How I Make My Pen Stands

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By JD Combs at J&J Woodsmithing

A couple years back I found and downloaded a pen stand plan designed by Steve Good at Scrollsaw Workshop *(His is shown on the left)*. So to start off let me thank him for the inspiration.

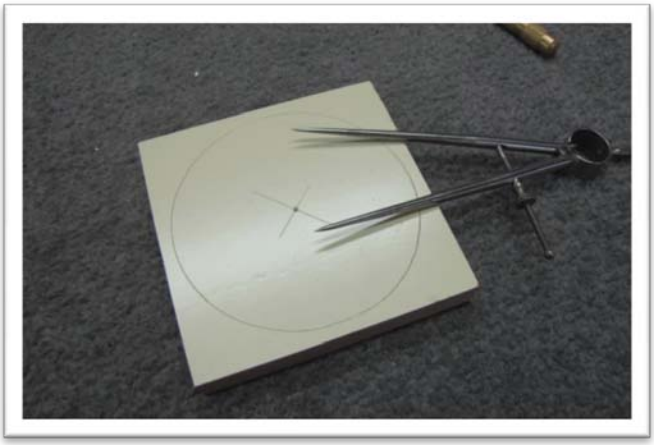
I had intended to someday make some like it but never really found an excuse. Well I recently needed something to display a memorial to my father, pens made from an old hammer handle of dad's. The pens would be gifts to my three siblings. The hammer handle had been found in dads shop many years ago just after he passed on.

I thought something like Steve's pen stand was perfect for my purposes. I needed a total of four stands. Steve's pen stand plan is actually a scroll saw template which would require a lot of sanding work so I thought I would see if I could come up with a similar designed that could be turned on a lathe, meaning far less finishing work.

Here is how I made my version, it is written as more of an explanation than a tutorial but it can be followed:

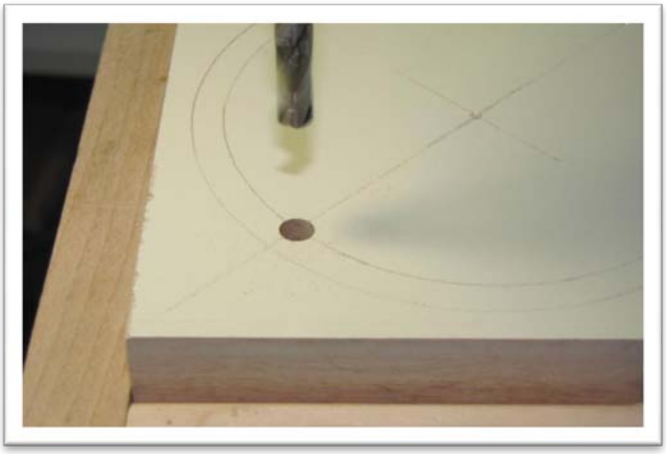
The stands are fairly small items therefore they can be made out of pretty much anything including off-fall (left over's) from other projects. I found a piece of five inch wide by 17 inch long 3/4 inch maple with some nice grain figure in it.

This photo doesn't do it justice, it is actually has beautiful color and figure in the wood. This is the last 6 inches of the piece, didn't think to photo graph the entire piece.



Note that it is painted on one side; the paint will be removed in the turning process.

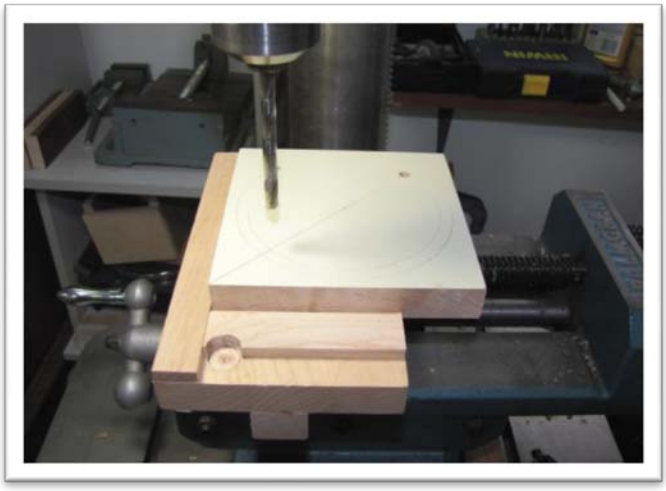
Step 1 – I cut the piece to a 5x5 inch square then set a divider to 2.5 inches. Found the center of the square by scribing lines across corners and scribed a 4.5 inch circle around its center. Reset the dividers and scribed a 4.25 inch circle inside the first one. The difference of 1/4 inch will be the nominal thickness of the pen support “post”.



