

# Acorn Boxes

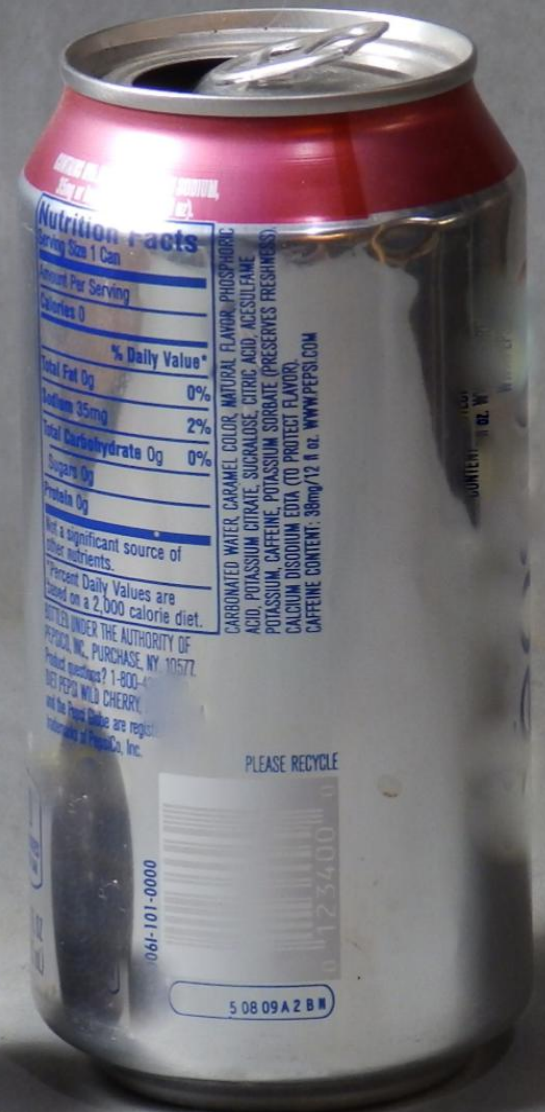
June 1, 2020  
by  
Tony Rozendaal



<-- Plum Bottom (All caps are Black Walnut (so far))



Scale -->







<-- Buckthorn Bottom



<-- Sycamore Bottom

Curly Ash Bottom -->





Made from two pieces of wood, cap and bottom are different species. Both are hollowed and then fitted and finished.





# Tools used for this Project

- scroll chuck
- roughing gouge
- spindle gouge
- box scraper
- narrow (1/16-inch) parting tool
- regular parting tool
- Wagner texturing tool (optional)
- sand paper
  - 120 grit (only when necessary)
  - 180 grit
  - 220 grit
  - 320 grit
  - 400 grit



# Begin with two blocks of wood

Black Walnut (cap) ~ 2x2x2 inches (on the left)

Sycamore (Bottom) ~1-1/2 x 1-1/2 x 2-1/2 (on the right)





# Mount the Bottom Blank

Expand the chuck jaws and mount the blank, then use the roughing gouge to round the other end.





# Put a Tenon on the End

I use a skew to put a tenon on the other end of the blank.

I like to have a tenon because I rough out the blank and then let it dry a few days. The tenon lets me remount it and have it close to round to re-turn it when it is dry.





# Turn the Blank Around

Remount the blank on the tenon and use the roughing gouge to round the blank





# “Face off” the end of the blank

This squares the end of the blank and prepares it for hollowing.





# Hollow out the Interior

I use a spindle gouge to hollow both the bottoms and the caps.

You could use a scraper or any small hollowing tool.





# Complete the Hollowing

I tried something for this presentation that I don't normally do. I tend to hollow a little too deeply - so I tried putting masking tape on the gouge to act as a depth gauge.

It sorta worked - but the masking tape takes quite a beating from the tool rest.

Hollow out the bottom to about 1 - 1-1/8 inches.





# Shape the Exterior

A rough shape is all we are wanting at this point. After the exterior is about where you want it (remember - you will be truing it up at a later date), refine the hollowing and leave a wall thickness of  $\sim 3/16$  inch. ( $1/4$  inch is almost too much)





# “Index Mark” the Blank

For this chuck, it saves me time and trouble if I can put the blank back into the chuck in exactly the same orientation as when I rough it out.





# Mount the blank for the cap

Process is very much like before...





