

Woodsmith **PLANS**

CRAFTSMAN MORRIS CHAIR



craftsman- style Morris Chair



If you have any doubts, I can assure you that this roomy Morris chair is just as comfortable as it looks. With its wide stance, thick cushions and reclining back, it's made for relaxing.

But for me, the reward here wasn't just the end result, but the time spent getting there. This chair is Craftsman-style woodworking at its best — solid, hands-on joinery with a few new and interesting challenges.

But challenges are just an opportunity to find solutions and that's what you have here. Take the stout legs

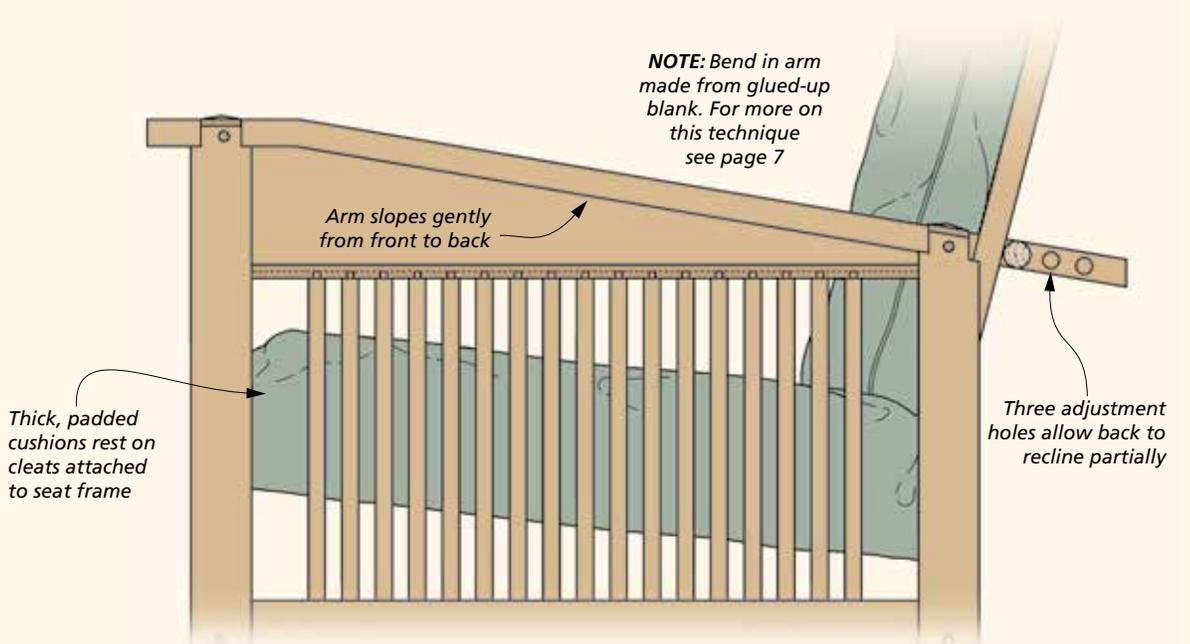
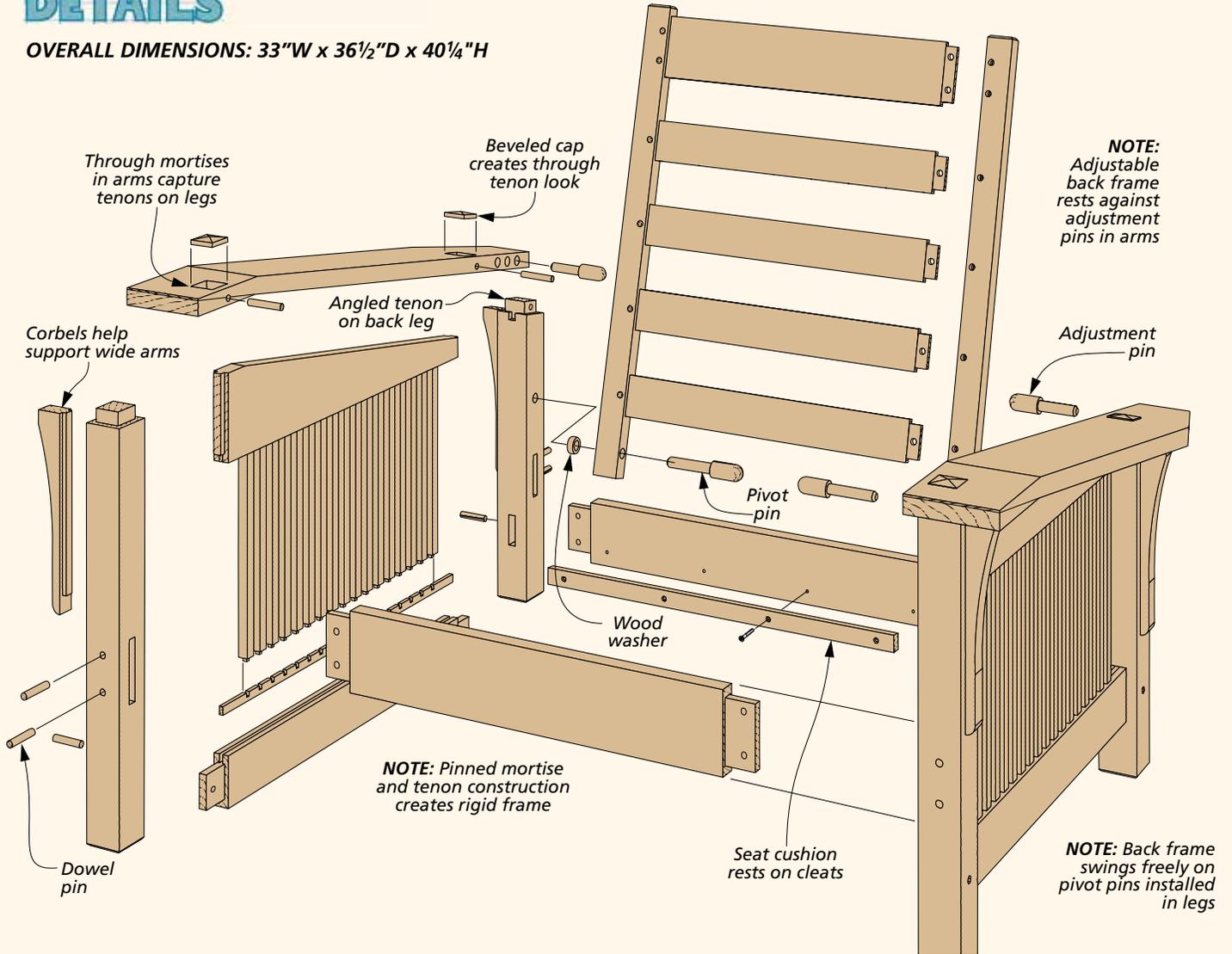
for example. I wanted them to show quartersawn grain on all four faces. Impossible? Not with the simple traditional technique that I used.

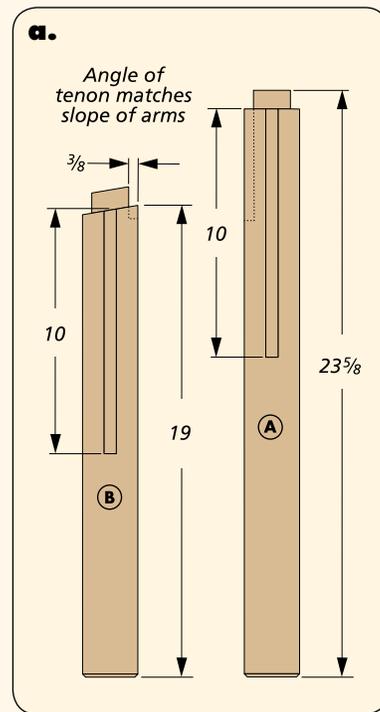
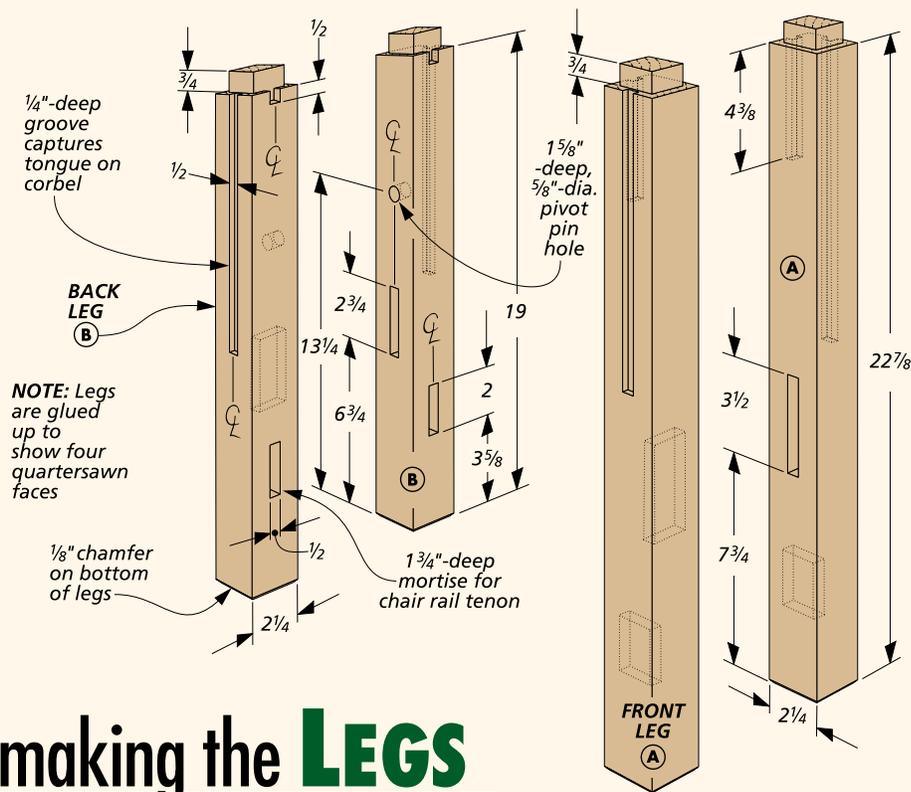
And you probably can't help but wonder how you'll make the sloping "bent" arms that give the chair its unique look. Well, a two-piece glue-up followed by a simple step-by-step approach makes the shaping easy.

Then once you complete the chair, you might want to add the matching ottoman on page 11 to cap off a great woodworking experience.

CONSTRUCTION DETAILS

OVERALL DIMENSIONS: 33"W x 36½"D x 40¼"H





making the LEGS

This Morris chair is a Craftsman classic — solid-looking and solidly built. So to get things off on the right foot, I began by making four sturdy legs from quartersawn white oak.

THE LEG BLANKS. The thick blanks that I needed for the legs required gluing them up. But I didn't want the legs to have a "glued-up" look. So to make my leg blanks, I borrowed an old technique. The box below explains a simple process for making great-looking leg blanks with four quartersawn faces.

