

Barley-twist candlesticks

CENTURIES-OLD HAND-TOOL SEQUENCE CREATES
A GOOD CONVERSATION STARTER

BY ERNIE CONOVER

Of all the things I make on the lathe, one of the most eye-grabbing is the barley-twist candlestick, which owes its name to a type of English candy traditionally made with a twist. Whether on a dining-room or a kitchen table, the candlesticks, usually made in right- and left-twist pairs, never fail to be the center of conversation, with woodworkers and non-woodworkers alike wondering how they are made. Although one would think that such work must require a router and complicated jigs, the design predates the router by at least 300 years. A lathe and a few simple tools are all you need.

This is a good project for novice turners, as the only turning is where you bring the blank to shape. The spirals are cut entirely by hand, with the lathe used as a vise to hold the work.

Besides a lathe you need some sharp gouges: I use a #9-7mm (#9 sweep, 7mm wide), a #9-15mm, a #7-20mm, and a #8-18mm. Gouges close to these in sweep and size would work as well.

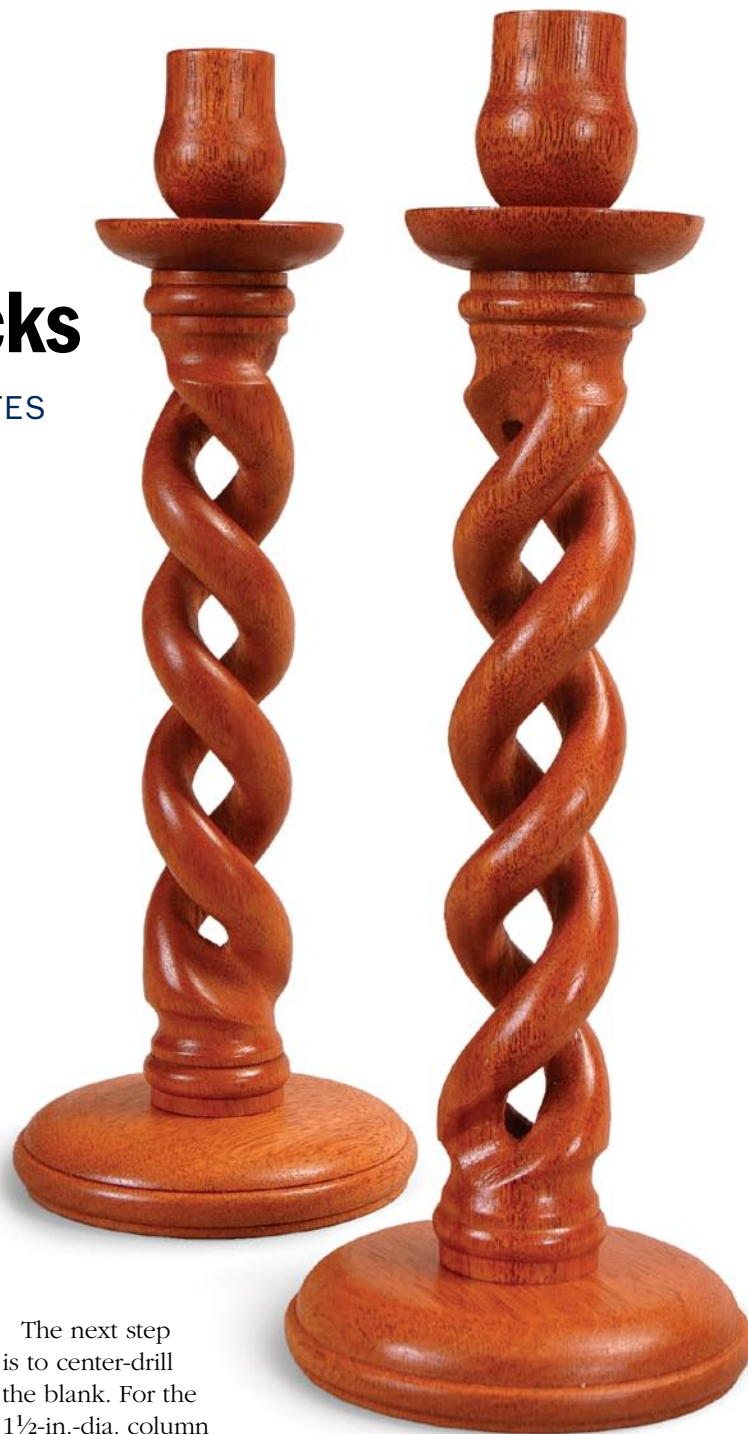
Choose wood that is easy to carve. Mahogany (shown) is a good choice for your first try; walnut is durable and looks good on a dining table; basswood is easiest to carve and looks fine in a less-formal setting; and oak was a common choice in 17th-century England.

