The Burl

A monthly newsletter for the
Willamette Valley Woodturners
e-mail: wvwturners@gmail.com
We are also on Facebook

Member chapter

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May Meeting Cancelled

Center50+
CITY OF SALEM SENIOR CENTER

2615 Portland Rd, NE. Salem, OR 97303

President's Message May 2020

What I Did on My CoVid Vacation

Enough with the virus already. That's all I have to say on the subject.
Not that I don't have plenty to do in the shop these days, but I thought this would be a terrific time to build a few lathe accessories I have been curious about for a long time: a modified Longworth chuck, and a vacuum chuck. This month I'll describe the process of building a Longworth chuck. These chucks are used to finish off the bottom of a bowl, typically to remove the tenon used to hold a bowl blank on a four-jaw chuck. If you've never seen a Longworth chuck, here is what mine looks like at the end of the build:

I started with two pieces of ¾" thick birch plywood. This plywood was not the highest quality, but it was what I had on hand, it was flat, and it was trying to be Baltic birch plywood. It failed in that attempt, but more on this later.

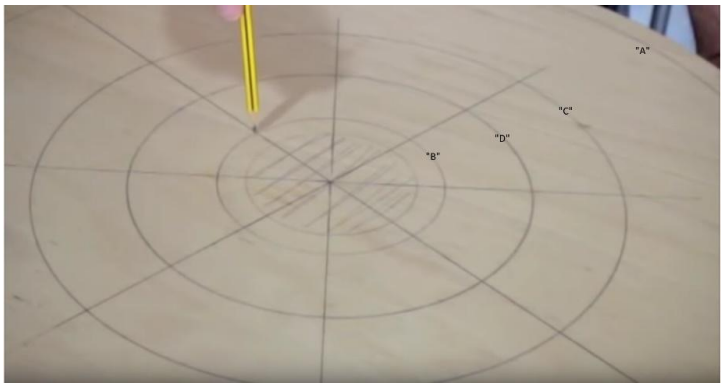
I used a large trammel point/compass combo to draw the circumference of a 20" diameter circle, and roughed that out on the band saw. (Size your Longworth at or below the maximum turning diameter of your lathe.) Because I had the exact center of both rough-cut circles, it was easy to screw them together with a few drywall screws, mount a 6" faceplate to one of them, and mount the whole assembly on the lathe. I made sure that my drywall screws were inside the area covered by the faceplate so they would not interfere with subsequent layout and machining. With the lathe turning pretty slowly at first, I trued up the two circles and then sanded the outside edges while they were still mounted on the lathe.

At this point I will mention that the layout steps for this chuck look complicated but are not. Once you have made one of these devices, the next few would go very quickly. Here's how the layout goes, and you only need to do the layout on one face – you will cut through both pieces of plywood at once.

First, draw a circle around your faceplate, then remove it. You'll want the disks aligned as exactly as you can make them, so once they are screwed together, don't take them apart.

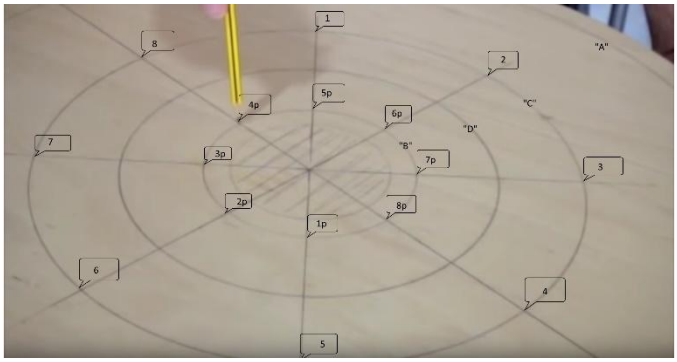
Now you'll draw four more circles on the face of your disk. Draw one about an inch in from the outer edge (call this one "A"), and another one about an inch outside your faceplate circle (this one is "B"). Draw a third circle halfway between these two ("C"), and the final one ("D") halfway between "B" and "C". This sounds confusing, but it's really quite simple to do. Refer to the photo below for a clear understanding.

