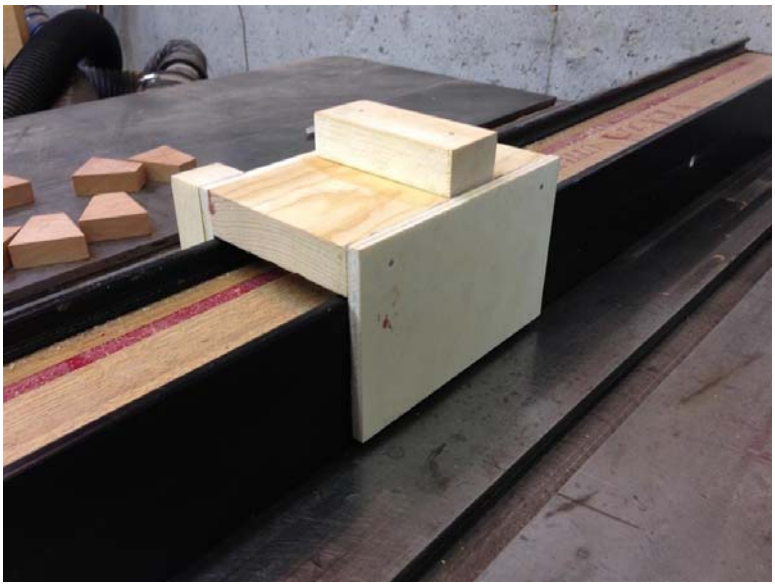

Photo 5 – This right-hand piece of ¼" plywood is not glued on. It is attached with two wire nails. The plywood piece should be removable to get access to the fence screws (for fence replacement) and also to fine tune the fixture width. I used blue masking tape to fine tune fixture width.

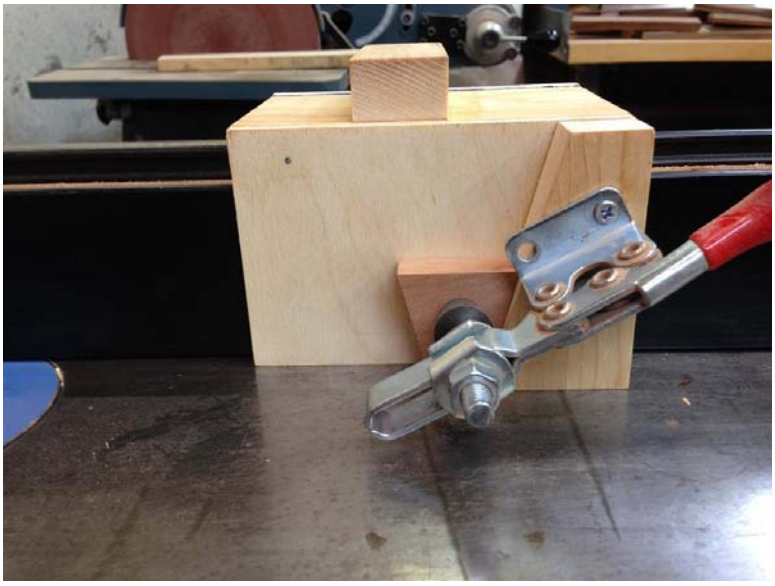

Photo 6 – The segment clamp was added. I used a push stick to hold down the segment when I pushed the fixture through the blade. I recommend that, for safety, you do not pull the fixture back through the blade. Instead, pick the fixture up off the fence and put it back down in its starting position in front of the blade.

Photo 7 - The blade to fence dimension was set with a dial caliper.

Photo 8 – The segments were glued together into two half rings. The segment top, marked with an X, is facing upwards. I sanded the half-ring butts to make the ring halves fit together perfectly. The disk was cut to about 1/16" radial clearance and sanded to a nice sliding fit, which is about .010" clearance.

Photo 9 – Test fitting the segment ring and disk.

