Wooden Boxes

SKILL-BUILDING TECHNIQUES FOR SEVEN UNIQUE PROJECTS

CARVING ◆ JOINERY ◆ MARQUETRY ◆ RADIUS INLAYS ◆ SEGMENTED TURNING

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Contents



Cut the box in half

THE NEXT STEP IS TO CUT THE BOX INTO two pieces, effectively separating the box top from the box itself. This step is done on the tablesaw with the help of a shopmade box-cutting sled. The sled provides a stable surface on which to rest the serpentine box front as you push it through the sawblade.

1. Make the sled bottom from 2-in.-thick scrap hardwood. Cut it to 5⅛ in. wide by 18 in. long. Then cut two holding blocks, each measuring 1½ in. thick by 1½ in. wide by 5⅛ in. long.

2. Draw the serpentine radius onto the edge of the sled bottom. To bring the box level to the sled bottom, set the box on four 5⅛-in.-long scrap-wood blocks. Trace the serpentine box front on to the sled bottom.

3. Next, install a ⅜-in.-wide 6-tpi blade into the bandsaw and check the blade for squareness with the table using a try square. Adjust the cutting height approximately ½ in. above the top edge of the 5⅛-in.-wide sled bottom.

4. Cut away the waste material from the sled bottom by sawing down the center of the pencil line. Use slow, steady pressure to ensure accuracy and smoothness of cut.

5. Now place the serpentine box face front down into the sled. Set one holding block onto the sled, butted up against the front and rear of the box. Mark the position of each block. These two blocks will hold the sled together after cutting through the box. Remove the box and set it aside.

TO CUT THE SERPENTINE box front in half, use a shopmade cutting sled. A block at each end of the sled holds the box securely in place.

USE A SANDING BLOCK **with 150-grit sandpaper to sand the cut edges of the box flat and smooth.**

6. Fasten each holding block to the sled with four 3-in.-long screws. Note that for each block it's important to drive two screws to each side of the sawblade path. Sawing into a misplaced screw will ruin the blade.

7. To cut the box in two, start by setting the table-saw fence 1½ in. from the blade, and adjust the blade height to 2⅝ in. Set the box face down onto the sled. Place the sled tight to the fence, turn on the saw, and push the sled through the sawblade to cut through the serpentine front **(PHOTO A)**. Remove the box from the sled and set the sled aside. You will not need the sled to cut through the back and ends of the box.

8. To cut through the box back and ends, begin by setting the sawblade height to 19⁄32 in. That'll leave approximately 1⁄32 in. of hardwood uncut, so the two box parts will remain together during the next three cuts. Cut all three sides, starting with one end, and push the box through the sawblade, keeping it as straight as possible throughout the process. Then repeat with the back surface and finish up with the remaining box end.

9. To separate the box top from the box, use a scalpel to slice through the remaining hardwood. Sand the cut edges flat and smooth **(PHOTO B)**.

Cut rabbets for the ebony banding

ON THE OUTSIDE EDGES AND CORNERS OF the box, I installed black-ebony banding, which serves as a decorative design element but also as a durable strip that protects the veneer.

1. Set up the table router with a ball-bearing piloted rabbeting bit. Adjust the bit to cut a ⅛-in.-deep by ⅛-in.-high rabbet. Rout rabbets into the top edges of the box top, the bottom edges of the box bottom, and all four corners of both the box top and box itself **(PHOTO A)**.

2. Now readjust the rabbeting bit for routing the inside edges of the box top and box. Set the bit to cut ⅛ in. deep by 1⁄16 in. high and rout the rabbets.

ROUT THE RABBETS **for the ebony banding on the outside edges and corners of the box**



Playing Card Box

THIS BEAUTIFUL camphor burl card box provides a neat, stylish way to store all your playing cards. Centered on the box top is an attractive marquetry design that represents the four suits of cards. To enhance the edges of the box, I added diamond-pattern banding to further illustrate the playing-card theme.

In this chapter, you'll learn techniques for cutting the playing-card marquetry using just a scalpel, a technique known as the *window method*. The playing cards are cut from holly veneer and the card symbols—heart, club, spade, and diamond—are cut from bloodwood and Macassar ebony veneers. And there are step-by-step instructions for fabricating the diamond-pattern banding from Macassar ebony, bloodwood, and holly hardwoods.

Other advanced box-making techniques used in this project are cutting miters with a 90° V-groove router bit and turning a knob out of Macassar ebony. To complement the ebony used throughout the box, you'll learn how to make the box feet from pieces of Macassar ebony.

The playing card box measures 3⅜ in. tall by 8 in. deep by 14⅝ in. long, plenty large enough to store four decks of playing cards, poker chips, and even some dice.

MATERIALS

QUANTITY	PART	SIZE	CONSTRUCTION NOTES
2	Banding borders	1/16 in. × 1 1/4 in. × 19 1/8 in.	Macassar ebony
2	Half-diamond bandings	3/16 in. × 1 1/4 in. × 24 in.	holly
1	Diamond banding	9/32 in. × 1 1/4 in. × 24 in.	bloodwood
1	Box panel	1/2 in. × 14 1/4 in. × 20 7/8 in.	1/2-in.-thick maple plywood (for box top and sides)
2	Box substrates	1/42 in. × 21 1/8 in. × 14 1/2 in.	camphor burl veneer
4	Insert veneer	1/42 in. × 3 1/2 in. × 4 1/2 in.	holly veneer
2	Heart, diamond	1/42 in. × 2 in. × 2 in.	bloodwood veneer
2	Spade, club	1/42 in. × 2 in. × 2 in.	Macassar ebony veneer
1	Box bottom	1/4 in. × 7 1/2 in. × 14 1/8 in.	1/4-in.-thick maple plywood
2	Box bottom veneer	1/42 in. × 7 3/4 in. × 14 3/8 in.	camphor burl veneer
6	Edge veneers	1/42 in. × 3/4 in. × 8 in.	camphor burl veneer
6	Edge veneers	1/42 in. × 3/4 in. × 14 5/8 in.	camphor burl veneer
1 pair	95° stop hinges	1 1/16-in. × 1 1/4-in.	brass-plated
4	Top tenon feet	1/4 in. × 7/16 in. × 11/16 in.	Macassar ebony
4	Middle feet	3/16 in. × 1 in. × 1 1/4 in.	Macassar ebony
4	Bottom feet	3/16 in. × 3/4 in. × 7/8 in.	Macassar ebony
1	Knob	1 3/4 in. × 1 3/4 in.	Macassar ebony
3	Poker-chip dividers	7/8 in. × 1 1/8 in. × 4 7/8 in.	Macassar ebony
2	Card dividers	7/8 in. × 5/16 in. × 7 in.	Macassar ebony
2	Dice trays	7/8 in. × 1 3/8 in. × 4 1/16 in.	Macassar ebony