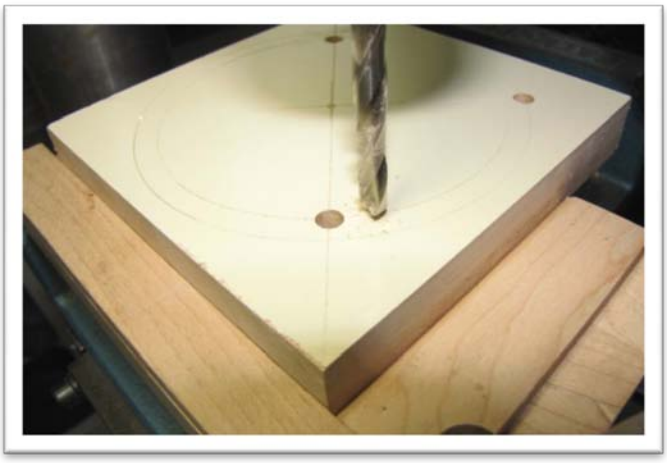
Step 2 - I needed to drill some 1/4 inch diameter holes with some relatively high precision (for woodwork) so I built a jig to insure the drilled locations were correctly located. The design of the jig will also serve other purposes in making the stand.

Here you see the jig in a drill press vice but it could be designed to simply be clamped to the drill press table. Making the jig should probably be considered a preportary step before starting making of the stand.

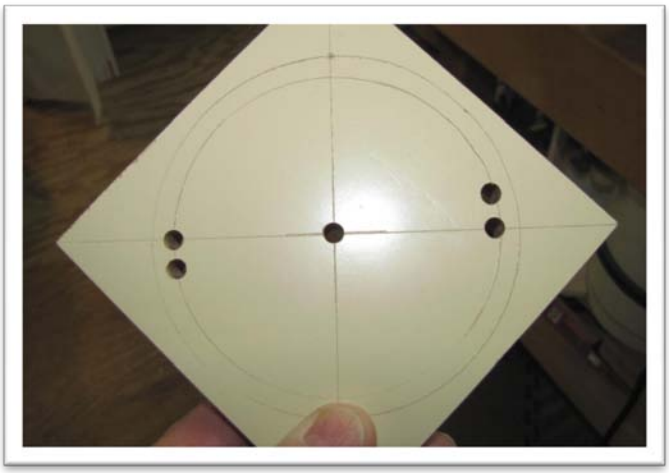
Two holes are drilled, one on each of two diagonal corners centered on the scribed diagonal line and the inside scribed 4.25 inch circle. The jig is basically just a two sided corner that allows the simple rotation of the wood blank by 180 degrees to drill the second hole opposite of the first but in the same location relative to the corner.