TENONS, MORTISES, & GROOVES. Once the leg blanks are complete, you can begin work on the joinery that will

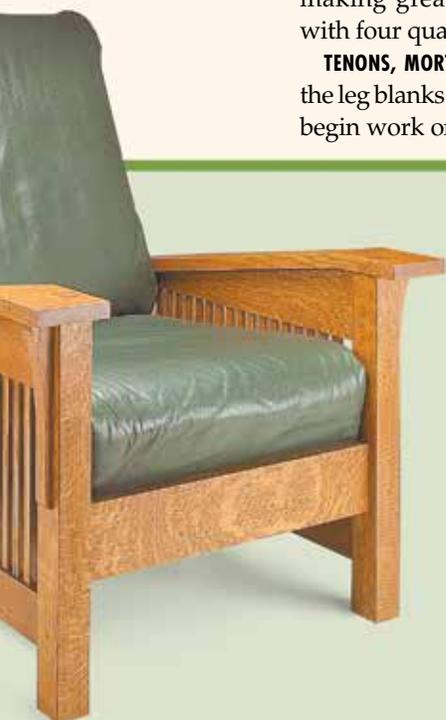
connect the legs to the other frame parts. The drawings above show you what's involved.

The first thing you need to concentrate on are the square tenons on the tops of the legs. These tenons will fit "through" mortises in the arms to add an extra measure of strength to the chair frame. And, as you'll see, the length of the shorter back legs is measured from the shoulders of the tenons.

The front leg tenons are pretty straightforward. But the angled tenons on the shorter, back legs are a different story. The instructions on page 4 guide you through this.

With the tenons completed, you can turn your attention to cutting mortises and grooves. Each leg has two deep mortises that will capture stout tenons on the lower rails. The arms will provide most of the strength across the top of the chair sides. So for the upper side rails, I relied on stub tenons that fit in grooves routed in the legs. And a groove running down the outside of each leg will be used to attach the corbels you'll add later.

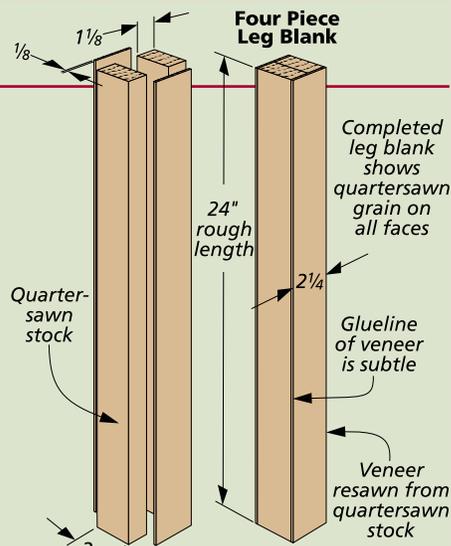
TWO HOLES. Finally, a 5/8"-dia. hole drilled in the inside face of each back leg will hold a wood pin that connects the back frame to the legs.



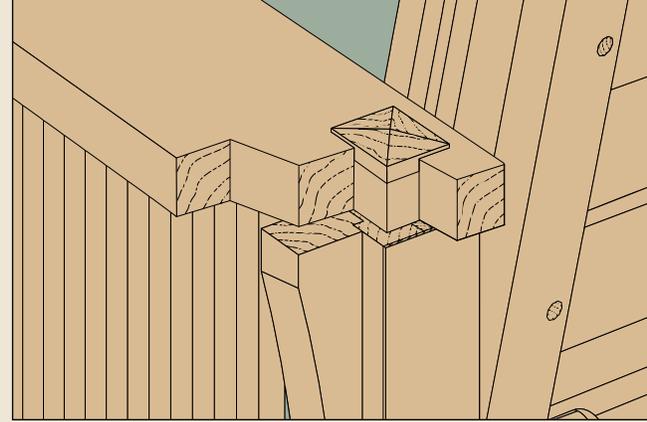
How-To: Quartered Legs

The quartersawn white oak used for Craftsman-style furniture has a distinctive "flecked" grain pattern — but only on the face grain. So a two-piece glueup would only show quartered grain on two sides. The other two would have a plain grain pattern as well as a pretty noticeable glueline. The traditional technique I used to glue up the leg blanks (shown at right) solves both of these problems at once.

First, two 1 1/8"-thick pieces of quartersawn stock are glued up to create a 2 1/4" x 2" blank. Next, I resawn some quartersawn stock into 1/8"-thick veneers and glued it to the "plain" faces. This hides the glueline and gives you four quartersawn faces.



4 easy steps to an Angled Tenon



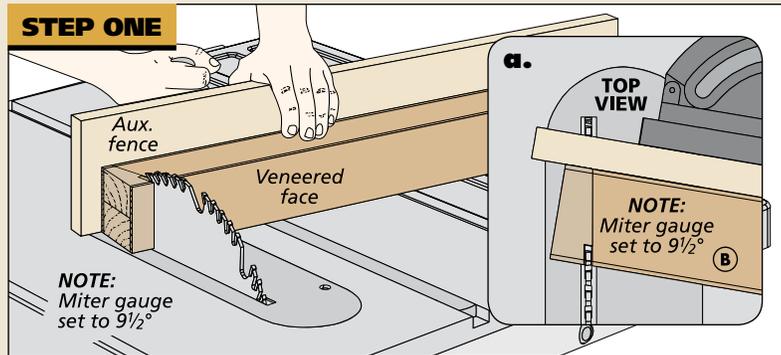
The sloping, “bent” arms of the chair add a few challenges. The first is the angled tenon on the top of the back legs that matches the “fall” of the arms. It just takes a step-by-step approach to get the job done.

TWO QUICK NOTES. Before you turn on the table saw, there are a couple things to mention. First, as you can see in the drawing on page 5, the final length of the back legs is measured from the front shoulders of the tenons. So you won’t cut the legs to length until the tenons are complete. Second, for the best look, all the legs should have the veneered faces at the front and back. So, mark them clearly. Once the angled tenons are cut, you can’t turn the legs.

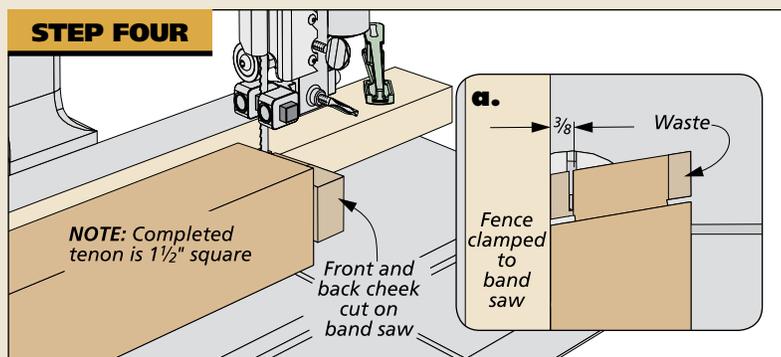
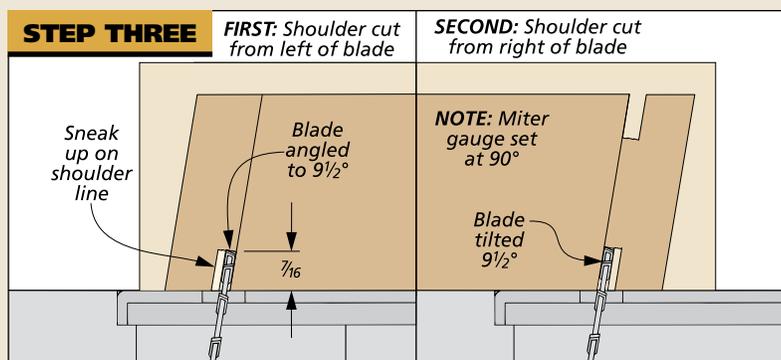
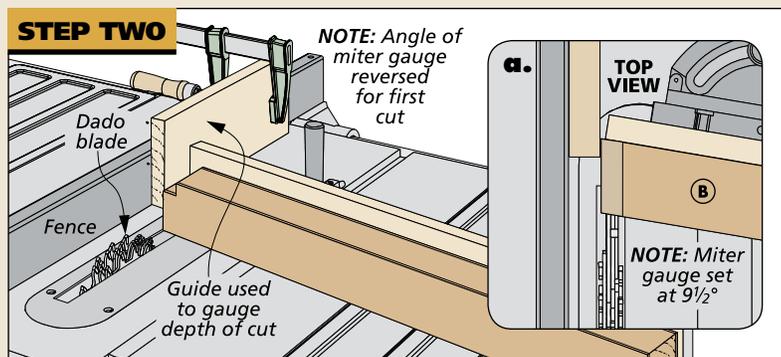
A FOUR-STEP PROGRAM. Step One shows you how to get started — with a $9\frac{1}{2}^\circ$ cut on the end of the blank. Next, in Step Two, a dado blade is used along with a depth stop on the rip fence to cut the two side shoulders. For the first cut, leave the miter gauge at the $9\frac{1}{2}^\circ$ setting you used to make the end cut. For the opposite side, the miter gauge will have to be angled in the opposite direction. This will take care of the two sides.

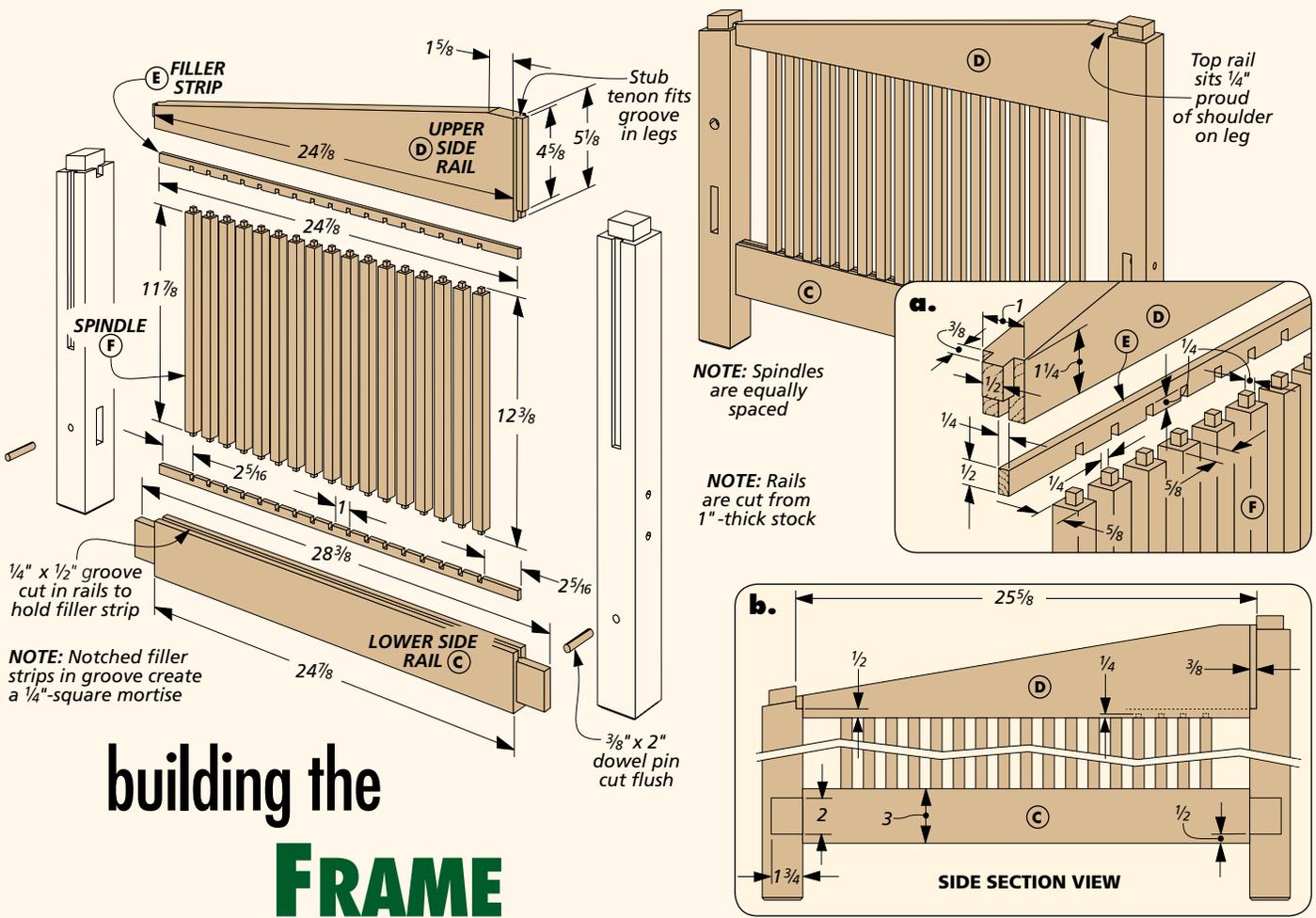
Now, switch back to a standard blade for the front and back shoulders (Step Three). With the miter gauge set square and the blade tilted to $9\frac{1}{2}^\circ$, sneak up on the first shoulder cut. For the second shoulder, you’ll need to cut from the opposite side of the blade.

