



International Association of Penturners

Studies in Segmenting IX: Arrow Shaft Chevron Blank

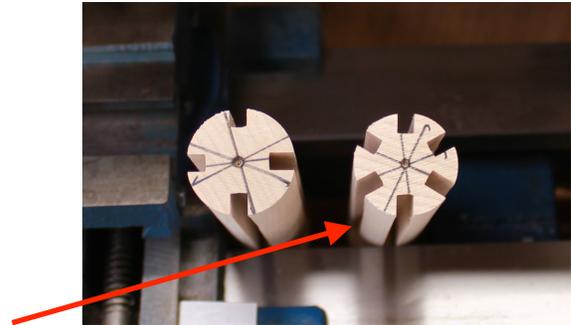
Author: Mark James August 2019

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In this tutorial I will first describe how I made a six sided Chevron Arrow Shaft blank/pen. Since I used some equipment that most pen turners do not have, at the end I will also show a different method to construct the arrow shaft.

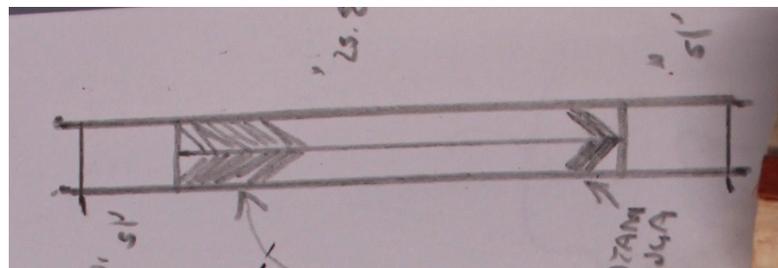
After making "a few" four sided Chevron blanks, I wanted to try something different. Why not a six sided blank? I have a 1950's metal lathe with no motor, but a heavy-duty 360 degree indexing plate, a trim router mounted on the cross-sled, and can cut very accurate slots into pen blanks. It's mission in life is to cut slotted blanks. The blank on the right is the one I used for this project.



This is a picture of the end of the blank just prior to turning.



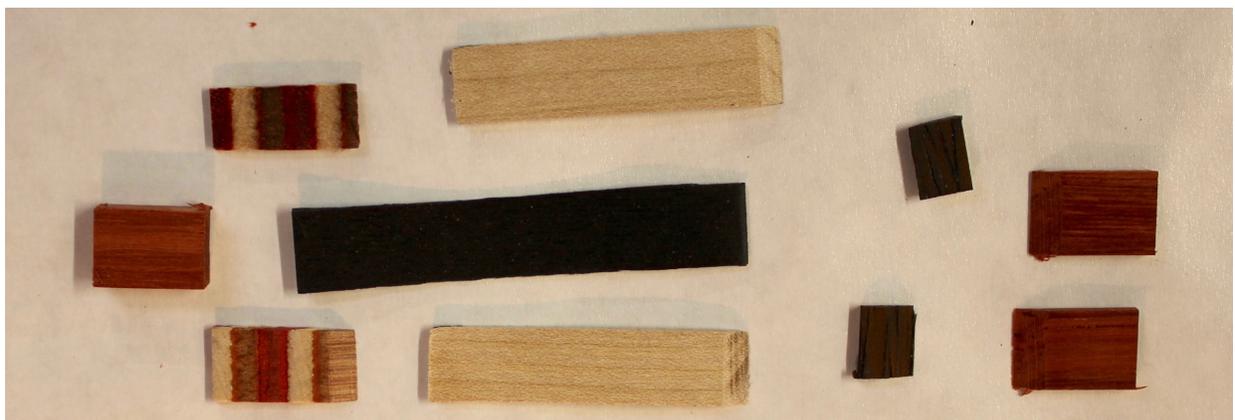
I knew the kit I wanted this for, so my tube length was also known. This is the rough draft for the design, and the final segmented inlays (shown just for reference for where I am heading). The dimensions can all be modified for the tube you may choose. The process is more important than the dimensions, but the rough draft is still helpful to determine the dimensions of each segment.