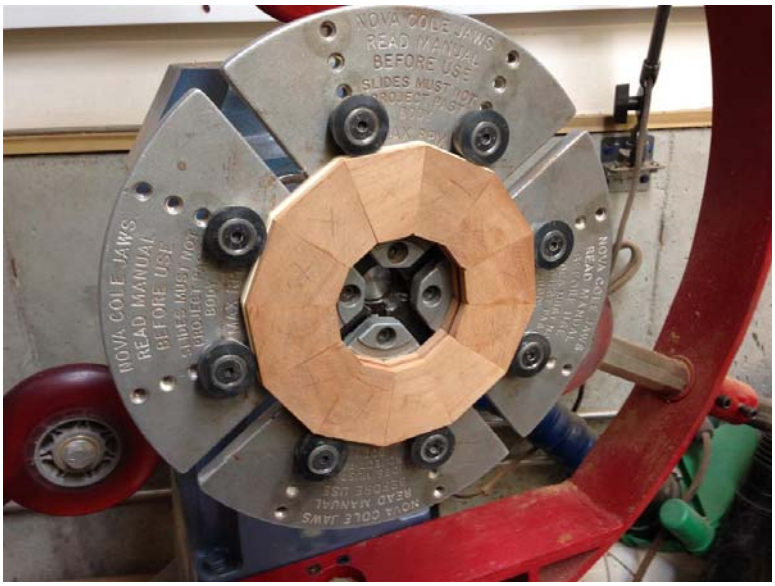

Photo 10 – The segment half rings were rubber banded together and clamped into a Cole jaw chuck. The segment ring inner diameter was turned round.

Photo 11 – The two rings halves have been separated to show the different curves of the inner side of the ring. Top ring side is facing up.

Photo 12 – All parts were separated and finished using lacquer. The disk was test fit again for looseness.

Photo 13 – The two ring haves were glued together, making sure the disk remained loose in the slot. A tenon was cut in the faceplate waste block to the exact ID of the floating disk recess. The tenon height has about 1/32" clearance to the floating disk (does not touch) to hold the faceplate end of the bowl in place as it is parted off the faceplate.

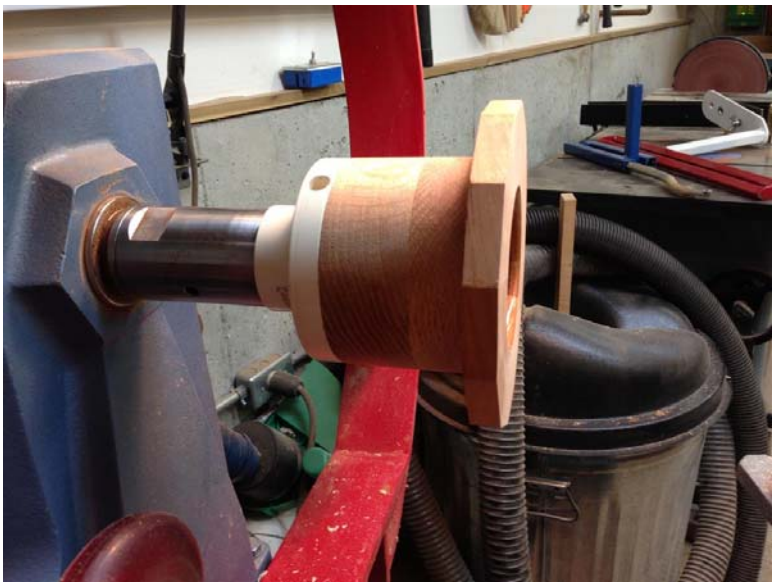

Photo 14 – The lacquer on the bottom side of the ring was sanded off and the ring was glued to the faceplate waste block.

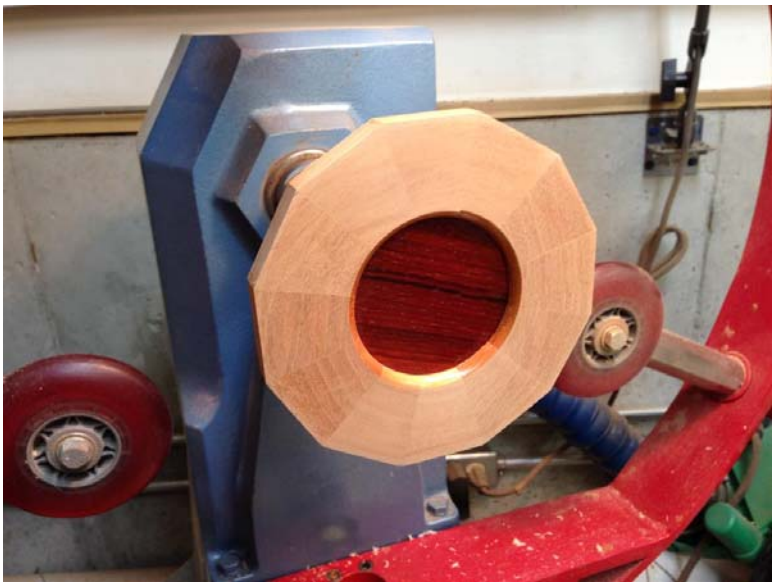

Photo 15 – The top side of the segment ring was faced off and flattened. After the bowl is completed and parted off the faceplate waste block, the floating disk recess can be used for exact centering of the bowl for reverse turning the base.