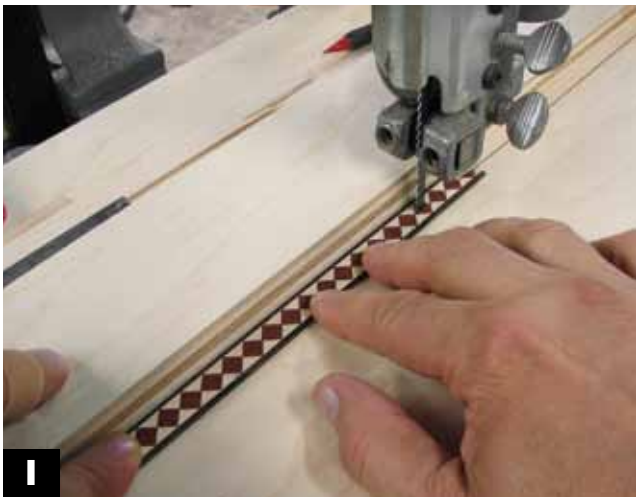
Slice the banding into thin strips

1. Before slicing the banding into thin strips, flatten one edge with a low-angle block plane. Set the plane iron for a very shallow cut and make long, continuous strokes across the banding **(PHOTO H)**.

2. Set the tablesaw fence 1/16 in. from the blade and cut the banding into thin strips, using a push stick for safety. By using an ultra-thin-kerf blade, you should be able to get nine slices out of the 1¼-in.-wide glued-up piece of banding. That means you'll have three extra pieces, in case of any mishaps.

3. The last step before starting to build the box is to use the bandsaw to rip three pieces of banding lengthwise down the middle. These half-width banding strips will be installed along the seam between the box and box top. Make a plywood platform with an attached fence to fit the bandsaw table. Clamp the platform in place and check to be sure the blade will rip the banding precisely down the middle. With the blade aligned exactly with the center of the bloodwood diamonds, slowly push the banding strips, one at a time, past the blade **(PHOTO I)**.

USE A BENCH VISE to hold the banding while planing the edges flat and even.



USE THE BANDSAW to rip three pieces of banding lengthwise down the middle.

Making Micro-Thin Cuts

To produce extremely thin cuts, as is necessary when making the 1/16-in.-thick diamond-pattern banding, I recommend using an ultrathin-kerf rip blade in the tablesaw. This blade has teeth that are only 5/64 in. wide. The results are cleaner thinner cuts with much less waste.

Window method of marquetry

THE WINDOW METHOD OF MARQUETRY IS A technique that uses only a scalpel to cut the veneers. First, a template is used to draw a design onto the background veneer. Then the template design is cut out from background veneer, creating a window. The window in the background veneer is then filled with another veneer, called the *insert*.

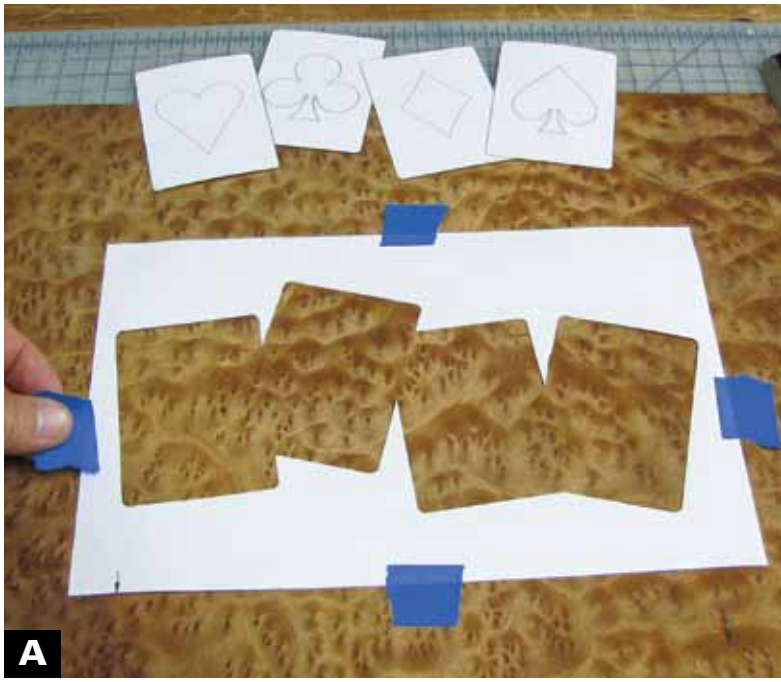
Using the window method to cut marquetry takes a bit longer than other marquetry techniques, but there's a lot less preparation time involved. It's also a good marquetry method for cutting straight lines with a high degree of accuracy.

1. Start by making a photocopy of the playing-card template shown on p. 47. Then use a cutting mat, scalpel, and straightedge to cut around the outside lines of the template, leaving the four cards attached as one design.

2. Before starting the marquetry, cut a 14¼-in.-wide by 20⅞-in.-long box panel from ½-in. maple plywood (this one panel will be used to form the box sides and top). Next, cut two clamping cauls from ½-in. plywood or medium-density fiberboard (MDF). Make them approximately ¼ in. wider and longer than the plywood panel.

3. Cut two pieces of camphor burl veneer to the same size as the clamping cauls: 14½ in. wide by 21⅛ in. long. Save time by using one of the cauls as a cutting template: Set the caul on top of the veneer and cut around it with a scalpel.

4. Take the paper template from which you earlier cut out the four-card design. Tape the template to the center top surface of one of the camphor burl veneer pieces; this veneer piece will eventually cover the top and all four sides of the box **(PHOTO A)**.



TAPE THE TEMPLATE to the center top surface of one of the camphor burl veneer pieces.

Spray a light coat of adhesive to the backside of the four-card template, which you cut from the paper template. Set the four-card template into the cutout opening in the paper template and press it down onto the veneer. Peel off the taped-down paper template.

5. Holding the scalpel at approximately 45°, cut around the outside edges of the four-card template **(PHOTO B, p. 46)**. Don't try to cut all the way through the veneer; instead, make relatively short, light scoring cuts around the template. When you get to the tight-radius corners, make very short scoring cuts. After scoring the veneer all the way around the four-card design, place the scalpel blade in the scoring cuts and cut through the veneer.

Make the decorative banding

THE DECORATIVE BANDING THAT RUNS around the top and sides of the box features a ¼-in.-wide strip of curly maple that's bordered along both edges by narrow pinstripes of walnut. Make the banding by first laminating together curly maple and walnut hardwood and then ripping the blank into thin strips to form the banding.

1. Start by crosscutting on a miter saw two pieces of ¾-in.-thick walnut and one piece of ¾-in.-thick curly maple to 30 in. long. Then use the tablesaw to rip both pieces to 2 in. wide.

