

The Lutyens Garden Bench

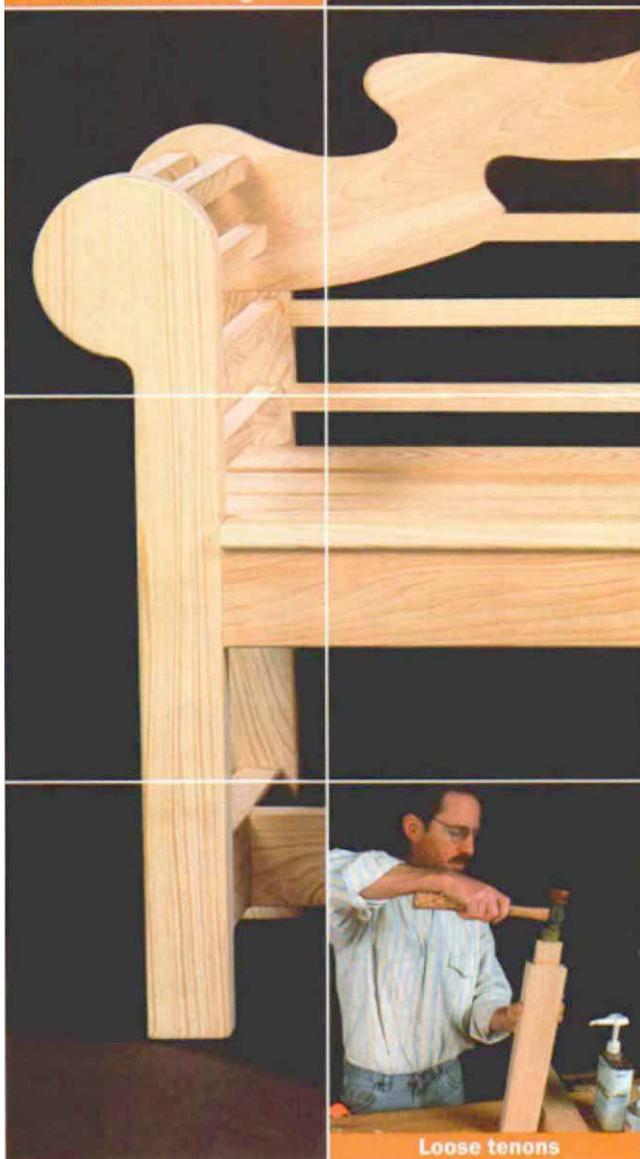
Turning our little yard into a landscaped garden retreat has been one of those back-burner projects my wife and I have managed to avoid since buying our house six years ago. It's been easy to do because neither of us is a gardener. As a woodworker, I'm always able to find constructive projects somewhere inside the house that are better suited to my skills than moving earth and planting flowers. Plus, I've decided that a proper garden should evolve slowly over the years—four years ago we planted a Japanese maple under the fringe of the huge Sycamore that dominates the yard, and last summer I laid down a brick patio outside the back porch. Good things shouldn't be rushed, I tell myself.

Now that I work primarily from home, the prospect of taking daily work breaks in a more pleasant backyard nook has me thinking more about the gardening part of our imaginary garden. But over the winter months all I could do was plan, dream and defer. Then I saw a picture of the Lutyens garden bench in a catalog. The bench had the kind of distinctive elegance that I wanted my garden to have, but with a price tag nearing \$2,000 in the catalog, I decided to make one myself.

The original bench was designed 100 years ago by Edwin Lutyens (1869-1944), a British architect and designer. The bench's curvaceous crest rail and lollipop-like front legs form a whimsical frame around the classically regimented slats of the back and rolled armrests. An



Full-sized drawings



Pattern-routing



Loose tenons

Full-sized drawings and accurate templates help break a classic design into manageable parts

BY TONY O'MALLEY



eye-catching and comfortable three-seater, it's no wonder the Lutyens bench is still copied by dozens of outdoor furniture manufacturers.

Some reproductions I've seen have no bottom stretcher at the front or back, and others have both. As I sketched and worked through drawings, I began to notice that a bottom stretcher even with the front legs would restrict a sitter's feet from going where they naturally want to go—under the seat a few inches. As a compromise, I positioned a stretcher under the middle of the seat, tenoned into the bottom side stretchers.