For Step Four, I took the blanks to the band saw. Here, with a fence in place, I removed the waste from the front and back cheeks to complete the tenon. Finally, you can cut the legs to final length.



A New Angle. The angled joinery at the back of the chair is a minor challenge with a great pay-off.





building the FRAME

At this point, the four legs are ready to go. So the next step is to make a sturdy frame by joining the legs with rails and spindles. Adding the two “bent” arms comes a little later.

SIDE ASSEMBLIES. You’ll start by putting together the two side assemblies shown in the drawings above. As you see, tenons on the upper and lower rails fit the mortises in the front and back legs. Square spindles are added between the rails using a time-saving, groove-and-filler strip technique.

THE SIDE RAILS. The upper and lower side rails are both made from 1”-thick stock to keep them in proportion to the hefty legs. The lower side rails are simply cut to size and then tenons are cut to fit the mortises in the legs. The upper rails require a bit more work.

A look at detail ‘b’ shows how the top of the upper rail tapers (at 9 1/2°) from front to back to join with the back legs. The profile created by the legs and the top rail matches the bent shape of the arms you’ll be

adding later. And if you look close, you can see that the upper rails stand slightly proud of the shoulders of the tenons on the legs. This “extra” height will be captured in a shallow groove cut into the bottom of the arms.

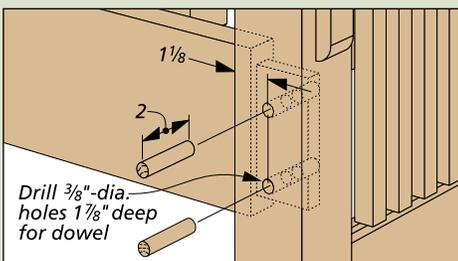
All this sounds trickier than it is. Just start by cutting the upper side rails to length and overall width. Then cut stub tenons on both ends to fit the grooves you routed in the legs. Finally, cut the upper rails to shape, as shown above. That’s it.

ADD THE SPINDLES. With upper and lower rails fit to the legs, you’re ready to add the spindles. As I mentioned, a simple groove-and-filler strip technique streamlines the mortise and tenon joinery. A look at detail ‘a’ tells the story.

The “mortises” in the upper and lower rails start out as 1/4”-wide grooves. Then I made notched, filler strips to “plug” into the grooves. In short order, you have a series of evenly spaced and perfectly sized mortises.

TWO SIDES FRAMES. After cutting and fitting the 5/8”-square spindles

How-To: A Pinned Tenon



Drill & Insert. After drilling holes for the dowel pins, cut them to rough length and “ease” one end before driving them in.

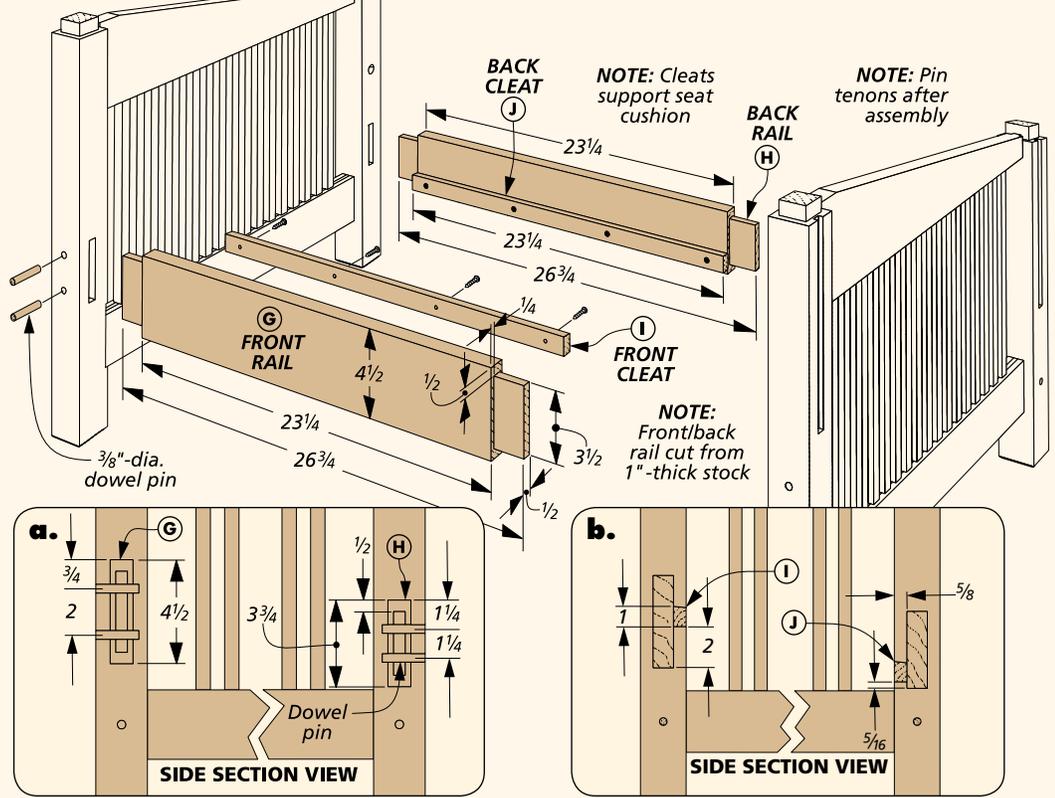


Trim Them Flush. When the glue is dry, you can use a chisel, bevel down, to carefully trim the dowel pins flush to the surface.

between the rails, you can get out the glue and clamps and put all the pieces together. First, glue the filler strips in place. Then insert all the spindles (with glue) into one rail. Then, working from one end, fit each spindle in order as you pull the rails together. A clamp or two will hold the rails and spindles together while you add the legs.

A STANDING FRAME. Once the two sides were assembled, I added a front and back rail to create a four-legged, “stand-up” frame. And then I added a traditional Craftsman detail by pinning all the lower tenons with dowel pegs. The box on page 5 shows the process.

Finally, after adding the two cleats that support the seat frame, you can move on to the arms.



A Closer Look: Will the Real Morris Chair Please Stand Up?

When you take a look at the drawings of the two chairs at right, you see a remarkable difference. The chair in the lower drawing should look pretty familiar. You can easily see the common lineage it shares with our sturdy, Craftsman-style Morris chair. But, chances are, you've never seen a chair quite like the one in the upper drawing.

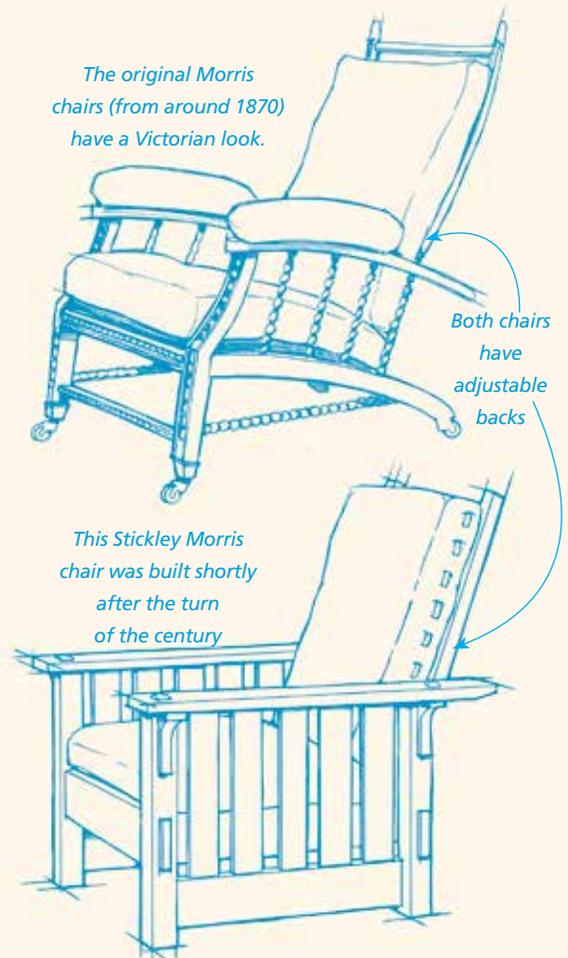
Well, the truth is that both chairs are Morris chairs. Basically, any chair that has an adjustable back falls into this category. And through the years, there have been a lot of variations. But, believe it or not, the chair in the upper drawing is the original, upon which all the others were based.

The first Morris chairs were named after and produced by the English Arts and Crafts design company owned by William Morris. Morris was a writer, philosopher, artist, and, most importantly, an early pioneer of the Arts and Crafts movement in late 19th-century England. But truth be told, William Morris didn't design the chair that bears his name. That distinction goes to his chief designer, Phillip Webb. In his time, Morris was

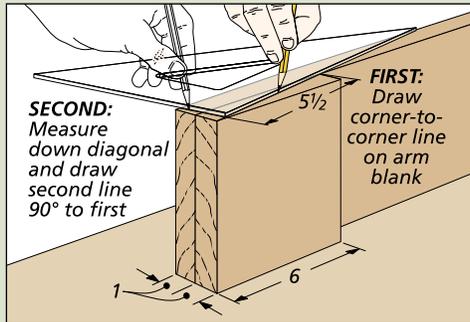
actually best known for his wallpaper designs. But his philosophy of functional design and hands-on building methods are what he is best remembered for.

And this is where American furniture designer and manufacturer Gustav Stickley enters the picture. In 1900, Stickley traveled to Europe and picked up on the ideas of William Morris and other Arts and Crafts proponents. When he returned to the U.S., he dedicated himself to designing and building a style of furniture that fit the needs and lifestyle of the American people. His "Craftsman-style" furniture would be simple, solidly built, and functional.

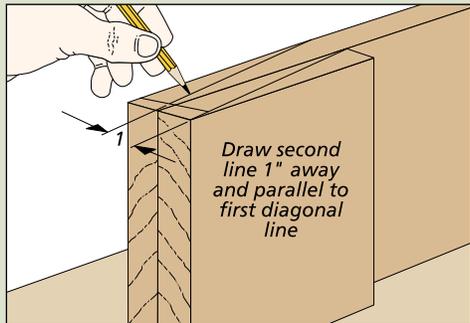
So Gustav Stickley gave us his uniquely American interpretation of the Morris chair (the lower drawing is of an early version). And for most of us, this is what we think of when we hear that name. And, I think you'll agree, that Stickley and his imitators brought the Morris chair as close to perfection as possible. The solid look and feel of a Craftsman-style Morris chair just begs you to sit down, put your feet up, and forget your cares.