2. Raise the tablesaw blade to 2¼ in. high and lock the rip fence ¼ in. from the blade. Resaw the curly maple piece, using a push stick for safety, to produce a ¼-in.-thick by 2-in.-wide by 30-in.-long strip. **(PHOTO A)**

3. Set the fence 1⁄16 in. from the blade and resaw each walnut piece to create two 1⁄16-in.-thick by 2-in.-wide by 30-in.-long strips.

4. Make two 2-in.-wide by 30-in.-long clamping cauls out of 1-in.-thick MDF. You're now ready to laminate together the maple and walnut pieces to form the banding blank.

5. Wipe all dust from the three banding pieces and from the two clamping cauls. Use a 3-in.-wide roller to spread an even coat of yellow glue onto both surfaces of the curly maple and one surface of each walnut piece **(PHOTO B)**.

6. Assemble the banding blank by gluing one walnut piece to each side of the curly maple piece. Then sandwich the blank between the two MDF clamping cauls. Wrap Gorilla Tape around each end of the assembly to prevent the parts from shifting out of position during clamping.

7. Tighten one short bar clamp over each piece of tape, then start in the center of the assembly and add more clamps, spacing them about 3 in. apart.

RESAW THE CURLY MAPLE for the decorative banding to ¼ in. thick, using a push stick for safety.

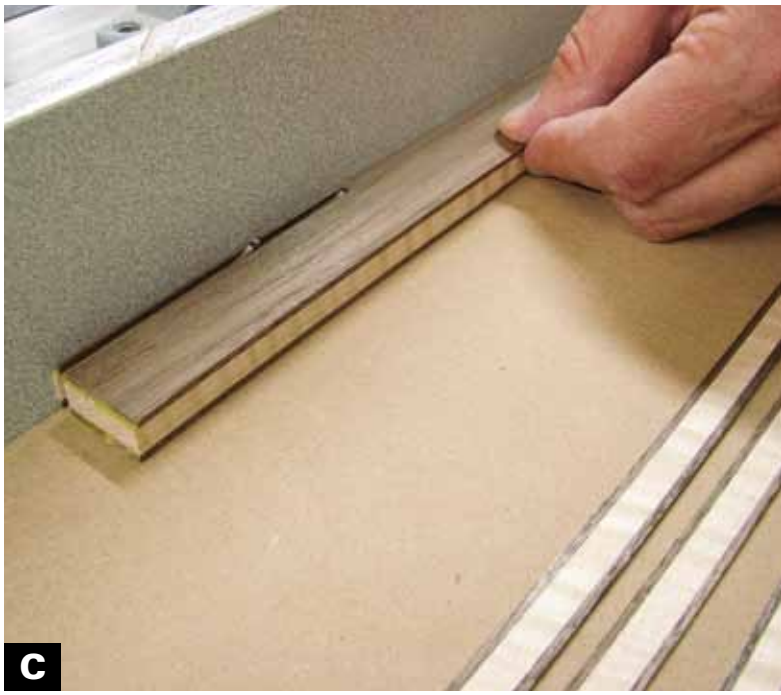
LAMINATE TOGETHER the maple and walnut pieces to form the banding blank. Sandwich the blank between two MDF clamping cauls.

Tighten each clamp with heavy pressure to squeeze out all air and excess glue.

8. Immediately wipe away any excess glue with a clean rag and then let the glue dry overnight. After removing the clamps and cauls, sand the broad 2-in.-wide surfaces of the walnut smooth and flat with a sanding block and 150-grit sandpaper.

9. Clamp the blank into a bench vise and smooth and flatten one long edge with a block plane.

10. Set the tablesaw fence 1/32 in. from the blade and use a push stick to cut the laminated blank into thin, narrow strips of banding. Note that by using an ultra-thin-kerf rip blade, I was able to get 20 pieces of banding from the 2-in.-wide blank, which is more than you'll need to complete the box **(PHOTO C)**.



RIP THE LAMINATED BLANK into narrow 1/32-in.-thick strips of banding.

Veneer the decorative side panels

THE BOX TOP AND ALL FOUR SIDES FEATURE a center panel of Karelian burl veneer, which is outlined by the decorative maple-and-walnut banding made in the previous step. The banding is used as a decorative element but also to separate the Karelian burl veneer center panel from the quartered cherry veneer that borders the box top and sides.

To veneer this box, I purchased one 14-in.-wide by 84-in.-long piece of Karelian burl veneer. Now that's more veneer than needed, but it allows you to select the best grain pattern, avoid using any veneer section that's chipped or cracked, and recut a piece should you make a mistake.

It's worth mentioning that veneering over hardwood can be problematic, especially on large projects, because solid wood and veneer expand and contract at different rates. However, for smaller projects, such as wooden boxes, expansion isn't a concern because the amount of wood movement is insignificant.

1. Cut two clamping cauls out of 3/4-in. or 1-in.-thick MDF or plywood. These cauls will be used to clamp the Karelian burl veneer to the four sides of the box. Cut one caul 2 5/8 in. wide by 8 1/2 in. long for the box ends and a second caul 2 5/8 in. wide by 11 1/2 in. long for the box front and back.

2. Place the veneer on a cutting mat, set a clamping caul on top, and use it as a template to cut the

3. Miter-cut the end of banding piece no. 3 and fit it against the mitered end of piece no. 2. Draw a line where you must square-cut the end of banding no. 3 **(PHOTO A)**. This squared end will butt up against the edge of banding piece no. 4, giving the appearance that banding pieces are crossing over one another. Once banding piece no. 3 has been cut and fitted, flip over the veneer panel and tape no. 3 in place.

4. Cut banding piece no. 4, which is the longest piece in the Greek key corner. Start by cutting a 45° angle in one end and then butt it against the mitered end of piece no. 1. Take a steel rule, slip it underneath banding no. 4 and press the rule against the outside edge of the center panel. Make a pencil mark where the steel rule intersects banding no. 4 **(PHOTO B)**. Miter-cut banding piece no. 4 on the pencil mark to 45°. Tape banding piece no. 4 to the center panel.