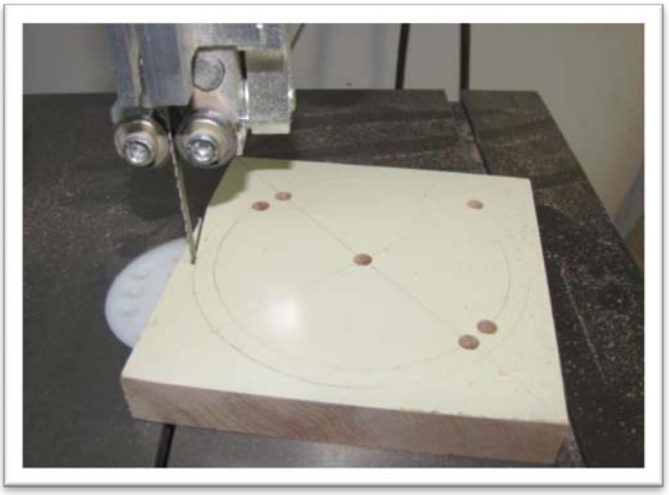
Take care that the holes are drilled on the inside line and not on the outside line. *I made that mistake as can be seen in this next photo.* The hole at the right hand corner is incorrect so we will ignore it. Now I shift the jig to the left slightly keeping the drill bit centered on the inside line so that a new hole will be about 1/8 inch away from the first series of holes.



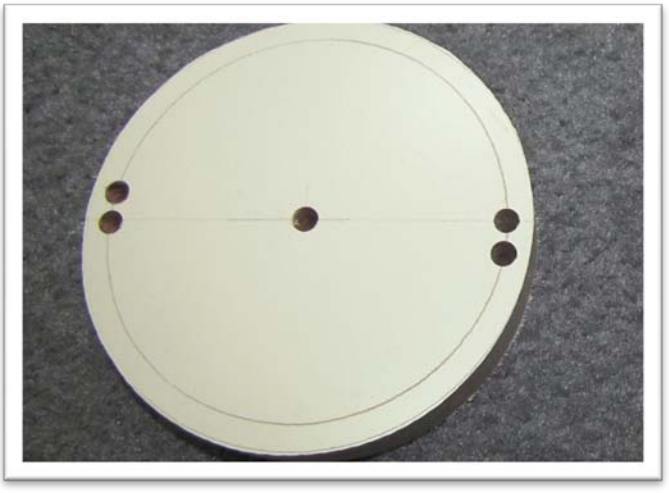
Step 3 - Drill the second series of holes similar to the first by drilling one then rotating the blank and drilling the second hole.



Step 4 - I then replace the drill bit in the press to drill a hole that fits onto a mandrel that I have for my lathe but at this point you could do whatever you normally do to mount and center something like this to your lathe. Just make sure it is centered and if you use a faceplate it must be 3.5 inches or less in diameter. In any case you should end up with something similar to this but with your mounting scenario and without your thumb covering the mistaken hole ;-).



Step 5 - (*Optional*)
Cut off the corners of the blank by cutting just "outside" the larger circle on the blank. I used a band-saw but it could be done on the lathe using a parting tool.



(A different blank without the mistake hole.)

Various Lathe Mounting Options

A custom mandrel (My preference)

A face plate less than 3.5"

A vacuum chuck less than 3.5"
I don't advise a center hole for this one

A wood worm screw

Step 6 - However you do it, mount your blank onto your lathe either square or round. Here you see my round blank mounted using a custom mandrel I made for another but similar purpose. I normally mount it in my collet chuck but it fits nicely in my Nova 3 spigot jaws as well.

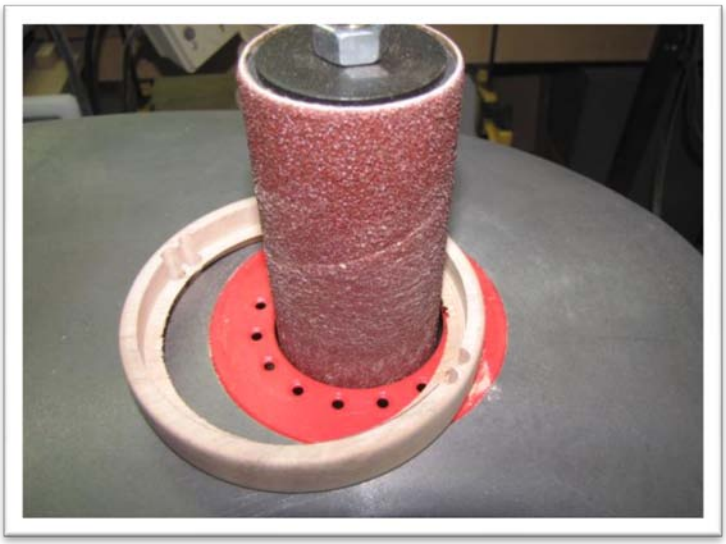
Step 7 - If you haven't already, part off the blank corners then turn the blank down to round flush with the 4.5 inch circle. Here you see where I have turned it down, slightly rounding the edges and turning off the layer of paint. I have also sanded the outer rim and sides of what will be the stand "post". If your "scrap" blank is like mine you may want to clean off the paint or other surface problems all the way to the center. It is much easier here than later, DAMHIKT. We can use the leftover center for the stand base. I don't use it in this tutorial.

