

I CAN DO THAT!



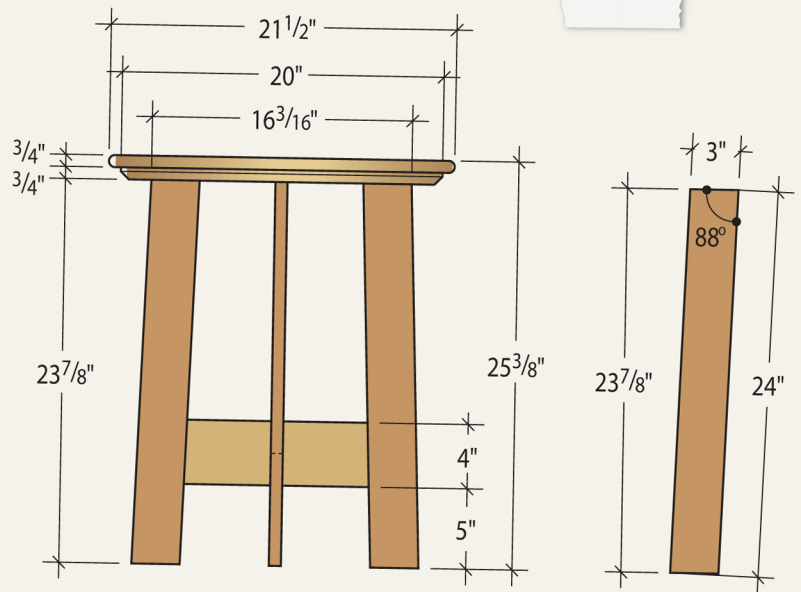
POPULAR
WOODWORKING

WOODWORKING PROJECTS



EDITED BY DAVID THIEL

17 quality furniture projects
that require minimal tools
and experience



PATIO CHAIR

PROJECT 14



BY A.J. HAMLER

I've always envied bakers, working around that fresh-baked aroma all day. This cedar patio chair – the best-smelling project you'll ever make – will have you feeling the same way.

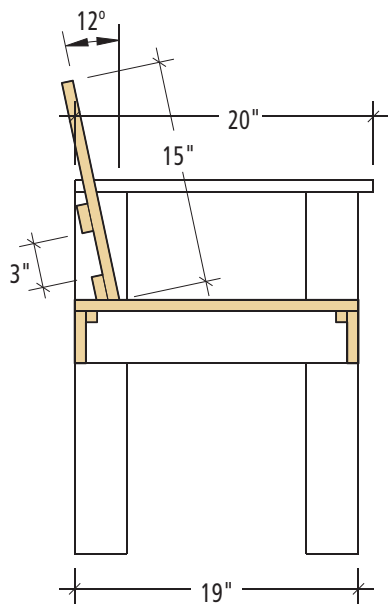
Cedar is straight-grained, with minimal shrinkage and expansion, and doesn't cup or twist as much as other softwoods. It

works very easily, and it's the perfect wood for outdoor furniture as it naturally resists water, decay and insect damage.

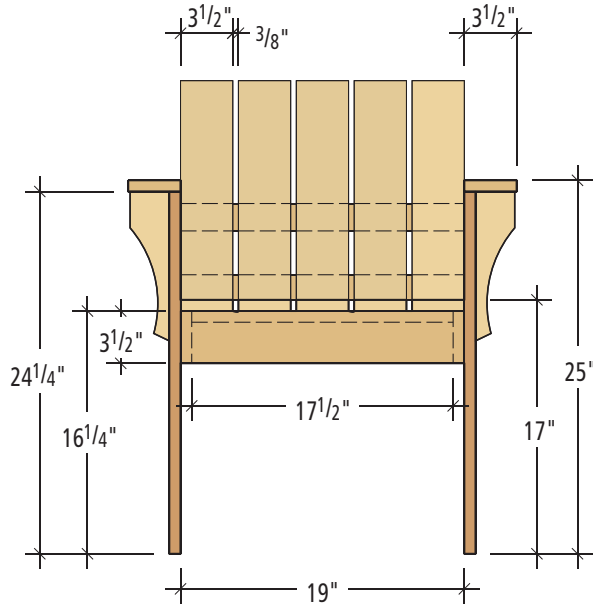
Cedar comes in several species. Aromatic cedar, commonly used in hope chests and closet linings, smells great. But because the trees grow so slowly (a 20-year-old tree may be no more than 20' tall) it's on the expensive side for larger projects, plus it'll require a special order from

a lumber company. Spanish cedar is less expensive, but the dust can be an irritant for many. And it's still a special order.