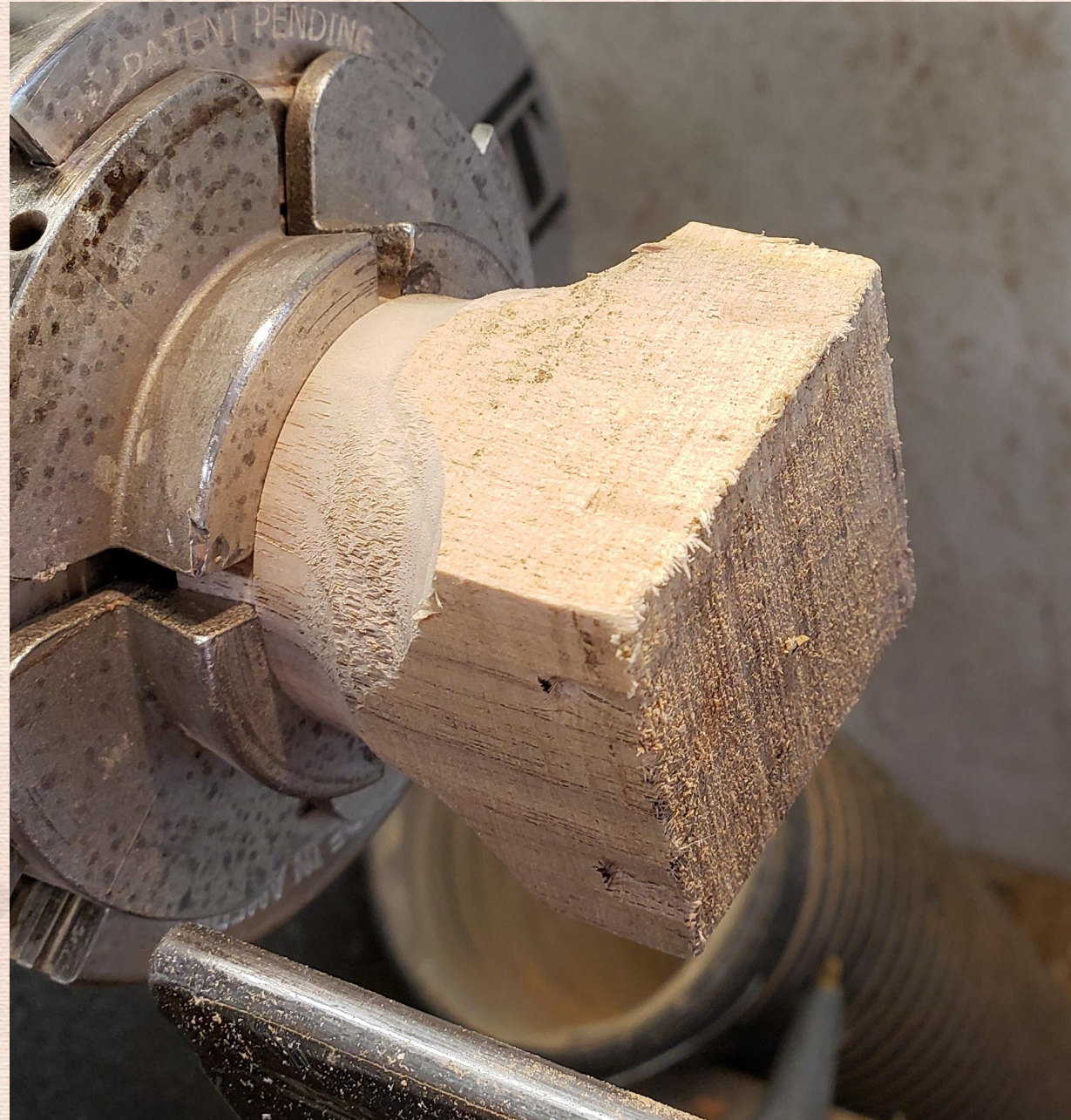
Round the blank, add tenon





# Reverse the blank

Blah, blah, blah.





# Round the Blank and Face it Off

E pluribus unum....





# Compare the Blanks

This is to ensure there is sufficient size difference for the cap to “lap over” the bottom.