Prepare the blank and lay out the twists

Before you turn the blank to the cylindrical pattern and drill out the center, be sure to imprint drive-center marks on both ends so that you can chuck the work in the same exact position at either end for carving. When creating the turning, put a gentle cove just inside the bead at each end to allow an easy start and finish with the gouges when carving the threads.

The next task is the layout lines. If your lathe has indexing, then use it to draw the four horizontal lines, but you can also use dividers or the lines drawn earlier on the end grain to find the center. Now divide the shaft into $\frac{3}{4}$ -in.-long segments, holding a pencil against the work to create a series of circles.

Although our forefathers would have used a piece of string to lay out the spiral, masking tape does a better job. Wind the tape in a left or right spiral so that one edge crosses each intersection of the 90° lines and circles. Repeat for the other spiral.



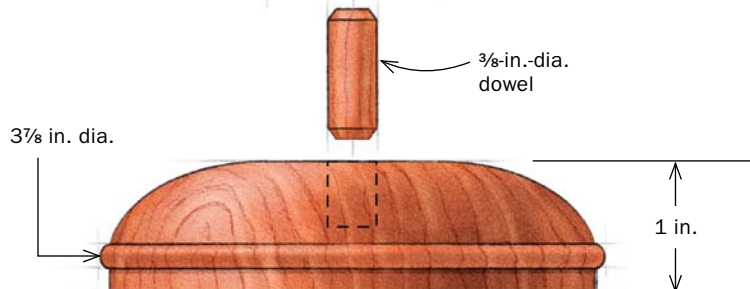
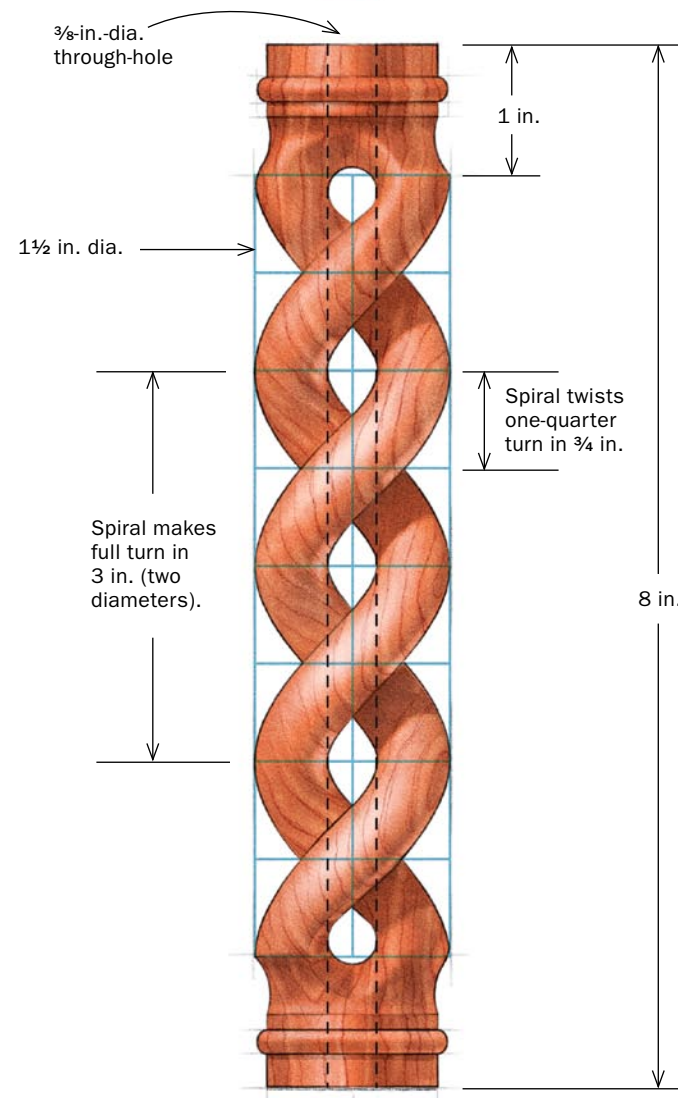
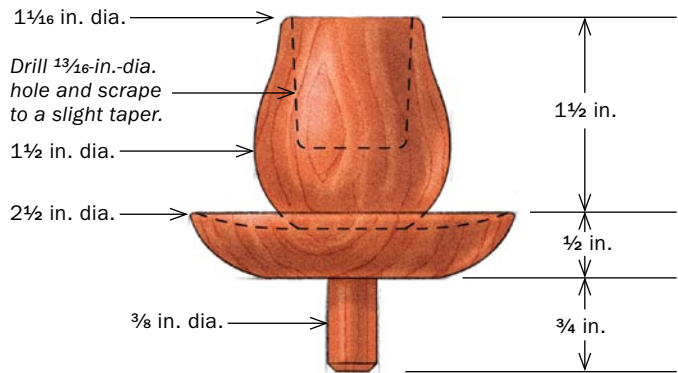
The next step is to center-drill the blank. For the $\frac{1}{2}$ -in.-dia. column on this design, drill a $\frac{3}{8}$ -in. hole. Drill from both ends to ensure better centering of the bore.