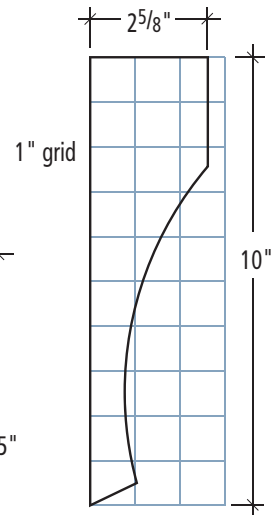
But Western red cedar – I'll just call it cedar from this point forward – is the perfect compromise. It's inexpensive enough for furniture, most people don't find it an irritant and, best of all, you can find at home centers. And then there's that aroma. Believe me, you'll be think-



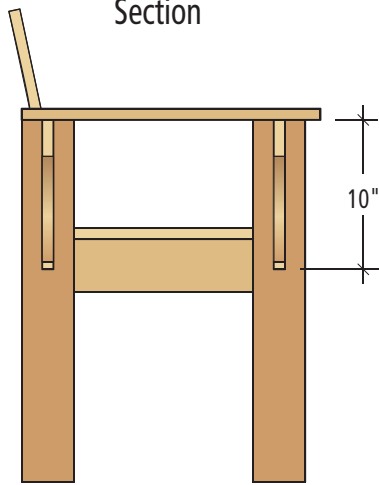
Section



Elevation



Plan -
Armrest Support



Profile

PARTS LIST

NO.	PART	STOCK	THICKNESS X WIDTH X LENGTH	
			INCHES	MILLIMETERS
4	legs	cedar	$\frac{3}{4} \times 3\frac{1}{2} \times 24\frac{1}{4}$	19 x 89 x 616
4	armrest supports	cedar	$\frac{3}{4} \times 2\frac{5}{8} \times 10$	19 x 67 x 254
2	armrests	cedar	$\frac{3}{4} \times 3\frac{1}{2} \times 20$	19 x 89 x 508
2	seat box front/back	cedar	$\frac{3}{4} \times 3\frac{1}{2} \times 19$	19 x 89 x 483
2	seat box sides	cedar	$\frac{3}{4} \times 3\frac{1}{2} \times 17\frac{1}{2}$	19 x 89 x 445
5	seat slats	cedar	$\frac{3}{4} \times 3\frac{1}{2} \times 19$	19 x 89 x 483
2	slat support cleats	cedar	$\frac{3}{4} \times \frac{3}{4} \times 17\frac{1}{2}$	19 x 19 x 445
5	backrest slats	cedar	$\frac{3}{4} \times 3\frac{1}{2} \times 15$	19 x 89 x 381
2	backrest braces	cedar	$\frac{3}{4} \times 2 \times 19$	19 x 51 x 483



ing up excuses to make more cuts just to release another burst of that great smell into the shop.

Because this is an outdoor project, we'll use stainless steel screws wherever it may get wet. The stainless steel screws I bought are star drive. Star drive screws are fun to use, and the driver bit (included in the package with the screws) makes a very positive contact with the screw for sure driving; it'll even hold the screw without assistance. The pocket hole screws used for the seat box are protected underneath, as are the screws attaching the seat slats, so no need for stainless there. Speaking of waterproofing, if your finished chair will actually be out in the rain, consider using a waterproof glue such as Titebond III.

Almost all of the components for this chair measure $3/4" \times 3 1/2"$, the actual dimensions of a nominal 1×4 , so everything can be made from 1×4 cedar right out of the rack. That means most of the cuts are crosscuts and you won't need to do much ripping. Buy enough stock to be able to cut your components to avoid knots. (Alternatively, you can save money by purchasing 1×8 boards and ripping up your own $3 1/2"$ stock. I've found that wider boards are generally more attractive and in better shape in the racks than narrower boards.)

Keep in mind that 1×4 dimensional stock can vary a bit – it may be slightly more or less than exactly $3 1/2"$ — so cut components accordingly. It's all right if



The stainless steel screws used for this project are self-drilling, and feature a star-drive head.

