A Light Settee in Cherry

Straight lines simplify the design, and a woven seat adds character

BY MATTHEW TEAGUE

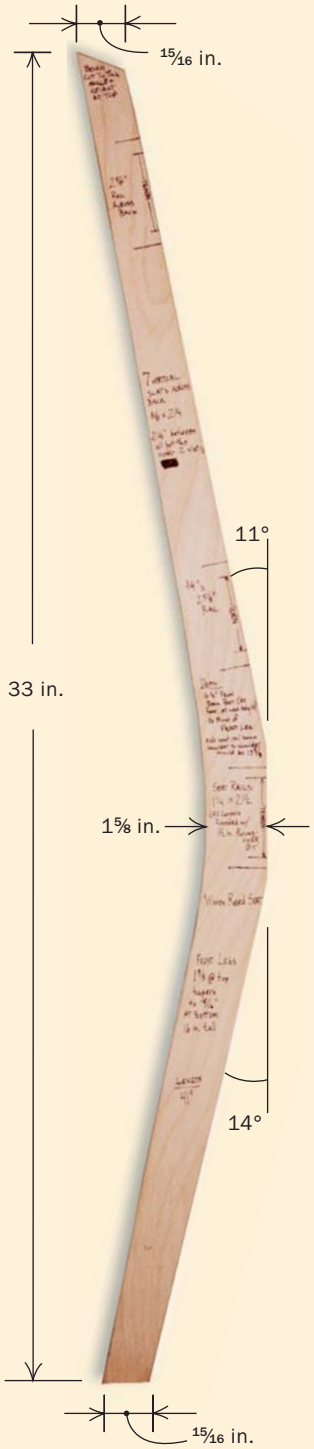
I can't draw well, but it's never kept me from trying—on newspapers, leases, whatever happens to be in front of me. And when I needed a coffee table, I was drawing them everywhere. One design began on a Post-it note while I was on the phone—which may explain, in retrospect, its odd transformation. When one table leg turned out a little canted, I drew another line off the back, making it a chair. Then when I tried to turn the chair-like doodle into a perspective drawing, the lines were too long—yet further proof that I can't draw. But when I looked back down, my coffee table had turned into a vaguely elegant settee. I drew little cross-hatched lines across the seat and was rather pleased.

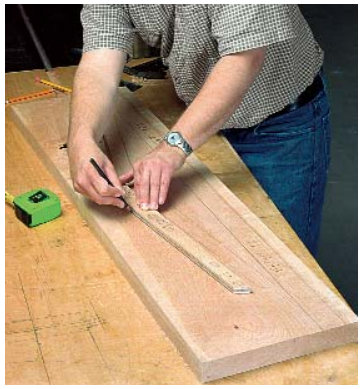
I spent a bit more time on later

Photo, this page: Tom Begnal

LEG TEMPLATE SERVES AS A STORY STICK

All mortises can be marked directly from a story stick, which is simply the rear-leg template marked with mortise locations and notes on construction. Should you ever want to build the bench again, the layout information is in one handy place.