Now you'll need to draw four diameters, carefully dividing up the disk into eight equal "pie slices". The easiest way to do this accurately is to use dividers, and lightly step off eight divisions around circle "A". Adjust and re-divide until you start and stop in exactly the same place. Once you have your divider set precisely, push the points of the dividers into the wood as you step off the divisions. Next, use a straightedge to connect opposing points so the straightedge goes through the center of the disk. When you're done drawing, your disk should look like this (note that the darkened circle in the center is the faceplate location:



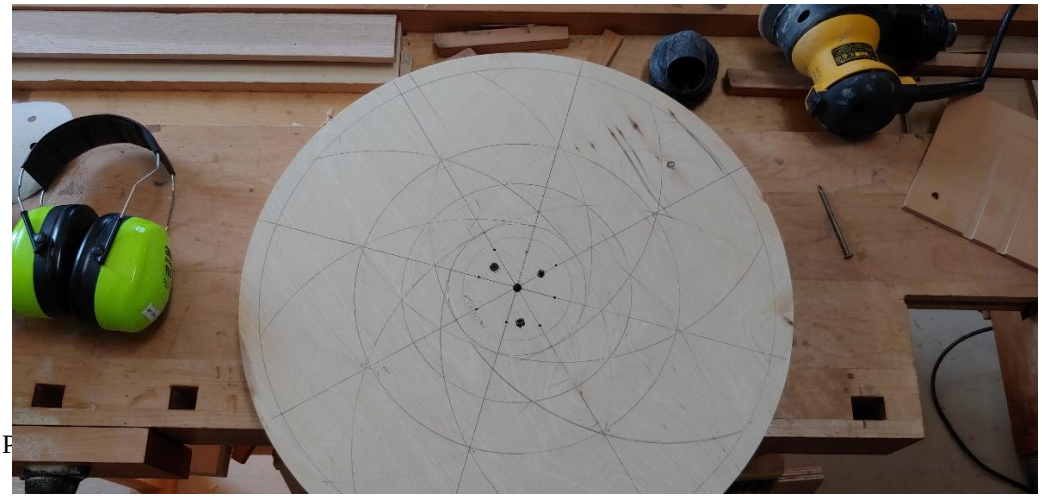
Now the "tricky" part. Not really – it just looks that way.

You next need to draw arcs which will be routed out with your router. You will need your compass again for this operation. Set the compass legs so the pivot point of the compass is placed at the intersection of circle "C" and the diameter lines you drew, with the pencil resting on the same diameter line but at circle "B". In the following photo, the compass point is places at the callout labeled with a number, and the pencil goes at the corresponding callout that includes the "p". (Note – disregard the yellow pencil in this photo)

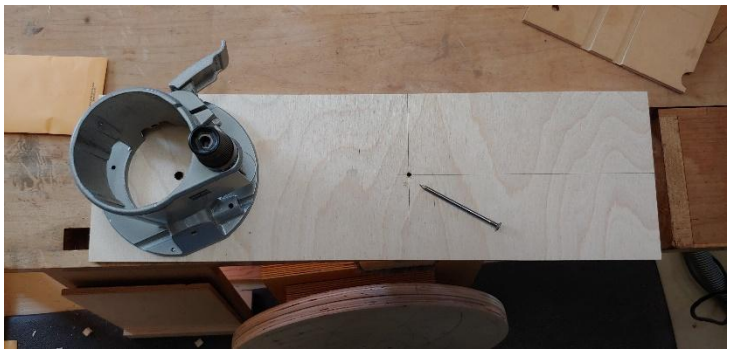


Example: place the compass pivot point at location "1", and the pencil at location "1p". Moving the pencil to the left, draw an arc beginning at "1P", and ending on circle "A". Repeat for each of the points on circle "C".

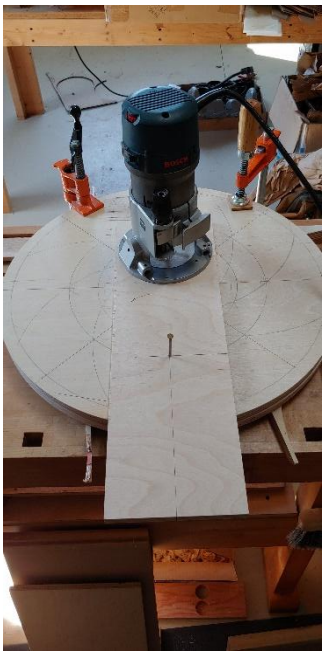
When you get done, your plate will look like this: Looks complicated. Isn't!!