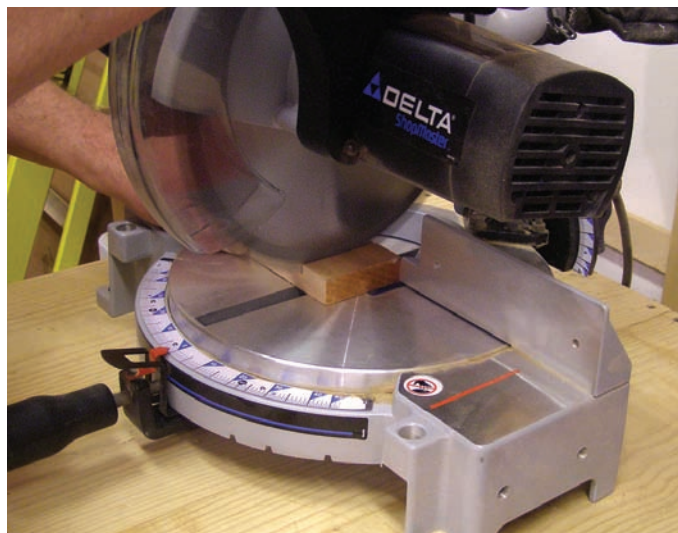
the widths aren't quite the same, as long as you group like widths together. For example, if one board is slightly more than $3 1/2"$ wide, cut all the legs from that.

Also, cedar sometimes varies in thickness; some I bought was as much as $7/8"$ thick. Again, this isn't a problem as long as you group like thicknesses together, and make minor alterations to project dimensions as needed. Another quirk of cedar boards is that one side is smooth while the other is almost always rough. No problem; just orient the boards with the rough side down or to the rear of the chair.

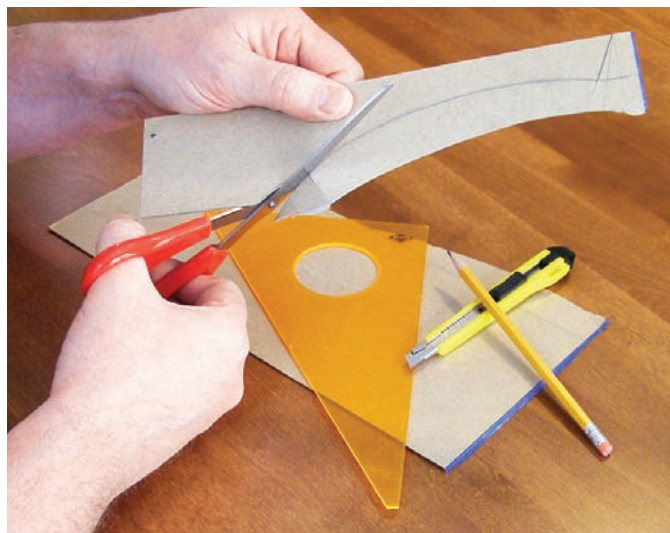
Mission Meets Mountain

The design of this chair blends the classic look of Mission style with the construction details and outdoor hardiness of Adirondack furniture. I retained the overall shape and arm/leg details of a Morris chair, joined with the slat appearance of an Adirondack chair. Overall, I think the effect works nicely. Little attempt is made to hide the screws in Adirondack chairs, but most are hidden in this chair, making for a smooth, unblemished appearance.

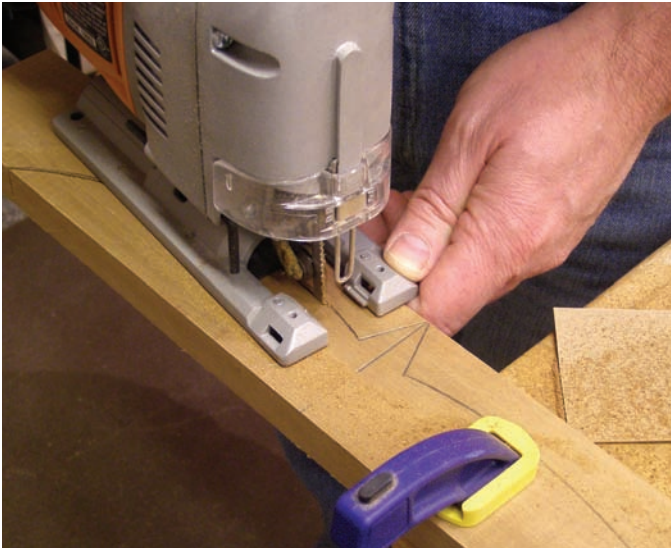
The project consists of three main sections: sides, seat and backrest. It doesn't



Since we're using standard 1×4 lumber, most of the cutting you'll do will be crosscutting, which can be quickly handled on the miter saw.