Saw, carve, and sand the spirals

Use a backsaw to cut a $\frac{1}{4}$ -in.-deep kerf following the curve of the cylinder on the spiral lines you just laid out. Place the #9-7mm gouge on the tool rest, just as if you were going to make a sheer cut with a turning tool, but skewed to follow the line of the kerf. You want to cut to the right side of the sawkerf to be cutting downhill with the grain. Now turn the work with the lathe's handwheel or an auxiliary wheel (see drawing, p. 98). If you have the tool at the correct angle, you'll automatically follow the spiral, but if not, simply correct on the fly.

Now reverse the piece end-over-end on the lathe and carve the other side of the kerf, blending in the middle as much as

Turn a cylinder and lay out the spirals

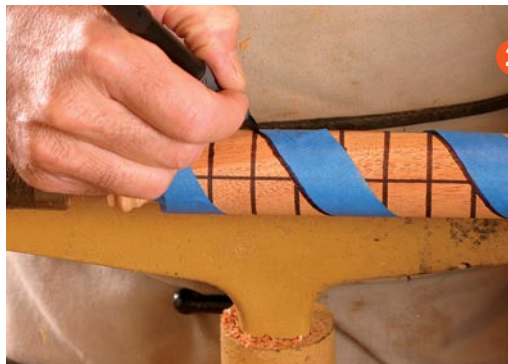


TWIST: NOT TOO LOOSE, NOT TOO TIGHT

This barley twist consists of two threads cut into a cylinder. The tightness or looseness of the twist is determined by the length of cylinder covered by each revolution of the spiral. I have found that a spiral that completes one turn in two outside diameters works best. With these three candlesticks, the one on the right has too much twist; the one on the left has too little, while the center one looks about right.



1 Lay out the lines. Divide the blank into quarters, marking two opposite lines with a dot to designate where the spirals will start. Then draw lines $\frac{3}{4}$ in. apart around the cylinder.



2 Draw the spirals. Wrap masking tape around the cylinder, connecting the intersections of the horizontal and circular lines, and mark the line. Do this for both spirals.



3 Center-drill the cylinder. Drill the blank from each end to keep the hole centered.

Saw and carve the spirals



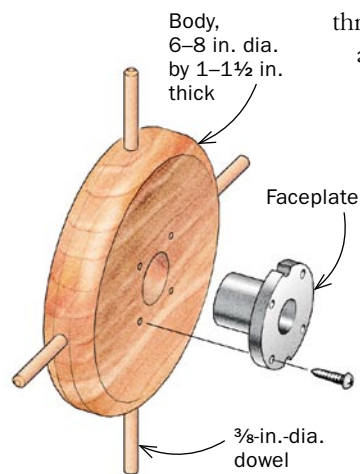
Saw the layout line. Use a backsaw to cut a kerf roughly $\frac{1}{4}$ in. deep along the spiral lines. Gradually spin the piece by hand as you cut.

possible. Come back and repeat both cuts using a #9-15mm gouge to widen the channel.

When you have cut to the bottom of the kerf, deepen the sawkerf and repeat the process. Before you break through to the drill hole and weaken the workpiece, use a #7-20mm or #8-18mm gouge inverted to round over the top edges of the grooves.

