

Simplified Spirals

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Marking out a cylinder of wood to cut a spiral can often be an exercise in frustration and the following is a simplified method that does not rely on complex calculations. I think that spirals that call for complex computations tend to look mechanical, and if that is a look that you like, by all means continue. However I like spirals that flow starting in one plane and rotate around the spiral and end in the same plane. For single or double spirals, I prefer the spiral to make one rotation or at most one and half. For lace bobbins these spirals are usually cut freehand. This method can be applied to any size project with any number of complete rotations.

Following is a step by step outline of how I mark out spirals.

I. Begin by turning the area to be spiraled into a cylinder. Measure the area to be spiraled. If this figure can be easily divided by 4 evenly and without straining, then the hard work is done. For example if the length to be spiraled is 8", then each segment is 2". Transfer these dimensions to the stock. If however this length is some odd number, the following is an old quitter's trick.

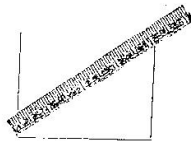
A. Draw a line on a sheet of paper to the measured length.



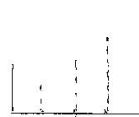
B. Using a right triangle, index card, framing square or whatever is at hand draw perpendicular lines at each end.



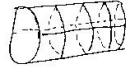
C. Anchor a ruler at one end of the line and slide the other end up the opposite perpendicular line until you can divide by four. Mark these divisions with a dot.



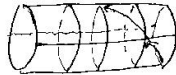
D. Again using the right triangle (or whatever) connect these dots to the original measured line. The piece is now divided into 4 equal segments. The length of these segments can be transferred to the work piece using calipers or directly from your calculation sheet.



2. Use chuck jaws of a four jaw chuck or an indexing wheel (commercial or homemade) to mark out 4 lengthwise lines. For a single or double spiral these lines will be 90 degrees apart.



3. Draw in the spiral by starting at a far right intersection of lines and going to the next intersection. A piece of sandpaper bends easily conforming to the wood and is a quick way to draw the line. NOTE: the spiral will be left handed or right handed slant depending on going up to the next intersection (left handed) or down (right handed). Continue marking through the four segments.



4. At this point the spiral is marked out. The line drawn is the center of the area to be removed. Use a combination of files, carving tools, sand paper to remove the wood. Trust your eye to judge the width of the spiral.

5. Other thoughts on spirals.

- a double twist or Barley twist: mark another spiral 180 degrees (or opposite) to the spiral just marked out.
- for a triple spiral mark the lengthwise lines at 60 degrees and draw out three spiral lines 120 degrees from each other.
- triple and multiple spirals often look better if they stop 3/4 of the way around. In otherwords divide the area to be spiraled by 3 instead of 4.
- if you decide on hollowing out the center of the spiral, think the process through and don't reinvent the wooden spring.
- if you want the spiral to twist around more than once, mark out these primary divisions and then subdivide each subsection by 4. I personally think that complete rotations look best, but you may like to begin and/or end with a partial rotation.