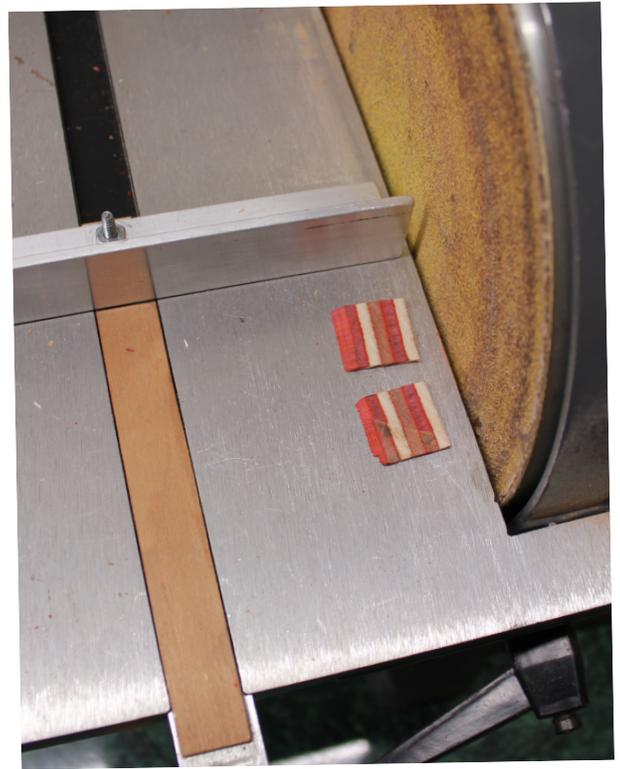
I decided to use a 75 degree angle for all the segments, and used a Spectraply pen blank for the feathers as I liked the color scheme. The blue tape was an easy temporary zero tolerance plate. I adjust my blade height frequently, and with the blue tape I can simple tear it off and have a perfect fit with a new piece. Slices were cut for the Chevron at about .077" width, for a final Chevron/arrow only of about .154". The angle and thickness are all adaptable.



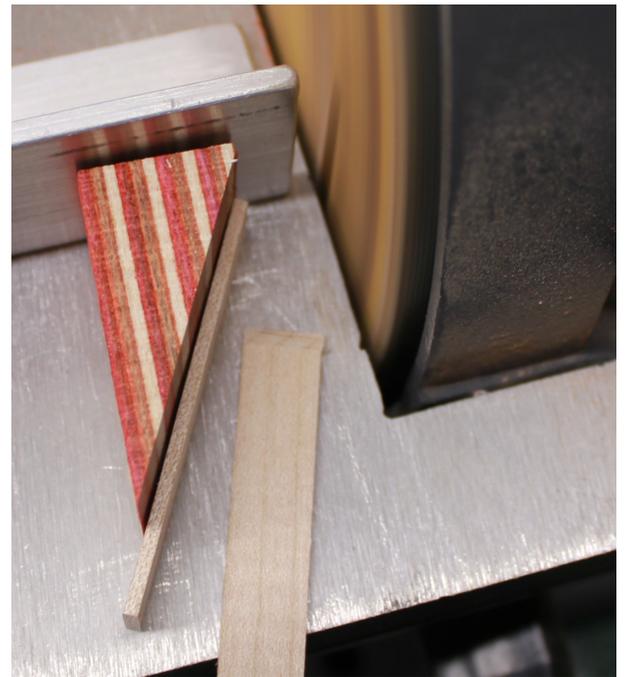
Each arrow needed 10 segments, so 60 segments were assembled.



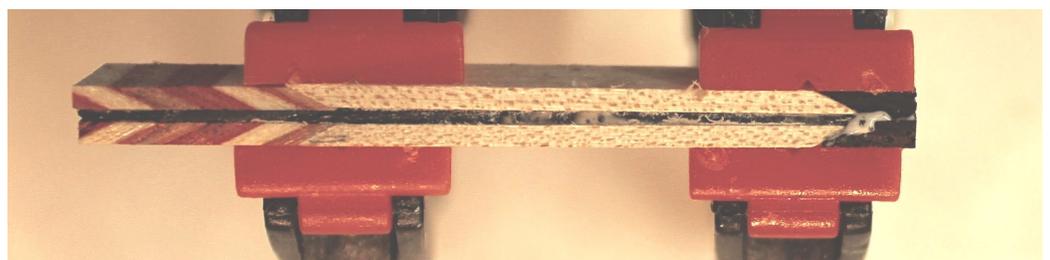
The ends and the sides of the segments needed to be sanded to insure that all patterns would be in alignment. The maple ends needed to be at a 90 degree angle to the sides.



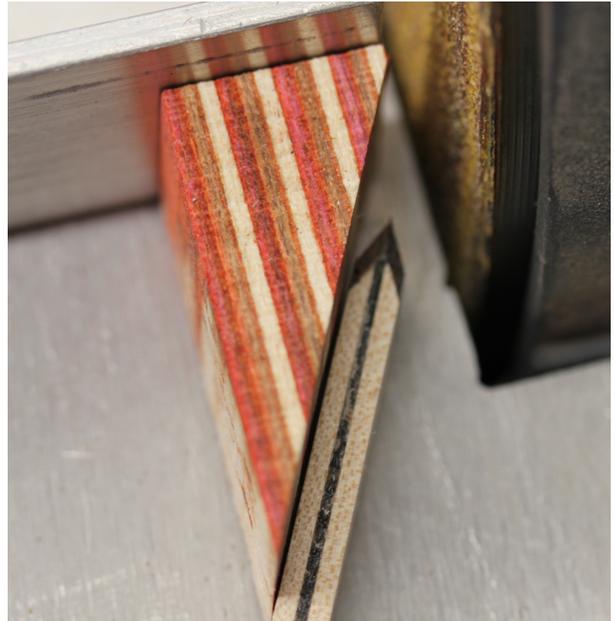
I then used the leftover end of the spectraply as a guide to sand the ends of the segments for the 75 degree angle. If your angle was a bit off (e.g., 73 or 77 degrees, don't try to replicate it with a miter gauge, use the end of the spectraply, it will give the exact matching angle). Each piece needed only one side sanded, so this was easy; I just needed to make sure that each set of matching pieces were the same length. The spectraply "feathers," the maple sides (both ends), the black tips and the end caps all needed the 75 degree angle. Make sure the bed of the sander and your guide bar are also at a 90 degree angle to the sanding disk.