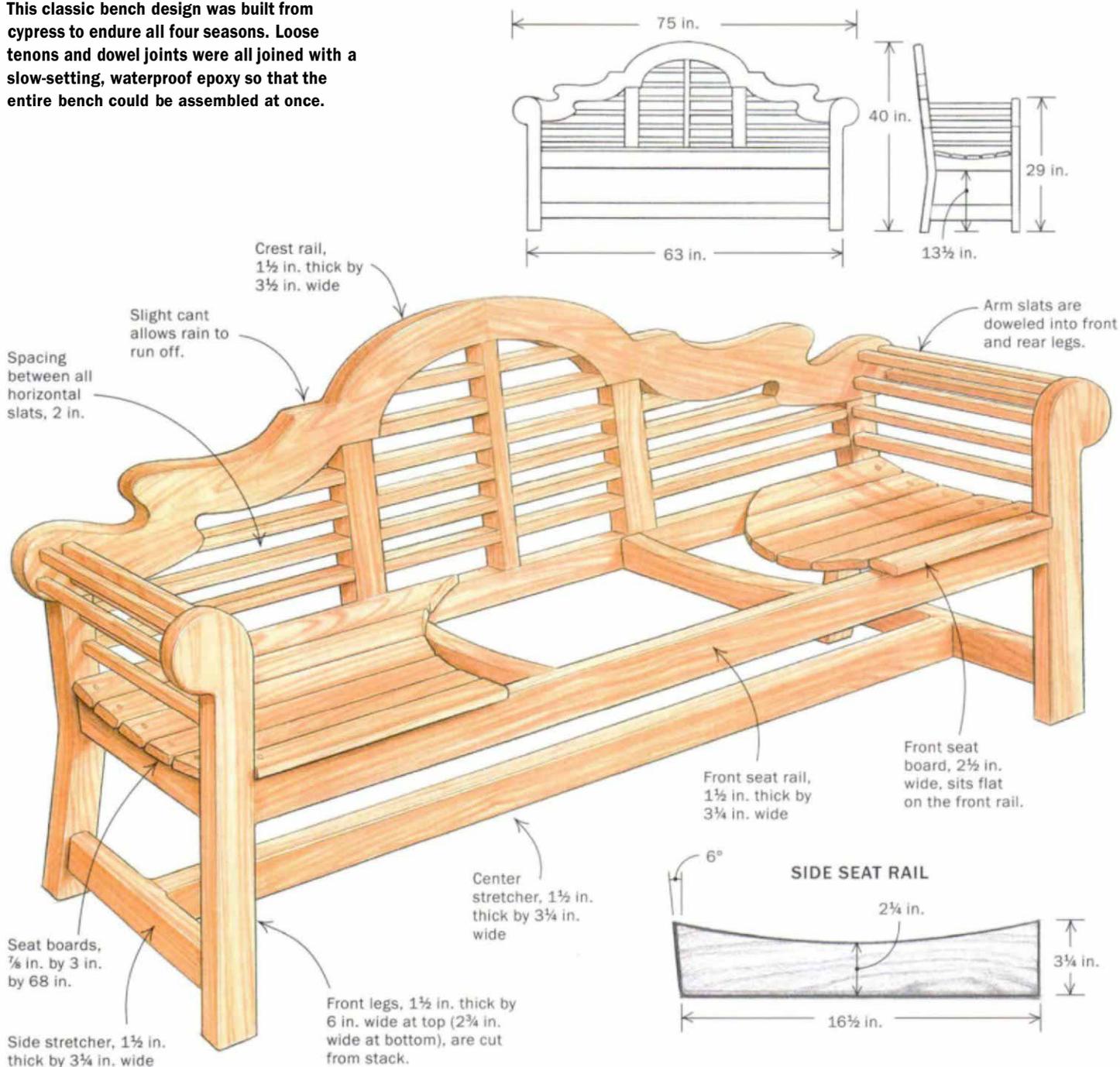
I worked out the details of the entire bench using full-sized drawings. I drew the bench, at various views, directly onto $\frac{1}{4}$ -in. plywood. Because of the myriad joints, angles and curves in this design, full-sized drawings were crucial to making the project run smoothly. The drawings helped me not only to refine the design of the bench before committing any cuts to lumber but also to figure out the construction and necessary order of assembly.