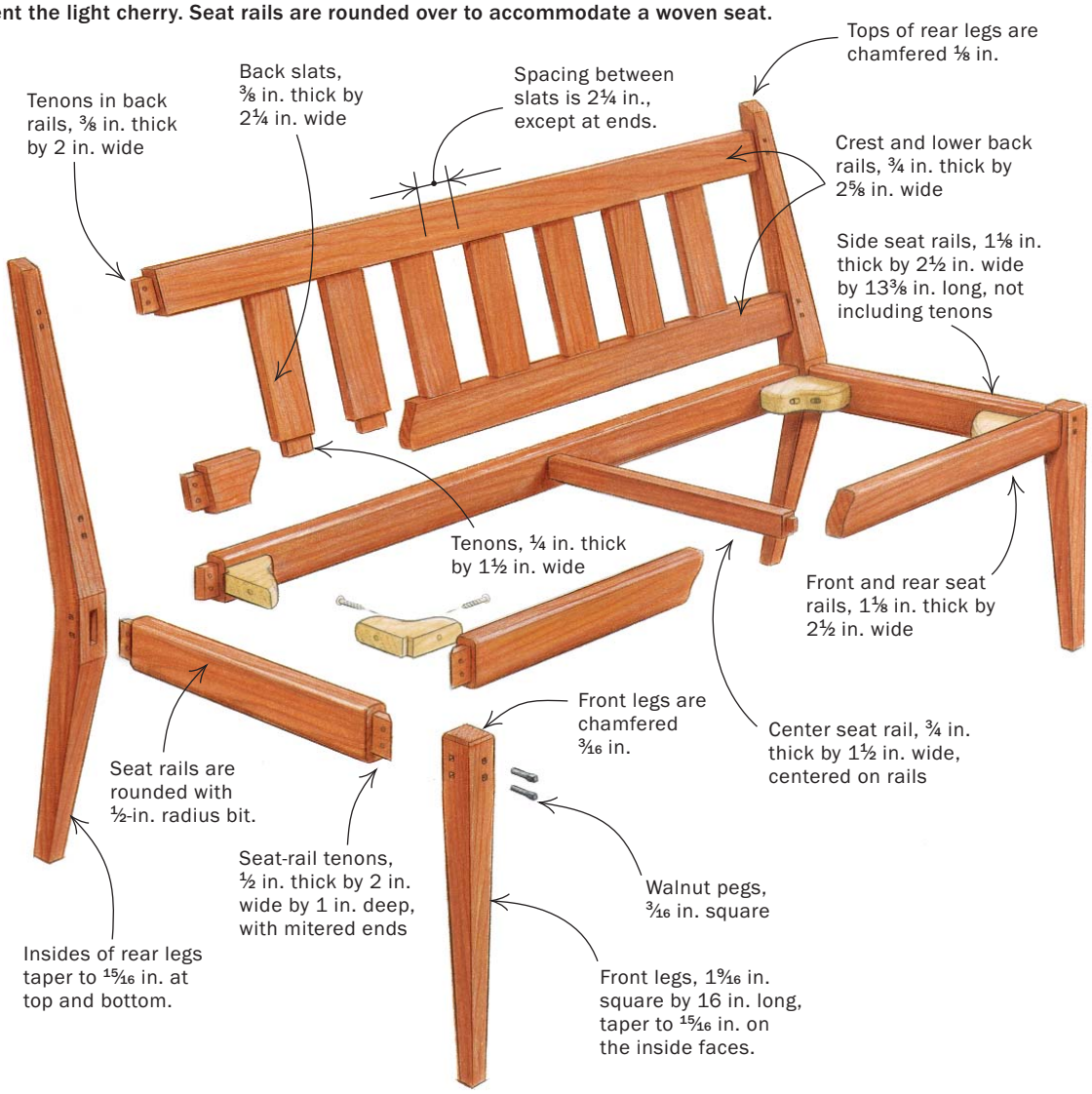
One board, four legs. *Nesting the two rear legs allows you to cut all of the legs from one 10-in.-wide 8/4 board. The legs are bandsawn to shape after layout.*

A perfect match. *Clamp the two rear legs side by side, then hand-plane them smooth. Do not plane an angle into the flat surfaces where the seat rails join the legs.*

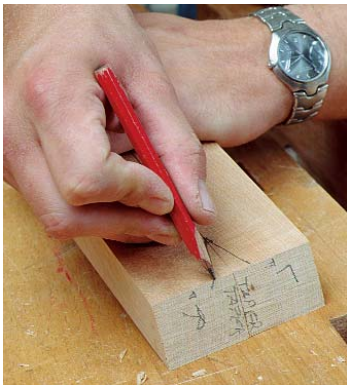
Fair the transition curve. *The curve at the back of the leg is smoothed with a spokeshave. Any slight tearout can be cleaned up with a card scraper.*

A BENCH FOR TWO

This design uses mortise-and-tenon joinery throughout, with square walnut pegs to accent the light cherry. Seat rails are rounded over to accommodate a woven seat.



