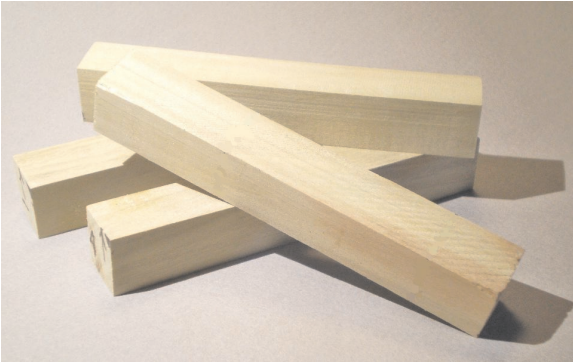


Inside/Outside Ornaments

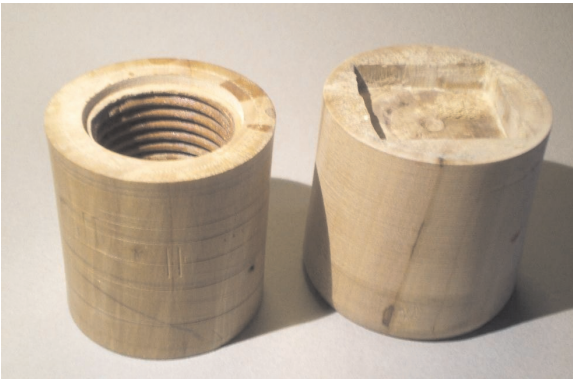
H.B. Pye January 2015



An Inside/Outside turning is made from four square pieces of wood cut to an equal length. It is important that each of these piece are as square as possible. For this example, each piece of wood is 5/8" x 5/8" x 4".

Maintaining accurate length will assure accurate alignment when the four pieces are reversed.

This piece, when mounted, will not be turned round. A 2" wide cove will be cut slightly off-center with a minimum diameter of 1/2".



To mount the four pieces on the lathe, two threaded blocks are used. The block on the headstock end is tapped 1-1/8" by 8 tpi. The block on the tailstock end is threaded 3/4" by 10 tpi to match the Oneway live center.

Both blocks have a 1-1/4" x 1-1/4" x 1/4" deep recess in their ends. This recess is relatively easy to make. Using a 1-1/4" Forstner bit, drill a 1/4" deep hole into both blocks. Then use a carpenters chisel to remove excess material in the corners, leaving the recess square. Thanks to Michael Kehs for suggesting these holding blocks.



The four pieces are mounted between centers using the holding jigs. If the jig is made accurately and the four pieces are sized correctly, the jigs will hold the wood securely. This is not always possible. In those cases, the four pieces can be glued together. Do not glue the entire surfaces, just glue at the ends. A drop or two of thin CA should be enough. A very small drop of white glue or double-sided tape should also work.

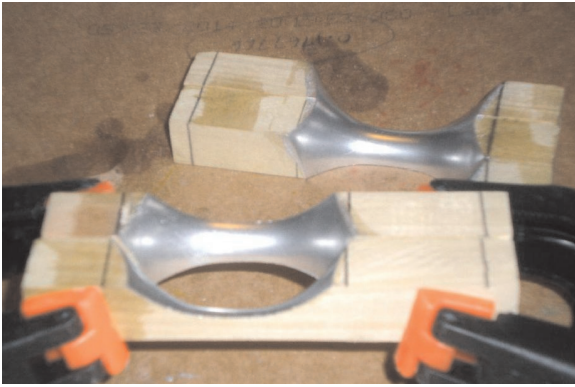
The two sets of pencil lines define the location of the cove.



In the picture on the left, the first turning (inside) is partially completed. The goal is to have a symmetrical cove between the two pencil lines. In this case, the left side is complete, but more wood must be removed on the right. The smallest diameter should be roughly 1/2" in diameter. The cove should be sanded through the grits to 320. A coat of sanding sealer followed by a light sanding with fine (400 to 600) paper will prepare the surface for finish.



