Carving Spirals in a Bowl

By Bob Moffett

Carving spirals in your turning is yet another way to enhance the appearance of your piece. The patterns you can develop using these techniques are endless and only limited by your imagination.

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Introduction:

In this handout, I will explain the process that I use for carving spirals on the outside of bowls. I use spirals to enhance a bowl after it has been turned. My way is not the only way, it is just the way that works for me. I learned my technique from numerous turners such as, Al Stirt, Stewart Mortimer, Jack Reyome, Frank Penta, Michael Foster, Avelino Samuel and numerous other turners. If you come up with a better, easier way, I would certainly be interested in knowing your method. Spirals have been around in architecture since at least the time of the Roman Empire so I have not discovered anything that hasn't ever been done previously. You are welcome to duplicate my methods or use them as a starting point for developing your own style of turning.

For this exercise we will use a bowl 9 inches wide by 3 3/8 inches high. We will put a rim around the top of the bowl and a foot on the bottom. Make the bowl out of maple or other fairly soft wood which is easy to carve. If this is your first experience with carving spirals on your bowl, I recommend using a soft wood such as maple, box elder, popular or other soft wood as the carving and sanding will be much easier and quicker. Stay away from anything with knots in it.

Steps:

1. Select a bowl blank that is at least 9" in diameter and 4" thick, preferable a soft wood such as maple, box elder or other relatively soft wood without any knots in it.

2. Drill a hole in the top of the bowl blank for your woodworm screw.

3. Chuck up the blank and rough turn.

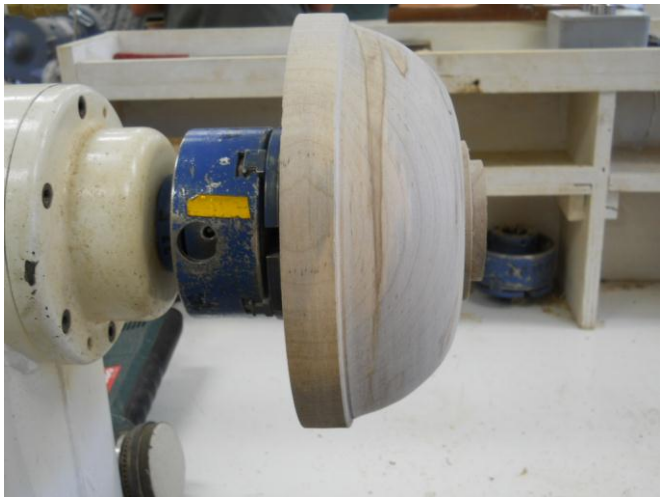
4. Turn a 9" diameter bowl (just the outside) with a 3 ¼" foot 3/8" deep and a secondary foot under that one 2 ¾" wide and 3/8" deep. A glue block will also work in place of the secondary foot if your bowl blank is not thick enough. I like to put a ¾" rim on the bowl that is ¼" proud of the outside of the bowl. For now make the rim about 7/8" wide. This gives you some margin for error during the carving.

Note: Even though you will be cutting the outside of the bowl, I prefer to sand it to the final sanding grit as I feel it is quicker to sand the bowl with the bowl rotating on the lathe than holding it in my lap.

5. You will use the secondary foot or the glue block to mount the bowl when turning the inside of the bowl later on.

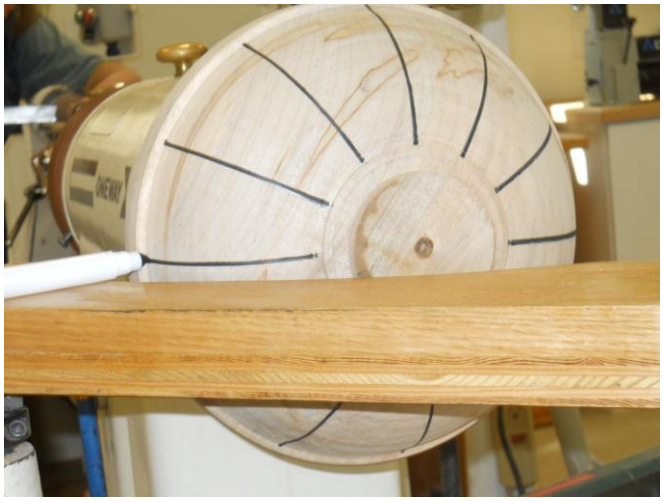
6. Mark the center of the foot, using either a pencil or you live center, so that it will be easier when reverse chucking when you are finishing the foot and completing the bowl. Do not remove the secondary foot until the carving is completed.