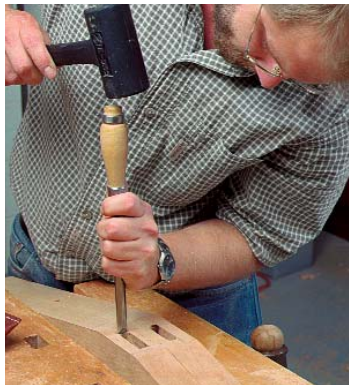
Drawings: Bob La Pointe



Mark out the legs. *Tick marks on the front of the legs indicate which faces will be tapered after the mortises are cut.*

A story stick saves time. *Layout is simplified by marking out all mortises directly off the rear-leg template.*

Cut the mortises for both legs at the same time. *Use a router and edge guide, and clamp the legs together to provide a larger bearing surface for the baseplate .*

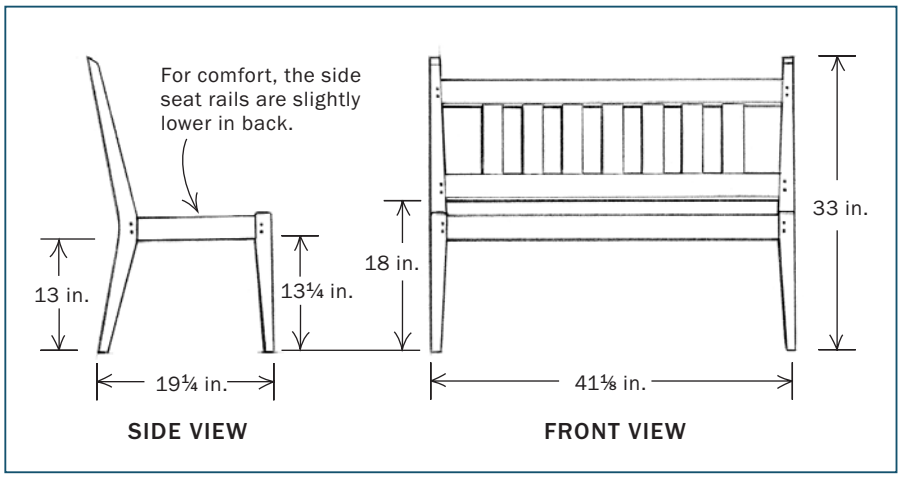


Square up the mortises. *When cutting mortises with a router, you either have to chisel the mortises square or round over the tenons.*

drawings: I designed a stretcher system, tried two dozen shapes for the back and various seat treatments, but in the end I kept returning to the Post-it note sketch of my coffee table. I liked its lightness and the simplicity of its straight lines. I bumped up the size of the seat rails to avoid using stretchers and to give the undercarriage a more delicate look. And I chose to use a woven seat for its light appearance.

My settee appears rooted in the Shaker and Arts and Crafts traditions, but the woven seat and walnut accents lend the piece a contemporary look, which suits my tastes. It's a small, low bench, perfect for an entryway or along a short wall.

Building this settee calls for only about 15 bd. ft. of wood—8/4 for the legs, 5/4 for the seat rails and 4/4 for the back. I chose cherry because it is easily worked with hand tools and because its light color lends the unimposing look that I wanted the piece to have. But the design would work just as well using other woods.



Shape and mortise the legs

I always make templates for the rear legs of chairs and benches. I mark out all of the mortises and write down construction notes on the template itself. This way, if I ever want to make the piece again, I have a reliable story stick. For this piece, I made a template for the rear legs by bandsawing the profile out of plywood and cleaning it up with files, planes and a spokeshave.

To make both the front and rear legs of this piece, you need only a single 8/4 board about 40 in. long and 10 in. wide. Mill the stock down to 1⅝ in. and then lay out the rear legs, one nested against the other. The offcuts will provide enough stock to mill the front legs.

Rough out the profiles of the rear legs on the bandsaw, then clean up the front surfaces with a handplane. Because the fronts of the two rear legs are the reference surfaces for locating the mortises, they must line up perfectly. Clamping the two legs together while handplaning is an easy way to ensure matching legs.

