
**WORK FROM THE CENTER OUT**
Working from the middle outward allows you to perfect each section before moving on to the next.

# Decorative Veneering

## Assembling a complex pattern requires only basic tools and a logical approach

BY PAUL SCHÜRCH

In the many years I've been teaching, I've found that many students initially are afraid of veneer—a thin, fragile material. But that fear disappears once they've learned a few basic cutting and assembly techniques. By using a common chisel in uncommon ways and learning to tune up and use a standard veneer saw, assembling a complex panel becomes as easy as cutting and taping together paper.

Decorative veneering is the process of assembling the pieces of a design like a jigsaw puzzle, forming a single sheet. The design then can be glued onto a substrate in one piece. This eliminates the need to rout out a recess for inlay after gluing the main veneer to a core, and it offers a world of complex design possibilities.

Wood veneer offers a wonderful and varied palette of color and grain found in the burl, trunk and crotch areas of a tree. Burl veneer is my favorite because of its swirling patterns of reflecting light and color. I often use it as a background for marquetry. In the panel assembled for this article, a four-way book-match draws the

### Tools for success

I use both a chisel and veneer saw to cut veneer. The secret to tuning a chisel is to round the cutting corner slightly. A rounded corner won't dive into the grain, which pulls the chisel off line. It also cuts more smoothly. The corner you want to round is the one that's in contact with the work when you are dragging the chisel toward you with the bevel side against the straightedge.

After grinding an even bevel, hone the edge on a 1,000-grit waterstone, pausing periodically to knock off the burr from the back of the edge with one lapping stroke on the back.

Next, cut through the back of cloth-backed, 100-grit sandpaper two or three times to round the corner slightly (roughly a 0.020-in. radius). Scraping the corner over medium-density fiberboard (MDF) also works. Switch to a 1,200-grit waterstone to continue honing the edge and to knock off the burr from the blunted corner.

***A veneer-cutting chisel must be sharp, with a rounded corner.*** *Run the corner over the back of cloth sandpaper a few times to break it slightly. Then rehone it.*

For veneer work, I don't stop at the waterstones. To finish honing the edge and to sharpen the rounded corner, buff the edge on a felt wheel with buffing compound. Hair should actually leap off your arm trying to escape this edge.

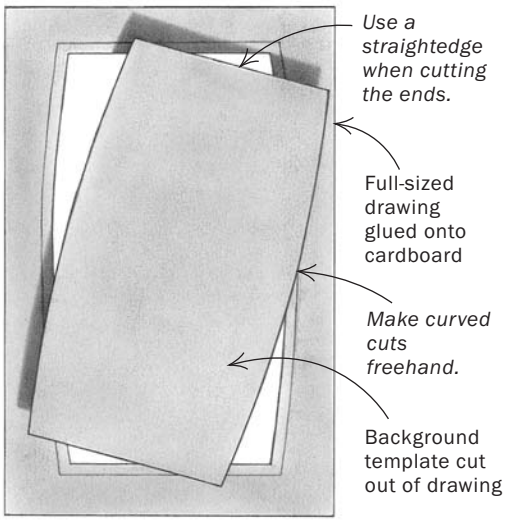
The chisel excels at cutting one layer of veneer at a time, but