Next step is to make a trammel base for your router, if you haven't already made one for other projects. A trammel base is just a fixture that lets you route an accurate circle. In this case, the diameter of the arc you'll cut is the same as the distance from points "1" and "1p". You want to be accurate when you lay out this trammel base and when you make it. Here is what I made for this project:
Nothing fancy here – a plywood scrap, a router base, and a hole that let me use a nail as a pivot point.
To cut out the arcs, you drill a hole to accept your pivot at each of the intersections on circle "C". The router bit should fall on the beginning of the arc you drew in the previous step. You will need to route away the waste in a series of plunge steps, not all at once.



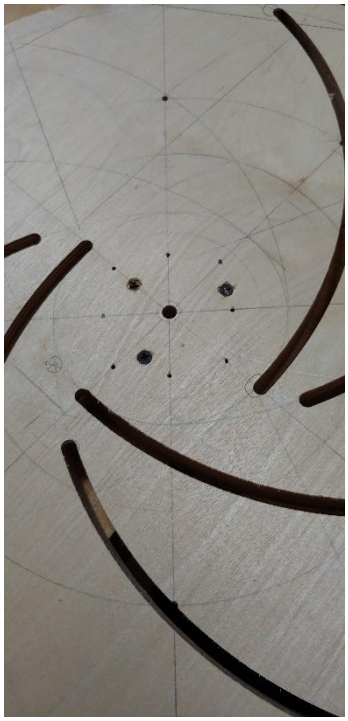
Here is the trammel base in position on the disk, at the beginning of the waste removal process. Note that I raised the disks up off my workbench with some scrap, because the router bit is eventually going to pop out the bottom of the second disk:



Take it easy with this process – don't try to hog off too much wood with each pass. I used a 5/16" straight bit in the router, with a shank length long enough to reach the bottom of the second disk. This process creates a lot of chips and dust and I found it helpful to wear a respirator along with my safety glasses and hearing protection. I also cleaned up underfoot every few passes to maintain reasonably secure footing. If you have a router with built-in chip collection that would be a real asset for this part of the work.

The photo to the left shows the routing process about half-way through, and the one below shows the same level of completion without the trammel base and router in place.

Here is one detail that I think is important. In the photo to the right, you will see that I stopped some of the routed arcs well away from circle "B". I did this because I was afraid that all of those grooves ending at the same spot on that diameter would weaken the disks. This decision led to an important result: an increase in the minimum bowl size the chuck can accept. I know plywood is plenty strong, but I thought a little safety margin was worth it.



To compete the chuck after routing out the arcs, do the following steps. First, drill a series of finger holes along the outer edge. You can see these in the photo below. Drill them all the way through both disks, sand them, and if you like, round over the edges with a palm router and a 1/8" roundover bit. Here's a close-up:

Next, drill a hole through the center of both disks, sized to accept a bolt that will become the center "axle" of the chuck.

Now (and not before!!) remove the drywall screws holding the two disks together.

Finally, sand both faces of both disks. Apply some shellac, or maybe a coat or two of wax, and the finishing is done.

Now flip over one of the disks, and bolt them together using your bolt, two washers and a Nylock nut. Don't tighten the nut so much that the disks cannot rotate against each other. Use the finger holes to rotate one disk clockwise and the other counterclockwise. You'll see now how this thing works. Insert some buttons to hold the bowl in place, and try it out.

Here's the finished chuck. The "buttons" I show here are available from Craft Supplies USA as replacements for the Longworth chuck they sell. I had to replace the machine screws that come with the CSUSA item with longer ones due to the ¾" plywood I used for the plates.
I have a little video of the chuck in action, but can't add it to this article, unfortunately.

What I Would Do Differently

After making this chuck and using it, I would make a few changes. First off, I think ½" plywood is plenty thick enough for a chuck of this nature. The ¾" stock I used is, I think, overkill. Second, I would use genuine Baltic birch ply rather than the pretender I had on hand. Baltic birch ply (Apple Ply, multi-ply) has no voids, the plies are thinner, and are generally higher quality than what I used.

If you 're thinking about building one of these, and have questions, feel free to get in touch with me by email. I'll be glad to try to answer them! There are lots of videos on YouTube that step through the construction of a Longworth chuck, so if you're interested, do a quick search. They look complicated, but the construction is quite straightforward.

Next month: Building a Vacuum Chuck

And now…. Let the Chips Fly!!

~~Jeff Zens
President's Message May 2020

Upcoming Demonstrators for 2020

NOTE: due to the Corona virus, the next several months are undetermined.