After the flats of the legs have been handplaned, shape the curve at the back of the legs using a spokeshave. Take light cuts and work with the grain, and as soon as the wood begins to tear out, try shaving from the other direction. Light tearout can be cleaned up with a card scraper.

Before laying out the mortises, check the grain direction of the legs and mark which surfaces will get tapered later—you don't want the tapers to fight against the grain. Also, label the tops of the legs as front, rear, left and right.

Before tapering either the front or rear legs, mark out and cut the mortises for the seat rails as well as those for the crest and lower rails on the back. This way you can rout to a flat-bottomed mortise, even though the shoulders on the back-rail tenons will be angled later to match the taper of the legs. The mortises for the seat rails are 2 in. wide and ½ in. from the outside of the legs. The mortises for the back are 2 in. wide and 5⁄16 in. from the front of the leg.

I cut the seat-rail mortises using a ½-in. straight bit and an edge guide mounted on my plunge router. Clamping two legs together provides a wider flat surface for the router to bear against as you cut. Be sure to stop the router exactly at the mortise line. Work the

Photos, except where noted: Michael Pekovich

Mark tenon shoulders from the assembled back. *With the rear seat rail clamped in place, make sure the assembly is square, then clamp the crest and lower back rails into place. The tenon shoulders, which are angled slightly to match the leg tapers, can be marked directly off the leg.*

router back and forth in the mortise, dropping down only about ⅛ in. with each pass, until the mortise is a hair over 1 in. deep. The mortises for the back are cut using the same method, but with a ⅜-in. straight bit and slightly deeper. I square up the ends of the mortise with a chisel, but you can just as easily round over the corners of the tenon.

Tapering the legs—Though the settee has a rectangular seat, tapering the inside of the legs makes it appear as though the back flares outward. The back legs taper from full width ¾ in. above and below the seat-rail mortises to 15⁄16 in. at the top and bottom. Leaving a flat surface where the seat rail joins the leg allows you to use simple, right-angle joinery.

Place the handplaned surfaces on the bandsaw table and cut the tapers on the inside of the legs. While at the bandsaw, go ahead and taper the front legs. The bandsawn surfaces are smoothed with a handplane. To ease joinery, be sure you don't change the angles of the flat areas where the seat rails join the legs.

Cut and tenon the seat rails

Because this piece has no stretcher system, the seat rails must be meaty, and the joinery tight. Mill the seat rails to 1⅛ in. thick and cut them 2½ in. wide. After the rails have been cut to length, tenon them. I used a horizontal router table similar to (and inspired by) Ernie Conover's setup on pp. 68-69, but you can cut the tenons using a handsaw, bandsaw, tablesaw or whatever method you're accustomed to. I cut tenons to the full depth of the mortise, then trimmed the tenons at 45° on the ends. Mitered tenons provide more glue surface.

Cutting angled shoulders. *After the bulk of the tenon has been cut on the router table, backsaw to the angled shoulder line. Quick work with a chisel trims away the excess.*

A center rail reinforces the woven seat. Locate the center of the front and rear seat rails and cut mortises ½ in. deep by ½ in. wide by 1 in. long to accept the center rail. The rail, made of ¾-in. stock, is positioned ½ in. below the height of the seat rails. If the seat ever sags with age, it will sag into a handsome two-seater with clearly delineated bucket seats—a look I've wanted to emulate since seeing it on an old English Arts and Crafts settee.

All of the edges of the seat rails have to be rounded, because the reed lengths will break if you try to bend them around the sharp corners. Round the edges of the rails using a ½-in.-radius roundover bit at the router table.

Join the back to the legs

Once the seat rails have been tenoned, dry-fit the back and clamp it up to make sure that the joints close up and that the assembly goes together squarely. Then lay out the crest and lower back rails and clamp them into place on the legs. Working from the clamped-up back, mark out the angled shoulders of the tenons.

Tenon the back rails slightly short of full depth, then backsaw to the line at the shoulders. A little cleanup with a chisel and shoulder plane helps the joint close up tightly.

