

Manually Duplicating Small Pieces by Dan Brandner

April '26 Demo

Duplicating small pieces manually is really about having a good way to mark and measure elements repeatedly. Pair that with good technique and a good eye.

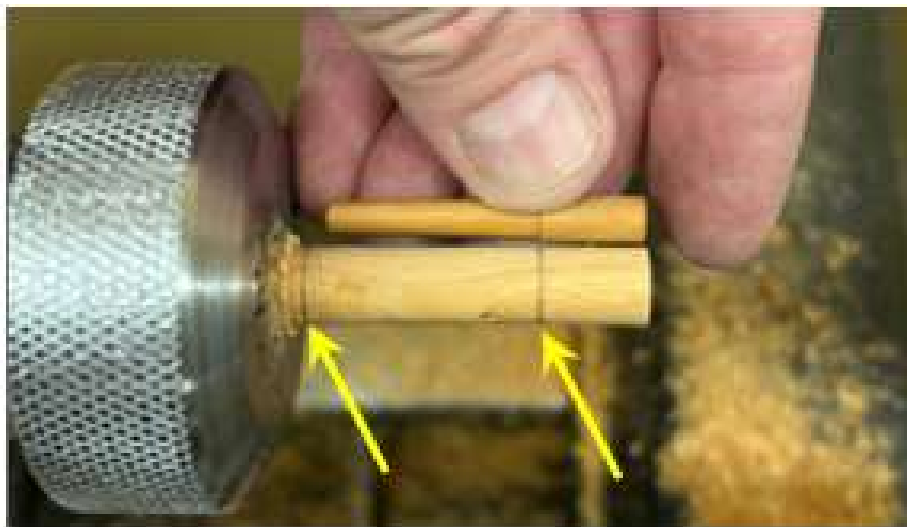
I was recently asked to make a cribbage board for an older couple who wanted larger pegs and larger holes to help with their eyesight. The board would be made on my CNC machine, but I thought I would turn the pegs. I made them a sample block to see if these sizes were OK. A normal board has $1/8$ " holes, and I figured $1/4$ " were too big so I settled on $3/16$ " peg holes.



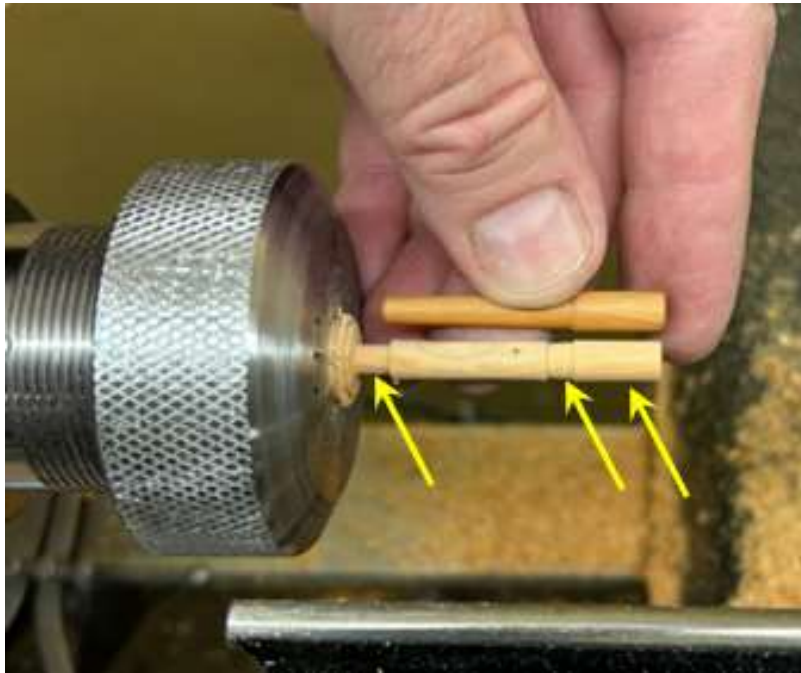
Cribbage Peg Sample Block with $3/16$ " holes.

I made the first peg, guessing at the height, how deep to be in the hole and with a simple design. These samples were $1-11/16$ " inches long, with a straight handle $1/2$ " long, and a tapered shaft going from $13/64$ " to $11/64$ " and about $3/16$ " [$12/64$ "] in the middle. I planned a hole depth of $3/8$ ".

I made these light-colored pegs from buckthorn, a good use for this small diameter hard wood. I started between centers, turning it round with a spindle roughing gouge, and then put a $1/2$ " tenon on one end so I could mount it into a collet chuck. Alternatively, you could hold it in a small set of jaws or use Alan Lacer's method of manually shaving off the corners of your stock to a slight taper and tapping it with a mallet right into the MT2 taper of the headstock.