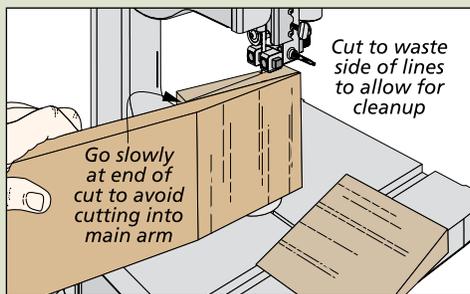
How-To: Add a Bend



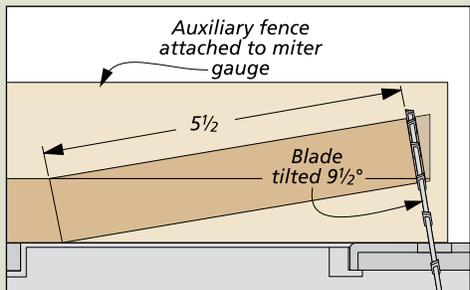
The Lower Side. First, lay out the lower side of the bend by simply drawing a corner-to-corner line on the short lower arm block.



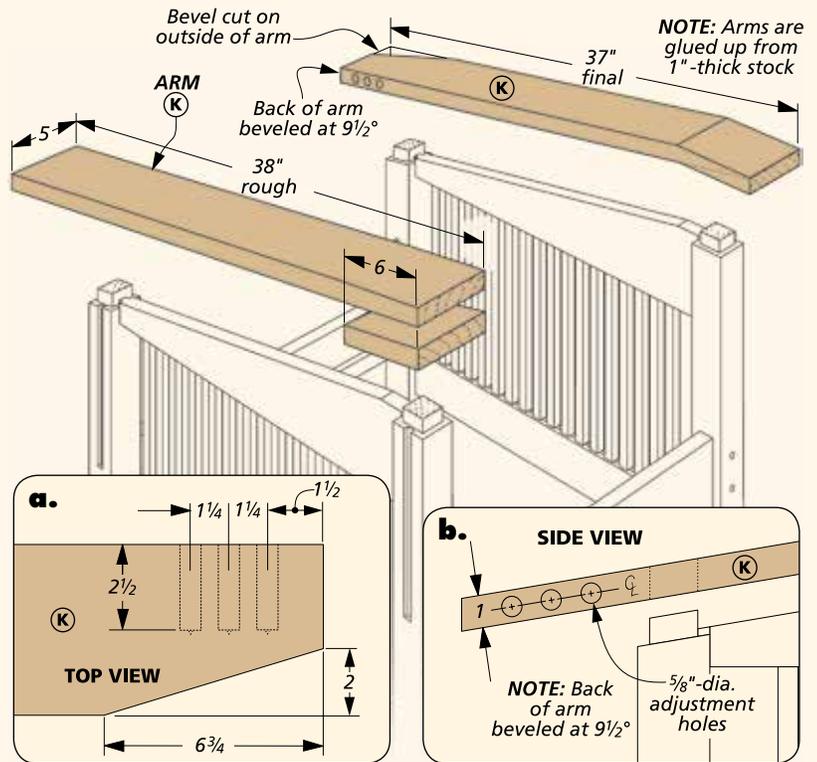
The Upper Side. Next, measure up 1" from your first line and draw a second line. This line will be the top side of the bend.



Cut & Clean. After carefully removing the waste at the band saw, I cleaned up the two faces with a block plane and sandpaper.



Square the End. Finally, you can take the blanks to the table saw to square the ends. You'll need to tilt the saw blade 9 1/2°.



adding the ARMS

Now that the legs, rails, and spindles are assembled, the next task is to add the uniquely shaped arms. And this is where things really get interesting. Although, making the "bent" arms is a challenge, all it takes to get things done right is a steady step-by-step approach.

LOOK IT OVER. The best way to start is to familiarize yourself with what you need to accomplish.

The arms do more than just draw attention and create a comfortable resting place. They're actually an important structural part of the chair frame. A pair of through mortises in the front and back of each arm and a groove that runs between them allows the arm to fit over the side assemblies. All this joinery creates a rock-solid side frame and a strong connection for the pivoting back frame of the chair that you'll build a little later.

TWO BENT ARMS. But for starters, you'll need to create two arm blanks with the right shape. What you're shooting for are arms with a crisp bend that look like they were cut

from a single, solid-wood blank. The process I used to achieve this is straightforward.

The drawings above and in the column at left explain things pretty well. As you can see, a glued-up, two-piece blank is your starting point. Just be sure you get the lengths of the two pieces right and the blanks glued up flush at the front end. And then for a seamless look, take a little time to match the color and grain of the two pieces you glue up for the rough blank.

Once the rough blanks are made, you can create the bend (How-To column at left). And finally, trim each arm to final length with a bevel cut, as shown in detail 'b.'

ADJUSTMENT HOLES. The next two steps are pretty simple. First, I took the arms to the drill press. Here I drilled three, evenly spaced, 5/8"-dia. holes on the inside edge of each arm. These deep holes hold the adjustment pins that the back frame will rest against. And then, the back of each arm is tapered at the band saw (detail 'a').

THE ARM JOINERY. Now you're ready to tackle the joinery that connects

the arms to the lower frame. The major effort here involves drilling and chiseling out through mortises in the arms that match the tenons on the end of the legs. This job is made a little easier by the fact that the topside of these mortises will be plugged with separate caps, as illustrated in the box below. But

you'll still want to get the best fit possible here. The box below will put you on the right track.

GET IN THE GROOVE. With the mortises completed, there's only one more job to do before the arms can be added to the frame. A 1"-wide groove needs to be routed between the two mortises on

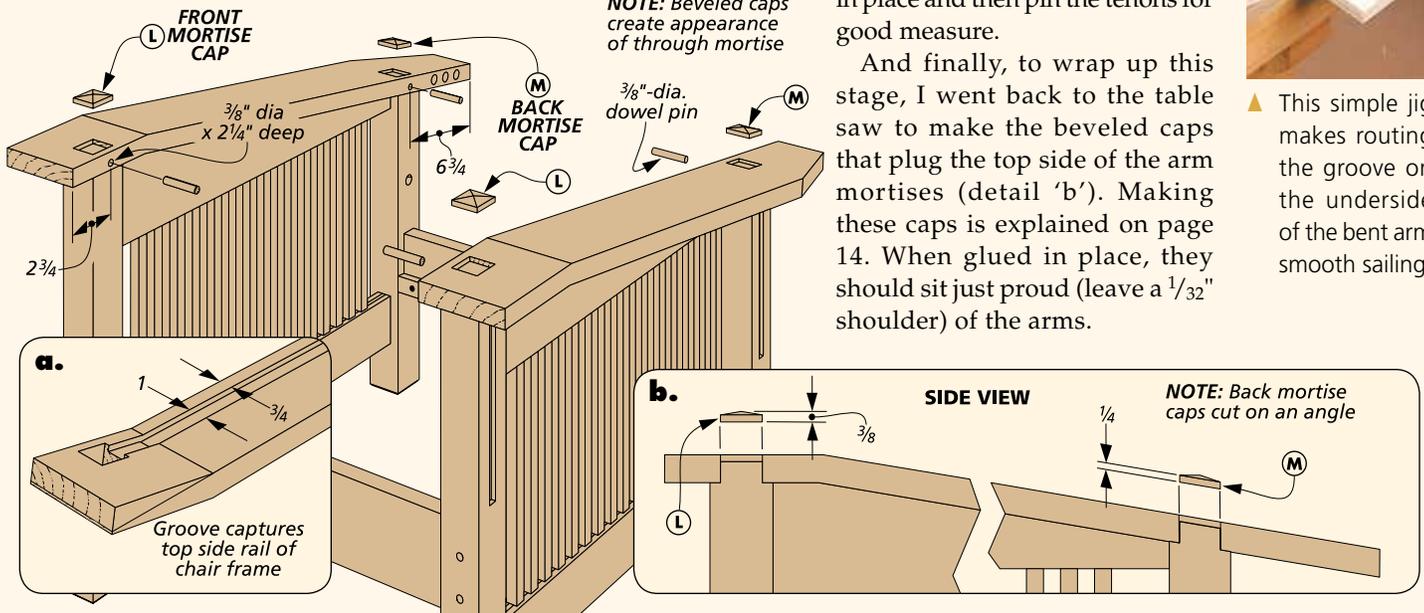
the underside of each arm. This groove allows the arm to fit over the upper side rail and seat fully on the leg tenons. If you're wondering how you're going to do this, just turn to page 13 and you'll learn the secret.

ARMED & CAPPED. Once the groove is complete, the arms can take their place on the frame. Just glue them in place and then pin the tenons for good measure.

And finally, to wrap up this stage, I went back to the table saw to make the beveled caps that plug the top side of the arm mortises (detail 'b'). Making these caps is explained on page 14. When glued in place, they should sit just proud (leave a $\frac{1}{32}$ " shoulder) of the arms.



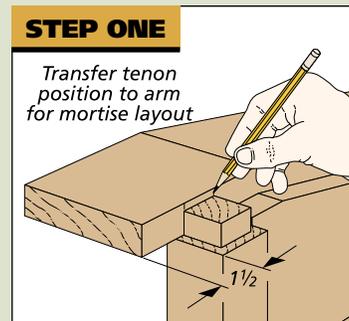
▲ This simple jig makes routing the groove on the underside of the bent arm smooth sailing.



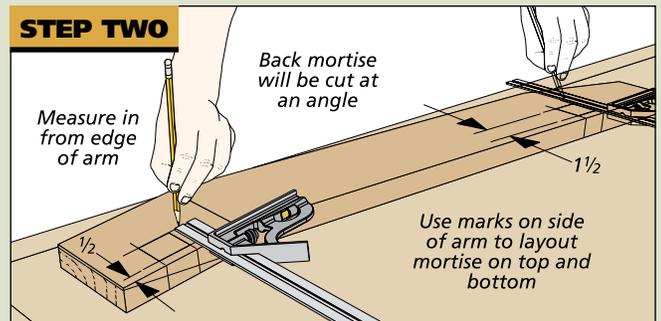
How-To: Arm Mortises

The through mortises in the arms are an important part of the joinery of the chair as well as one of its eye-catching features. So you want to cut them as accurately as possible. Both the distance between the two mortises in each arm and the size of each mortise need to be right on. But you'll find that more than anything else, this just takes a slow but sure approach. It starts with a careful layout, followed by some patient work with the chisel. The drawings at right illustrate the process.

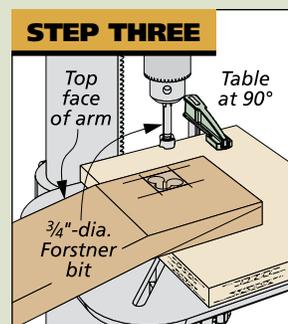
Keep in mind that since these are through mortises, your work will show on the tops of the arms. A crisp, accurate mortise on the topside will make fitting the mortise caps an easier job and the completed project more impressive.