Step 8 - Now I use a pencil and mark a line that bisects the four 1/4 inch drilled holes through their centers. This will provide a guide line for my parting tool.

Step 9 - Using my 1/8 inch parting tool I part just over half way through the blank using the "inside" of the pencil line as my outer limit. Now is a good time to sand the inside edge of the outer ring of the turning.

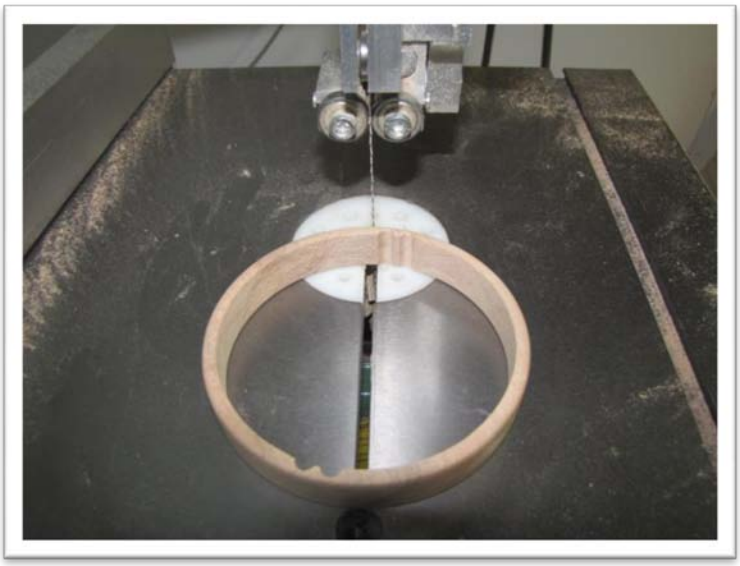
Step 10 - Flip your blank over now so that the side next to the headstock is now toward the tail-stock being sure that it stays on the same center. Repeat the last half of step 7 if necessary, then steps 8, and 9. In step 9 do not part all the way through until you have sanded the inside edge on this side. Your mounting option may play a part here; the part must remain centered after flipping it over. Once it is flipped, re-centered, *partially* parted-off, and then sand, finish parting the ring off.

You should end up with something similar to this with most of it already sanded and ready for finishing.



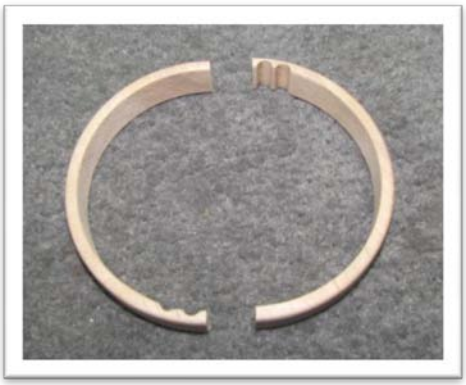
Step 11 - There are probably several options for accomplishing this task but in my case I used my new oscillating sander. A drum sander on the drill press or a Dremel would also work. However you do it, finish the inside of the ring to remove the thin web of material left from parting and to dress the inside for finishing. Take care not to remove thickness stock from the ring. You want to keep it nominally 1/4 inch thick.