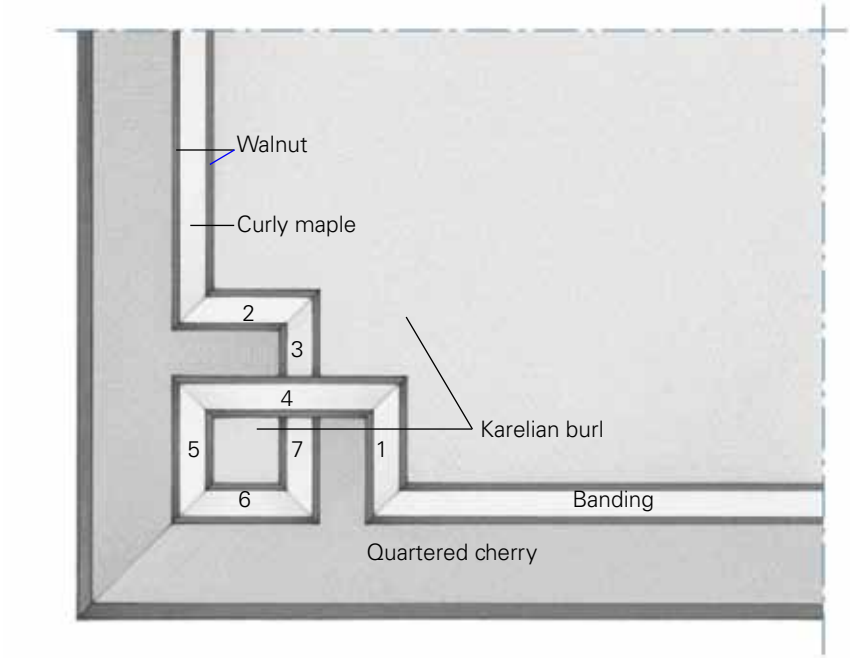
5. Place a piece of Karelian burl veneer onto the cutting mat and use a steel rule and scalpel to cut out a ⅝-in. square. Tape this small square of veneer into the center of the Greek key.

CUT AND FIT BANDING PIECE no. 3, drawing a line where the square-cut end butts up against the edge of banding no. 4.

6. Cut and tape in place banding pieces no. 5 and no. 6 and then tape them to the center panel. Be sure to use a steel rule to keep all the pieces straight and square.

7. Miter-cut the end of banding piece no. 7 and set it tight to the mitered end of piece no. 6 and against the edge of the Karelian burl square. Make a pencil mark where piece no. 7 overlaps banding piece no. 4 **(PHOTO C)**. Square-cut banding no. 7 on the pencil mark, set it in place, and tape it to the backside of the center panel. Repeat these steps to complete the remaining three Greek key corners.

Greek Key Corner Layout



WORK SMART

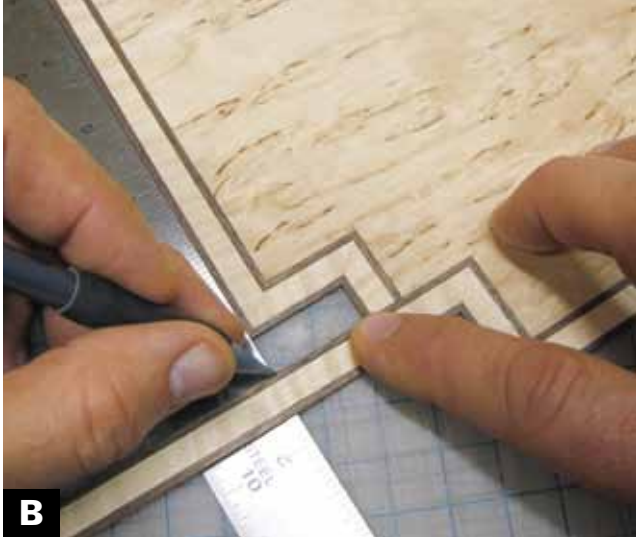
To make sure the Greek key corners are square and straight, use a straightedge guide or steel rule to align the banding pieces before marking and cutting them to length.

8. To complete each Greek key corner you must cut and install the rectangular pieces of quartered cherry veneer that fill the open spaces to either side of each Greek key. However, before cutting these small rectangular pieces, you must cut the outside cherry borders first. That'll make it much easier to match up the wood grain on the borders with the wood grain on the rectangles.

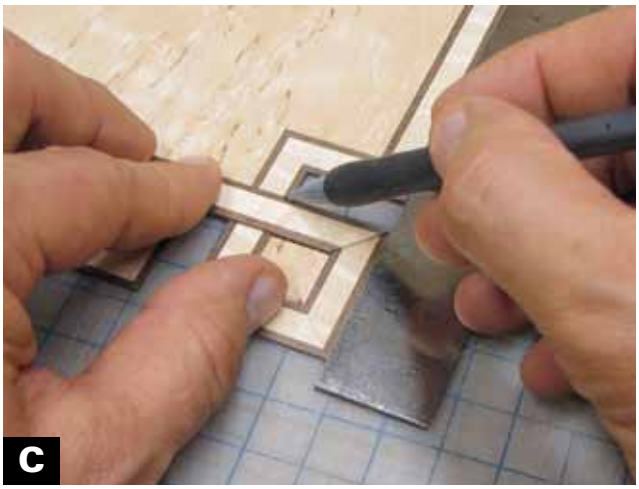
Use the same 11⅛-in.-long and 14⅛-in.-long clamping cauls used earlier to cut the cherry borders for the sides of the box. Follow the steps shown on pp. 76–77 for cutting the quartered cherry veneer borders to fit around the center panel of the box top.

9. The next step is to cut the small rectangular pieces of cherry veneer to fit into the open notches beside each Greek key corner. Start by setting one cherry border on top of a flitch of cherry veneer. Shift the border around until you find a matching wood-grain pattern on the veneer. Now slip the veneer under the Greek key corner, aligning the matching wood-grain pattern under the open notch. Firmly press down on the banding and cherry veneer, and then cut out the cherry rectangle with a scalpel **(PHOTO D)**.

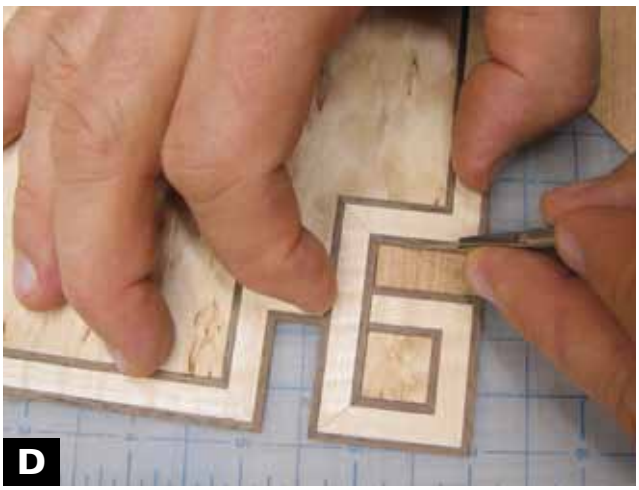
The wood grain on the rectangle will now match the wood grain on the border. Repeat these steps to cut two cherry rectangles for each Greek key corner. Once done, tape the rectangles to the back of the center panel. Then tape the four quartered cherry borders to the panel as well.



MARK THE OUTSIDE MITER for banding piece no. 4, which is the longest piece in the Greek key corner.



MARK THE SQUARE CUT on the end of banding piece no. 7 where it abuts banding no. 4.



CUT THE SMALL RECTANGLES of cherry veneer to fit into the open notches beside each Greek key corner. The wood grain on the rectangle should match the wood grain on the border.