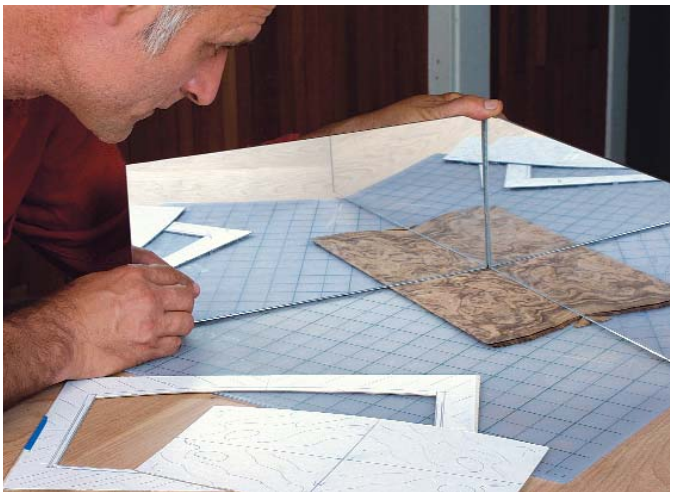


Photos: Asa Christiana

## STEP 1 CREATE A BOOK-MATCHED BACKGROUND

### MAKE A TEMPLATE



***Use a pair of mirrors to find the best book-match seams.*** *Refer to a template (foreground) to make sure you leave enough veneer to cover the pattern.*

***Stack all four layers and then cut them using a veneer saw and a thick straightedge.*** *Assemble two halves of the book-match, retrim the center seams and join the halves.*

***Put down gum tape on the outside edges of the pattern.*** *This will prevent the burl from crumbling when cut. Use a brush to burnish all gum tape onto the surface.*

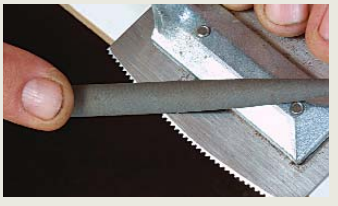
***Cut the burl background section to its final shape.*** *Use the cardboard template as a fence to guide the chisel. Always use the chisel on the glue face, which will keep its V-shaped kerf on the back of the pattern.*

eye toward the center of the panel and offers a rich contrast to the border. I used walnut burl for the center, or background, mahogany as a medium-colored border and a thin border banding (traditionally called a *filleti*) of padauk and sycamore to frame the background and separate it from the border.

The same cutting and assembly techniques you will learn making this panel can be used to make an endless variety of designs, in a variety of sizes and shapes, with different combinations of border, background and banding. The scale and style of the panel in this article are well suited for the top of a jewelry box. However, larger decorative panels made with these same techniques also are used in furniture, such as case pieces and beds.

### Start with a full-sized drawing

In my shop every panel starts as a full-sized drawing. I even paint in approximate colors to get a better idea of the final result. This drawing is your chance to work out shapes, proportions and



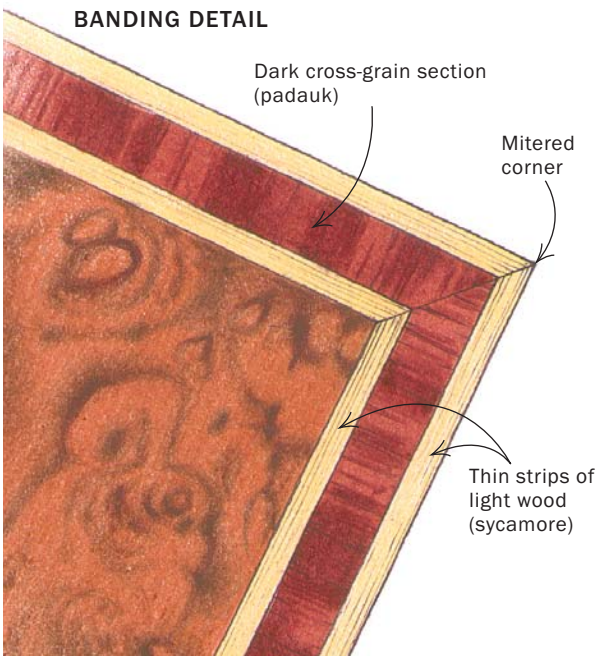
***Veneer saws are not ready out of the box.*** *First, sharpen the teeth with a fine file, following the angles already established. Then file a bevel onto the outside edge to bring each tooth to a sharp point. Knock off the burr from the back, and you're ready to make perfect cuts.*

**the veneer saw is necessary for cutting straight lines through multiple layers.**

**To sharpen this saw, file the teeth, bevel one edge of the blade so that each tooth comes to a sharp point and then hone off the burr on the back of the saw.**

Drawings: Michael Gellatly

## STEP 2 ATTACH THE BANDING ONE PIECE AT A TIME




***Assemble the banding.*** *First, edge the pattern with blue tape, sticky-side up, to hold the individual pieces in place.*

veneer species. You only have to color one-quarter of the pattern; you can use two mirrors to mock up the rest. The same mirror technique is used to preview the burl book-match (see the top photo on p. 75). Draw the final lines on this pattern accurately; later you will use this drawing as a cutting template.