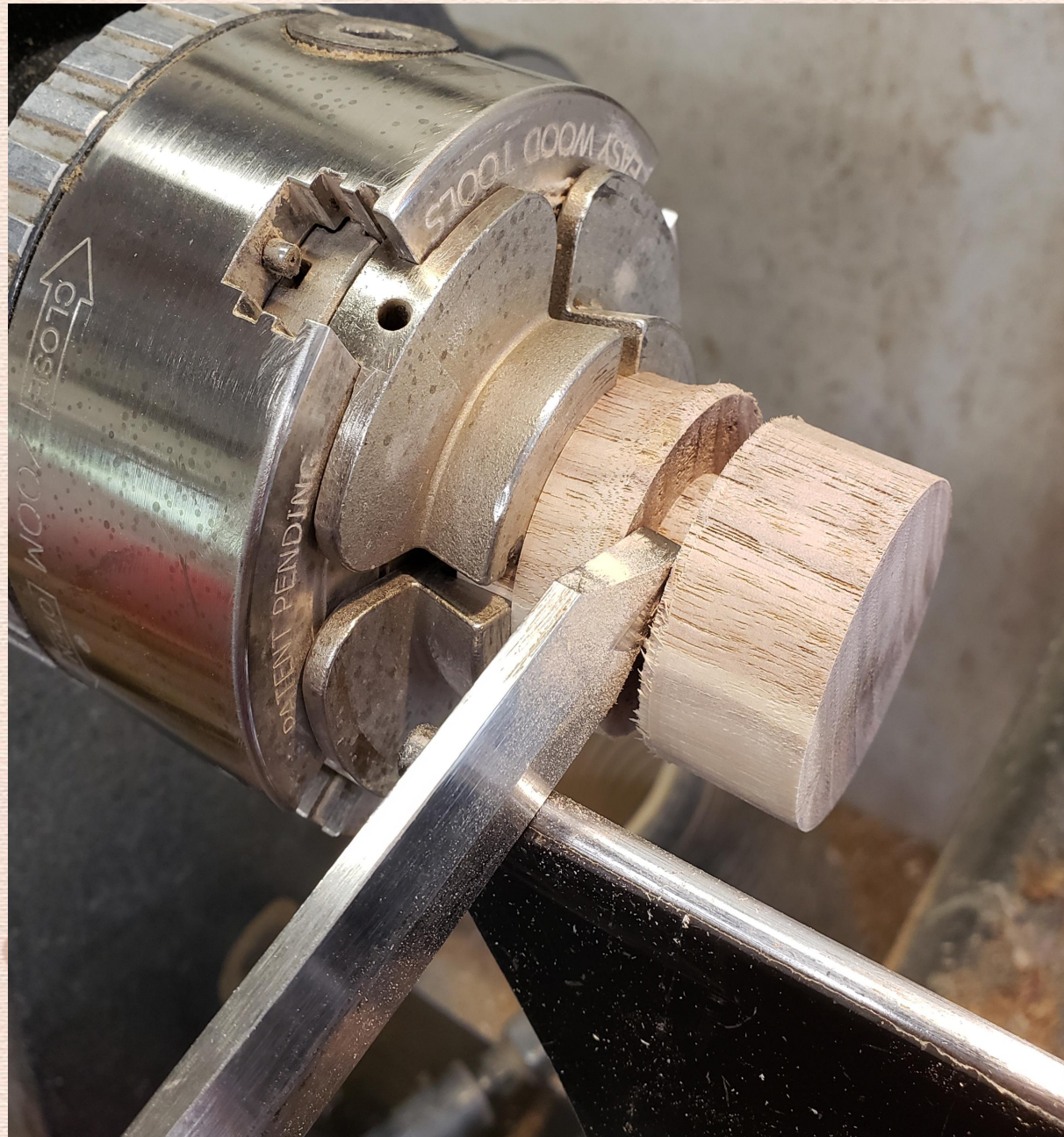
# Make Parting Cut into the Blank

Use a parting tool to cut 1/3 to 1/2 the way into the blank.

This does three things for me:

1. Relieves wood from the chuck side of the tool - speeds the shaping of the cap.
2. Enables drying of the blank.
3. Keeps tool from skating into the chuck.

Leave enough material to support hollowing and jamb chucking.