7. Sand the outside of the bowl.

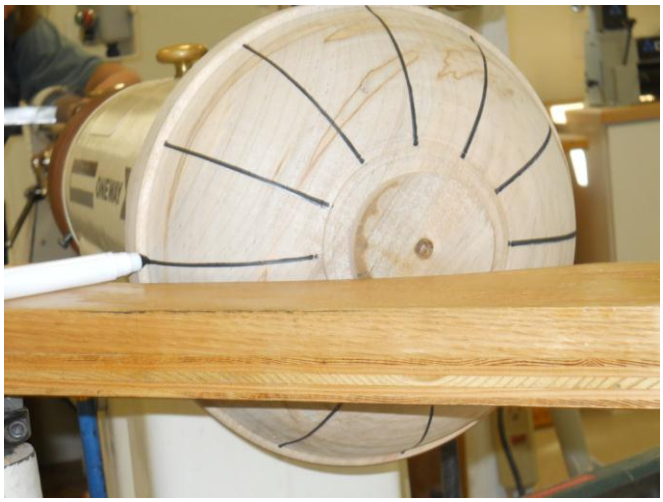


8. Now that we have the outside of the bowl turned and sanded, we are ready to start the carving process. If you have an indexing wheel on your lathe or a separate indexing wheel, use it to mark 12 divisions on your bowl using either the jig shown in the photo below or your tool rest. It is best to use the jig as it is easier to help keep the line straight. The line must be drawn on center. If it is above or below center, the line will also be a spiral. If you do not have an indexing wheel or your lathe does not have indexing capabilities, you can use a cloth tape measure to determine the circumference of your bowl. A cloth tape measure is better to use than a metal one because it conforms better to the outside rim of the bowl. Lay the tape on the rim to measure the circumference of the bowl, divide the circumference by 12 and place 12 equal marks just below the rim. Then, using your pencil and the jig or your tool rest, make a line from the top, "just below the rim" to the foot of the bowl as shown below. If you are using a light colored wood, you can use a regular pencil to make this line.

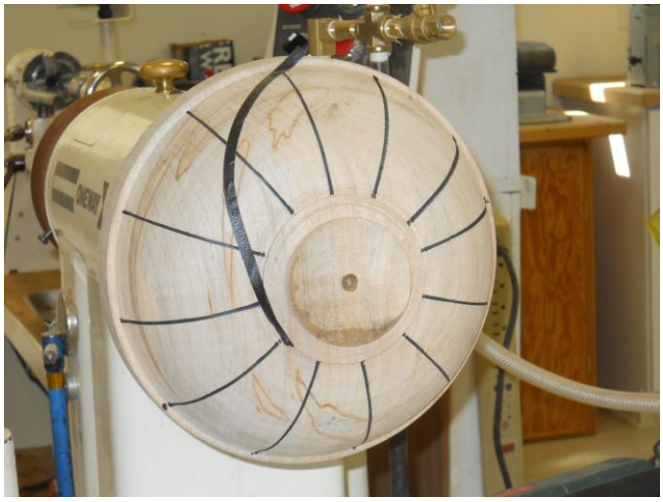
9. I find it helpful to number each of the 12 lines. With the bowl divided into 12 segments, you will notice that the segments are wider at the top than at the bottom. This is because of the curve of the bowl and the circumference at the top of the bowl is larger than at the bottom of the bowl.



10. Now we will start to draw out the curve for our spirals. Take the bowl off of the lathe, but **don't take it out of the chuck.** If you leave the bowl in the chuck it will remain centered when you put it back on the lathe. Place the bowl in the chuck upside down so it is resting on a solid, stable work surface. When you are working on the bowl, you will see the bottom of the bowl. See picture below.



11. Use a piece of ¼" tape (or regular masking tape) to sketch the spiral to be carved. I prefer to use tape, as I can adjust it and not have to erase lines when I change the shape of the spiral. Tape one or more spirals until you get one that you like. Then remove the tapes spirals that you didn't like and keep the remaining one that you did like. Once you have the one that you like, mount the bowl back on the lathe.

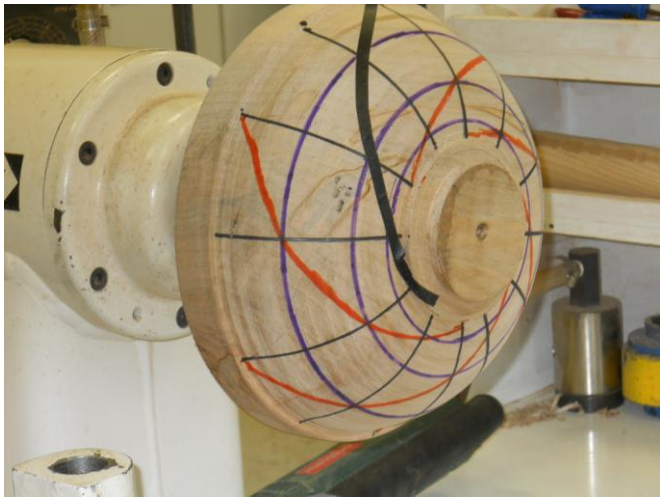


12. Place a line around the bowl at each point that the tape crosses the vertical pencil lines that run from the rim to the foot. These lines should go all the way around the bowl. This gives you a grid to use for drawing the rest of the spiral lines. You are going to end up with a lot of lines drawn on the bowl so it is a good idea to use a different color for each type of line, ie. vertical lines one color, lines around the circumference of the bowl, a different color and curved lines a different color.

13. You now have what looks like a bunch of rectangles on the outside of your bowl. You can now use either the tape on a colored pencil to lay out the remaining parallel spirals.