Along with the full-sized drawing, you must arm yourself with cutting techniques. During my apprenticeship in Italy, I learned to use a wide chisel to make a number of different veneer cuts easily and accurately. I use a 40mm Double Cherry-brand chisel. The extra mass of the tool adds momentum to the cut, making it smoother, and the long wooden handle fits comfortably into my shoulder when I press straight down on the tool to make chopping, or parceling, cuts.

For the other chiseling cuts, I use the corner of the blade as a knife, drawing it across the veneer in subsequent passes. I can make freehand, curving cuts, use a straightedge to guide the chisel or use a partially assembled veneer pattern as a fence to cut a mating piece.

### Assemble the pattern from the center out

Upon receiving your veneer order, carefully inspect and number the leaves of veneer using blue tape to keep them in sequence. Do not mark directly on the veneer. Store the leaves between two flat surfaces in an area that is cool and at about 70% humidity.

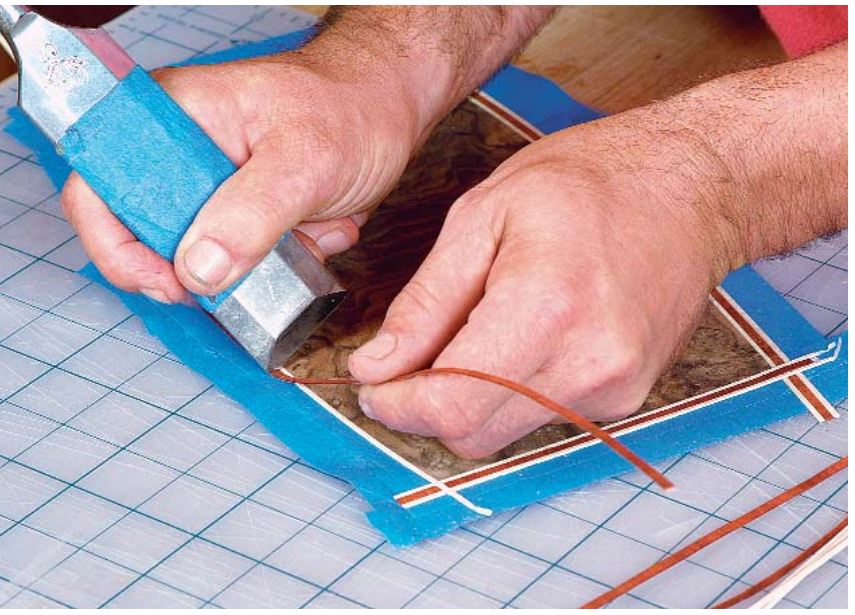
By working from the middle out, you can perfect the center joints before trimming the perimeter and adding the next element. Determine the most attractive grain pattern for the double book-match and mark the two seams. Line up, or index, the four leaves

## Spacer jig makes perfect stringing

***Slide the veneer against the simple jig.*** *The thickness of the stringing will be determined by how much the screw heads protrude from the edge of the jig. Again, place gum tape on the back of the veneer to prevent splintering.*

***Set a thick straightedge onto the veneer against the screw heads.*** *Sandpaper under the straightedge keeps the veneer in place.*

***Cut away each strip with a sharp veneer saw.*** *Pulling the saw straight back, make a light pass to start, then make firm passes until the strip is severed cleanly.*



***Handle with care.*** *Gently kerf the outside edges of the cross-grain strips, which will allow them to bend without breaking.*

***A perfect miter.*** *Overlap the ends and make a parceling (chopping) cut. Then align the chisel blade with the two corners and press straight down.*

in a stack by aligning two or three natural grain markings or knots on the surface. Tape the leaves together, and use the veneer saw and a ¾-in.-thick straightedge to cut only one seam. Be sure to use a long sanding block to clean up the edges.