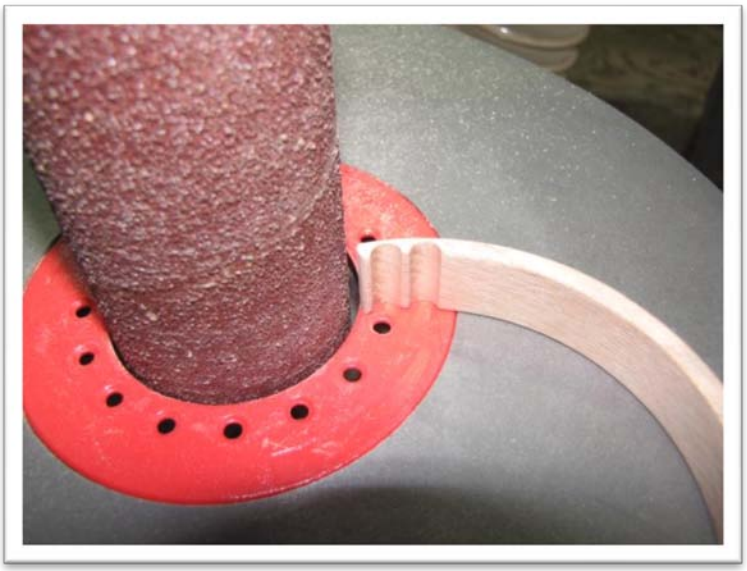
It should look like this when you have finished sanding it.



Step 12 - Take the ring to the band-saw or other thin kerf saw, cut the ring just to the left of the two coves made by the half holes in the ring. Leave about 3/32 to 1/8 inch of material between the saw kerf and the cove closest to the blade. Now rotate the ring 180 degrees and make a second cut exactly like the first cut. I like to line up the side of the ring that is toward me (bottom of picture) so that the approximate location of the first or second saw kerf is in line with the slot in the saw table depending on which one is being cut.

You should end up with two pretty close to identically shaped half rings.





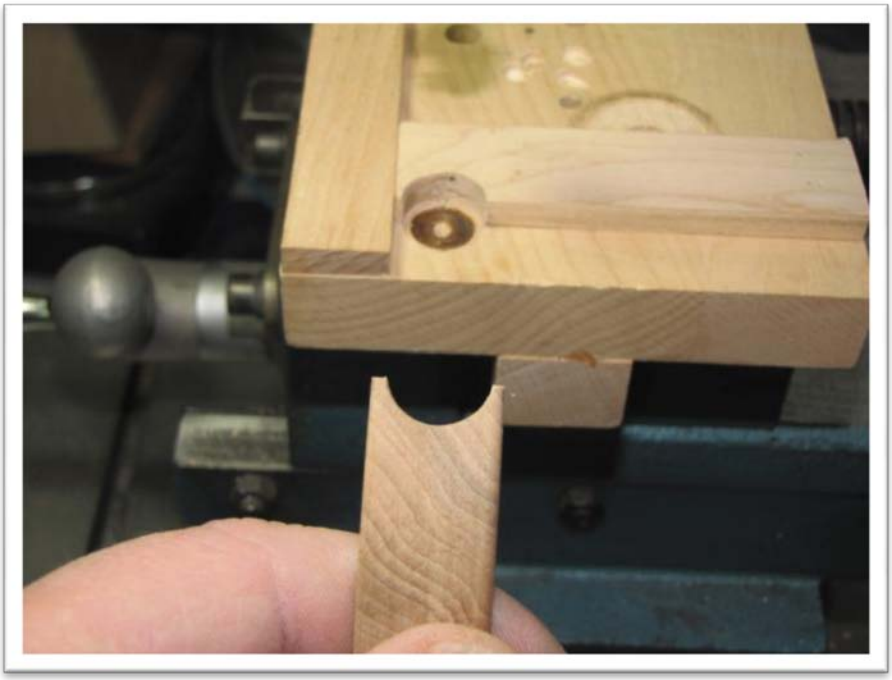
Step 13 - Take the half rings back to a sander. Dress up the ends to round them over slightly. Here I have rounded over the outside ring end edge to about a 1/8 inch radius and the inside to about a 1/16 inch. Basically here you can do whatever you think looks good.