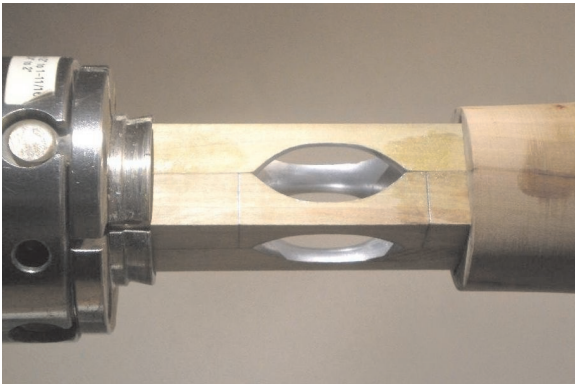
On the left is the completed "inside" turning. Notice the cove touches the guide lines only at the corners. This is the proper alignment since the four corner edges will form the center line once the pieces are reversed. In this case, the inside is finished with silver RubNBuff, a carnuba wax, varnish and anodized aluminum combination. Once applied, the surface is allowed to dry for a few minutes and then buffed. It should be allowed to dry fully overnight.



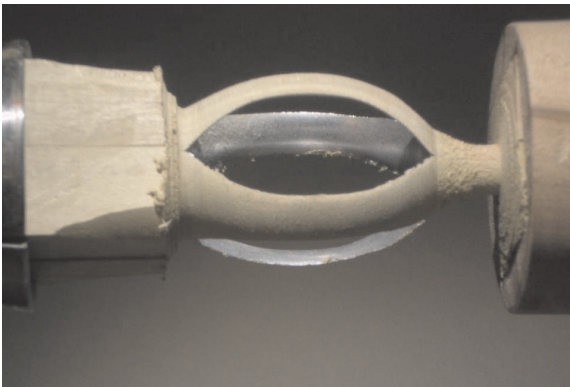
After the inside is complete, each of the four pieces is rotated 180° moving what had been the inside, to the outside. Pairs are glued and clamped. The surfaces to be glued must be flat. If necessary they can be flattened on a piece of sandpaper laying on a flat surface. Glue should be applied to all surfaces, but used sparingly. If the RubNBuff is not dried, glue squeeze-out will discolor it.

When the pairs are dried, they are glued together following the same procedure.

FLAT GLUEING SURFACES ARE IMPORTANT!

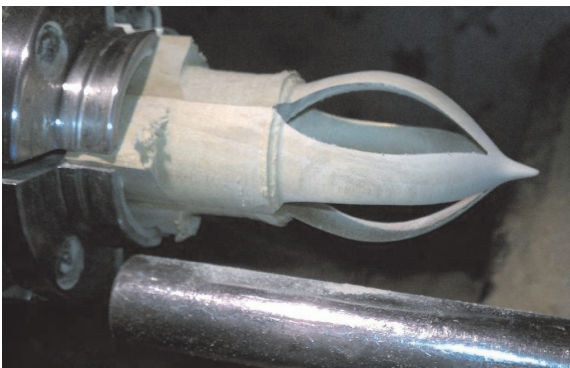


Once all the glue has dried, the pieces are returned to the lathe. The holding fixture is used on the tail stock. A live center could be used, but splitting the pieces with the centering point is possible. A chuck should be used on the headstock. Since the right end will be finished and parted off, a secure method of holding the piece is necessary. Other methods of holding the right end may be possible, but a chuck is far-and-away the most convenient.



When turning the outside, the tool is cutting air a large percentage of the time. Because of this, the lathe speed should be as high as possible. In any case, sharp tools and light cuts are necessary. Remember all the torque from the headstock is transmitted to the right end through those four thin ribs.

Start by turning to a cylinder continuing until the center of the webs have a knife edge. Then start narrowing the ends maintaining a constant thickness of the webs. Continue this on the right end until an "Ogee" curve is created.



Continue refining the right end. The intent is to complete the ogee curve into a relatively sharp point and to maintain a uniform thickness along the entire opening area. Your fingers make an accurate thickness gauge.

Before parting off the right end, sand through the grits, sanding from the center of the ornament to the right end.

This completes the right half of the ornament.



Continue shaping the left end. This end will have a cylindrical section instead of a point. Maintain a constant thickness until the stem area is reached. Sand the body carefully before cutting the stem to final thickness. Part off leaving a stem about 1/4" long. Except for adding a hook and finishing the outside, the ornament is complete.