Choose an appropriate wood for outdoor use

Reproductions of the Lutyens garden bench are typically, made of teak, but I ruled that out immediately due to the cost. My bench would sit outside permanently because I didn't have a place to store it indoors over the winter, so weather resistance was a main requirement. Spanish cedar is a good mahogany-colored wood that weathers better than real ma-

AN OUTDOOR FAVORITE

This classic bench design was built from cypress to endure all four seasons. Loose tenons and dowel joints were all joined with a slow-setting, waterproof epoxy so that the entire bench could be assembled at once.



hogany, but I couldn't find any locally. I looked at several imported hardwoods being marketed for deck building—ipe from South America and jarrah from Australia among them—but these woods are very heavy, quite abrasive to tools and generally hard to work. High weight also helped me rule out

locally grown woods like white oak and locust.

I settled on cypress for its light weight, good moisture resistance and moderate hardness. It was also available from a local supplier at a good price and in thicknesses that would work—I used 8/4 material for the bench frame and 4/4 material for the

seat boards, arm slats and back slats. If you want to avoid planing rough lumber, cypress is available as dimensional lumber from many suppliers of deck-building materials.

Start with the seat frame

There's no better motivator when making furniture than ac-

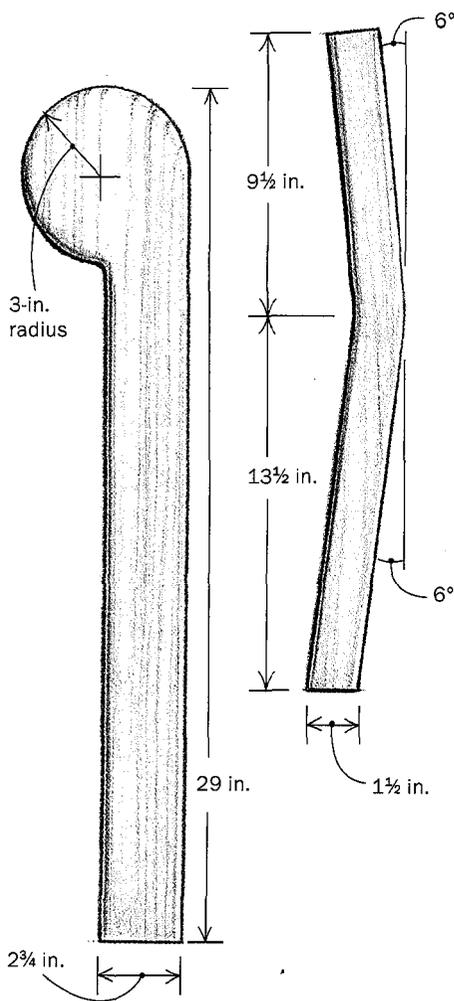
tual progress, so I like to start with the easier parts of a project and work my way up to the more difficult ones. In this case the back of the bench was by far the hardest part to make, so I decided to build the rest of the bench first.

For each back leg, I face-glued two pieces of 8/4 stock. I

FULL-SIZED DRAWINGS AID LAYOUT

FRONT LEG

REAR LEG



Full-sized drawings lead to accurate templates. The drawings make it easy to check measurements and make a template for the legs. Simply mark out the profile on the blank (left), then bandsaw the leg to shape (right).



Mark legs at intersection points. With the front leg cut to shape, use a side-view drawing to mark out the position of the rail and stretcher (left). All frame mortises are centered on the stock and are 1/2 in. thick (right).



planed down the stock to 1 3/4 in. thick (the actual thickness is not crucial; just keep it as thick as possible). I ripped the stock slightly oversized to 3 in., then glued the slabs together. The seam is visible only from the side, not from the front or back. Structurally, either approach would be sound, but my approach made the front view a little cleaner. I planed the rest of the 8/4 stock down to its final 1 1/2-in. thickness.

I transferred the profile of the

back legs from my full-sized side-view drawing and cut them out on the bandsaw (see the photos above). I sanded the bandsawn surfaces on my 6-in. edge sander, but a block plane and some hand-scraping would work just as well.

Both front legs can be cut from a single piece of stock, 6 in. or wider, with the straight part of the legs overlapping. I rough-cut the legs first, then ripped the inside edge of each one on the tablesaw, stopping

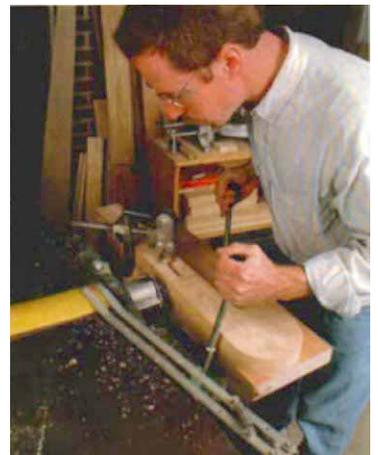
short of the top circle. Then I bandsawed the final shape of the circle and the transition into the straight inside edge.