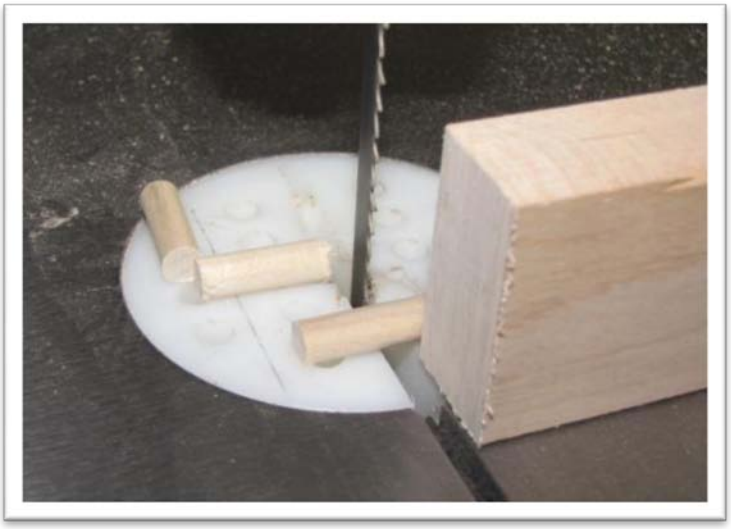
Here is what I was going for. Note the slight rounding on the other end as well, however, more will be done on that end later, it is not critical at this point.

Step 14 - Remember the multipurpose jig used earlier for the hole locations. Got back to it now and create a set-up similar to this. I have installed a 1/2 inch Forstner bit in my drill press. Center it over the non-coved end of the half ring, center both left and right and at the very edge of the end of the ring. The first cut will not only notch the end of the ring but the stop on the jig as well. The jig notch is not a problem it just shows where to place future ring ends and acts as an alignment for future setups of the Forstner bit location. BTW ignore all the holes in the surface of the jig; it is used for other purposes than pen stands.

Here is the result.

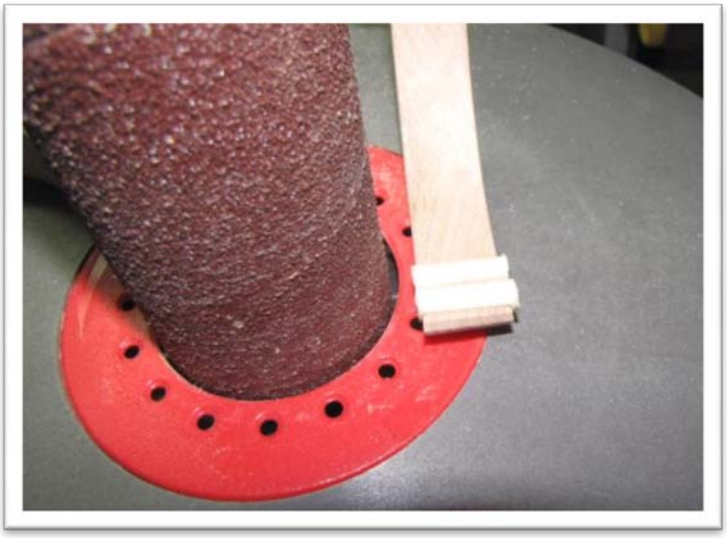
You can go smaller if you like but 1/2 inch will nest most any size pen nicely. You may want to do a better centering job for the notch then I did.