Transferring the pattern for the curved armrest supports to the workpieces is easier if you first cut a template out of stiff cardboard.



Cut out the armrest supports with a jigsaw. To keep the smooth sides facing forward on the finished chair, note how I've alternated the pattern to create *left* and *right* pieces.



Mark the tops of each leg as a guide to the exact center for attaching the armrest supports. Be sure to mark the legs *right* and *left* for proper orientation.

matter if you do the sides or the seat first, as long as you save the backrest for last to take exact measurements from the assembled chair for a perfect fit.

Start by cutting the legs and armrests to length on your miter saw. Set these aside for now.

Trace the outline for the curved armrest supports onto a piece of cardboard, and use this to transfer the pattern onto a workpiece at least 41" long. Cut out the four supports with a jigsaw. Mark a center line on the top end of each leg and align

the supports, then glue and clamp them in place. Don't forget to mark the sets for *left* and *right*. Drill a pair of countersunk holes on the inside of each leg into the supports and attach securely with screws. I used a 2" screw at the top, and a 1 1/4" screw at the bottom. Locate the bottom screw so it will be hidden by the seat.

Attach the armrest by first gluing and clamping it to the leg pair for each side, making sure there is a 1" overhang at the front leg, then use a countersink bit to drill and then drive screws up through the back of the armrest supports and into the armrests from underneath.