With all of the seat-frame parts cut to size, it was time to cut the mortises. Years ago, when I first learned woodworking, there was a horizontal mortiser in the shop where I worked. With one setup, this machine cuts mortises in both parts that form a joint; a separate piece of wood is used for the tenon (called a loose tenon). In most cases it's a

lot easier than cutting a tenon and routing a mortise, and the resulting joint is just as strong. Since then, the idea of cutting mortises with a plunge router has never caught on for me, and I now use the mortiser on my Robland combination machine (see the photo below) for al-

DO COMBINATION MACHINES MAKE SENSE?

The deal I got on my used Robland X31 combination machine seven years ago was too good to pass up. The Robland combines five tools: tablesaw with sliding table, jointer, planer, spindle shaper and horizontal mortiser. Moving from one task to another can be time-consuming, but the tool is heavy duty and high quality. For my small shop and tight budget, the machine definitely has been worth the money.



most all joinery work, including doweling.

I centered the mortises in the 1½-in.-thick rails and stretchers and in the faces of the legs. After shaping the tenon stock and cutting the separate tenons to length, I glued them into the ends of all the rails and stretchers with epoxy. One caution, however: Before gluing the tenons into the seat rails, dry-assemble the legs and side rails. If the complementary angles formed by the back-leg cant and the rails are off, the joints



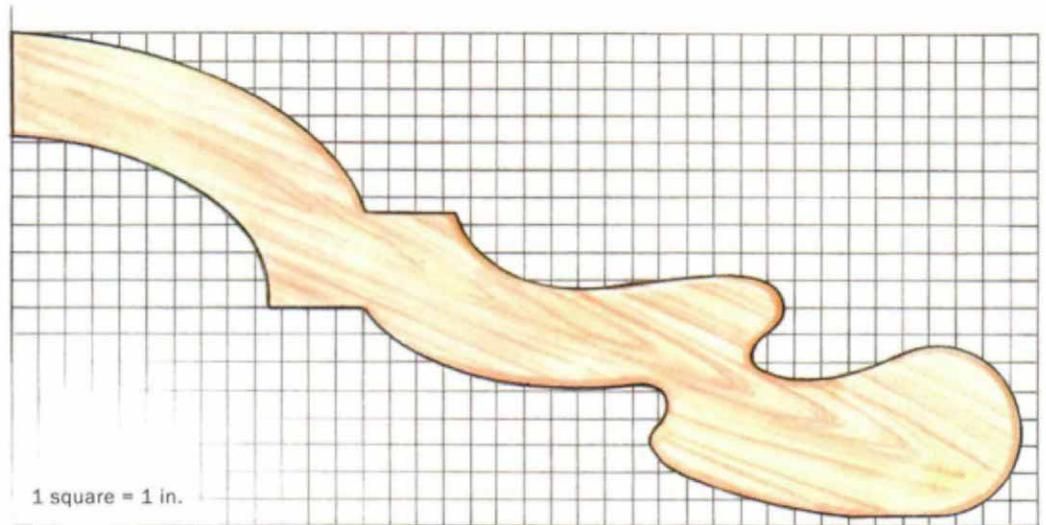
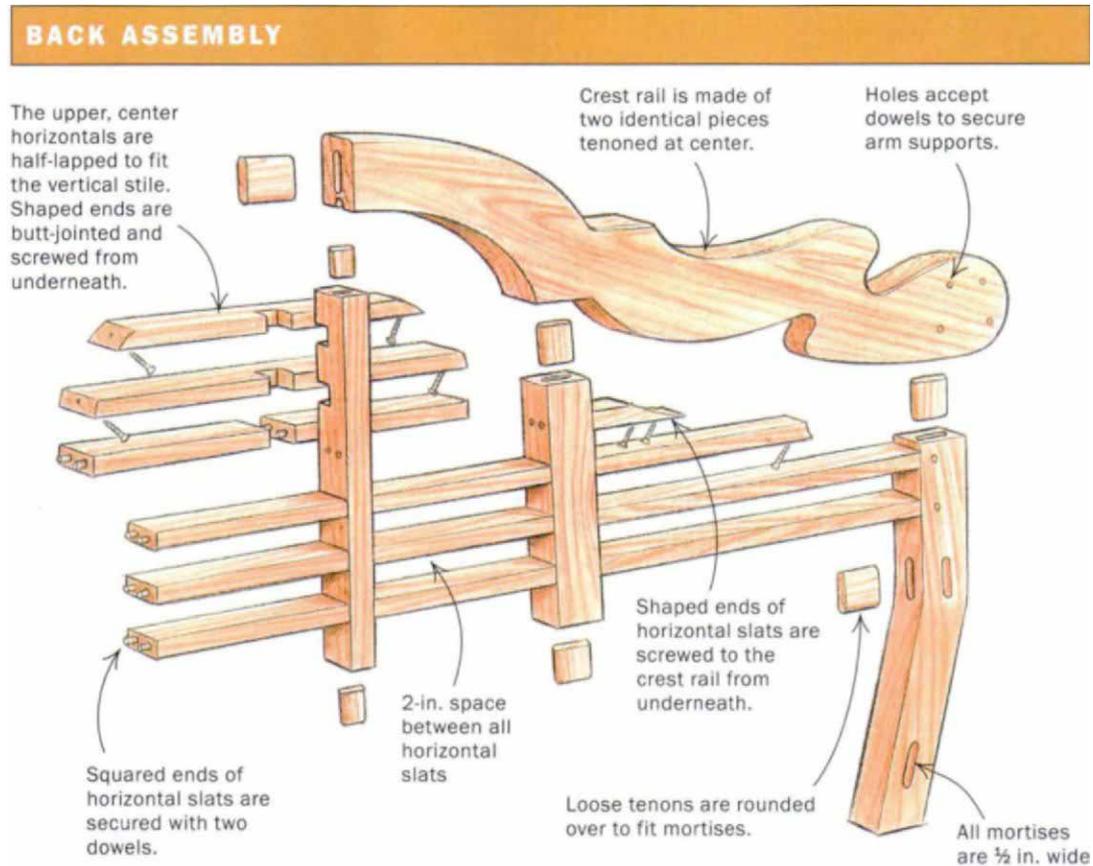
One tenon fits all. The author mills tenon stock to thickness, rips it to width, then rounds over the corners. By trimming them to short lengths, he can make many tenons from one piece of stock.