The crest and lower back rails are mortised to accept the back slats. To lay out these ¼-in.-wide by 1½-in.-long mortises, find the centers of the two back rails, then clamp the two pieces together with their

centers aligned. Use a square to mark out both sets of mortises at once. Cut the mortises about 1 in. deep.

To get a quartersawn look on the back slats, I resawed them from 8/4 stock I had left over from the legs. After tenoning the slats, hit the surfaces with a handplane and dry-fit them to the back rails.

Glue up one section at a time

To make sure there won't be any surprises during the glue-up, dry-fit the entire piece. With clamps in place, check to see that all of the joints close up, and fix any trouble spots.

After a successful dry-fitting, start gluing the back slats into the crest and lower back rails. You'll need only a few clamps to pull the joints closed. Glue the back and rear seat rail to the rear legs and set the assembly aside. Then glue the long front seat rail to the front legs.

Once the front and back assemblies have dried, make sure that the side rails still fit easily into place (excess glue can dry in the bottoms of the mortises). Brush glue onto the ends of the tenons and into the mortises, and don't forget the center seat rail as you join the front to the back. Clamp up the assembly and let it dry.

When the glue has cured, glue and screw thick corner blocks into place. Though the corner blocks are set about ½ in. below the top of the seat rails, it's a good idea to round over their edges. This way, should the seat ever sag, the reeding won't rub against sharp edges, possibly cutting into it.

Add decorative pegs and apply a quick finish

After the corner blocks have been glued and screwed into place, I pegged the structurally important tenons using square walnut pegs, which accentuate this design nicely. Use a brad-point bit to drill 3⁄16-in.-dia. holes through the legs and into the tenons, then square up the front third of the hole using a chisel.

To make the pegs, rip a scrap of walnut just shy of 3⁄16 in. deep on adjacent sides, leaving a sliver of wood to hold the strip in place. Then cut the 3⁄16-in.-square strips away from the stock and cut them to 2-in. lengths. Round over the end and lower half of each peg with a small carving knife. Put a drop of glue on the ends of the whittled pegs, and use a metal hammer to tap them into place. Stop hammering when the peg bottoms out (you'll hear a difference in tone), or you risk splitting the leg. Cut off the ends of the pegs with a small saw, then use a chisel or low-angle block plane to trim them flush to the legs.

I've tried countless combinations of varnish and oil on cherry, and all of them seem to work fine, though recently I've been using Minwax Antique Oil Finish. A mix of varnish and oil, this finish goes on quickly and easily and seems foolproof to me. Wipe on the first coat with a rag, give it 10 minutes to dry, then buff it off with a dry rag before the surface gums up. After the first coat dries, sand it with 400-grit paper, apply a second coat using 600-grit paper instead of a rag, then buff the coat dry. The finish is buttery soft but still pretty dull after two coats, so wipe on another coat with a rag, give it 10 minutes, then buff the surfaces dry. As you add coats in the same manner, the finish begins to build—the more coats, the glossier the finish.

Weave the reed seat

Perhaps it's because I remember gathering oak splints with my grandfather, who wove baskets on slow Sunday afternoons, but

Square pegs in round holes

The dark walnut pegs lend a subtle accent to this cherry settee. Driven through the tenons, the pegs also ensure that the joints stay tight.

Squaring a drilled hole. *Begin by drilling through the leg and tenon with a bit just smaller than the width of the peg. Make sure you don't drill through the other side of the leg. Use a 1⁄8-in. chisel to square up the first third of the hole.*

Making peg stock. *Rip adjacent sides on a small strip of walnut—3⁄16 in. wide and just under 3⁄16 in. deep. Leave a sliver of wood at the corner to keep the strip from shooting out of the tablesaw. The sliver also makes it easier to pull away the square peg material from the stock.*

Whittling pegs. *With the pegs cut into 2-in. lengths, round over the first third with a small knife. Rounding the ends of the pegs prevents them from splitting the legs.*