Here's one arrow almost done.



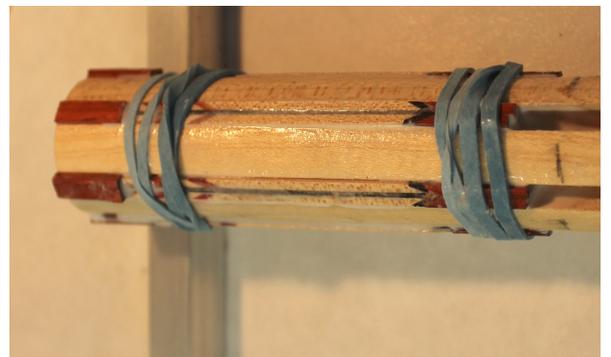
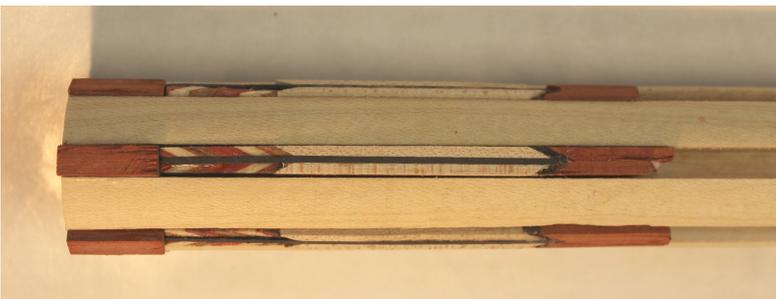
Sanding the black tip to final shape.



The six segmented inserts (the ends were later sanded for an even match).



A test fit, and the glue-up with 2 part epoxy.



I waited until the next day, then turned the blank round to fit into a collet chuck. I drilled the tube hole on the lathe, centered the blank prior to gluing-in the tube, then finished the turning and finishing.



Not too bad for a six sided inlay blank.



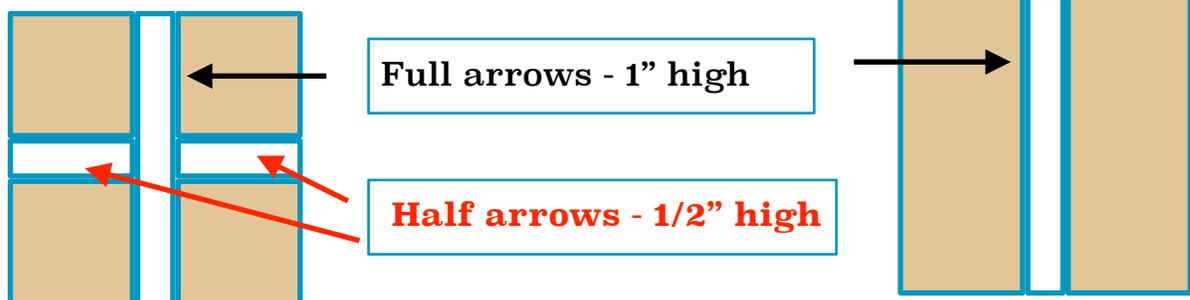
Theme and Variations

I promised a few different methods. I have not completed these to a final pen , so this is more of a discussion to spur some creativity.

One: This is for those who do not have the capacity to make the six-slotted blank, and will make a four sided or two sided blank (more details on how to construct these are in previous articles).

These six segmented inserts were about 1/4" high, and were constructed to fit into the six slots.

Simply make two of them 1" high, cut one in half and now you have the three inlays for a conventional four sided or two sided blank.



Two: This is for those who do not want to cut multiple small segments, sand the edges to an appropriate angle and glue up each inlay in stages.

You can construct the arrow design directly from a variation of the Variable Brick Chevron Blank (Studies In Segmenting III - IAP Library).

With some planning, you can construct a Variable Brick that once cut into slices and paired for the chevrons, will do a nice job of making your arrows. In this example the 1" maple layers (top and bottom) have extra material so that the arrow can be centered on the tube. The thicknesses/colors of the arrow feathers can be adjusted as you wish.



And as seen below, if you modify the middle section you can lengthen or shorten the arrow shaft. Adjust for whatever blank length you want. **Oh, have FUN!**