won't close perfectly. To solve the problem, simply scribe a new cut line and recut the back ends of the side rails and side stretchers for a perfect fit. (Be sure to recut the two intermediate seat rails at the same time.)

Also, because the tenons on the front, rear and side seat rails intersect, I mitered them so that each is as long as possible. I cut the curve in the seat rails on the bandsaw and—at long last, it seemed—dry-assembled the bench frame, less its back.

The back is the most difficult section to make

Good design often leads to construction and assembly conun-



drums, and it's certainly true with the back of this bench. The visual centerpiece around which the bench is designed, the back is deceptively well integrated into the rest of the bench's structure (see the drawings above). But the required assembly sequence was not immediately obvious to me. Looking at the sturdy bench frame dry-assembled, I wanted to glue

something up. But each assembly sequence I considered led to a dead end involving the back of the bench.

After scratching my head for a long while, it became clear that the entire bench, starting with the back, would have to be glued up in one continuous assembly. It also would have been possible to glue up the back first and then the rest of the

bench frame, but I opted for a single glue-up. I chose an epoxy from West Systems and used a hardener with a slightly longer open time than the company's standard hardener (see the box on the facing page).

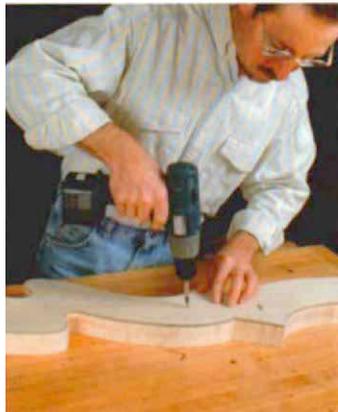
First I made a full-sized drawing of the entire back. Then I made a template for shaping the crest rail, which is made of two pieces connected at the center-

line with a mortise-and-tenon joint. I drew a half pattern of the crest rail on paper and refined the wavy curves with a lot of trial and error, using catalog photographs as a visual guide. After transferring the pattern to a piece of 1/4-in. plywood, I bandsawed the shape, then blended the curves using a belt sander, spindle sander and rasps. I traced the shape onto the rail halves, then cut them out on the bandsaw, staying slightly outside the line. Then I screwed the template to the back faces of the rail halves and trimmed them flush. The first pass with a pattern-routing bit trimmed about two-thirds the thickness of the edge; a flush-trimming bit, with the bearing riding on the edge already shaped, cleaned up the rest (see the photos at right).