# Shape the Outside of the Cap

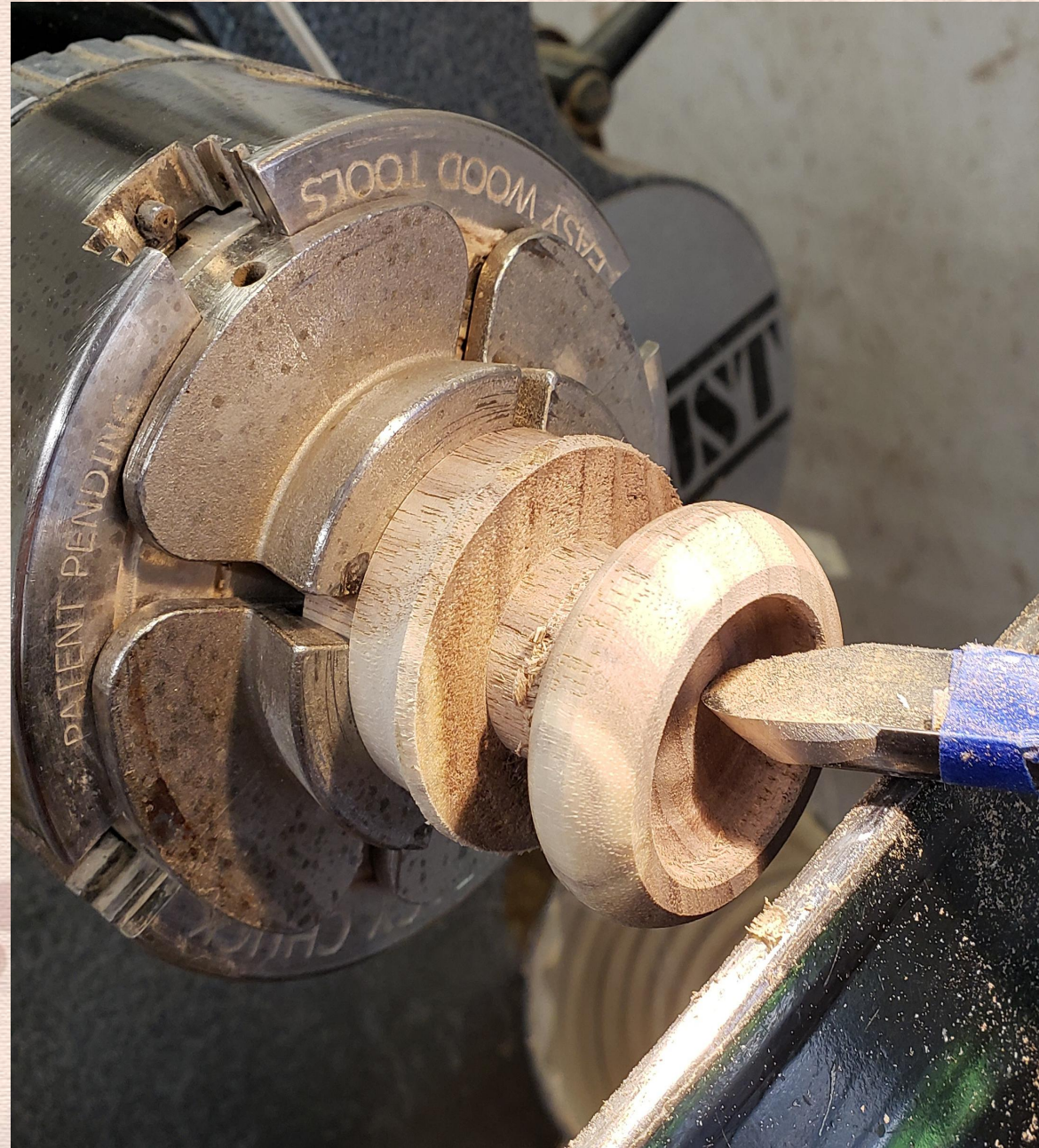
Use a spindle gouge to shape the outside of the cap.





# Rough Hollow the Inside

Using my trusty spindle gouge





# “Index” Mark the Blank





# Number the Blanks

I try to keep the blanks as pairs - there are minor variations in size from one acorn to another.

That is not to say that I haven't ever used a cap with a different blank or made a second piece (either bottom or cap) because I ruined one.





After the Blanks have Dried for  
Several Days...











# Remount the Bottom

This shows where I have determined where the bottom of the blank is and transferred that to the outside of the blank. I then used a pencil to draw a line around the blank.





# True Up the Blank

Use the spindle gouge to true up the inside and the outside.

If necessary, hollow to the desired depth.

Clean up the inside until the sound is the same all the way around the blank.

Final wall thickness between  $\frac{1}{16}$  and  $\frac{1}{8}$ .