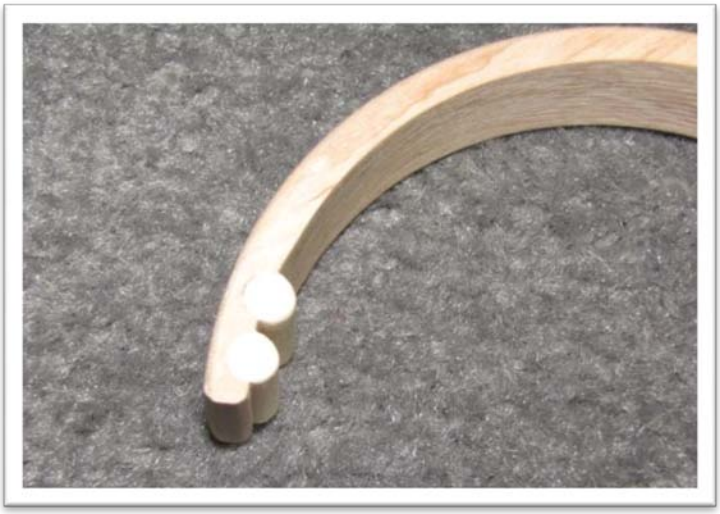


Step 15 - Now we need some 1/4 inch wooden dowels. I used some commercial Poplar dowels in my first stands but the result wasn't nearly as nice as turning them from wood similar to the rest of the stand. I will show the difference at the end. Whatever you use cut two 3/4 inch long pieces for each half ring (each stand).

Step 16 - Center and glue these into the two coves on the end of the half ring. I used medium CA glue which seems to work very well and I don't have to wait for it to dry. Note the contrast in wood color, more on that later.



Step 17 - Now back to a sander. Dress up the ends of the dowels so that they are flush with the edge of the post (half ring). Be careful if you have an aggressive sander, we are not looking to narrow the post end, unless that is a new design feature you like.



Nice and flush.

Step 18 - Now back to the jig. Use the installed dowels to "hook" the post over the back guide of the jig. The back guide of the jig is about 1 inch wide by 1/4 inch thick. It is just a piece of molding I found lying around that served the purpose. Install a 1/4 inch Forstner bit into your drill press, position it so that it is centered on the post side to side and centered on the back guide of the jig. Drill a hole about 1/8 inches deep being careful not to go through the post. Now remove the post out of the way and drill a little deeper to make a setup hole in the back guide of the jig. Use it in the future to setup the jig for a consistently shaped stand.

These are the 2nd, 3rd, and 4th ones I did. Notice the consistent hole location. For reference the center of the above hole will be about 5/8 inch away from the center of the first dowel or cove to the left in the photo.

Step 19 - Now go back to the saw and cut two more 3/4 inch long 1/4 inch dowels. Glue one into each of the two stand posts you just made. CA glue worked fine for me. Just make sure they are perpendicular to the post foot.

Now let's make the base.

The next photo is of 3 inch squares of 3/4 inch Black Cherry left over from some other project. I had drilled a hole in the center with the intent of making the upper-post of the stand as in the above tutorial, but then decide that 3 inches was too short for the stand. I tossed them back into the scrap bin until I realized I needed something for the base of the stand. This is before I realized that I could use the center cutout of the stand lathe process for a base, I didn't figure that out until the fifth stand.

However, the following process will work just as well for the "round blank" as it does for these square blanks. BTW there are no critical dimensions for the stand. This tutorial makes an oval shaped one but it is not necessary, a square or diamond shaped or even a rounded cornered rectangle would serve the same purpose.

The only semi critical point is, DO NOT MOUNT the post dowel into the center hole of the stand if there is one. Drill another hole along the length and about 5/8 inches toward the front of the stand from the center. Use it to install the post dowel into. The center hole will be hidden by the post foot. This will center the Pen more or less over the base. Installing the dowel into the center hole will have the pen too far toward the back of the base. Now let's make a base.