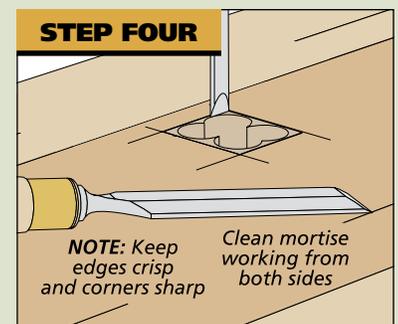
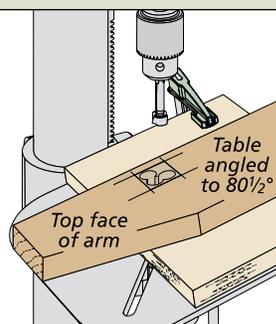
STEP ONE
Transfer tenon position to arm for mortise layout



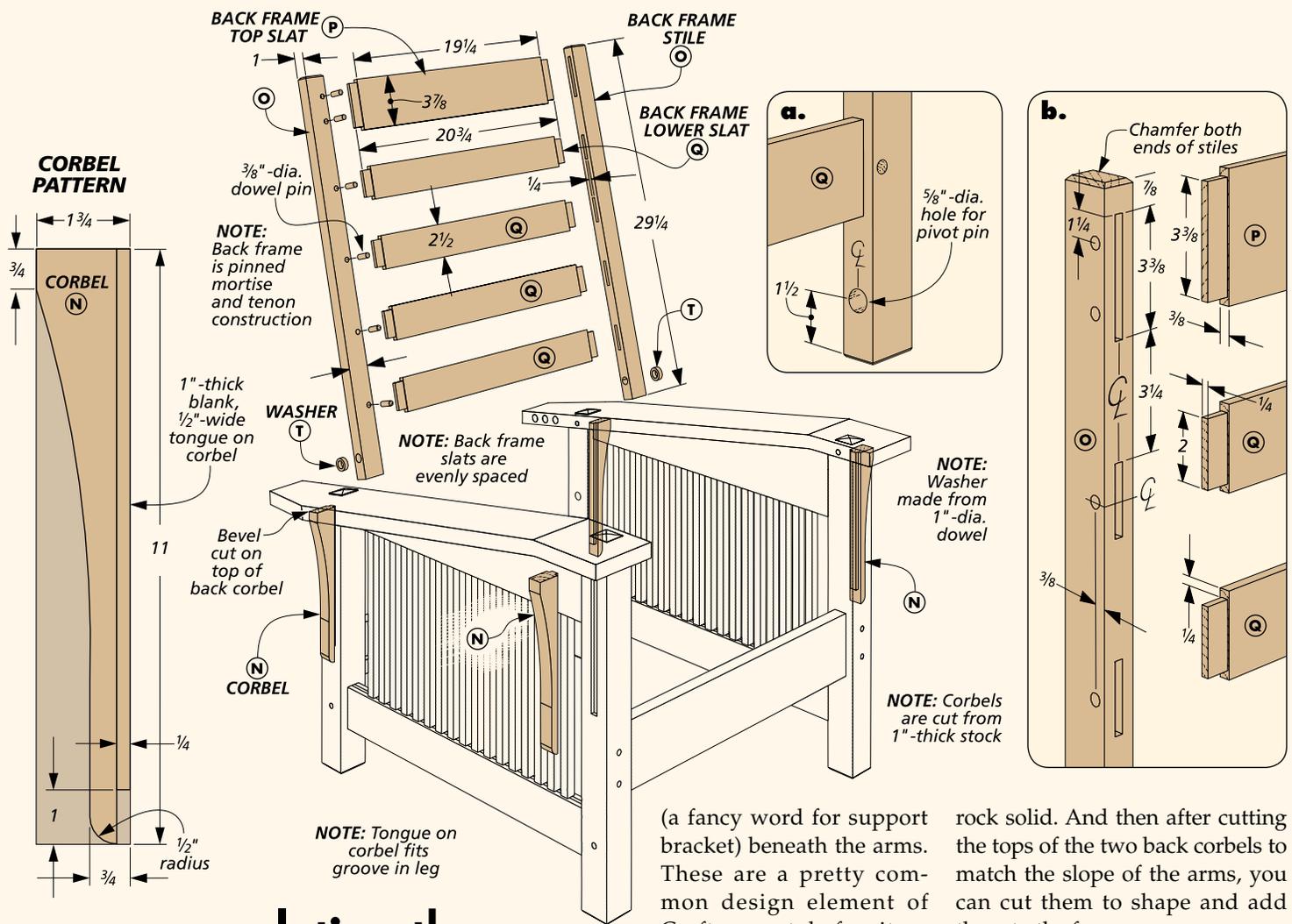
STEP TWO
Mortise Layout. The marks on the side of the arms can then be squared to the top and bottom to give you the right spacing. Keep in mind that the rear mortise is cut at an angle.



STEP THREE
Drill Press. Next, the mortises are started by drilling out the waste. Be sure to use a backup piece. You'll have to angle the table for the rear mortises.



STEP FOUR
Clean Up. Finally, use a chisel and mallet and clean up the mortises, working from both sides.



completing the DETAILS

▼ Both the washers and the pins can be made by using a hole in a scrap piece to center a hole in a section of 1"-dia. dowel.

At this point in the project you can relax a little bit. The biggest challenges are behind you. From here on out, it's just a matter of tidying up some final details.

THE CORBELS. The first of the finishing touches is to add the corbels

(a fancy word for support bracket) beneath the arms. These are a pretty common design element of Craftsman-style furniture and here they'll lend some extra support to the wide arms and also add to the solid look of the chair.

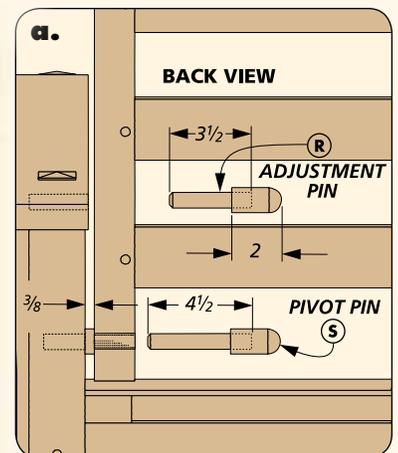
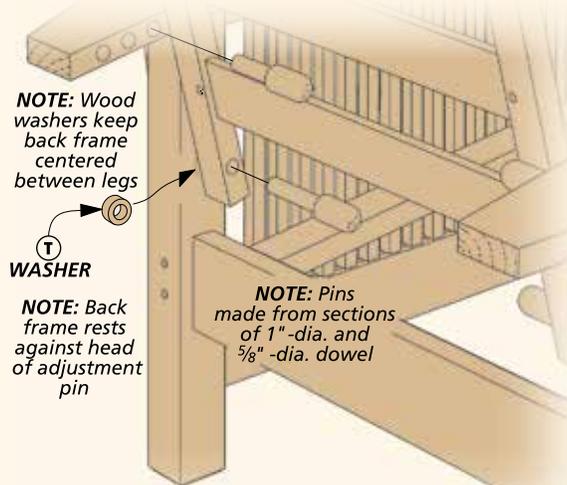
All four corbels follow the pattern shown in the left margin above. But before cutting the corbel blanks to shape, you'll want to complete the simple joinery. Each corbel has a tongue that mates with the grooves you cut on the outside of the legs. This makes it easy to fit them in place and the attachment will be

rock solid. And then after cutting the tops of the two back corbels to match the slope of the arms, you can cut them to shape and add them to the frame.

THE BACK FRAME. Next comes an assembly that's easy to build but has a very important function — the adjustable back frame. It's what makes the chair a Morris chair.

This frame needs to be both lightweight and easy to adjust, but also solid enough to carry its load. And the traditional pinned mortise and tenon "ladder" design used here will certainly do the trick.

The exploded drawing above and details 'a' and 'b' show you what



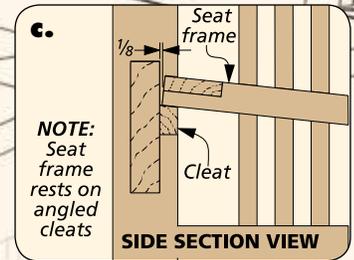
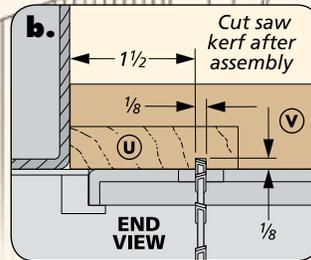
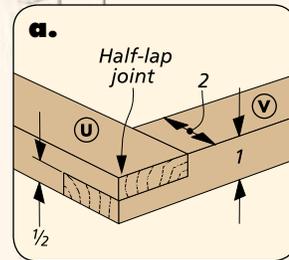
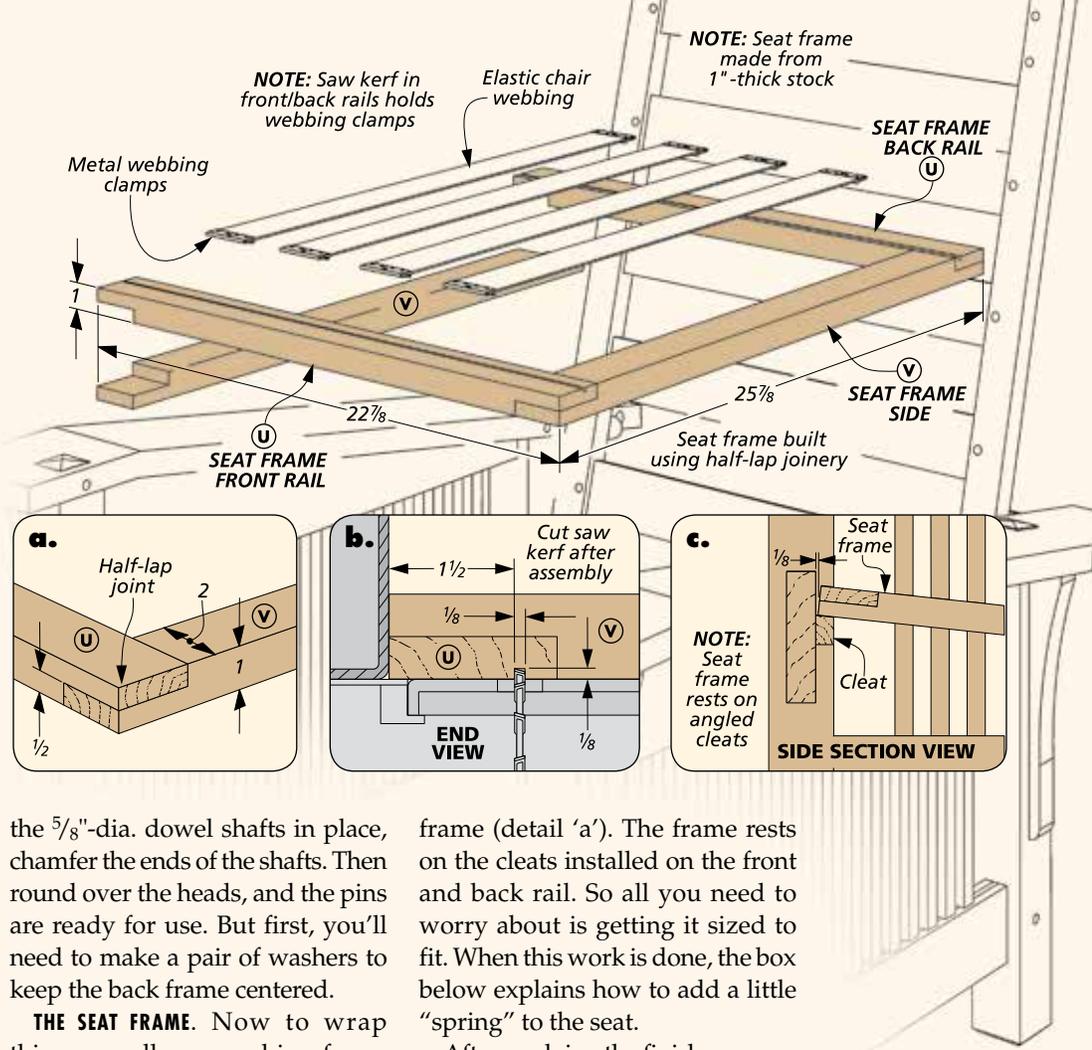
you need to know here, so I'll only mention a couple details.