# Sand the Blank (Outside)





# Sand the Blank (Inside)



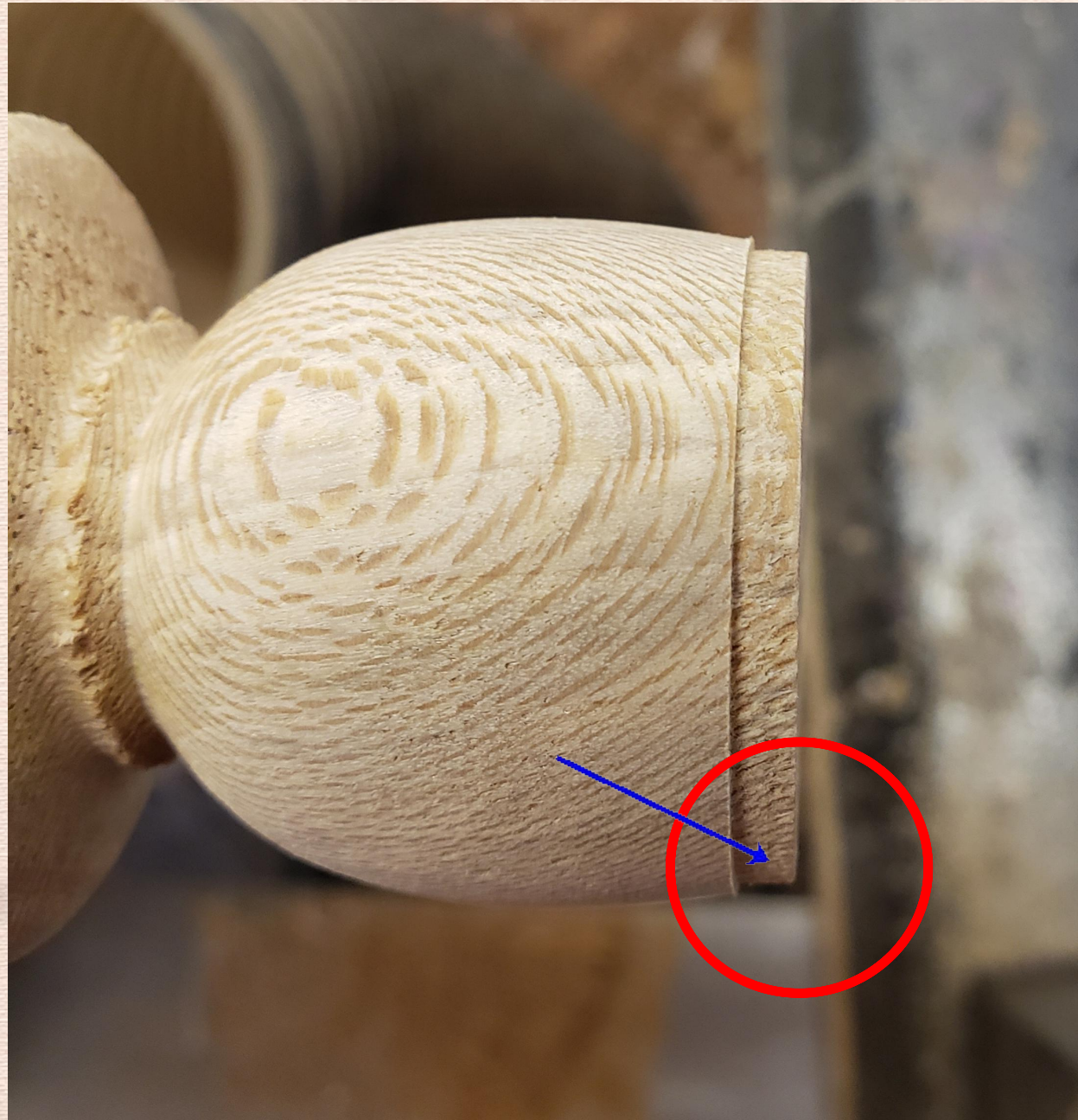


# Cut a mounting Recess

Use a sharp narrow parting tool to cut a recess in the end of the bottom. The cap will fit over this recess.

NOTE: the recess must be parallel to the bed rails on the lathe.

This is approximately 1/8-inch wide for this scale box.





...parallel to lathe bed rail...





# Part off the Bottom

What???? No Picture??

Ensure the part line is well  
below the bottom of the  
hollowed portion



# Mount the Cap Into the Chuck

Ensure the face of the cap is true (arrow). Use the spindle gouge to true it up.





# Check the Size

Check to ensure the mounting recess for the completed bottom is still larger than the hollow in the cap.





# Measure the Bottom

Don't worry about the reading - we are simply going to use the calipers to transfer the size of the recess to the cap.

(Note the variance in wall thickness around the bottom - this is not the desired outcome)





# Transfer the Measurement

Use the calipers to transfer the measurement of the mounting recess to the acorn cap.