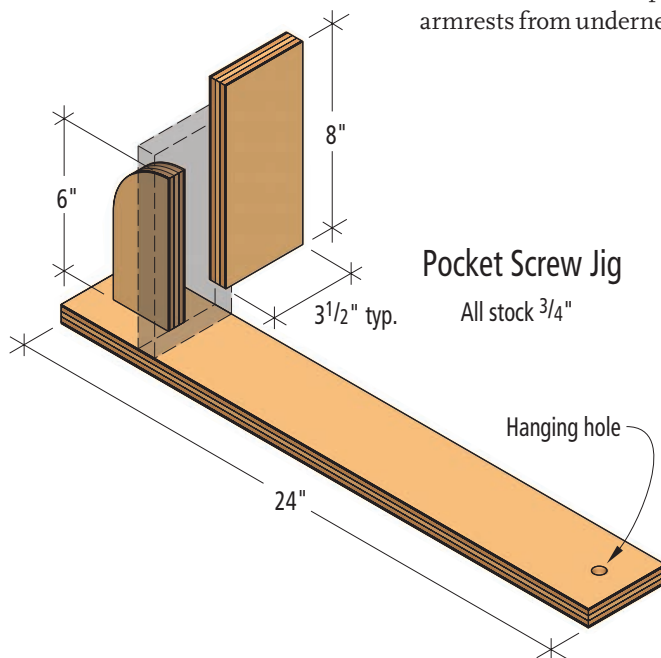
Take a Seat

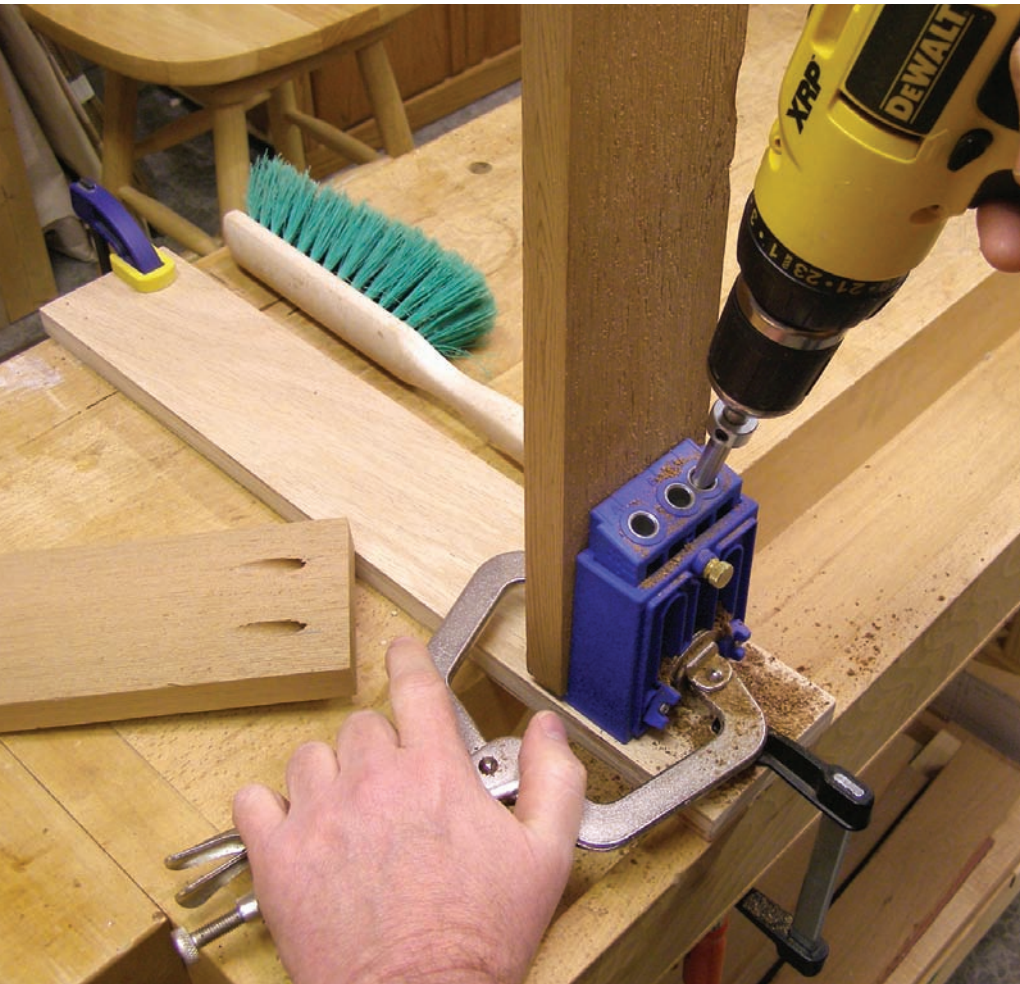
The seat box is done as one unit, joined with pocket hole screws. Crosscut the seat box pieces to length and center the inside end of each of the side pieces in the pocket hole jig. Use the outer guides to drill a pair of holes using the 3/4" setting. Note that I've attached my jig to a mounting board, which clamps securely to the workbench.

Assembling pocket hole joints in face frames using the jig's locking face clamp is simple, but joining boards end-to-end is more difficult, as the joints tend to move apart when driving screws in. I solved that by making a right-angle clamping fixture, into which I put both workpieces. Clamped securely at a 90-degree angle, the joint holds together perfectly when driving the screws. (By the way, I drilled a hole into the end of this assembly fixture and my pocket hole jig mounting board, so both can be hung on the shop wall when not in use.)

Basic Assembly

With the leg sets lying flat, mount the finished seat box to the inside surface with three countersunk 1 1/4" screws after gluing and clamping it into place. I attached the seat box so the top edge is 8 3/4" below the top surface of the armrests, but you can adjust this a bit if you like. A couple of pieces of scrap support the leg set to keep it level while working.





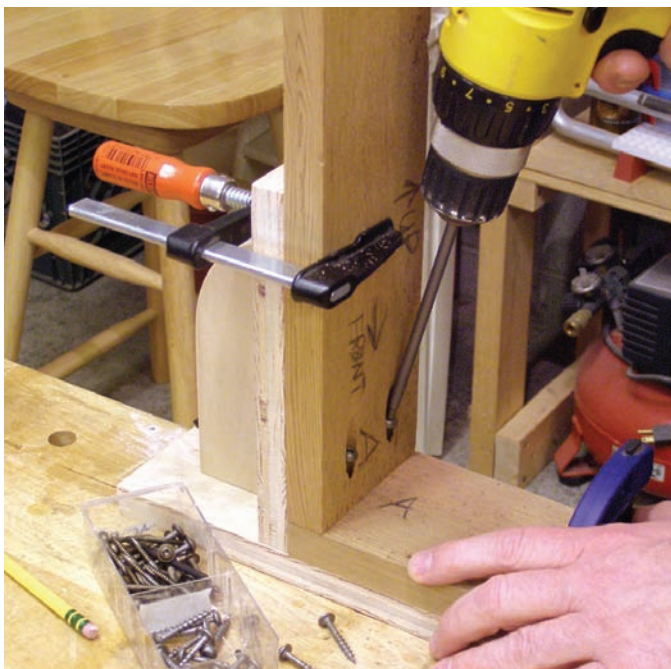
With the workpiece clamped securely in the jig, use the two outer guides to drill the holes for the washer-head pocket screws.