The back frame is held in place by a couple of pivot pins that pass through the frame stiles and into the legs. You'll want to drill the holes in the stiles before you assemble the frame. The frame is sized to fit between the arms of the chair with an $\frac{1}{8}$ " clearance on either side. And finally, a chamfer on the top and bottom of the stiles adds a classic Craftsman touch.

THE PINS. Once you've assembled the back frame, you're only a short step away from connecting it to the main frame. To do this, you need to make a set of pivot pins and a set of adjustment pins.

The two sets of pins are identical except that the shafts of the pivot pins are 1" longer. This extra length allows them to pass through the back frame stiles and still have plenty of bite in the legs.

The stout, two-piece pins can be made easily without any lathe work. The photo at the bottom of page 9 shows you how. I first used the drill press to drill a 1"-dia. hole in a piece of scrap. Then this hole is used to center a $\frac{5}{8}$ "-dia. hole in sections of 1" dowel. After gluing



the $\frac{5}{8}$ "-dia. dowel shafts in place, chamfer the ends of the shafts. Then round over the heads, and the pins are ready for use. But first, you'll need to make a pair of washers to keep the back frame centered.

THE SEAT FRAME. Now to wrap things up, all you need is a frame to support the seat cushion. And as you can see from the drawings above, this won't tax your skills. It's just a 1"-thick, half-lap

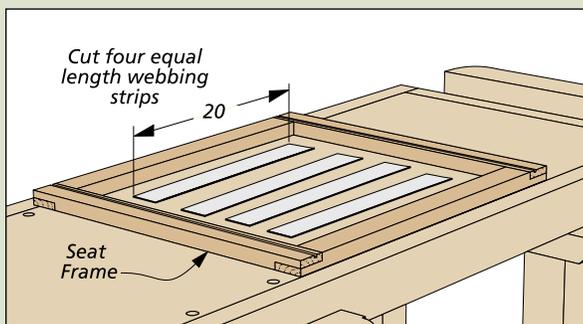
frame (detail 'a'). The frame rests on the cleats installed on the front and back rail. So all you need to worry about is getting it sized to fit. When this work is done, the box below explains how to add a little "spring" to the seat.

After applying the finish, you can try your hand at some simple upholstery (see the article below) and give the chair a try. You'll find that the "sit" was well worth the effort.

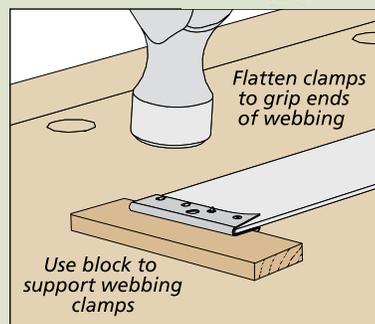
How-To: Install the Webbing

I considered simply using a solid piece of plywood as the base for the seat cushion. But the idea of having a seat with a little more "give" won the day. And in the end, the little bit of extra work was well worth it.

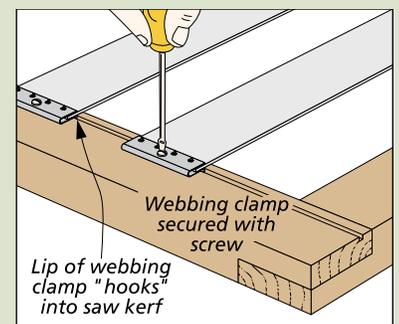
The process of adding the elastic webbing to the seat frame shown below couldn't be easier. The metal clamps grab the webbing tightly so that you can hook them into the frame kerf and screw them down.



Webbing. The elastic chair webbing will be stretched slightly to fit the frame. So I cut four equal pieces about 3" less than the distance between the kerfs.



Clamps. Next, a webbing clamp is "pinched" tightly over each end of the webbing strips.



Kerf. After fastening one end, stretch the strip to fit to the opposite kerf and screw it down.

craftsman- style Ottoman

Standing alone or placed in front of the Morris chair, this ottoman is a true classic.



Once you take a relaxing sit in the Morris chair, I can almost guarantee that you'll want to add this matching ottoman. But the best thing about this project is that it can easily stand on its own. With or without the chair, it's a great piece to build.

GETTING STARTED. When you take a look at the exploded drawing below, you'll see that this project is just "nuts and bolts" joinery. First, you'll build the two end assemblies, then connect them with side rails and stretchers.

THE LEGS. The best place to start is with the four, solid legs. You can begin by cutting the *legs* (A) to size from 1 3/4"-thick stock.

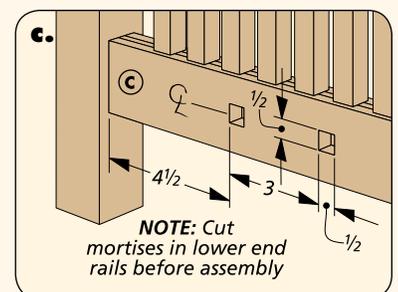
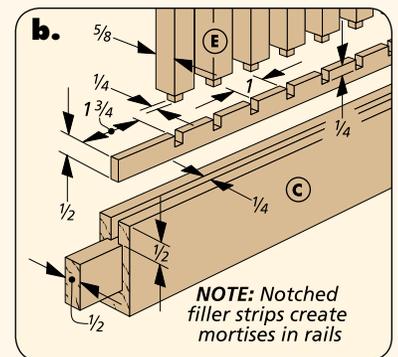
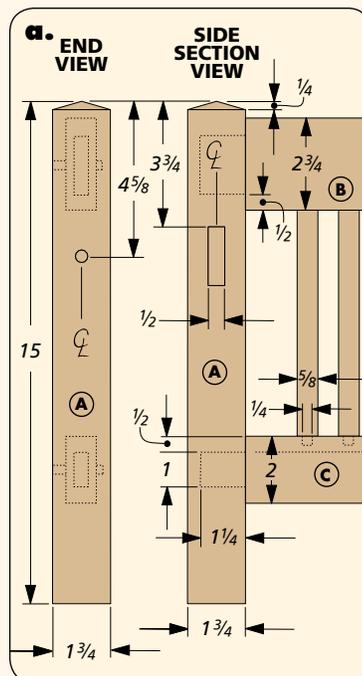
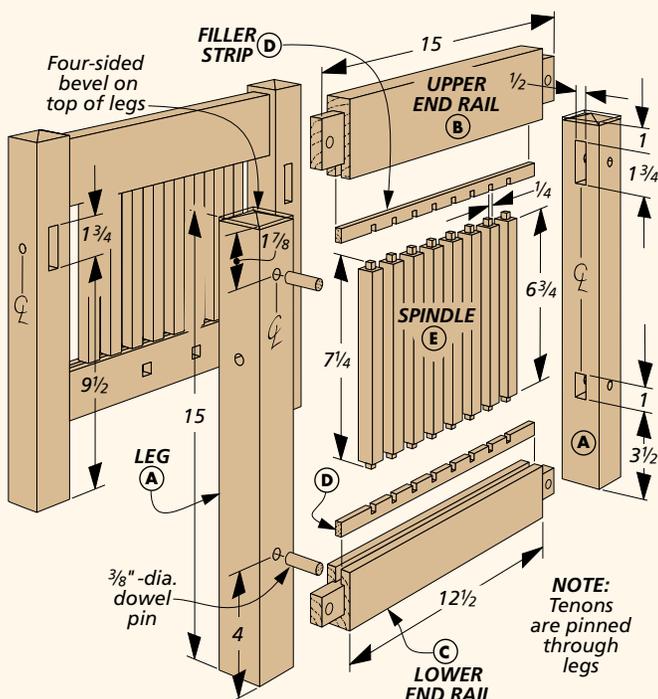
Next in line are the mortises — three in each leg. But before you get started, I suggest you pair up the legs (two for each end) and mark them clearly. This way, when you lay out the mortises, you're less likely to get confused.

With the mortises laid out, I first paid a visit to the drill press to drill out most of the waste. Then I took the legs to the workbench to clean up the mortises. Finally, I cut a four-sided bevel on the top of each leg (detail 'a').

RAILS & SPINDLES. The legs are now ready to have the end rails and spindles added. To match the

sturdy look of the legs, I cut the *upper end rails* (B) and *lower end rails* (C) to size from 1"-thick stock. After cutting tenons to fit the mortises in the legs, you can add the grooves used to create the mortises for the spindles. To complete these mortises, I made four notched filler strips and glued them into the grooves in the rails as shown in detail 'b.' The 16 square spindles are the final pieces to the puzzle.

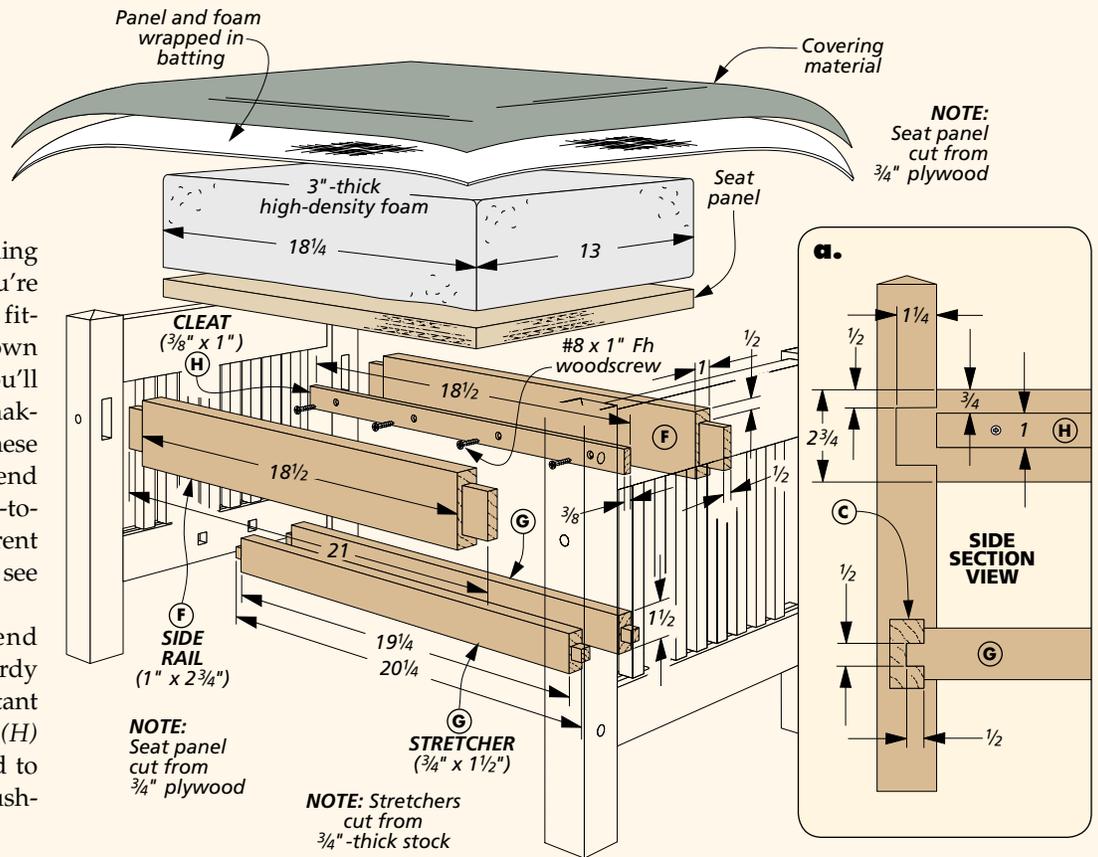
TWO ENDS. Before gluing each end assembly together, I took care of one final joinery task. And that's to cut two mortises in each of the



lower rails (detail 'c' on previous page). These mortises are for the stretchers that add some stiffness to the frame.