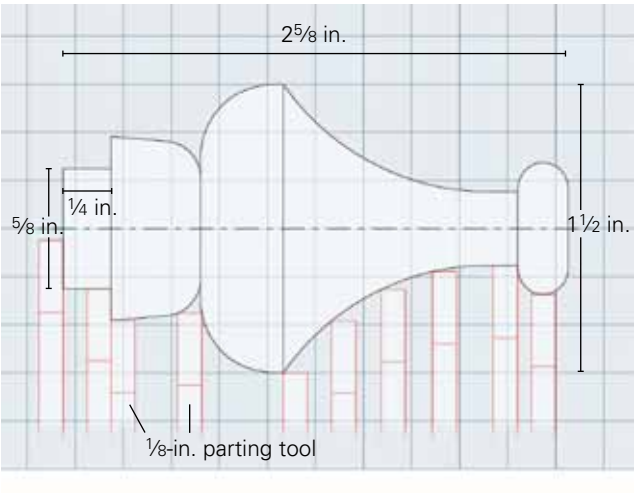
Turn the segmented feet

To turn the segmented feet on the lathe you'll need an outside caliper and four turning tools: a roughing gouge, ⅛-in. parting tool, skew chisel, and ⅜-in. round-edge skew.

1. Mount one of the octagonal blanks in the lathe and set the speed to about 500 rpm. Use a roughing gouge to cut the blank into a perfectly round 1½-in.-dia. cylinder. Stop occasionally and check the diameter with the calipers.

2. Photocopy the "Segmented Foot Template" below. With the lathe turned off, hold the template against the round blank and mark where to cut with the parting chisel **(PHOTO E)**. Then hold the pencil point against each mark and rotate the blank by hand to draw cut lines all the way around the blank.

Segmented Foot Template



Template is full scale. Grid is ¼ in. × ¼ in.

WORK SMART

When turning the feet, be sure the gouge is always in contact with the tool rest. Position the tool rest no more than ¼ in. away from the spinning blank.

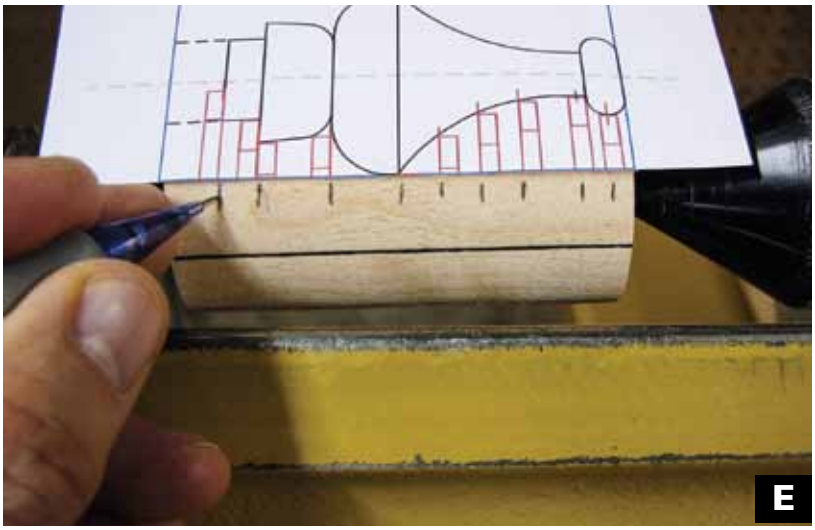
3. Starting at the bottom end of the foot, use the ⅛-in. parting tool to cut a depth kerf into the blank on each of the six lines **(PHOTO F)**.

4. Crank up the lathe to about 800 rpm and use the round-edge skew to remove the waste wood and turn the bottom end of the foot. Be careful not to cut deeper than the depth kerfs.

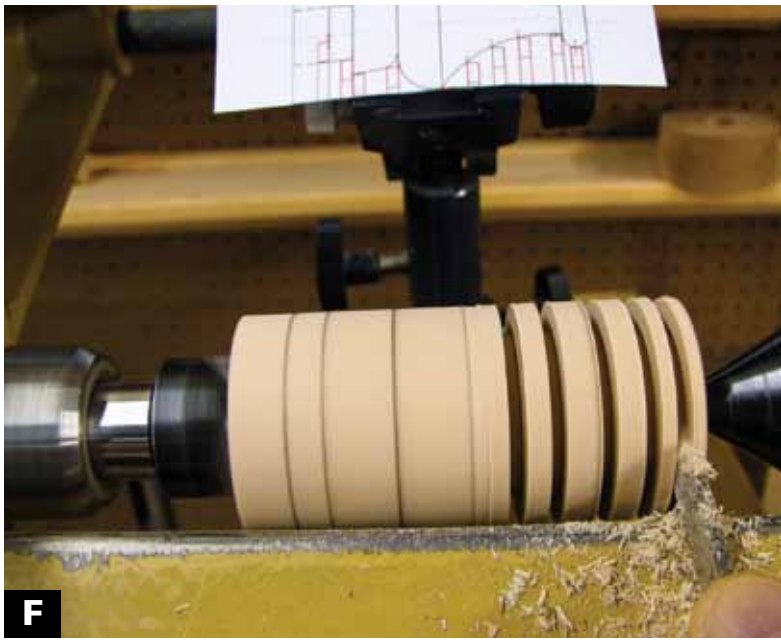
5. Shape the rounded bun on the very end of the foot with a skew chisel **(PHOTO G)**.

6. Turn the ¼-in.-long tenon at the upper end of the foot with a parting chisel. Check with the calipers to ensure the tenon is exactly ⅝ in. dia.

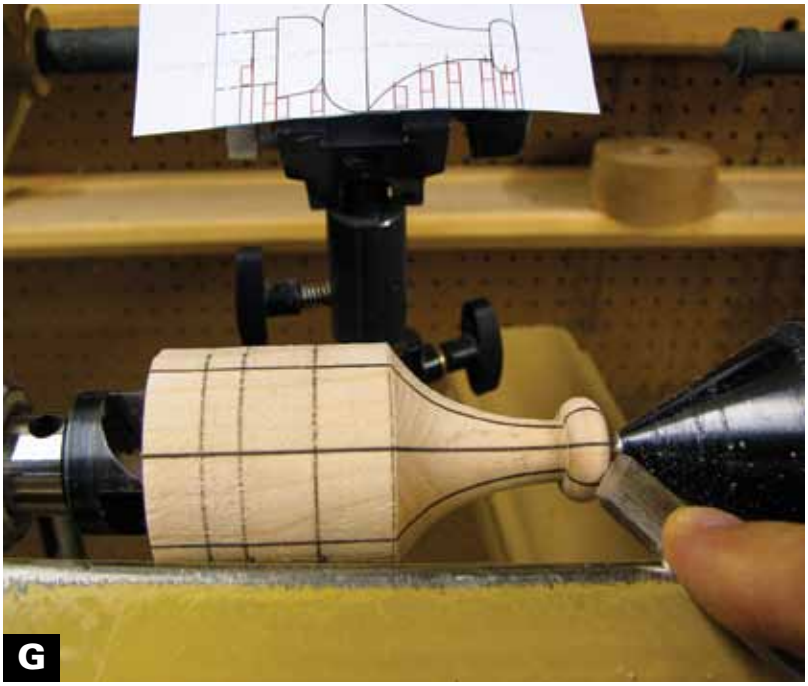
7. Use the skew chisel to shape the large and small rounded sections of the foot. Work slowly, shaving off very small amounts of wood until you reach the final shape.



