

The Captive Scarf Joint

John Coffey ©2020



I've been experimenting with a new splice. It is a rectangular version of the cone splice (which itself is really a round version of a scarf joint!). I had two jobs where I would save a substantial amount of touch-up time by cutting the scarf inside the wood, having nothing visible from the outside and a perfect opportunity to test out my idea.

The first set of pictures are of an easel. The back post had broken at the dowels where it joins the pivot. It's a cheap easel and anyone who knows me knows that I loathe dowel construction! In this case, an awful lot of leverage comes to bear on that join and I decided to replace dowels with a tenon. I don't like cutting in a square tenon because it weakens the wood further down, at the end of the tenon. A proper repair, in my mind, is a scarf joint where the tenon tapers. The pictures will show this better.

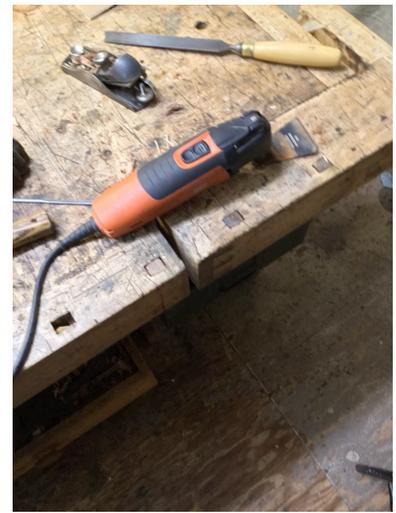


Above is the finished pivot/leg assembly.

To the right is the initial plunge cut showing the broken dowels and the splice ready to be glued in.



Having bought a Fein tool (Fein Multimaster) a few years ago to undo some nailed tenons, I realized that, using this tool, I could make this splice with relative ease. With a woodworking blade with teeth very much in the Japanese style, I could plunge cut into end grain at angles to pull a wedge out of the end (releasing the wedge is a bit more difficult as the V-ends of the cut need to be made using other methods). I could then cut a mating piece of wood and glue it in the end making a traditional tenon. While it takes much longer than removing both ends of a dowel and re-doweling, it certainly is stronger and leaves no touch-up after. The repair is completely invisible.



The second set of photos are of a second Empire table base which I “inherited” without a top. The block on which a top would sit was doweled on with four 1/2” dowels and did very little to hold the block in place. Traditional construction is a double tenon and that is what I recreated with this “new” splice.

To release the wedge, I simply drilled the ends with a chair reamer, and chisel out the waste in between. I then square up the ends with chisels, finishing it off with a 1/16” chisel at the bottom of the mortise.

I make the tapered tenons by laying out the angles on the stock and bandsawing the taper. They are fairly easy to fit. If it appears to be wiggling at the top of the mortise, then the pointy end of the tenon needs to be pared. If the top of the mortise is tight but the bottom is wiggling, then the top of the tenon needs to be pared. Once I have a good fit, I glue it in with epoxy. I make the tenons oversized so I have some room to make them square and parallel afterwards. Epoxy is helpful in providing strength on surfaces that might not be perfectly mating. However, if the time is spent to get perfectly mated surfaces then hide glue or PVA glue will work just fine.