The first step is to turn your spindle fully round, then mark off the shoulder of the peg's handle as well as the full peg length. I also used the skew to pare a nice and square end to the top of the peg



Next turn the diameters of the handle, the shaft below the handle and the tip to size. I stayed a little generous on the diameters to allow for planing with the skew and sanding, and checked with a digital caliper near the end.



For sanding, I used a 4-sided sanding block I had made by gluing sandpaper to a nice and square block of wood. I had originally made this 12" long sanding block to finish sand a French rolling pin. Having used the skew, I only touched it with the 320 and 400.



Finally, taper the shaft from the upper shoulder below the handle to the tip by planing with a skew. Adjust as needed to specified measurements with the final step being sanding. Notice, I've remarked the length for parting off.

For a small piece like this, I finished it with Aussie Oil before parting off. When parting off, try to get that length/height as accurate as possible, adjusting with hand sanding if needed. It is very important when duplicating small playing pieces like these cribbage pegs or chess pawns that, at the very least, the heights are the same. The eye has a way of drawing attention to any difference in height.

It doesn't hurt to use an electronic caliper to measure down to 0.01" or 1/128" of an inch. Will they be EXACT duplicates? Probably not, but well within seasonal size changes for wood, and they will be hand turned.

I'll be making pegs of different colored woods, and may make the handles a little more elaborate too.

Now, let's make a chess piece. This was a request by Grayson Schwartz on how to manually make small duplicate pieces.

Manually Duplicating Chess Pawns

As I played more with my skew for practice, I started duplicating a chess set that I got back when Bobby Fischer was dominating over Spassky in 1972. This is a rather small set as far as pieces go. A traditional “Staunton” set, designed by Nathaniel Cooke in 1849, and popularized by English chess master Howard Staunton has defined height and shape standards. The Staunton set has become the standard for chess play and international competitions.

Making a pawn follows the same steps as I have done with the cribbage peg, with just a few more things to measure. It will still rely on good technique and a good eye.

Because of all the things to measure, I made a simple template out of an old plastic card. [It’s plastic, so don’t measure the spinning spindle as you will melt it.] On this template, I marked out 4 different spindle sizes, for the elements on the pawn, as well as the length markings for placement on the spindle. I call it my Mini Pawn “Storyboard”.



For dimensions, I have a 1-1/4” height for my pawn, with a 5/8” base, a 7/16” collar, a 3/8” ball on top and a 1/4” neck under the collar.

For the pawn I chose a maple blank cut from a 1” maple board. Cut square, I can hold it in a small set of jaws in my chuck. This has the advantage of being able to make a pawn, then, loosen, and slide the stock forward to make another one.

The first step is to turn it round with a spindle roughing gouge to about the largest diameter element on the pawn.



Next, I turn the diameter down to the largest part of the pawn, its base. Again, leave diameters a little generous for refining and sanding.



Once the spindle is all down to 5/8" and I've pared a clean end on the right of the spindle (bottom of pawn), I can mark the elements on it with the storyboard.

The 3 notches on the storyboard indicate:

- where the ball begins on top
- where the bottom of the collar is
- where the notch on the base is.



Next, I used the parting tools to reduce the diameter on the different elements. Specifically, the ball diameter, and neck diameter.

I used two different sized parting tools below the collar.

You might want to allow for using the skew to pare a nice surface on the bottom side of the collar.



After this, I turn the notch into the base, start my gradual slope up to the neck. Placing one decorative shoulder into that slope. Shape the collar, straight underneath and a slope straight up to the ball, then turn most of the ball on top.

Use either the skew or a spindle gouge for this.

In between, I'll hold another pawn up to the spindle to make sure I'm staying on track.

I have the base to the right, so if you want to drill it out to add some weights, you can do that as a first step. As a final step you'd add felt to the bottom in that case.



Finally, I will sand and finish this with Aussie oil before parting off. You want the speed of the turning spindle to help with the finish.



And at last I will part off with either a skew or spindle gouge very carefully, to minimize the amount of sanding on the top of the ball. Then finish what you had to sand with your Aussie oil rag, rubbing it in hard with your hand until it heats up to set the finish.

The first pawn will be the easy one. Making the others match will take practice. Remember they are handmade, so don't have to be 100% identical, but as close as you can make them. Also remember, that their height is critical as the eye can pick out that difference more easily. Making them all the same height will go a long way in making an attractive set.

When I get around to making a set, I will probably make many extra pieces from which I can then select the most similar ones for the set. The extra practice will make the later pieces much better than the earlier ones.

So far, I've made some pawns, a rook, a bishop, a Queen and a King, to see how difficult it would actually be. Not too bad, it seems, to make the first ones anyway. I still need to work on a knight, and I'll be using some wood carving techniques for that.