Incidentally, each half of the crest rail requires 8-in.-wide stock or wider. I didn't have any 8/4 material this wide, and I didn't want seams in the face of the rail, so I face-glued two wide pieces of 4/4 stock.

I was less than thrilled with my decision for two reasons. First, the front and back boards were not well matched, so the grain is noticeably different when looking at the top edge of the crest rail. And because one of the boards was a lot heavier than the other, the laminated stock bowed slightly after I had planed it to final thickness. The lesson: select boards of similar grain and weight if you have to face-glue.

Next, I cut the mortises in the crest rail and bottom rail of the back, in the two vertical stiles in the back and in the top of the



back legs. Because their odd shape precluded clamping to the mortising table in the normal fashion, I could not completely cut the mortises for the two intermediate stiles into the crest rail using my horizontal mortising machine. Nevertheless, I clamped the rail halves at an angle and mortised in as far as possible, then deepened and finished these two mortises with a drill and chisels. I cut the center vertical stile to fit be-

SHAPING THE CREST RAIL



Many chances for refining the crest rail. Begin with a pattern shaped on paper, then adjust it as you mark it out on plywood template stock. Cut out the shape on the bandsaw and refine the template further with rasps and various sanding machines. With the template screwed to the face of the crest rail, use a pattern-routing bit in a router to clean up the shape. A flush-trimming bit finishes the job.

tween the crest rail and bottom rail, rounding its top end to match the curve of the arch. Then I cut small mortises to join this center stile to both rails. I could finally dry-assemble the main structural frame of the back, then cut all the slats to fit.

My plan was to fit all of the slats with a pair of dowels in each end and drill the corresponding holes in all of the verticals. At this time I wondered about the assembly sequence of

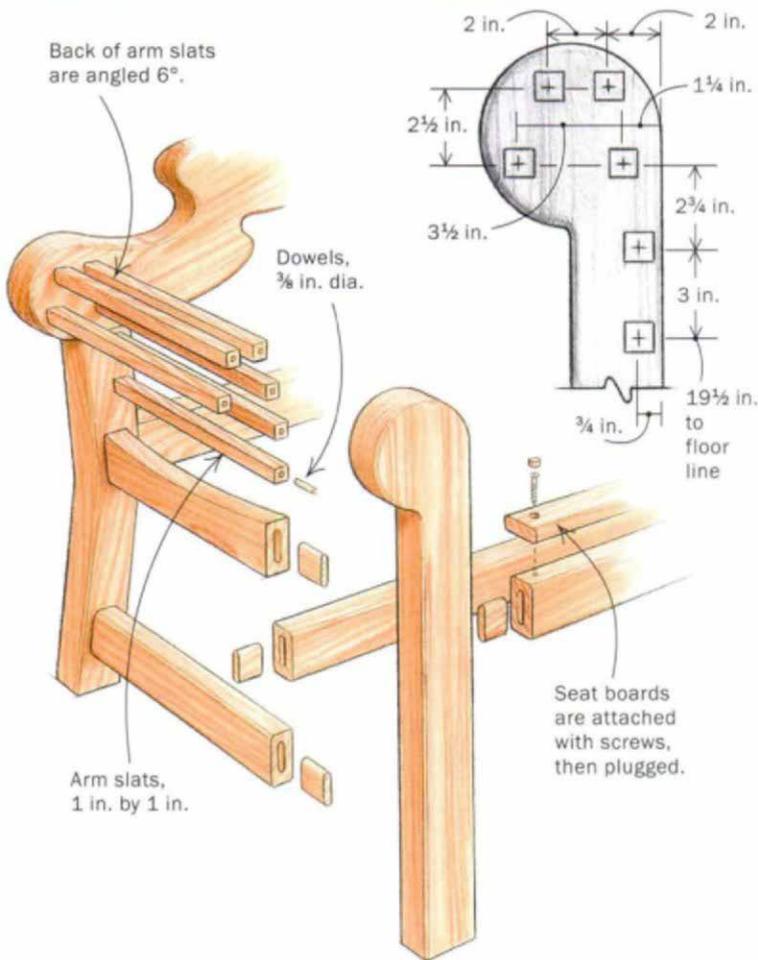
the back, with all of those slats. The main structural parts (bottom rail, crest rail, three stiles and back legs) come together in one direction, while all of the slats are joined in the perpendicular direction. The problem is with the slats that join to the crest rail—if they were doweled, there would be no way to