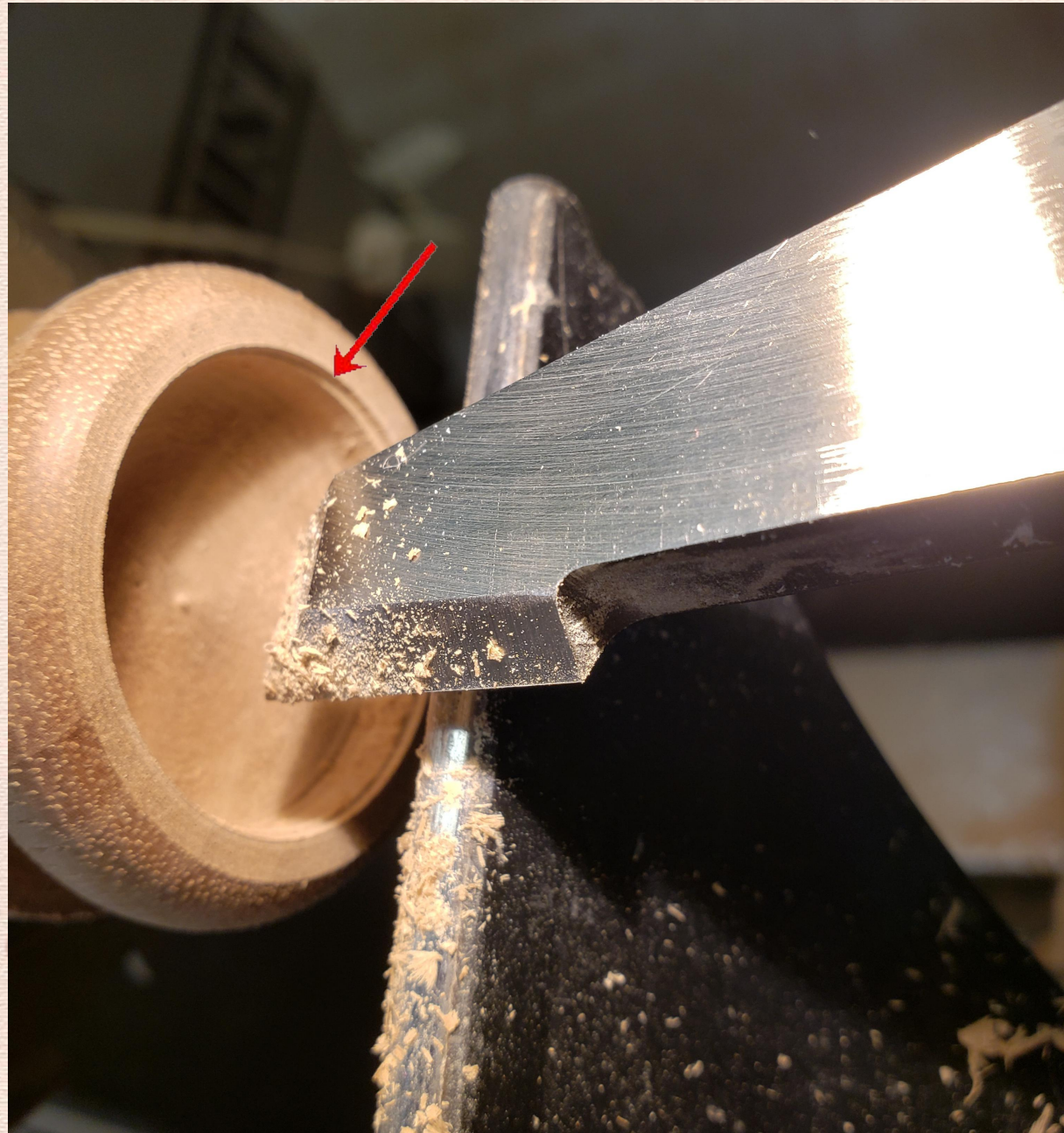
# Enlarge the Hollow in the Cap

Enlarge the hollow in the cap to the line transferred with the calipers.

The tool I am using here is a Penn State box scraper modified to have a negative rake.

Note the step - I “sneak up” on the size I need by fitting the bottom to this step, then enlarging the entire hole to match the step.

Again, keep the side of the tool parallel to the lathe bed ways.





# Fit the Bottom to the Cap

We want a pretty tight fit here as we are planning to use the cap as a jamb chuck to complete the bottom.

In this photo we are getting close, but the cap needs to be enlarged and/or deepened a little for the bottom to seat all the way.





# Finish the Bottom of the Bottom

The bottom is fully seated (tightly) into the cap.





# Complete the Bottom

Shape the bottom of the bottom with the spindle gouge, then finish sand.





# Remove Bottom from the Cap

I use neoprene gloves to get a better grip on the small smooth bottom to remove it from the cap.





# Ease fit of the Bottom to the Cap

I use the box scraper at this point to “ease” the fit of the bottom to the cap. Scrape a little material off and test repeatedly until the fit is a “pop” fit.

This leaves the surface shown here, so next we will clean up the inside of the cap and undercut the rim slightly





# Presentation of Spindle Gouge

This cut requires careful presentation of the spindle gouge to the work piece.

The gouge is held level on the tool rest in both directions - the sides of the flute should be level and the tool should be level.

Use the end and side of the bevel of the gouge to make light cuts along the inner wall of the cap.

Allowing the gouge to roll will result in a catch which can ruin the piece.





# Shape the Cap

Use the spindle gouge to shape the cap.

The pencil line shows the depth of the hollow in the cap. This helps me know what I have to work with for shaping the cap. If I hollow a little deep I can change the shape of the cap to accommodate that.