HOLD THE SEGMENTED-FOOT template against the round blank and mark the key cuts.



USE THE PARTING TOOL to make the initial cuts in the foot. Refer to the marking template to determine how deep to cut each kerf and then use calipers to maintain the proper diameter.



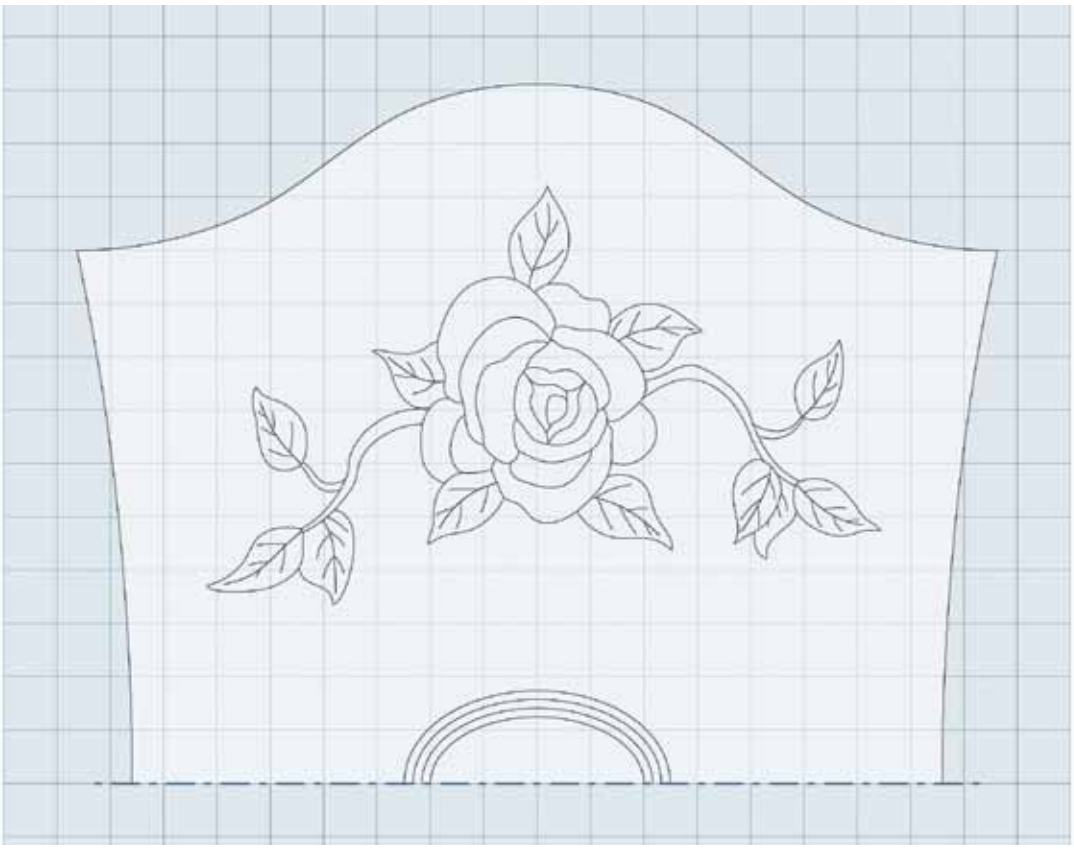
SHAPE THE ROUNDED BUN on the end of the foot with a skew chisel; be careful the skew tip doesn't cut into the foot and sever the bun.

WORK SMART

I like to keep my lathe at a slow setting from the beginning to the end. I keep my digital rotations per minute reading anywhere from 500 rpm to 900 rpm. When cutting with the roughing gouge, keep it lower (around 500 rpm) and then speed up when detailing with the other turning tools. The type of wood also determines my speed setting.

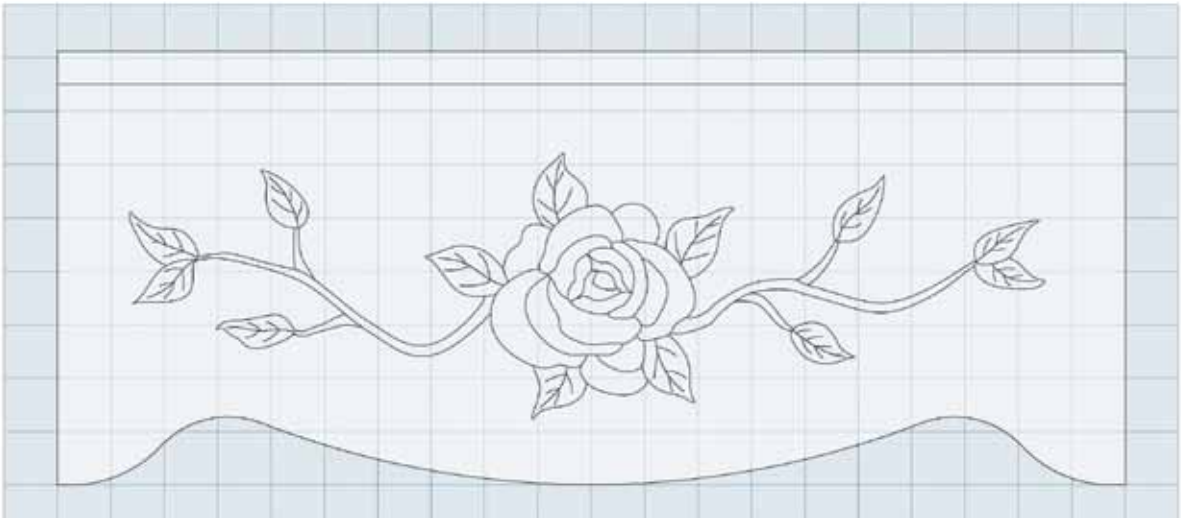
Carving Templates

Top (left and right)



Enlarge by 180% for full-size template. When enlarged, grid is ½ in. × ½ in.

Front



Enlarge by 180% for full-size template. When enlarged, grid is ½ in. × ½ in.