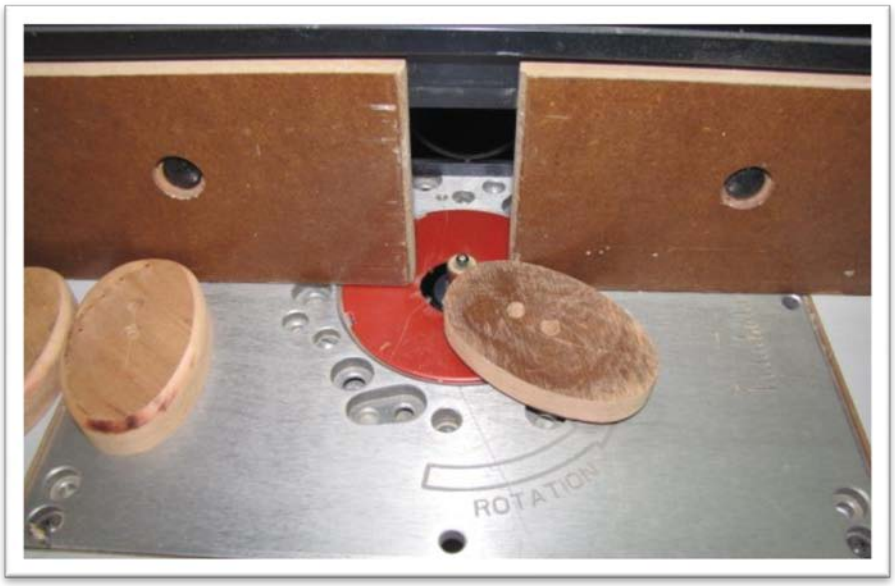
Step 20 - Gather your material for the base, either some contrasting complimentary wood such as this Black Cherry or use the Center from the above tutorial if your mounting arrangement does not destroy it. As shown below find the center of the blanks the 1/4 inch hole is not required but it came in handy for sanding and in any case it is hidden by the stand foot. As noted above, these already had the hole. In the process of finding the center, draw one of your center location scribe marks from corner to corner.

Step 21 - Set a divider so that from the center of the blank you can scribe an arc about 3/4 to 7/8 inch long on opposite corners of the bottom-side of the blank, the marks are hard to sand out if on top.

Step 22 - Reset the dividers and scribe two more arcs across the sides of the blank which will be the other two corners of the blank. Set the fixed pivot point of the dividers in from a corner about 1/16 to 1/8 inch, set the other point so that a scribed arc on the other side starts and ends at about 1/2 to 5/8 inches from the ends of the previous arcs. If you are using a round blank the first two arcs above may not be required, also you will set the 2nd arc pivot 1/16 to 1/8 inch in on a diameter line. Now take the blank(s) to the band saw and cut them on these arcs. You should end up with something that resembles and oval.

Step 23 - Take the rough ovals to the sander and shape them into a more pleasing shape. If you are making more than one, drill in the second hole and use it and a 1/4 inch dowel (or two) to "tie" them together so that they are all shaped and sanded at the same time and will have the same shape.

Just sand them and finish as you like. I routed a 1/4 inch round-over on the top for what I consider a more pleasing appearance. Now let's assemble the base and stand.



Step 24 - Glue the stands dowel end into the base. Again CA glue worked for me. Note the orientation of the post and the fact that the post dowel is installed NOT in the center hole of the base but in a new offset hole.

Take a close look at the assembled stand, do any touch up sanding, pay particular attention around the two dowels at the bottom. When you feel it is satisfactory apply your favorite finish and you are done.

Let's compare my samples with different base materials. Note the difference between these two stands. The LH stand below is made from the same piece of Maple as the RH one but using the left over center from the lathe to make the base and a slice of the same board to turn two 1/4 dowels for the bottom feature.

The RH stand below was one of the ones depicted in this tutorial. It is made from the same Maple except that the base is made from Black Cherry and as mentioned the 1/4 inch dowels in the bottom feature are Poplar.

Future stands will have matching dowels at least, poplar is much too light. I do rather like the Cherry base.

Feel free use this tutorial but please advise the originator that you have done so.

Critiques and comments appreciated.