CHOOSE GLUE SET TIME TO MATCH YOUR WORK

This is an outdoor bench, so I turned to epoxy (West Systems Epoxy; 517-684-7286) because it is waterproof. But I learned that adding a slow-set hardener would give me 50 minutes open time—more than the usual 9 to 12 minutes. For simple applications, such as gluing loose tenons into place, I used the regular formula. But the hardener gave me enough time to do the final assembly all at once.



ROLLED ARMS



bring the crest rail down onto the stiles and also engage the dowels in the back slats at the same time.

I'm sure there are other solutions, but I decided that all of the slats attaching to the crest rail would be butt-joined and reinforced with countersunk screws from underneath. Additionally, the slats under the center arch would have to be added after the main assembly by half-lapping them over the center stile. Between epoxy's good gap-filling ability and carefully predrilled holes for the screws, these butt joints should hold up just fine.

I cut all of the slats to fit within the assembled back frame. To get the curved ends of the upper slats, I held them in position and marked right off the crest rail where they intersect. I bandsawed and sanded the ends to fit snugly. After cutting the half laps in the center stile and the two top slats, I used the same process to fit these last two slats. I drilled the dowel holes for all

of the slats on my horizontal mortiser.

Build the rolled arms and attach the seat

Once the components of the back had been cut and the joinery fitted, I reassembled the entire bench dry (see the right photo below), then cut the arm slats to fit. First I laid out the position of each slat on the front and back legs, then cut the slats square at the front and with a 6° angle at the back to correspond to the angle of the back (see the drawings at left). I drilled and doweled the ends of the arm slats on my mortiser, then drilled the corresponding holes in the back legs and crest rail with a hand drill using a bevel gauge as a guide (see the left photo below).

After all that, the most essential part of the bench—the seat—still remained undone. The back edge of the rear-most seat board is angled at 18° so that it can snug up against the back legs and stiles. The front

HAND-DRILLED MORTISES

Rolled arms are attached with dowels. With the back dry-fitted tightly into place, you still have to drill dowel holes for the slats that make up the rolled arms. To make sure the angle is correct, use a bevel gauge canted to 6° to guide a handheld drill.



ATTACHING THE SHAPED SLATS



Finishing the back. After the main components of the bench have been glued up, the smaller slats can be set into place.



A smooth fit. Using a dado set on the tablesaw, the two top slats are notched to fit over the center stile.



Scribing the back slats. The upper slats on the back are scribed for a tight fit. A bandsaw is used to cut them to shape, but final shaping is done with rasps and sanding machines. The shaped ends of the slats are screwed into place from underneath.



seat board is narrower and sits flat on the square edge of the front seat rail. The four middle seat boards are identical. To promote rain runoff from the seat and reduce the likelihood of splinters, I rounded over the top edges of the seat boards with a $\frac{3}{8}$ -in. roundover bit.

Using exposed screws in the top of the seat boards would detract from the refined look of this bench and give water a place to pool. And screwing up through the curved rails would require different-sized screws or counterboring a different depth for each board. So I attached the seat boards to the frame from above with galvanized deck screws. The holes were counterbored, and I glued plugs in them for a clean look.

Before the final glue-up, I sanded all of the bench parts, keeping the joined areas good



The last touch. Working from the back toward the front, the author uses spacers and screws down the seat. Once in place, bungs are epoxied into place over the countersunk screws.

and flat. I went over all four edges of the arms slats with an $\frac{1}{8}$ -in. roundover bit. I used a $\frac{1}{4}$ -in. roundover bit to soften the exposed parts of the curved crest rail and the front legs, being careful to stop at the joint seams. After sanding, I assembled the bench with epoxy and a lot of clamps.

Well, my garden retreat is still composed of a brick patio, a

Japanese maple and a few potted plants. Only now it's also graced by a quite comfortable and distinctive bench. But I'm afraid it will take some inspired landscaping and probably more than a few years to develop a garden that's worthy of the bench. □

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