Carve the roses and petals

1. Once you've completed all the stab cuts, you can begin relief carving along the pencil line that's ⅛ in. from the template. Hold a gouge on the pencil line at a 60° angle and lightly strike it with a mallet to cut up to the stab cut. (Using a mallet provides greater control and helps prevent accidentally carving beyond the stab cut.) **(PHOTO C)**

2. Using the same method of stab and relief cuts, carve one rose petal at a time, starting with the outside petals and working in toward the center of the rose. Match the carving gouge to the lines of each petal. And it's best to complete each petal before moving on to the next, as opposed to stab-cutting all the petals and then coming back to carve them all. Stab-cut 1⁄16 in. down into the wood **(PHOTO D)**.

3. Relief-carve up to the stab cuts while holding the gouge at approximately 45°. You need to hold the gouge at this slightly shallower angle because the rose petals are relatively wide **(PHOTO E)**.

ONCE YOU'VE COMPLETED all the stab cuts, begin relief carving along the pencil line that's ⅛ in. from the template. These sharply angled cuts create a border outline that gives the carving much depth and shadow.

WORK SMART

When creating the relief carvings of roses, vines, and leaves, work slowly and deliberately. And remember, carving isn't as complicated as it looks; these methods can be learned by novices or seasoned woodworkers. All you need is a little patience and practice.

CARVE THE ROSE PETALS one at a time using the same method of stab cuts and relief carving.

MAKE THE RELIEF CUTS on the petals with the gouge held at approximately 45°.

Prepare the outside corners

TO ENSURE THAT the bloodwood veneer ribbons on the corners match up with the ribbons on the front and ends of the box, use a pencil to draw the ribbons onto the hardwood corners of the box. Here, you can be a little creative, shaping the ribbons as you like. Just be sure they align with the front and end ribbons. And to make the ribbons appear to twist, simply draw the ribbon to a point from each direction **(PHOTO A)**.

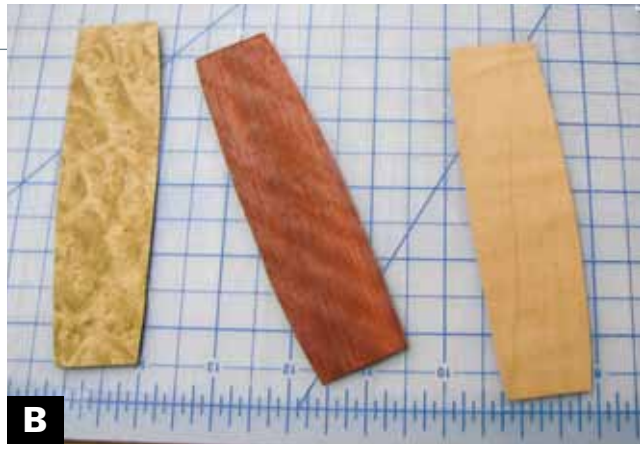
All four of the box corners will have ribbons running across them. The two back corners will have a single ribbon, the two front corners require two ribbons each. After drawing the ribbons onto the hardwood corners, cover each corner with tracing paper and trace the ribbon outlines onto the paper. This will be the cutting template for the veneers used to cover the corner.

CONNECT THE RIBBONS on the front and ends of the box by continuing them across the hardwood corners of the box. You can afford to be creative here.

Veneer the outside corners

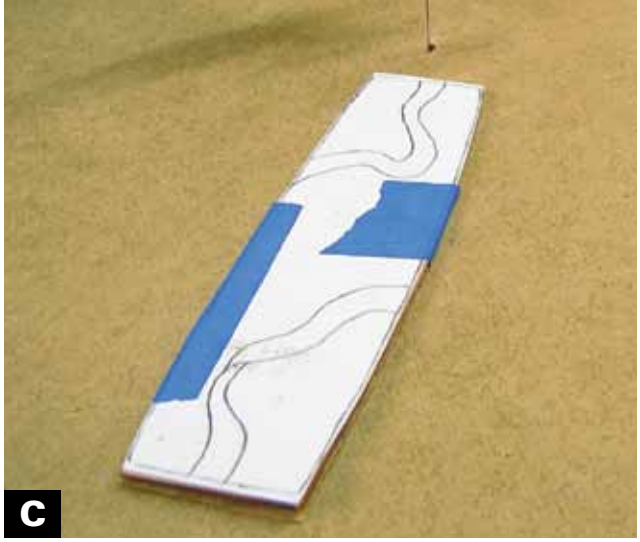
The following steps guide you through creating the marquetry detail at the four outside box corners. This simple technique ensures that the inlaid-veneer patterns will flow smoothly from the box front, across the corners, and onto the box ends.

1. For each box corner cut three pieces of veneer, each approximately 1 7/16 in. wide by 5 1/8 in. long. You'll need one piece of chestnut burl for the background, one piece of bloodwood for the ribbon, and one piece of scrap veneer for the template. Cut out the veneer using a scalpel and self-healing cutting mat **(PHOTO B)**. Be sure the wood grain on the bloodwood veneer is running vertically. That way, the ribbon will look like it's flowing upward to the top.



YOU NEED THREE PIECES of veneer to create the outside corners: one piece of chestnut burl for the background, one piece of bloodwood for the ribbon, and one piece of scrap veneer for the template.

2. To preserve your tracing-paper template, make a photocopy of the original. Then cut out and glue the copy to the face of the waste veneer using spray



ASSEMBLE THE STACKED-VENEER packet and cut along the pencil lines.

PRESS THE CORNER VENEER into place, rubbing down lightly with a wooden veneer hammer.

adhesive. Stack the three pieces of veneer and tape together two edges to form a small packet.

3. Set the scrollsaw to its slowest speed and cut the stacked-veneer packet along the pencil lines **(PHOTO C)**.

4. Place the cut veneer pieces back together face-side down onto a sheet of mounting-film paper. Then trim off the excess paper with a scalpel.

5. Using an electric heat gun, lightly warm the glue side of the veneer and the face of the hardwood corner. Brush hot animal hide glue onto both surfaces, then lightly press the veneer into place; hold with your fingertips for about one minute. Lightly rub down the veneer with a wooden veneer hammer **(PHOTO D)**. Let the glue dry at least three hours before trimming and sanding the edges flush. (Note that if you're using yellow glue instead of hot animal hide glue to adhere the veneer, you'll have to make a clamping caul to match the outside radius corners.)

Veneer the top edges

USE THE SAME CUTTING TEMPLATES that you used to cut the hardwood cherry front, back, and ends (see p. 162) to cut the chestnut burl veneer for the top edges of the box. Only this time, draw a line ⅛ in. larger around the templates. Follow the radius profiles, but mark the ends at 45°. Check to be sure the mitered ends of the templates fall centered on the mitered box corners. Trace the templates onto the veneer and cut out the four pieces.

1. Use the heat gun to lightly warm the glue side of the veneer and the hardwood edge. Brush hot animal hide glue onto both surfaces **(PHOTO A)**.

USE HOT ANIMAL HIDE GLUE to attach the top edge veneer to the box; apply glue to both surfaces.