Date	Name	Website	Topic	Saturday Class
5/14/2020 Meeting Cancelled	Tom Hastings			No
6/11/2020	Reed Gray	https://www.robohippy.net/	Production Bowl Making	No
7/9/2020	Matt Monaco	https://www.monacobowls.com/	For both demo and class, many options! See Below and Please express an interest to Marc Vickery	YES! July 11th More detail to follow and see below
8/13/2020	Steve Newberry	Word of mouth	Spheres to Cups	Not at this time
9/10/2020	Under consideration. Some possible ideas in the works. Please refer any ideas to Marc Vickery – THANK YOU			
10/8/2020	Phil Lapp	Word of mouth	Crotch Bowl	no
11/12/2020	Art Liestman	http://artliestman.com/	Demo and class are on the "lost wood process"	YES! Please let Marc Vickery know if interested asap
12/10/2020	Under consideration. Some possible ideas in the works. Christmas??? Please refer any ideas to Marc Vickery – THANK YOU			
Please express an interest of ANY Demonstrator or weekend workshop you would like to see to Marc Vickery				

Membership Rewards

Chain Sharpening Service from Jeff Zens

I have recently purchased an electric chain sharpener and can accurately sharpen your chains and adjust your depth stops for your saw chains. This will restore the chain to "factory-new" condition. Most chains can be sharpened for $10.00, but longer chains or badly damaged chains might be a little bit more. This service is only available for club members.

Library

A friendly reminder to members with books and/or videos checked out from the library. Please return them at this next meeting.

Wood Gathering

Sign-up sheets will be available to indicate your availability to help with wood gathering. Anyone who learns of a tree or log that is available to the club should notify Gary Dahrens, (503) 260-9778. .

From Terry Gerros

I am a distributor for Stick Fast CA glue, Sharpfast Sharpening systems, the Holdfast vacuum chucking system and Saburrtooth Carving bits. If you have an interest in these products, give me a call or send me an email for details.

Supplies

The club purchases a few supplies in bulk and sells it to members at club cost. We routinely have superglue ($5), black or brown superglue ($10) accelerator ($10) and Anchorseal ($9/gal). The club has a small supply of half round protractors ($6) used to measure the angle ground on a tool, and depth gauges ($5). HSS Round Tool Bits rods (1/4" x 8") are also available ($3). Jerry Lelack will have the resale items available at the meetings, except for Anchorseal which is available through Jeff Zens. You will need to bring your own gallon jug; contact Jeff to make arrangements.

Club Member Discounts

- **Craft Supply**: The club's order will be going out on the Monday following our Club Meeting if our order equals or exceeds $1,000. Craft Supply gives us a 10% discount plus free shipping on all items, and occasional additional discounts on certain other items and quantity purchases. If you order from the sales items, you will receive the club discount in addition to the sale discount, making many items available at very attractive prices. For detailed instruction for ordering see the article in the November 2015 Burl. Questions? See Jeff Zens

- Club members are registered with **Klingspor's Woodworking Shop** at www.woodworkingshop.com or 800-228-0000, they have your name and will give you a 10% discount.

- If you show your club card at checkout time to the cashier at **Woodcraft** in Tigard they will give you a 10% discount (May not apply to some machinery).

- **Exotic Wood** is offering a discount of 15% off any orders placed at: www.exoticwoodsusa.com. (This includes sale items and free shipping on orders over $300). Use promo code ewusaAAW

- **Gilmer Wood** now offers our club a 10% discount on purchases made there. If you haven't been to Gilmer's, it is well worth the trip to Portland, if only to make your mouth water and make you cry if you leave empty handed.

Club happenings in our area

(Please visit the club's website listed below for additional information)

Northwest Woodturners (Beaverton, OR)
www.northwestwoodturners.com

Cascade Woodturners (Portland, OR)
www.cascadewoodturners.com

Beaver State Woodturners (Eugene, OR)
www.beaverstatewoodturners.com

Oregon Coast Woodturners (Newport, OR)
www.oregoncoastwoodturners.com

Southwest Washington Woodturners (Vancouver, WA)
www.southwestwashingtonwoodturners.com

South Coast Woodturners (Coos Bay, OR)
http://southcoastwoodturners.com/

The Burl is a monthly newsletter publication of the **Willamette Valley Woodturners**.....

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Send all other club correspondence to the clubs official address:
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Club e-mail: wvwturners@gmail.com