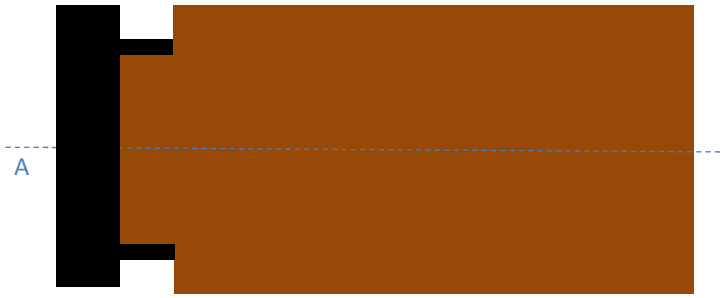
Multi-Axis Candlestick

Design and Notes By: Arnold Ward

1



Start with a 3” square 6” long. Round off the piece on the lathe and square the ends. Cut a tenon on the end that fits fully into the stronghold chuck without touching the bottom. Mark the #1 jaw position on the wood.

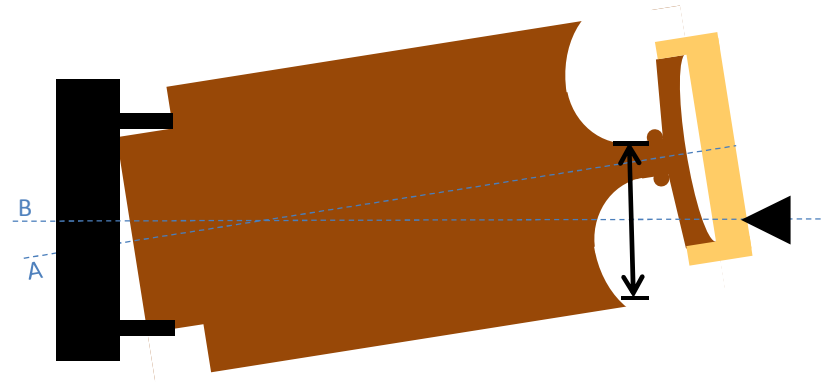
2

Cut the top of the candle holder shelf, where the metal holder will attach. (known as the Bobèche, for catching wax). Cut the diameter to the size of the cap that will fit over it so it fits very snug. Sand the top smooth. Mark the center now with a small dimple for a drill later.

3

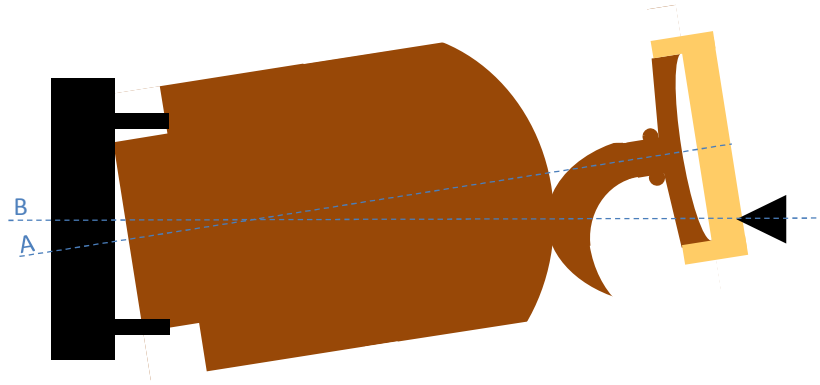
Put a tight fitting cap over the top. If necessary, use tape or a paper towel to get a tight fit. Mark the position of the cap on the wood. Using the tailstock for support, cut under the Bobèche. Sand smooth.

4



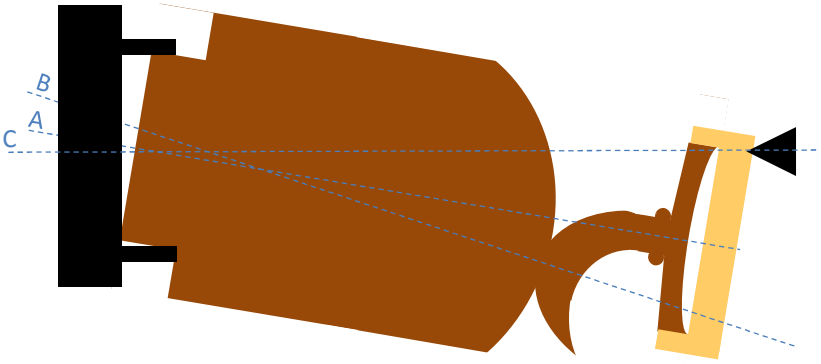
Offset the tenon in the chuck so that at least 2 teeth are holding. Clamp tightly. Sight the angle to ensure that there is enough wood at the exterior to allow you to cut to the stem. Remove the cap and use a center punch to create a dimple in the cap for the tailstock center and then put it back to same position. Be careful not to break the stem when applying pressure with tailstock.