Align the grain, and join the first two leaves of veneer with blue tape on their glue faces, pulling them tightly together as you tape. Then cover the entire seam with a strip. Flip the panel and apply gum tape over the seam. Repeat this on the other two leaves, then align and stack the two halves and cut the last seam. Flip one half to finish the four-way match, and then join the halves.

The blue tape holds the leaves together until the water-activated gum tape dries on the other side. The 25-gram gum tape should be moistened enough to feel slimy. Apply the tape over a joint, then use a fine brass- or plastic-bristle brush to burnish the gum tape onto the veneer. Wet gum tape will warp the veneer, so put the sheet between two pieces of plywood or melamine to dry.

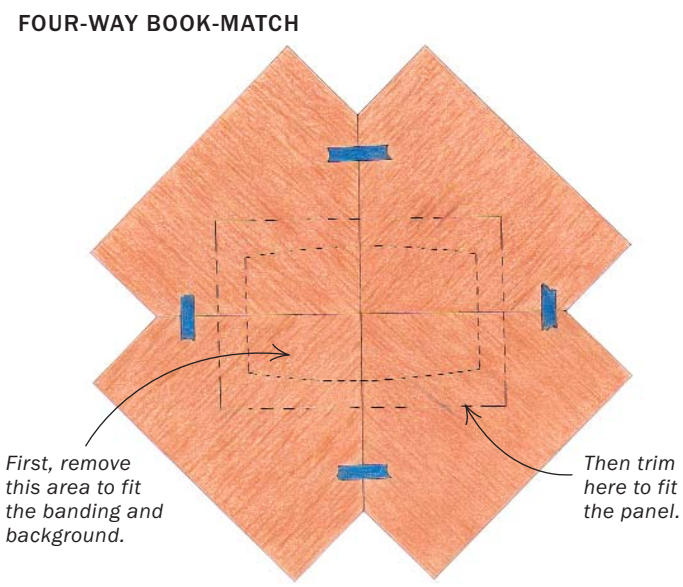
With spray adhesive, glue a photocopy of your original drawing of the panel onto a piece of thin cardboard to make a cutting template for the outside edge of the background. Using this template as a fence, cut the curving, outside edge of the background and the straight ends. The proper technique is to hold the chisel at an angle with its bevel riding vertically against the guiding edge so that you can see the cut clearly. It takes at least three passes to cut through a piece of veneer. The first cut, a light scoring pass, is the most important one. Use a bit more pressure for each subsequent cut. If the veneer is tearing a lot, you may have to reinforce it with blue tape on the opposite side. Cutting the veneer creates a V-shaped groove in the wood, so you must do your cutting on the glue face to keep the V-kerf hidden in the final pattern.

## Make and attach the banding

In this case the banding is made up of two thin strips of light wood surrounding a darker cross-grain section. Use a spacer jig (see the

***Trim away the overhanging tape.*** *The chisel technique makes it possible to cut right to the banding without damaging it.*

## STEP 3 INSET THE BACKGROUND AND BANDING INTO THE BORDER




***Assemble a four-way book-match with the veneer aligned diagonally.*** *Then place the center pattern onto it, aligning the center seams, and use the pattern as a fence to cut the border to fit.*

bottom photos on p. 76) to cut thin, even strips. The veneer saw is the tool of choice here.

Reinforcing the veneer, especially the cross-grain sections, with gum tape prior to cutting keeps the sheets intact while cutting and assembling them. Don't worry about excess gum tape; it will all come off later after the panel has been glued up.

To attach the banding, first attach blue tape to the edges of the background, putting it on the show face and leaving tape hanging over the edge. Assemble the strips piece by piece on the blue tape, placing them snugly along the edge. Overlap the banding at the corners.

Then, using the chisel, miter the overlapped pieces with a single plunging, parceling cut. The joint should come out perfect.