SIDE RAILS & STRETCHERS. After gluing up the two end assemblies, you're almost home. The next step, fitting the two side rails, as shown at right, will go quickly. But you'll want to pay attention when making the two stretchers. Since these are mortised into the lower end rails, not the legs, the shoulder-to-shoulder length will be different from the two side rails. You can see this in the drawing at right.

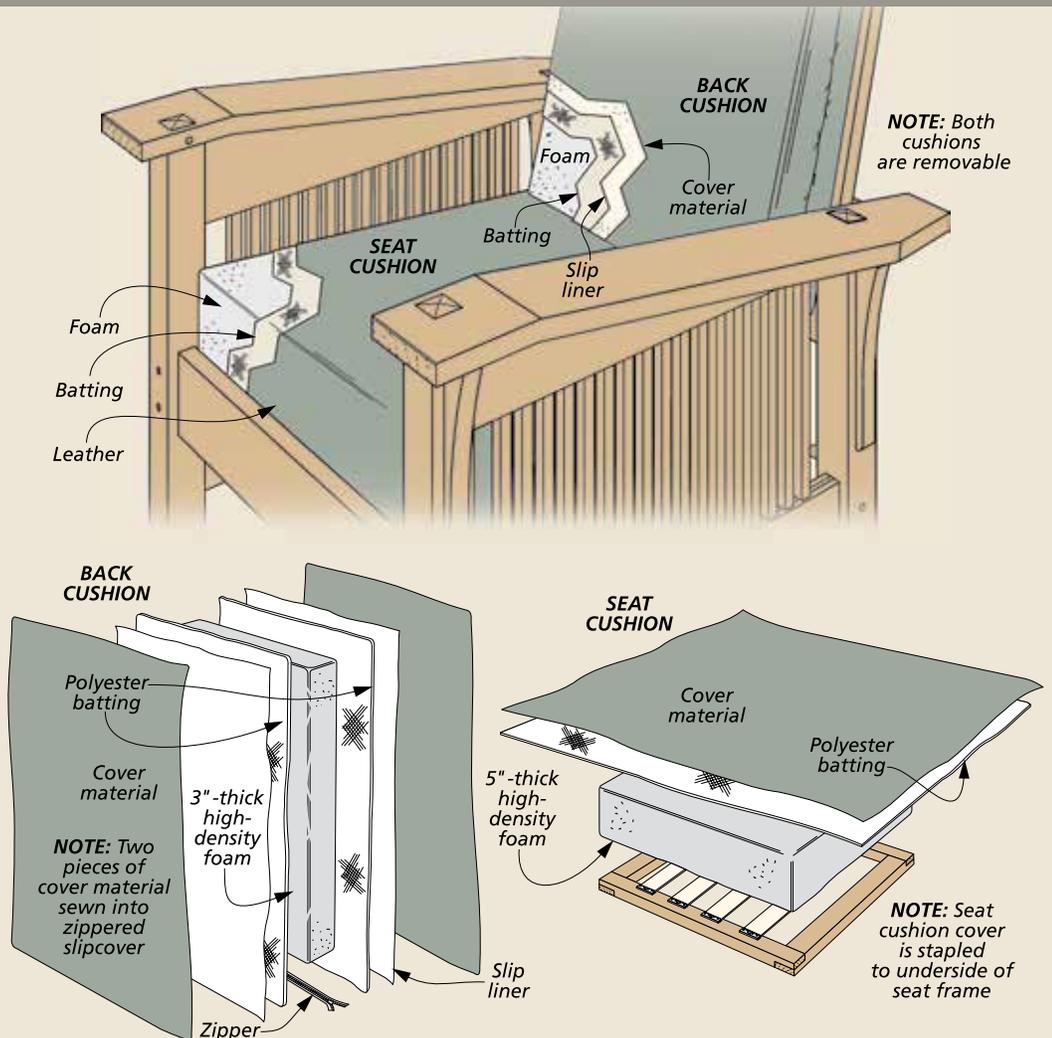
CLEATS. After gluing the end assemblies and rails into a sturdy frame, there's still one important detail left. A couple of cleats (H) need to be screwed and glued to the side rails to support the cushion (detail 'a' at right).



adding CUSHIONS

When it came time to make the two chair cushions, I decided to keep things simple. And I was surprised at how easily they went together and how nice they looked when they were done. You may decide to leave this chore to a professional, but if I can work my way through it, I'm sure you can do it too.

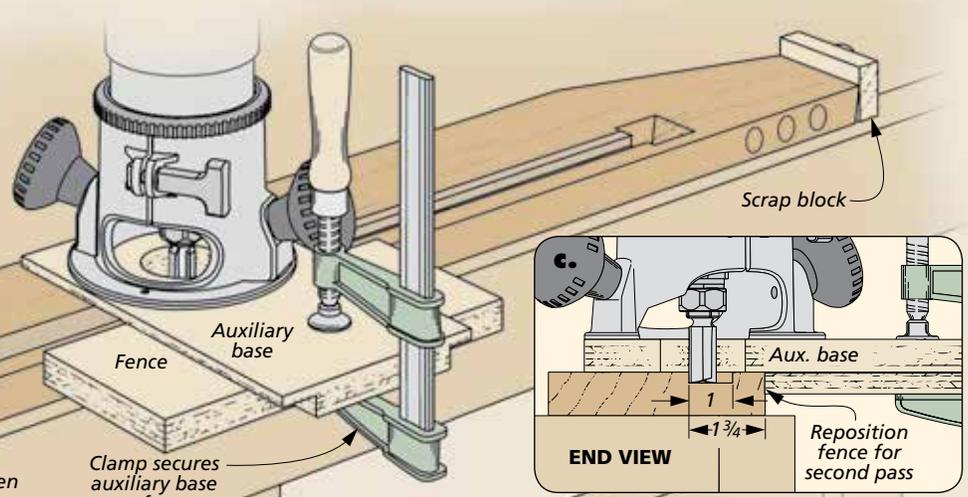
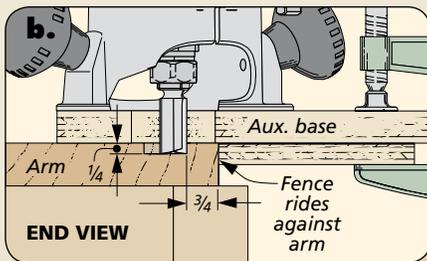
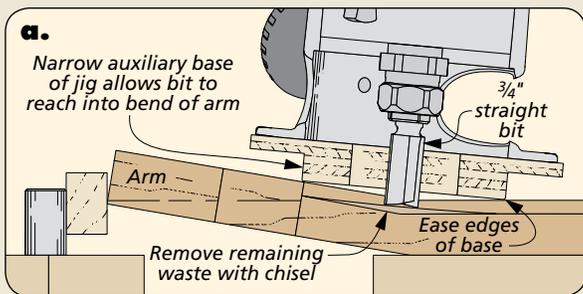
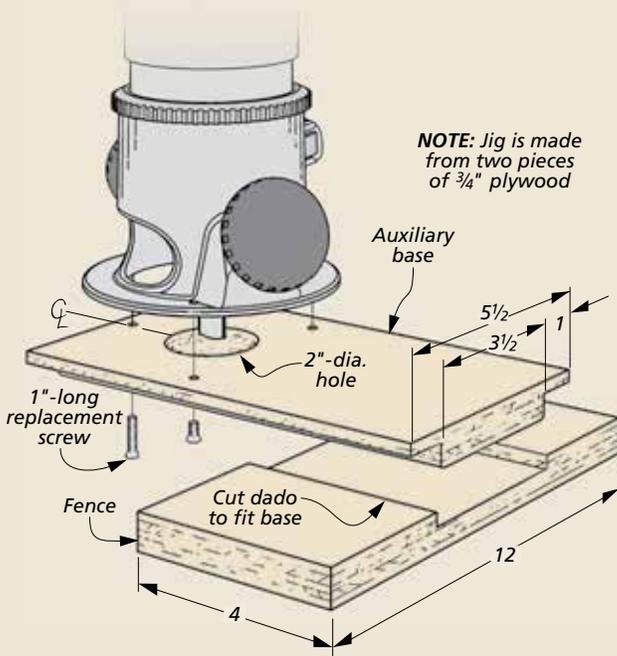
The drawings at right show you how the seat cushion and back cushion are assembled — batting and fabric cover a thick piece of foam. Note: The back cushion requires a little basic sewing.



SHOP NOTEBOOK



bent arm ROUTING JIG



When it came to routing the grooves in the underside of the arms for the Morris chair, I ran into a little problem. The bend in the front of the arm acts like a ramp, lifting the router bit out of the groove. To get around this, I made a simple edge guide with a “narrow” auxiliary base (see drawing below).

The jig is nothing more than two pieces of $\frac{3}{4}$ ” plywood — one is an auxiliary base and the other is a fence (see drawing at upper left). A couple of rabbets are cut along the edges of the auxiliary base so that the part of the base that actually rides on the workpiece is only about

$\frac{3}{2}$ ” wide. This allows the router to ride over the bend in the arm without lifting the bit completely out of the groove (detail ‘a’). The auxiliary base fits into a shallow dado cut in the fence. Adjusting the fence allows you to position the router bit.

I routed the groove in two passes, adjusting the fence on the jig in between passes to control the width of the groove (details ‘b’ and ‘c’). You’ll still have to use a chisel to make the groove a little deeper at the bend in the arm. But this will be easy because the sides of the groove will already be established.

beveling the MORTISE CAPS



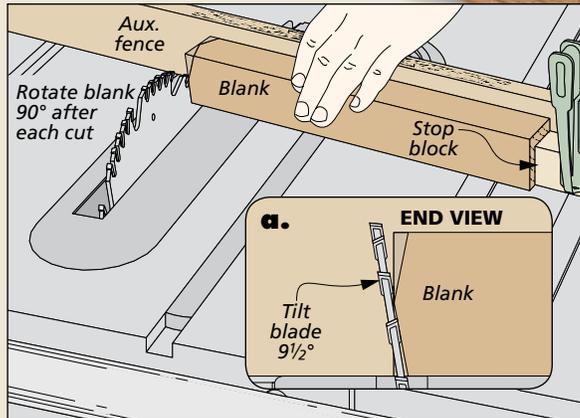
One of the details of the Morris chair that I really like are the beveled caps that fit into the leg mortises in the arms of the chair. The top of each cap has four beveled faces that meet at the center, resembling a flattened-out pyramid (see photo).