WORK SMART

It's important to keep the blade cutting straight and on course when feeding the packet into the blade. Don't get impatient and don't push too hard; let the blade do the work. Also, while you're cutting, occasionally lift up your fingertips very slightly, then immediately press the packet back down. This will reposition the packet by straightening the blade. It will also help keep the blade cutting straight and on course.

3. When cutting the veins into the leaves, just follow the template lines, and then back out the blade with the saw running. The resulting kerfs (gaps) made by the blade will fill with glue, creating dark lines that make the veins look very realistic.

4. To cut the sharp corners of the rose stems, saw right up to the tip of the stem and then turn off the scrollsaw. Remove the blade, turn the packet around so that the next cut is straight, and reinstall the blade. Turn on the scrollsaw and cut up to the next sharp corner. Repeat these steps for each sharp corner cut **(PHOTO B)**.

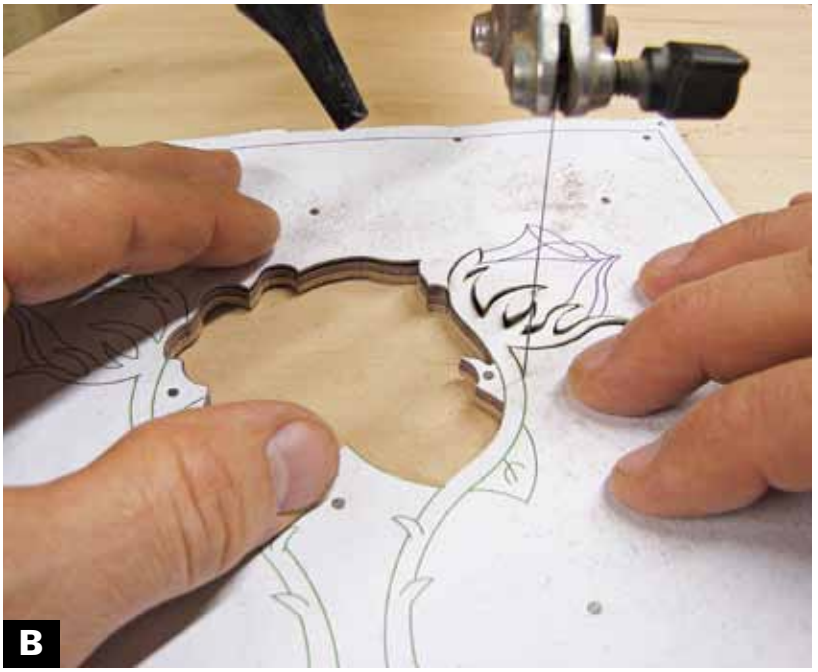
Another way to cut sharp corners is to rotate the packet at a faster pace right at the tip of the corner. This will take a little practice but works just as well and is a faster method.

Now finish cutting all the pieces in the marquetry packet.

WORK SMART

As you're cutting the veneer packet, place the cut pieces into a tray, so they won't get mixed up. The way I keep everything organized is to place the center rose into the center of the tray and the left and right rosebuds and stems into the same location in the tray.

WHEN CUTTING the veneer packet, cut out the center pieces first and then work your way toward the outer pieces.



TO CUT SHARP CORNERS, saw right up to the tip of the corner and then turn off the scrollsaw. Remove the blade, turn the packet around so that the next cut is straight, and reinstall the blade.

Create Shading with Hot Sand

Silica sand is used to shade marquetry pieces by lightly burning the veneer, producing a three-dimensional effect. This type of sand is very fine and thus provides a uniform burn into the veneer. Some of the best places for shading marquetry are where two pieces meet or at the center or outside edges of leaves. However, be careful not to overdo it. A little shading in the proper places is all that's required to give the marquetry picture a natural look. (It's smart to practice with several different types of veneers because veneers shade—and burn—at different rates.)

1. Start by filling a cast-iron skillet about two-thirds full with very fine silica sand. Set the skillet onto an electric stove or portable burner and heat the sand for about 30 minutes.

2. Meanwhile, place all the front-door marquetry pieces on top of one of the plywood clamping cauls, making sure to set them into their final positions **(PHOTO A)**.

3. Once the sand is hot, use tweezers to pick up the marquetry pieces and partially bury them into the sand. Leave the veneer pieces in the sand for short periods of time, 5 seconds to 10 seconds, while periodically checking the veneer. Be careful not to burn them or they'll become brittle and flake off. The goal is to get a light to medium shade of color, which gives the veneer a three-dimensional appearance **(PHOTO B)**.

4. After removing the marquetry pieces from the sand, they'll curl up a little as they cool. To flatten them out, place all the shaded pieces onto a plywood clamping caul. Then lightly mist the pieces with water, place another plywood caul on top, and clamp together for three hours. This will flatten the marquetry pieces **(PHOTO C)**.

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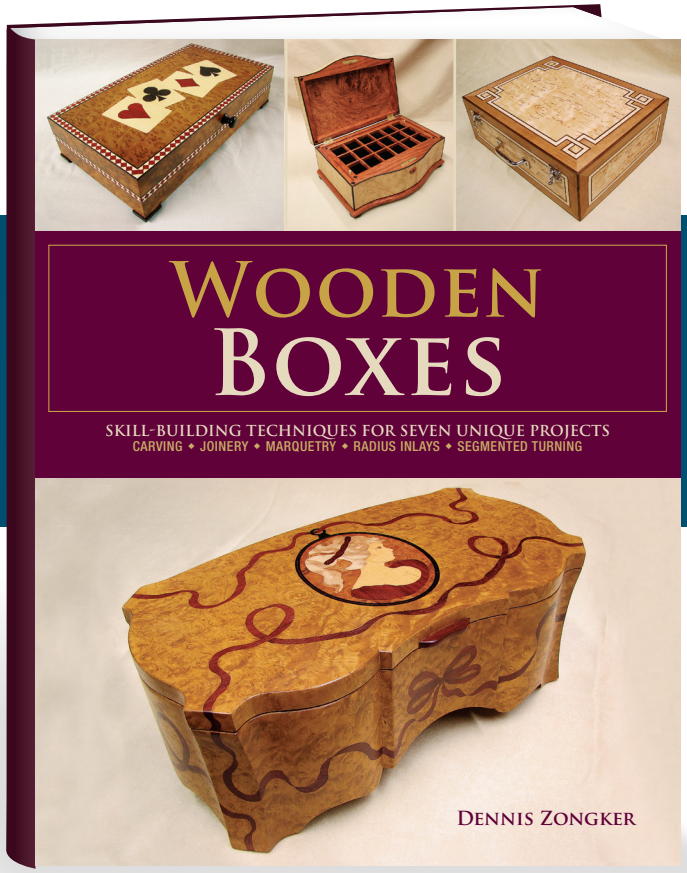

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