Finally, assemble the entire banding with blue tape on the glue face. Then remove the blue tape from the show face and replace it with gum tape.

### Book-match and attach the border

The grain in the border is aligned diagonally so that it appears to emanate from the center of the pattern. I lay out these seams using a 45° drafting triangle.

Again, index and cut the four leaves in a single stack, using the straightedge and the veneer saw, and joint the edges lightly with a long sanding block. Assemble the four-way book-match.

Overlay the background and banding onto the border sheet and align the center seams of the two layers. Apply a few strips of tape and use the over-laid center section as a cutting fence for the chisel. If everything remains in place during cutting, the border will fit the center section exactly. Attach the border as usual, with blue tape on the glue face and gum tape on the other.

**Trim the veneer panel to size—**Last, lay the substrate onto the glue side of the veneer sheet. For the substrate I used Medex, a water-resistant type of medium-density fiberboard (MDF). Align the center seams of the sheet with center marks on the edges of the substrate. Before cutting, attach gum tape to the show face where the cuts will be, to avoid splintering. Use the substrate as a fence to trim the veneer sheet to size.

Remove all tape from the glue face, make sure all of the seams and edges on the show face have gum tape and check that there is no overlapping veneer.

***A simple setup for veneering small panels.*** *To lay up veneer without using a vacuum bag, use ¾-in.-thick cauls and deep-reach clamps.*

### Lay up and finish the panel

Vacuum presses are wonderful for flat or curved work, and affordable small-shop models are available. But a panel this size is laid up easily using just clamps and melamine cauls.

For an adhesive, I prefer Unibond 800, a urea formaldehyde resin liquid, because the powdered catalyst comes in three colors to match various colors of the wood, and it has a rigid glueline, unlike yellow or white glue. Color-matching the adhesive makes squeeze-through much less obvious and problematic. A disposable foam roller applies the right amount of glue onto the substrate, about as much as a

***Lay the center section into the border and tape it.*** *Again, use blue tape first on the glue face, then gum tape on the show face.*

***Lay down the substrate and trim around it.*** *Use center marks to align the MDF substrate with the pattern's center seams.*

good coat of paint. Minimize warping by gluing a layer of veneer to the back of the panel at the same time to balance out the panel.

After a day or so, carefully scuff-sand the gum tape (and the high points of any thicker veneer) with a sanding block and 80-grit paper, continuing until the tape is almost gone. Stay away from the corners and edges to avoid sanding through the veneer. Next, use a paintbrush to wet the remaining gum tape. The water will soften the tape and show any loose veneer that needs regluing prior to sanding. After a minute, the tape can be removed easily with a sharp putty knife.

After the panel is completely dry, remove the 80-grit scratches with finer grits. Sand lightly and carefully to avoid sanding through the veneer.

With the burl veneers and multiple joints in this panel, it may be necessary to fill small gaps that remain after glue-up. Once you finish sanding, apply a light coat of shellac over the panel and fill any remaining gaps with Famowood #1 professional tinted filler, which is a creamy acetone-based putty. The putty can be tinted with universal tinting colors to match the surrounding veneer.

To remove the excess filler after it has dried, use a few drops of acetone on absorbent cloth or paper over a wood block. The acetone will not penetrate the alcohol-based shellac. Sand the panel to 400 grit, apply a topcoat, and the panel is done. □

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*Paul Schürch demonstrates this veneering process and other techniques in his book and video* Decorative Veneering, Vol. 1, *available at www.schurchwoodwork.com. The web site also features his furniture, teaching schedule and other tools and tips for veneering.*

## Finishing touches

***After the glue sets, sand away most of the gum tape.*** *Use a sanding block and stay away from the edges to avoid sanding through them.*

***Wet the surface to scrape away the last bits of tape.*** *The moisture also serves to reveal any air pockets beneath that must be repaired.*

***Wipe on a thin coat of shellac before filling and finishing.*** *Schürch uses colored, acetone-based wood filler to fill the small voids in the burl or elsewhere. The acetone won't dissolve the shellac, which protects the workpiece.*