



# CELTIC KNOT PEN INLAY



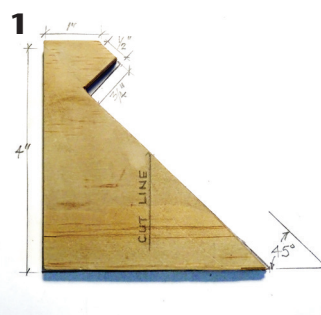
BY MICHAEL HAMILTON-CLARK

There are many creative ways to add visual interest to a turned pen or pencil. One of my favorite techniques is to inlay a Celtic knot in the top. This draws a lot of curious looks and elicits comments along the line of “How’s that done?” This is an invitation for conversation and possibly another sale. The secret to the Celtic knot is a simple cutting jig for the bandsaw.

## The cutting sled

The basic approach is to make a cutting sled for your bandsaw that will allow you to safely cut into the side of your pen blank at a 45-degree angle (**Photo 1**). The sled can easily be made from a piece of 1/2" (13mm) plywood. The dimensions shown are for use with standard 3/4" (19mm-) square pen blanks. The cut line is located so that the knot inlay will be centered 1-1/2" (4cm) from the top end of the blank, before the usual trimming back after boring for the brass tube and gluing it in place.

## Make a sled



The carrier sled is easily made from a 4" (10cm-) square piece of 1/2" plywood. Draw a line between two corners to find your 45-degree cut line. After laying out your lines, use a bandsaw to cut out the jig.

## Insert veneer

To use the sled, place it against the bandsaw fence and position the fence so that the cut line on the sled is in line with the saw blade (**Photo 2**). Clamp the fence. Place the blank against the sled's 45-degree face and slide the blank snug against the corner (**Photo 3**). Holding the blank firmly in place and with the sled pushed against the fence, feed the blank into the blade to cut a slot across the blank, stopping 1/8" (3mm) from the edge (**Photo 4**).

## Make the cut



Use your carrier sled to setup your cut. Set the fence so that the bandsaw blade aligns with the designated cut line on the blank.



Place your blank against the hook in the carrier sled and cut a kerf for the veneer, stopping about 1/8" of short of a through-cut.



# PROJECT: Celtic knot pen inlay



Glue a piece of veneer into the slot. After the glue sets, trim the veneer flush with the blank (**Photo 5**). Rotate the blank to a fresh face and repeat the process until you have glued veneer inlay into all four faces (**Photo 6**).

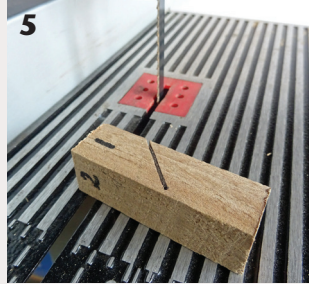
## Turn the pen

Now place the brass tube insert on the blank and center it longitudinally on the design and mark cut lines 1/16" (2mm) beyond each end of the tube. Take the blank to the bandsaw and cut along the cut lines. Drill the blank to accept the brass tube. Abrade the tube to roughen the surface and aid the glue bond. Temporarily block the ends of the tube to prevent glue contamination and glue the tube into the blank. Once the glue has cured, trim the blank to expose the brass tube ends. The blank is now ready for turning and as it is brought to round, the knot design will become apparent (**Photo 7**).

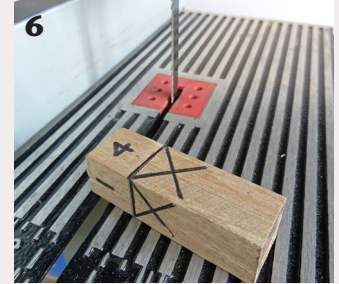
## Cut your own veneer

The inserted veneer can be cut on a bandsaw from a 3/4" pen blank in a contrasting color. If possible, and depending on the wood being cut, the thickness should match the bandsaw cut width (kerf) which is generally around 1/32" (1mm) (**Photo 8**). I set the fence to this thin cut with the aid of a piece of aluminum angle stock with approximately the same thickness as the veneer (**Photos 9, 10**). The resulting flitch should easily slip into the cut; if seating the veneer requires force, you risk breaking the 1/8" neck at the bottom of the cut (**Photo 11**).

## Trim the veneer



Glue your veneer in place and allow the adhesive to cure. After curing, trim the veneer flush with the surface of the blank.



After cutting and inlaying veneer in all four sides, your blank will resemble this example. Here the lines are drawn but not yet cut.

## Reveal the knot

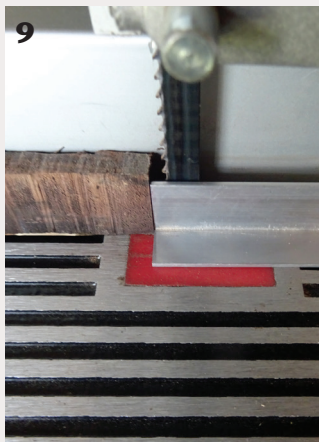


Follow your standard pen turning routine to reveal the knot in the top of the pen.

## Make your own veneer



Measure the thickness of your bandsaw blade—this should be the same as the resulting kerf.



A thin cut between the blade and the fence can be dangerous, and you risk the blade hitting the fence—better to have the veneer peel off the outside of the cut. Hunt around your shop for a proxy that will help you quickly setup thin veneer cuts, such as a piece of aluminum angle stock.



The veneer should slide into the kerf with little or no force.

# PROJECT: Celtic knot pen inlay



Depending on the species, a piece of wood this thin can be brittle and difficult to work with. If that's the case, aim for a practical thickness, but not more than 1/16" (1.5mm). A knot made from veneer thicker than this just doesn't look right.

Widening the kerf in the blank for a thicker veneer is simple. After making the initial cut, place a piece of your inlay veneer above the blank in the sled. This will offset the blank enough to widen the kerf (**Photos 12, 13**).

As an alternative to making your own, you can buy veneer strips. Fancier inlay patterns can be achieved using thin metal strips, alone or in combination with wood. These can be made by cutting up an aluminum drink can or, say, a brass draft stopper.

## Vary the angle

To explore more variations on this theme, try making carrier sleds with different angles. The knot based on 45 degrees is nicely rounded, but a shallower angle (like 30 degrees) or a steeper angle (around 60 degrees) will yield a fatter or slimmer knot accordingly.

The overall process is quite simple and there is plenty of opportunity for creativity, so have fun with it. ■

*Michael Hamilton-Clark, a retired civil engineer, has been turning wood for eighteen years. He lives in the Fraser Valley, British Columbia, and uses local woods to produce a variety of items. He is a member of the Fraser Valley Woodturners Guild, the AAW, and the Craft Council of British Columbia. For more, visit [alberystudiowoodturnings.com](http://alberystudiowoodturnings.com).*

## Thick veneer for weak wood



If you find your veneer is prone to crumbling, try cutting it a little thicker. Use a piece of the veneer to offset your blank for a second cut to widen the kerf.