With the seat box and leg sets assembled, glue and screw a $\frac{3}{4}$ " \times $\frac{3}{4}$ " cleat at the inside front and back, flush with the top of the seat box.

Crosscut the five seat slats to length and arrange them on the seat box — the two outside slats should be flush with the leg sets, but the interior slats should be spaced equally — and mark with a pencil. If your slats are a true $3\frac{1}{2}$ ", the spacing will be just over $\frac{1}{4}$ ". Adjust accordingly for your stock.

Attach the two outside slats first. Glue and clamp them in place, then upend the chair and drive a pair of countersunk $1\frac{1}{4}$ " screws through the cleats and into each end of the slat. Repeat with the three interior slats, being careful to maintain equal spacing.

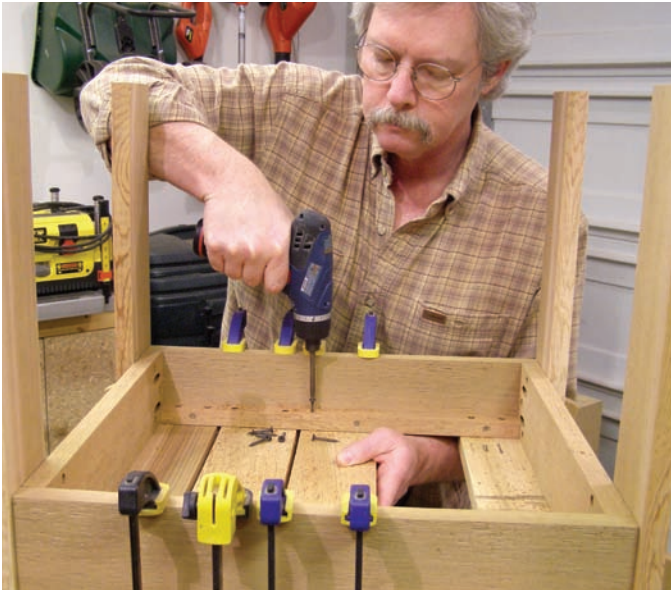
Cut a pair of $\frac{3}{4}$ " \times 2" back braces, measuring the inside width of the assembled chair to get the exact length for a perfect, snug fit between the leg sets. With the backrest slats crosscut to length, hold the lower backrest brace in place and mount the slats with glue and $1\frac{1}{4}$ " screws countersunk through the brace from the rear. As before, start with the outside slats then add the interior slats one at a time, matching the spacing on the seat slats. Fasten the upper brace in the same way; the exact location of the upper brace isn't critical as



A shop-made right-angle clamping fixture keeps the drilled workpieces securely in place when driving the pocket screws



Attach the completed seat box to the leg sets with three countersunk $1\frac{1}{4}$ " screws. Scrap wood under the leg set keeps everything level.



Countersink from the underside to drive screws to attach the seat slats. Since these screws are protected on the underside of the chair, I opted for regular screws here instead of stainless steel.



Although it isn't attached at this point, assembling the backrest inside the chair ensures a perfect, snug fit. Be sure the spacing of the backrest slats matches those in the seat.



With the jigsaw set at 12°, cut the bevel into the bottom edge of the backrest.



Drive a pair of 2" screws through each side of the leg sets to attach the backrest in place. The screws should anchor into the outside vertical slats, not the horizontal back braces.

long as it's below the rear of the armrest. Although not yet attached, the backrest should be a snug fit when finished.

Remove the assembled backrest from the chair to cut the bevel on the bottom. I opted for a 12° angle for the back, but you can adjust this a few degrees either way to your taste. Set your jigsaw to make the angled cut, and trim the bottom of the backrest through both the brace and slats, making doubly sure to cut the angle in the right direction. Touch up the angled edge

with a sanding block if necessary.

Put the backrest in place on the chair and set the angle so the bottom bevel is flush with the seat slats. Countersink and drive two 2" screws through the leg sets into the sides of the backrest. Locate the screws so they anchor into the outside back slats, not the ends of the back braces.

Finishing Up

Sand all upper and outside surfaces, round over the front edges of the seat

slats, and your patio chair is done.

Because cedar is so hardy in outdoor environments, no protective finish is needed. The cedar will weather nicely on its own, gradually acquiring a darker patina.

Should you ever desire to return your chair to a like-new appearance, a simple resanding will make the cedar look fresh-cut. (And give you an excuse to fill your shop with that delightful aroma once again.