The breakthrough to the drill hole presents the greatest danger of cracking one of the twists. It is easy for the gouge to become a wedge along the grain line. Reduce this risk in three ways: Clear enough wood from both sides of the groove to keep clearance for your gouge; make only light cuts; and use a rasp when breaking through. If all else fails, a bottle of medium-viscosity super glue is a good standby.

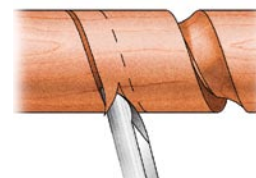
Once you have a good gap between the spirals, use a gouge on its side or upside down on the tool rest and carve the inside of the spiral by halves to avoid carving against the grain. If you'll be making a lot of these barley twists, use an in-cannel gouge; having the bevel on the inside of the flute gives



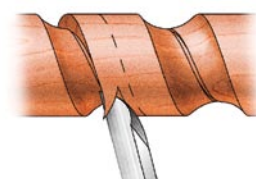
An auxiliary wheel makes hand-turning easier.



Carve the channel. Use a narrow gouge to carve a channel along each spiral. Stay to the right of the sawkerf so that you are cutting downhill and not against the grain. Flip the workpiece to carve the second half.



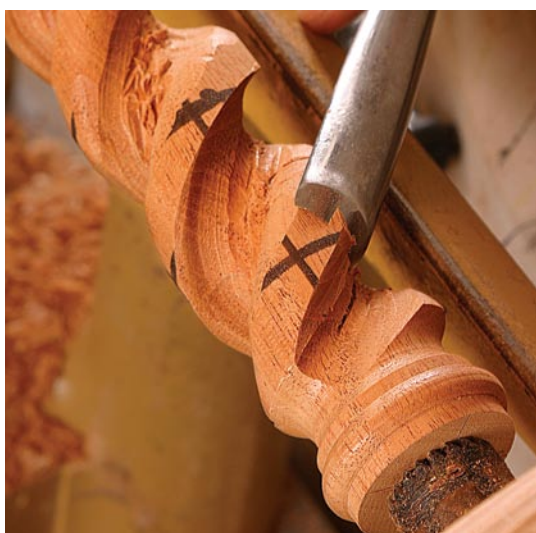
1. Stay to the right of the sawkerf.



2. Flip the blank to carve the other side.



Widen the channel. Come back with a wider gouge to enlarge the channel. Again, always cut on the right side of the kerf. When complete, saw down another $\frac{1}{4}$ in. and repeat the carving with the narrow and wide gouges.



Round over the spiral. Use an inverted gouge to shape the outside of the spirals.

Shape the inside of the spirals



Reveal the center hole and refine the spirals.

The workpiece becomes much weaker once you break into the drill hole. To reduce the risks of cracking a spiral, use a rasp when breaking through (above). Taking light cuts, delicately shape the insides of the spirals (right).



TIP: WORK ON BOTH SIDES OF THE LATHE

When cutting a left-hand spiral or certain sections of a right-hand spiral, it is easiest to move the tool rest and work from the back of the lathe.

greater control. You can find them at old tool sales, or regrind an old gouge. You'll need one whose sweep is slightly greater than the diameter of the spiral you're carving.

With the spirals roughly cut to shape, it's time to sand. Because you will not turn the lathe on, it's safe to use cloth-backed abrasive cut into strips. Start with P80-grit and work up to P180-grit paper.

Turn the other parts and apply a finish

Once everything is sanded to final smoothness, faceplate-turn the base, and spindle-turn the candle holder/wax cup. I turn a $\frac{3}{8}$ -in. tenon on the bottom of the wax cup to glue into the main shaft. I attach the base with a spindle-turned $\frac{3}{8}$ -in. dowel of the same wood I used for everything else.

Apply a coat of Minwax Antique Oil Finish and sand it in with P220-grit sandpaper. Sanding the wet oil ensures good bonding between coats and forms a slurry of wood dust and oil that fills the pores. When the finish is slightly tacky, wipe it with a clean cloth until almost dry. Repeat the steps with P320-grit, and finish with P400-grit. Aim for a very smooth, glossy surface but not a shiny, plastic look. □



Sand and finish on the lathe. With the lathe off, begin sanding the spirals with cloth-backed P80-grit sandpaper. The best method is to tear the abrasive into strips known as shoelaces (above). Wipe on an oil/varnish mix and sand it into the wood to create a smooth, medium-luster finish (below).