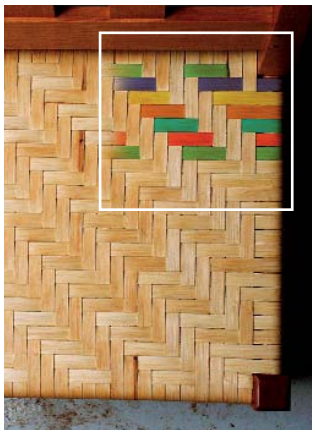
Driving it home. *After applying a small amount of glue to both the peg and the hole, tap the peg in place with a hammer. Keep the peg aligned and stop hammering when the peg bottoms out (you'll hear a change in tone); otherwise, you risk splitting the leg.*

Photos, this page and facing page (bottom): Tom Begnal

Right-side up. *By bending the reed to a tight curve, one side will fray while the other won't. Orient the frayed side so that it can't be seen.*

Securing the reed. *Begin by tacking a length of reed to the seat rail at the rear left corner of the seat.*

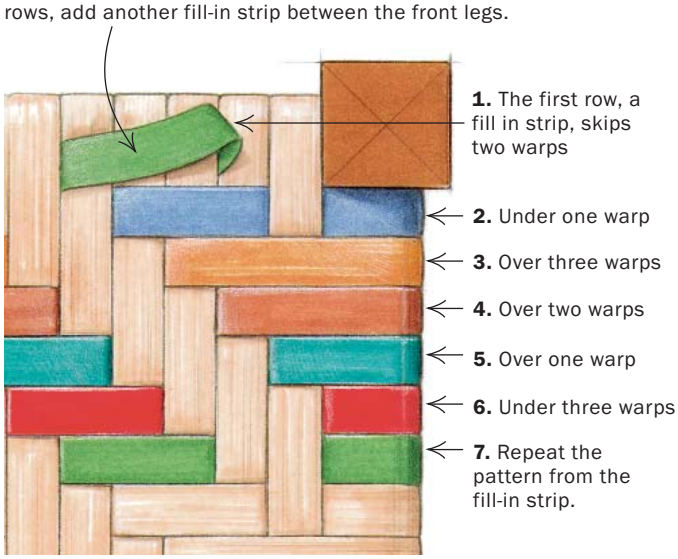
Beginning the warp. *The first length of reed goes under the front seat rail and over the back and continues in this way to the end of the seat.*



HERRINGBONE WEAVE

Woven of ⅝-in. reeds, this herringbone pattern makes an attractive and comfortable seat. Though the weave may appear complicated at first glance, it is nothing more than a repeating pattern weave of over three, under three. After the first six rows, the pattern repeats itself to the front of the seat. To ensure that the seat stays tight, the same pattern is repeated on the bottom of the seat.

The first and last weavers are fill-in strips. Instead of wrapping around the seat rails, 6 in. to 8 in. of extra length is simply tucked inside the seat—the tightness of the weave will hold the fill-in strips in place. Before weaving the last rows, add another fill-in strip between the front legs.



I've always loved the look of woven seats; they're inviting, comfortable and clearly handmade.

Because the seat is rectangular, the weaving for the settee is pretty straightforward. But weaving is slow work, so wear comfortable shoes and be ready to stand for a while. For this seat I used ⅝-in.-wide reeds (the material is actually the inner core of the climbing rattan vine), but oak or ash splints can be woven the same way. Reeds, and splints for that matter, are bought by the coil. I used about four coils of reeds to weave the seat for this settee. You should buy more reeds than necessary because, especially on a long seat like this, you'll want to use only the longest lengths so that you won't have to join the lengths of reed too often. You can buy reeds at many hobby and craft stores and through Connecticut Cane & Reed Co. (860-646-6586).

Before weaving, the reeds are first soaked in warm water (those who know suggest 140°F, but I've never put a thermometer to mine) for 45 minutes or so. After soaking, start with a long length of reed and orient it so that the correct side will be facing out on the weave. By bending the reed to a tight curve, you'll notice that short fibers fray loose on one side but not on the other. The side where the fibers break loose should go to the inside of the seat. Begin by using a #3 or so upholsterer's tack to secure the reed to the seat rail at the left rear side of the bench, then begin wrapping the warp (the reeds that run front to back). Start by going under the front rail and then over the back rail and continue in this fashion, keeping the weave tight.