14. For this exercise, we will make 6 flutes. Since we have 12 vertical lines dividing the circumference of our bowl, we will be drawing a cut line on every other vertical line. Using a colored pencil or marker that you have not used previously, mark the first line using the masking tape and grid as a guide starting on line 1. Now skip a vertical line and go to line 3 and mark that cut line so that it is parallel to the tape on line 1. Again skip a line and go to line 5 and mark that

cutline so that it is parallel to the line starting with line 3. Repeat this process until you have progressed all the way around the bowl. The number of lines skipped at the bottom of the bowl is the same as the number of lines skipped at the top of the bowl. The distance between each line at the top will be larger than the distance between each line at the foot of the bowl because the lines are further apart. This will create equal spacing of the flutes. Your bowl should now look like the photo below (but not mounted on the lathe).



15. Remount the bowl on the lathe as shown above.

16. Using either a reciprocating carver with a "V blade", a chisel with a "V blade, or a grinding wheel or Drimel tool, you can now start to carve the bowl. Use the spindle lock to lock the spindle in place. If you don't have a spindle lock, you can hold the bowl with one hand and the carving tool with the other hand, but be sure to keep the holding hand out of the cutting line. I would also not recommend holding the carver with one hand unless it is a small carver.

17. Unplug the lathe before you start carving. Wear hearing and eye protection. Lock the spindle and use either the carver or your chisel to start carving a line along the curved lines you drew. Carve from the foot towards the top of the bowl. That way the sharp blade of the carver or chisel is pointed away from you. The pressure of carving will also tighten the chuck rather than loosen it. The object of the carving you are now doing at this point is to make a groove in the side of the bowl to defined the bottom of each side of each flute and spiral. Carve until you have carved a depth of about ¼" and tapered at the top and foot of the bowl.

Note: I use a "V blade" because I like a crisp line at the bottom of the flute.
Note: If you are holding the bowl in a jig such as the Trent Bosch Carving Stan or a homemade jig that allows you to easily get to the bottom of the bowl, you can carve from the top down to the foot of the bowl.

18. Now put an 80 grit sanding disk on a 2" or 3" sanding pad, whichever you prefer, in your drill and using the edge of the pad sand the bottom of the line you have cut with the carver to establish a crisp line and the bottom of the spiral.

19. Use either a rotary tool with a cutting bit, a grinder such as the Proxxon long neck grinder with a carbide cutting wheel, a rasp or Microfile to round the spirals from the bottom of the spiral cut to the top of the flute.

20. After rounding out the spirals with the tools mentioned in step 19, start with 80 grit on a firm 2" or 3" sanding pad, sanding the sides of the spiral you cut. Sand through the grits, until you have the sanded finish that you want. Use the firm pad on the lower grits, up to 150 to shape the spiral. Above 150 grit, use a soft pad to even out any facets from the prior sanding and make a smooth curve from the depth of the spiral to the outer most point in the curve of the flute. This sanding should take out most of the lines that you drew on the bowl. At this point, you really don't need the lines anymore so sand away any remaining lines.

21. Now that you have carved and sanded the spirals in the bowl, you will need to finish the top rim and the foot. Remount the bowl on the 2 ¾" foot to finish the top rim. If you carved or sanded into the rim, you will want to remove that part of the rim. As a result of the carving/sanding that you did, you will have released stresses in the wood and the bowl may no longer be perfectly round.

22. Now is the time to hollow out the bowl taking into consideration the depth of the spirals.

23. Once the inside of the bowl has been hollowed and sanded you will need to reverse chuck the bowl to work on the foot. You can either do this by using a jam chuck, cole jaws, vacuum chuck or whatever other method that you employ for finishing the bottom of your bowls. Remember the mark you put in the center of the foot in step 6. That mark will still be the center of the bowl. Use that along with your tail stock to center the bowl on whatever you use to hold it. It is a good idea to leave the tail stock holding the bottom of the bowl as long as possible. Trim the foot to remove any carving or sanding marks that damaged the foot. Now that you have trimmed the foot to a size that you like you can turn off the portion of the foot that was inserted in the chuck. Then sand and decorate the remaining foot.

24. Sand the bottom of the bowl and finish it with the finish that you like best.

25. Sign your bowl using whatever method you like best and now start enjoying the fruits of you labor.

Suggested tools:

Reciprocal Carver
or
V shaped Chisel
or
Proxxon Long Neck Carver
2” Fine grinding bur for Carver
2” Sanding disks for carver

Electric Drill with either 2” or 3” sanding pad and sanding disks

Indexing wheel or cloth tape measure

Colored pencils

Masking tape 1/4” width

Line drawing jig & pencil (You can also use the tool rest on your lathe)

The homemade line drawing jig looks like this:

Other articles on carving spirals:

Techniques of Spiral Work, by Stuart Mortimer
Simplified Spirals, American Woodturner, Spring 1997, by Judy Williams
Techniques for Carving, American Woodturner, Spring 2001, by King Heiple
The Spiral, Nature’s Masterpiece, American Woodturner, Winter 2009, by Neil Kagan
Doing the Twist, American Woodturner, March 1997, by Howard Ford