5



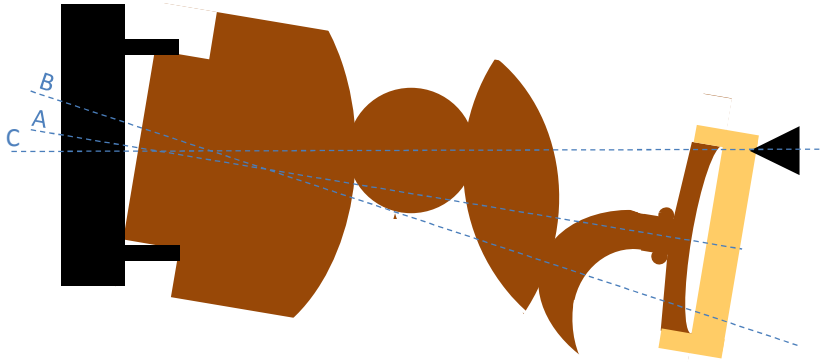
The fun begins! Use highest RPM you feel safe with. Keep your fingers outside the tool rest! Cut down to the stem and make a smooth curve around the bottom on the right side of the cut. For the left side, make an arcing cut to be the top of the disk. Before sanding, put tape over the underside of the Bobèche so you don't accidentally scratch it when sanding. Sand smooth.

6



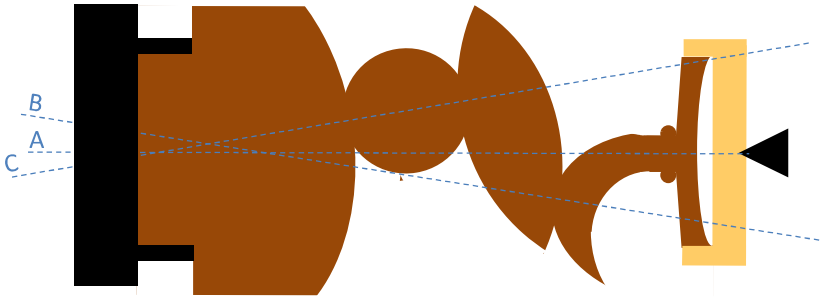
After sanding, release from the chuck and re-grip at a new angle. The biggest disc can be achieved by tilting the piece directly opposite of the first tilt. Again, make sure you get two teeth holding in the chuck. Remove the cap to make a dimple for the tailstock center and don't over-tighten the tailstock.

7



Cut the bottom half of the disk, then cut the sphere and the platform the sphere is sitting on. Make sure to leave enough wood for the base. Sand smooth. Again, use tape to cover already sanded parts, then sand this section.

8



Re-seat the piece in the chuck using the mark that was put on the #1 jaws. Remove the cap and sand the edge of the Bobèche.

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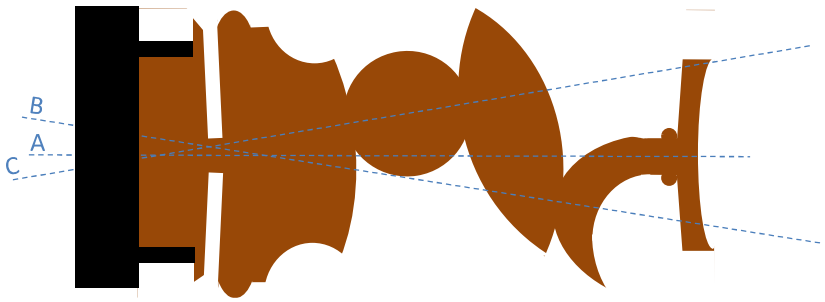
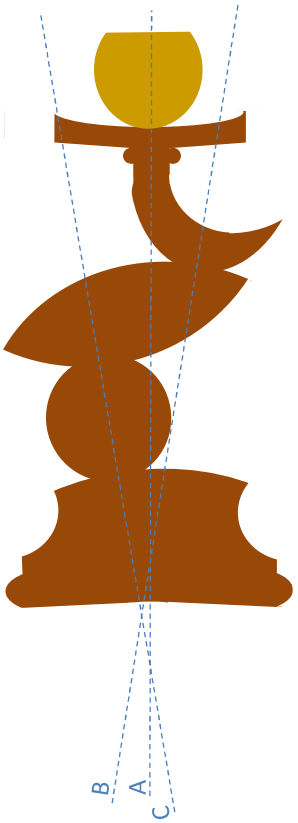


Cut the base to shape and sand smooth. When parting off, be sure to slightly undercut. Also, stop short of cutting off with your parting tool and cut it off with a saw. If you part it off with the parting tool, you are likely to get a deep tear-out in the middle that you can't easily sand out.

10

Place a sanding disk into the headstock using a Jacobs chuck. Use this to sand the bottom. Drill a pilot hole for the screw that will attach the metal candlestick holder to the stick (this can be done on the lathe with a Jacobs chuck in the tailstock, or at a drill press). Apply finish of your choice. Finally, secure the brass candle holder with a screw. Admire your work. Then gift the holder to someone and they will give you a funny look, like "what is it?". If they look closely, they might ask "Is this made from one piece of wood?" But, don't count on it. Then it will sit on a shelf collecting dust for years.



Materials:

Be careful to get cups with an Inside diameter around ¾". Many are designed for electric lights.
http://www.mylampparts.com/Departments/CUPS/CANDLE-CUPS.aspx

craft supplies cup (I did not use this one):
http://www.woodturnerscatalog.com/store/Projects___Lamp_Candle_Accessories___Candle_Cups___candle_cups?Args=

This looks promising, but not what I used:
http://www.discountcandleshop.com/product_info.php/products_id/367