Although the front and back caps are slightly different, the basic procedure for making them is the same. I simply cut four beveled faces on the end of a long blank. Then I cut the cap to length (height) from the end of the blank. The only difference between the two is the setup for the beveled cuts.

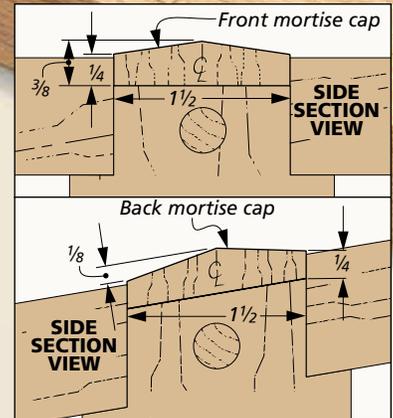
FRONT MORTISE CAPS. Creating the caps for the two front legs was simple because they fit into straight mortises. I made a blank to match the size of the mortises and then cut four bevels on the end, rotating the blank 90° between each cut. A stop block clamped to the miter gauge fence ensures that the bevels come to a centered peak.

BACK MORTISE CAPS. To make the back mortise caps, I started by cutting the two side faces. Cutting these involves compound angles, but it's actually pretty simple. Since the angle of the blade and the miter gauge is the same ($9\frac{1}{2}^\circ$), you can cut both opposing faces with one table-saw setup. All you have to do is rotate the blank 90° between cuts, and use a stop block to make sure the bevels meet at the center of the blank (see middle drawings at right).

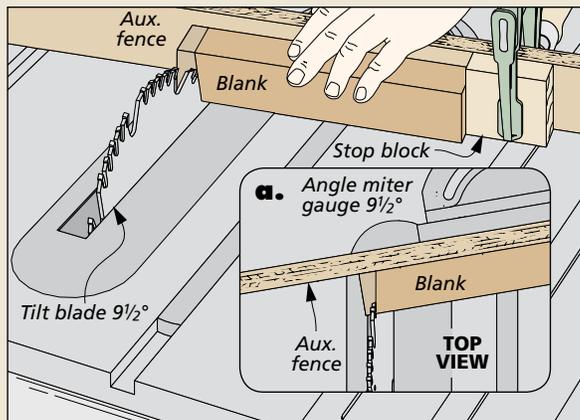
Cutting the front and back faces of the cap requires a couple of different setups, as shown in the lower drawings at right. Since you can't use a stop block for these cuts, you'll have to carefully sneak up on each face. The goal is for the bevel faces to intersect at the corners of the blank, meeting at a peak in the center.



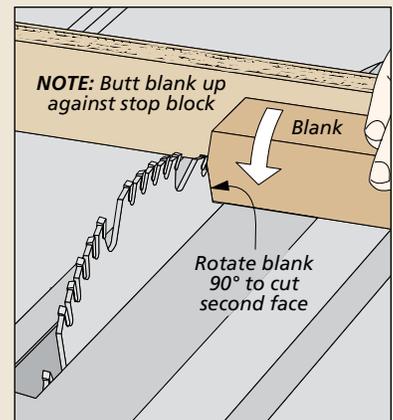
Front Caps. To make the front mortise caps, cut four $9\frac{1}{2}^\circ$ bevels on the end of a long blank. Use a stop block to ensure the beveled faces meet at the center.



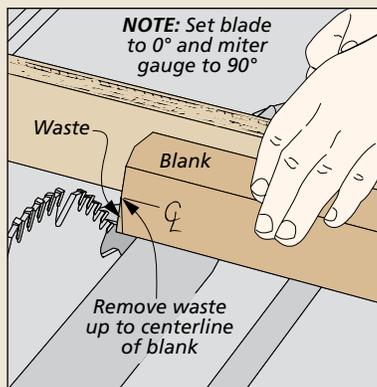
Angles. The back caps fit into angled mortises, making them a little more complicated to cut.



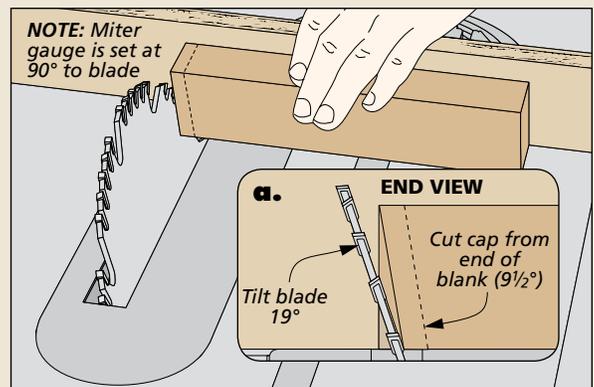
Back Mortise Caps. Start by clamping a stop block to the miter gauge. Then make a compound bevel cut — with both the blade and miter gauge angled $9\frac{1}{2}^\circ$.



Second Cut. Without changing the setup, rotate the blank 90° to make the second cut.



Third Cut. With the miter gauge square to the blade and the blade at 0° , sneak up on the third face.



Fourth Cut. To cut the final face, tilt the blade 19° and sneak up on the cut until the four beveled faces meet at a point centered on the end of the blank.

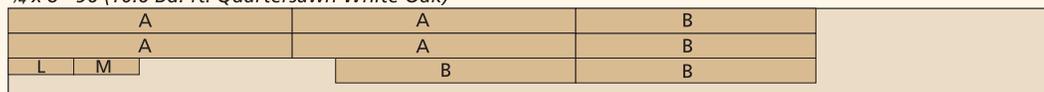
Materials, Supplies, & Cutting Diagram

Craftsman-style Morris Chair

A Front Legs (2)	2 1/4 x 2 1/4 - 23 5/8	O Back Frame Stiles (2)	1 x 1 5/8 - 29 1/4
B Back Legs (2)	2 1/4 x 2 1/4 - 22 rgh.	P Back Frame Upper Slat (1)	3/8 x 3 7/8 - 20 3/4
C Lower Side Rails (2)	1 x 3 - 28 3/8	Q Back Frame Lower Slats (4)	3/8 x 2 1/2 - 20 3/4
D Upper Side Rails (2)	1 x 5 1/8 - 25 5/8	R Adjustment Pins (2)	1 x 1 - 4 1/2
E Filler Strips (4)	1/4 x 1 1/2 - 24 7/8	S Pivot Pins (2)	1 x 1 - 5 1/2
F Spindles (34)	5/8 x 5/8 - 12 3/8	T Washers (2)	1 x 1 - 3/8
G Front Rail (1)	1 x 4 1/2 - 26 3/4	U Seat Frame Front/Back (2)	1 x 2 - 22 7/8
H Back Rail (1)	1 x 3 3/4 - 26 3/4	V Seat Frame Sides (2)	1 x 2 - 25 7/8
I Front Cleat (1)	5/8 x 1 - 23 1/4		
J Back Cleat (1)	5/8 x 1 - 23 1/4		
K Arms (2)	1 x 5 - 37		
L Front Mortise Caps (2)	1 1/2 x 1 1/2 - 3/8		
M Back Mortise Caps (2)	1 1/2 x 1 1/2 - 3/8		
N Corbels (4)	1 x 1 3/4 - 11		

- (8) Metal Chair Webbing Clamps
- 10 Lineal Ft. Elastic Chair Webbing
- (1) 5/8" -dia. x 36" Oak Dowel
- (1) 1" -dia. x 36" Oak Dowel
- (2) 3/8" -dia. x 36" Oak Dowel

3/4 x 8 - 96 (10.6 Bd. ft. Quartersawn White Oak)



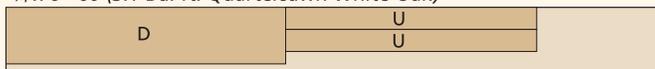
5/4 x 9 - 96 (7.5 Bd. ft. Quartersawn White Oak)



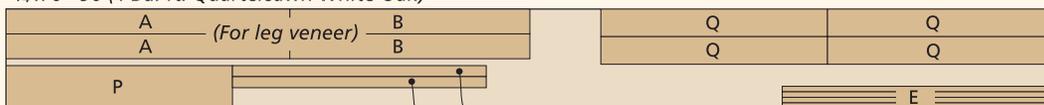
5/4 x 9 - 96 (7.5 Bd. ft. Quartersawn White Oak)



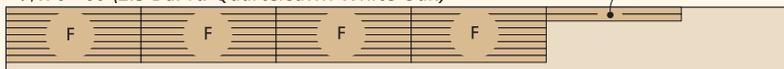
5/4 x 6 - 60 (3.1 Bd. ft. Quartersawn White Oak)



3/4 x 6 - 96 (4 Bd. ft. Quartersawn White Oak)



3/4 x 6 - 60 (2.5 Bd. ft. Quartersawn White Oak)



Materials, Supplies, & Cutting Diagram

Craftsman-style Ottoman

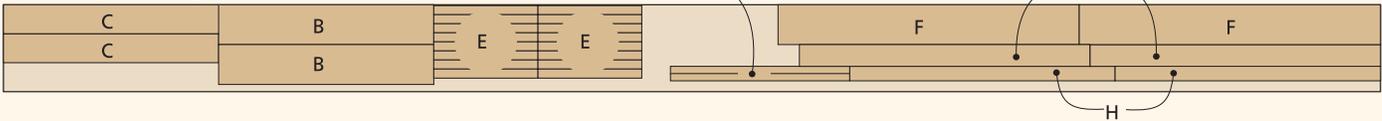
A Legs (4)	$1\frac{3}{4} \times 1\frac{3}{4}$ - 15	G Stretchers (2)	$\frac{3}{4} \times 1\frac{1}{2}$ - $20\frac{1}{4}$
B Upper End Rails (2)	$1 \times 2\frac{3}{4}$ - 15	H Cleats (2)	$\frac{3}{8} \times 1$ - $18\frac{1}{2}$
C Lower End Rails (2)	1×2 - 15	I Seat Panel (1)	$\frac{3}{4}$ ply. - $13 \times 18\frac{1}{4}$
D Filler Strips (4)	$\frac{1}{4} \times \frac{1}{2}$ - $12\frac{1}{2}$		
E Spindles (16)	$\frac{5}{8} \times \frac{5}{8}$ - $7\frac{1}{4}$		
F Side Rails (2)	$1 \times 2\frac{3}{4}$ - 21	• (1) $\frac{3}{8}$ " -dia. x 36" Oak Dowel	

$\frac{3}{4} \times 4$ - 36 (2 Bd. ft. Quartersawn White Oak)



NOTE: Also need $\frac{3}{4}$ " plywood for seat panel

$\frac{5}{4} \times 6$ - 96 (5 Bd. ft. Quartersawn White Oak)



**MAIL
ORDER
SOURCES**

Woodsmith Store
800-444-7527

Rockler
800-279-4441
rockler.com

Project Sources

One thing I really liked about building the Morris chair was that it required almost no hardware. Even the four pins and the washers are shop-made.

The few hardware items you'll need are for the seat cushion. I ordered 10 feet of elastic chair webbing (40998) and a package of metal webbing clamps (41004) from *Rockler* (the clamps are also called metal ends). I purchased the rest of my upholstery supplies locally.