# Sand the Outer Portion

I work out the tool marks with 120 or 180 and then work up through 220, 320 and 400





# Texture the Lower Cap

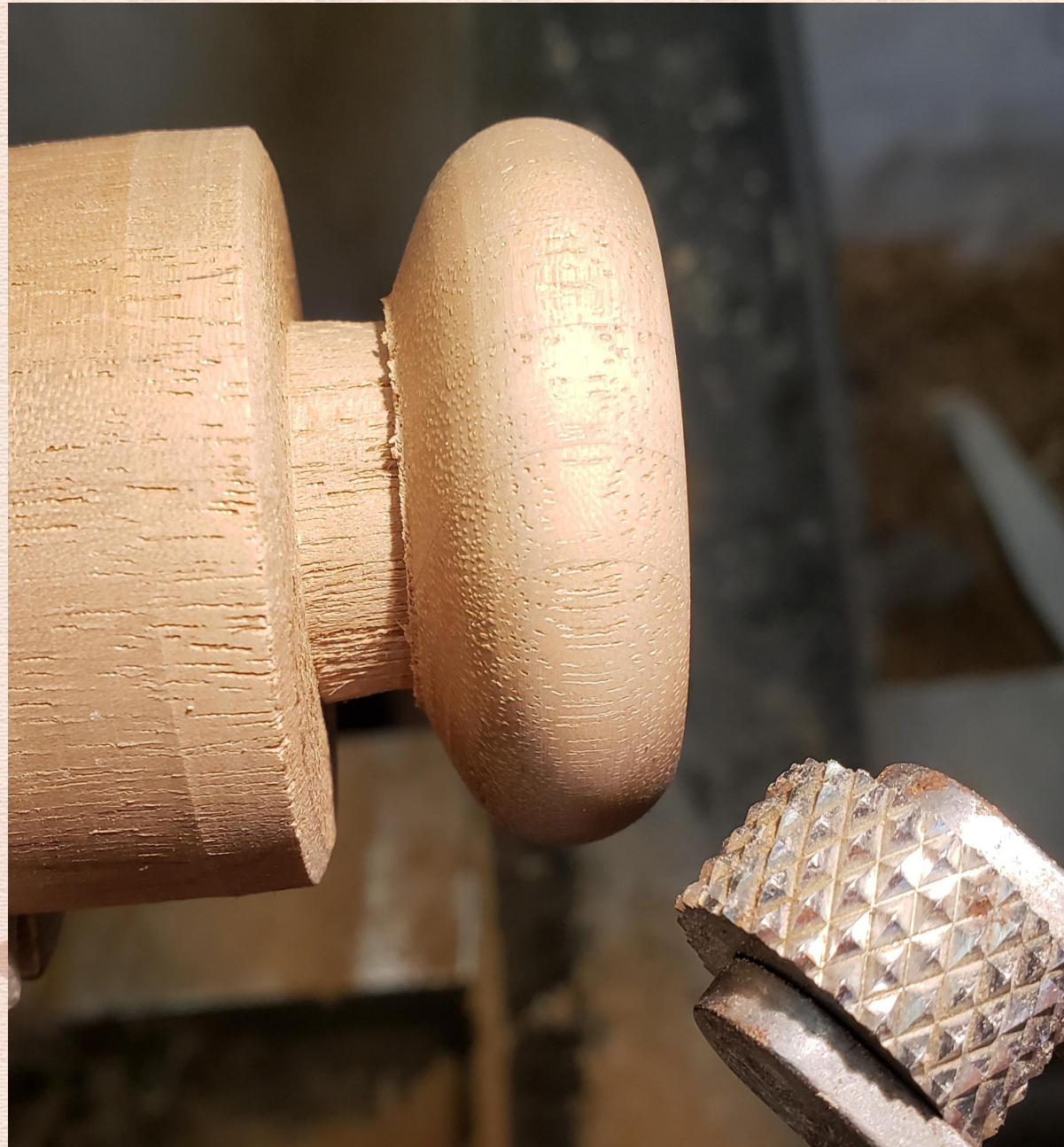
I just sanded it, and now I am going to texture it.

This is the Wagner tool - simply press the wheel into the wood and work it around.

Make sure to have the tool rest far enough from the work piece to allow the wheel to rotate. Otherwise, the noise it makes will scare you!