When you reach the end of the length of reed, you'll have to join that piece to another. Make sure all joining is done on the bottom of the seat. There are numerous ways to join reeds, but the method I've used successfully is to notch the end of both lengths and tie them together with string or copper wire. The other method I use is simply to staple the two reeds together. Many weavers balk at this method, but when pressed they admit to using it almost every day. No matter how you join the reeds, once the seat is woven, they can't go anywhere. If you do use staples, you can even remove those left visible after the weaving is complete.

Ending the warp. *When you reach the side rail, pull the reed underneath the seat and use a #3 upholsterer's tack to secure it to the seat rail.*

Weaving begins underneath the seat at the rear left corner. *Instead of tacking the reed into place, simply fold under the first 6 in. or 8 in.*

Weaving a herringbone pattern. *As you continue weaving the pattern into the seat, the weave gets tighter. You'll need to guide the last few rows using a dull knife.*

Continue weaving tightly across to the right end of the bench. When the warp is complete, work an upholsterer's hammer into the warp and tack the end of the reed to the seat rail, which should keep the warp tight. As you work, remember that reed shrinks slightly in length as it dries, so use a spray bottle of water to keep the seat damp.

Before you start the weft, or main weave, add a fill-in strip at the back of this bench on the top only. A fill-in strip runs between the two rear legs but is not attached to the bottom of the seat. Drop a length of reed into the warp, and fold it over, leaving about 6 in. inside the seat. Go under two, over three, as shown in the drawing on the facing page. Simply continue the pattern as you weave the strip into the warp. At the end, stuff about 6 in. of the strip inside the seat. The fully woven seat will be so tight that there will be no risk of the fill-in strip going anywhere.

The weavers (the lengths of reed that run left to right) create a three-over, three-under herringbone pattern. Start by tucking a weaver under the bottom left corner, weave it through the warp, going over three, under three all the way across, and then carry it over the side rail. The first weaver on the top of the seat (row 2 in the drawing on the facing page) goes under the first reed in the warp, then over the next three. Continue the three-over, three-under pattern all the way to the right seat rail, where the reed continues around the seat rail and under the seat.

Flip over the settee and weave the bottom in the same pattern: But begin by going over two, under three, over three, under three, until you reach the left seat rail. Wrap the weaver around the seat rail and continue with your second row across the top. But when you start the second weaver (row 3) across the top, begin by going under two and over three, then continue the three-over, three-under pattern to the end of the rail. The pattern continues this way throughout the seat.

JOINING REEDS

When you reach the end of a length of reed, join another piece on the bottom side of the bench. Cut two notches on each piece, then line up the notches and bind them with a heavy thread. Another option is to staple the two pieces together.

When adding weavers along the bottom of the seat, it is no longer necessary to join them. Simply overlap the old weaver and the new weaver for about 6 in. and continue weaving. The tightness of the weave will keep the seat from coming loose. The more weavers you add, the tighter the weave gets. Everything should proceed smoothly until you reach the last third of the seat. At this point, it becomes increasingly difficult to fit the weavers through the warp. To help make the weaving easier on the last few rows, cut the leading end of the weaver into an arrow, and use a dull table knife to help open up the warp and guide the weaver through. I've also used locking pliers, hemostats and needle-nosed pliers to grasp the end of the weaver and work it through the warp.

Once you reach the front of the seat, you can add a fill-in strip, as you did at the back, or leave it as it is. All that's left is to pull staples, trim string and burn off any frayed strands of reed. Woven seats are typically treated with a few coats of linseed oil, cut two-thirds with thinner or turpentine, and recoated every year or so. For convenience, I used the same Minwax finish I used elsewhere on the settee.

The settee is as simple to make as the feeble drawing I first made, but I like its character—especially the lightness of the piece and the walnut accents. I think the verticality of the reeds across the wide seat rails works well with the vertical slats in the back. I've built a couple of these pieces now. But I still don't have a coffee table—so I guess it's back to the drawing board. □

Matthew Teague is an associate editor.

Photo, this page (top right): Anatole Burkin