master class

Curved panels for furniture

SOLID, KERF-BENT CORE CAN BE TAPERED, TOO

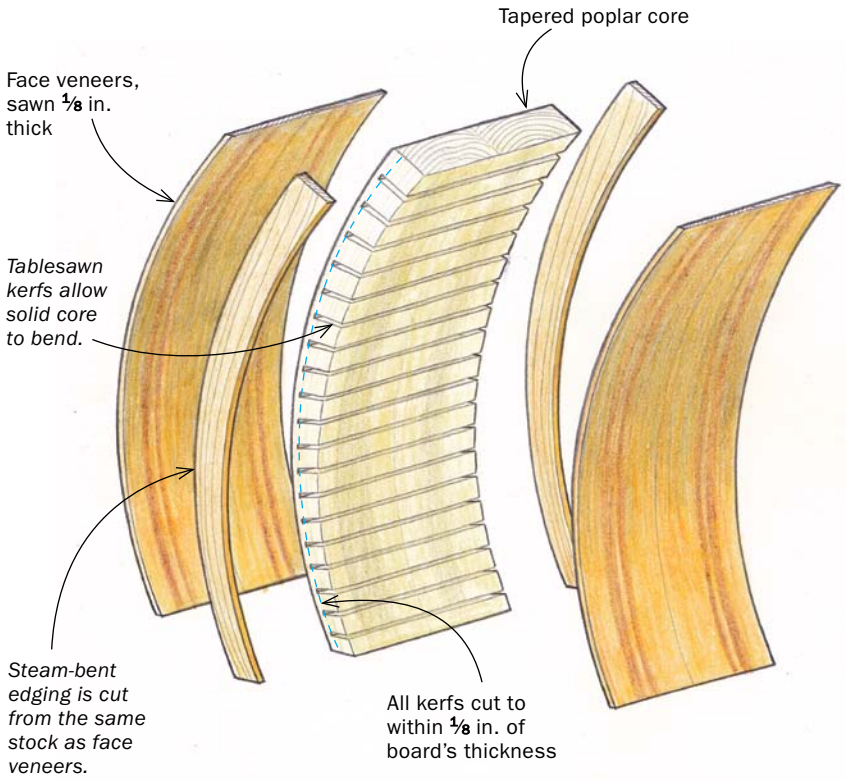
BY DAVID HAIG

I first began bending wood to build my signature rocker (see the Back Cover, *FWW* #215). I learned steam-bending and loved the results I could achieve with chair parts. Then I began wondering how I could bend panels for case furniture. The technique I developed allows me to make curved panels that taper in thickness and will look and behave just like solid wood. Of course, with the same technique I can also make curved panels of uniform thickness.

To make the panels flexible, I use a kerf-bent solid-wood core. I sandwich the core between

Pliable panels. *A solid-wood core kerfed across its width is the heart of Haig's system for making curved, tapered panels. He encases the core in face veneers and steam-bent edging, creating curved panels that look and act like solid wood.*

ELEMENTS OF AN ELEGANT PANEL



Photo, top right: Daniel Allen; drawings: John Tetreault

shop-sawn ⅛-in.-thick face veneers, and add steam-bent solid-wood edging. I cut my face veneers and edging strips from a show wood, and typically use an inexpensive wood like poplar for the kerfed core. If the ends of the panel will be exposed, I make the core from show wood as well.

You can make tapered curved panels using bent-lamination, but I find the kerfing technique much quicker and far more economical of material. Kerfing also allows me to locate the tightest part of the curve at any point along the panel; with bent-lamination, the thick end of a tapered panel will not bend as readily as the thin end.

Essentials of the kerfed core

To produce an even bend, I cut all the kerfs to within about ⅛ in. of the full thickness of the workpiece. As I cut the kerfs in the tapered board, working from the thin end of the workpiece to the thick end, I raise the blade a partial turn for each

Angled resaw starts the taper. *To make the 12-in.-wide tapered core stock, Haig resaws a 6-in.-wide poplar board on a diagonal line. He flips one of the resulting halves end-for-end (so the thick ends correspond) before edge-gluing the pair together.*

Glued up and tapered off. *After gluing up the tapered core (above), Haig smooths the tapered surface with a few passes through a planer on a tapering jig (right).*

Quick kerfs. *Haig cuts kerfs in the core with a purpose-built tablesaw sled and push block (left). Cutting with the workpiece pushed against a front fence enables Haig to use registration lines on the sled to establish quick, accurate spacing between kerfs (above). A pencil line on the workpiece guides the blade height. Sandpaper keeps the workpiece from sliding.*

Photos, except where noted: Jonathan Binzen

Assemble the sandwich

Veneer and edging from a single plank. *Haig first rips a blank for the steam-bent edging (above), then he bandsaws four slices of veneer. He edge-glues the veneer using painter's tape as a clamp. Before gluing, he tapes across and then along the joint on the back side, creating a hinge. Then he applies glue (right), closes the joint, and adds cross-strips on top.*

In the bag. *After applying a quick roller coat of glue to the face veneers and the core (above), Haig secures the sandwich with a few strips of tape and slides it into the vacuum bag (right).*

successive cut. I use a standard combination blade, but the type of blade is not critical.

The spacing between kerfs depends on the severity of the bend I want to make. A tight bend might require kerfs 3⁄16 in. apart; for a gentle bend, 1-in. spacing might suffice. At the ends of a panel, where it connects to the cabinet, I'll adjust the spacing to accommodate the joinery. Since both the kerfed core and the veneers are cut from solid wood, the panel moves with the seasons and should be joined just like solid wood.

Veneer and edging from a single board

Because I want a finished panel that looks like solid wood, I cut the edging and veneer from the same plank. After ripping off the edging stock at the tablesaw, I resaw the face veneers at the bandsaw and then put them through the planer. For the best grain match

Complete the panel

Trim the edges. *After glue-up, Haig joints one edge of the curved panel, carefully pivoting it to maintain contact with the fence (above). With the jointed edge riding against a high fence on the tablesaw, he rips the panel to width (right).*

Steam table. *After two hours in the steam box, the cherry edging stock bends readily to shape. The flakeboard bending form matches the curve of the ribs in the vacuum-bending form. A compression strap is critical.*

Ripped on a radius. *Haig resaws edging strips from the steam-bent blank, and then sends them through the planer.*

Clamps and cauls. *He glues on the curved edging strips one at a time, using a thick caul to spread the pressure.*

between veneer and edging, I bookmatch the veneers, gluing them up along the edges that were opposite the edging stock in the original billet. I make a sandwich of the face veneers and the kerfed core and glue them up in a vacuum bag. I put the kerfed side down so the kerfs close slightly as the panel bends, for a more continuous glue surface.

It may seem like a lot of effort to steam-bend edging stock, but the payback is powerful: The edging's grain follows the same curve as the panel and seamlessly matches the face veneers. □

David Haig designs and builds furniture in Nelson, New Zealand.

Shave it flush. *Haig trims the edging flush with a spokeshave and follows up with a card scraper.*