Other types of texturing tools could be used:

- star wheel
- chatter tool



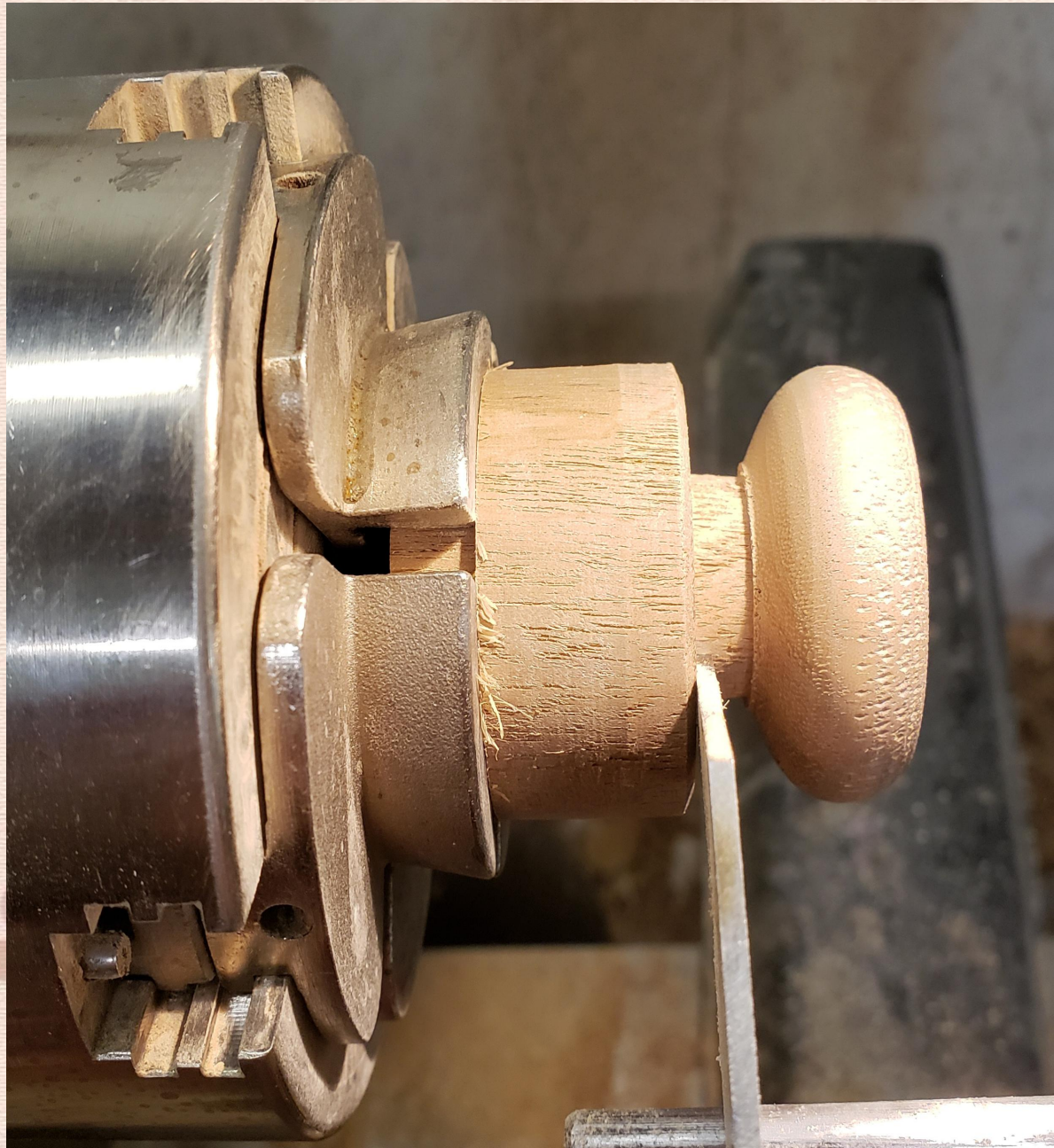


# Lower Portion After Texturing





# Part it Off





# Measure the inside of the Cap





# Prepare the Jamb Chuck

To get to this point...

1. Use the spindle gouge to face off the waste piece
2. Transfer the size of the cap opening to the waste piece
3. Use the small parting tool to form the tenon





# Place the Cap on the Jamb

If the fit is a little loose, there are a couple things you can do.

If it slips on and stays, but won't hold for turning, moisten the outside of the tenon (Cliff Mitchell uses spit and calls it "tongue oil.") This swells the wood fiber and very effective.

If it is a little looser than that, use a paper towel or napkin in the joint to take up space.

If it is too loose, face it off again and start over.





# Finish Shape the Cap

An option here would be to omit the peak, and drill a hole for a stem.

I would drill the hole at an angle so the stem was not straight out of the top of the cap.

I haven't done any like that. Yet.





# Sand the Cap





# Texture the Remainder

Again, texture is an option. Textured ones seem to sell better. However, a cap made from wood with really pretty figure has its own appeal!





# Remove the Cap from Jamb





# Finished Product - Almost...





# Finishing

Finish as you choose

What works for me is:

- 3-4 coats of Minwax Wipe-On Polyurethane on both pieces
- Buff and wax
- Do not buff and wax the cap if textured



**Any questions??**  
**Thank you for your kind attention!!**





# Other recent completions...





























