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Cover photo by Ray Pilon, Ottawa ON



LINDA FULCHER

I love language and, as I read about woodworking, I am quick to notice woodworking terms that are unfamiliar to me. This issue, the first term I didn't know was 'corbel' and, surprisingly, it is used by two authors, in two different furniture designs. I wonder if there is some kind of corbel trend starting? Is this an old design coming into fashion again, or are corbels the latest in furniture innovation?

I was guessing that a corbel might be a decorative bird appliqué, that is, before I had the chance to look it up in the dictionary, or check the authors' illustrations.

In the meantime, I was discovering even more new terms. You can imagine what I was thinking as I came across terms such as 'cutting muntins' and 'routing bullnoses'. I now realize that, in comparison to these strange beasts, I have become quite comfortable with some words, such as rabbits. In fact, now, I find rabbits kind of groovy.

I wonder, are rabbits really more common in woodworking, than muntins and bullnoses"? Maybe not. Maybe the authors have just been going easy on us, (you know, by starting us off with the smaller animals).

Woodworking nouns are one thing. Woodworking verbs are a whole new challenge. For example, one author instructs us to 'peen 'a bolt. That seems harsh, but at least it is direct, and blunt. What about the author who suggests that we "sneak up" on the tenons? From what I can tell, he wants us to do it every time. Not only that, but he advises that we sneak up on both the length and the thickness. I'm telling you, if somebody doesn't warn those poor tenons, right now, then they are going to be surrounded!



PAUL FULCHER

Danny Proulx said something in this issue's article that I have thought of, several times, since I first read it. It was a simple thing really, but it caught my attention. He says, in his Construction Notes on page 11, "Pay special attention to the width of the shelf slats. A 1/64" increase or decrease in slat width adds up over 18 boards." It's a small point. One that you may think "goes without saying". But it is a very important point.

Each and every cut of a project is important. Sure, you may not notice a slight variation,

even on a couple, or even three. But add it up over 18, and you are going to see a difference. Paying special attention to each and every cut makes any project fit, feel and look better. You may want to rush, or do it better when it matters more. But really, what defines the quality of the end product more than the crafting of each, and every, part? If any of us just wanted to have the end product in a hurry, or wanted the end product made with rough workmanship, we could just go out and buy it somewhere.

I received a letter (reprinted below), which tells the story of how one woodworker's hobby is evolving: one step at a time, and with some unexpected changes in direction, along the way.

Danny's note reminded me that woodworking isn't all about having the finished product. Woodworking is about attention to detail. It's about planning and dry fitting. It's about holding rough lumber and seeing a finished product.

So before you start any project, slow down. Take a deep breath and relax. Woodworking is the process of working with wood. Enjoy it. Savour it. Slow it down and take it easy. Pay special attention to each and every one of your cuts.

They all add up.

dear editors

Hi Paul:

Three years ago, I purchased my first router and, being a newcomer to woodworking at the age of 60, I knew I needed some instruction if I was not to do myself some injury! I'd heard there were router seminars at some of the wood shows, so I decided to attend the London Wood Show.

While at the show, I had no real interest in expanding my woodworking, beyond building a bookcase. But then I saw a booth with several pieces of intarsia on display. Learning how to do that immediately caught my fancy. I later found someone to mentor me and, as a result, intarsia has become my main woodworking interest.

At that first wood show in London, I picked up a copy of your magazine. It was

the first woodworking publication I had ever read. Reading your magazine provided me with much information, and I enjoyed the articles and projects. They allowed me to learn and to practice on projects to improve my skills.

I then started buying your magazine from the news rack. Given my interest in intarsia, I particularly enjoy Garnet Hall's articles.

Your publication was the first woodworking magazine that I have ever subscribed to, and I will continue to subscribe each year.

I like the new, improved version, on better quality paper. Each copy has something of interest to me, and although I may not build some of the things shown in the magazine, I still read all of the articles. When you are as

new to woodworking as I am, you need all the help you can get! Your magazine does a great job of helping newcomers like me.

It is also great to know that we have a Canadian home-grown woodworking publication. You and your wife deserve a lot of credit for putting together such an interesting publication. As someone who has had some experience with club newsletters, I have some small idea of how difficult a task you have, to get this done.

My sincerest thanks for doing such a great job. I will continue to be a loyal subscriber into the future.

David L./London

■ continued on page 41



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W

hen playing a relaxing game of pool, it's nice to have a comfortable chair to sit in as you watch your opponent and prepare your next shot. It's especially nice if that chair offers you a place to rest your cue and set your drink.

This 'mission style' spectator chair uses plain, flat sawn ash, but any type of hardwood or softwood could be used with equal success. The chair features 'stopped' and 'through' mortise and tenon joints. Notice how the back legs extend up to support the backrest. The slight bend in the legs offer more comfort than a straight back. This chair has a scroll sawn accent (or decorative appliqué) on the back rest, but it also looks nice plain. The chair's seat and backrest are made from leather, but use any fabric to match your room.

The mortise & tenon joints are secured using countersunk screws with matching plugs to pin the tenons. All mortises are 1/2" wide. All stopped mortises are 1/2" deep. The tenons are 1/2" narrower than the rails. The legs are 2" square rough stock, planed to 1 3/4" square. All other parts are from 1" rough stock, planed to 3/4". That way you can use already planed 3/4" stock from retail stores.

The first parts to cut are the legs. When cut, sand to smooth but not to finished. The layout of the mortise locations is very important, so separate the front from the back legs. Then clamp each set together so the top and bottom ends are lined up. Be sure that the rails which attach the front legs to the back legs are lined up. Lay out the arm mortise for the back leg by using the front leg as a guide. Clamp the front leg and back leg together so the bottoms are flush.

Cut Mortises in Front and Back Legs

When cutting the through mortises, enter from the side where the tenon will show through. That way you will get the cleanest edges and any tear out will be on the side where the tenon enters the mortise.

Assemble Side Frame

Cut the top side rails for the spindles. Make the bottom rails by cutting them a little longer, so that the through tenon can be cut to final length, after the dry fit. The



tenons can be cut in various ways. I use the table saw. By adjusting the blade height, when you flip your material around to do the other side you get a perfect 1/2" wide tenon. Then, by adjusting the fence to the correct distance, you get the correct depth. If tenons are slightly oversized, a quick once over with the sander or rasp file will make the perfect fit. To ensure consistency, do both top and bottom (for both sides) at the same time. Cut the front and the back of the top and bottom rails in the same way. Before cutting the spindles, do a dry fit of the side rails set into one set of front and back legs. Then measure between top and bottom rails to get the correct length for each spindle. That way, if there was a slight error on layout or wrong cut, you can still compensate here. Add 1" (1/2" at each end) to get the spindles' final length (including tenons).

Cut the spindles and tenons. Reassemble the sides with spindles and side rails into chair legs. Clamp all together ensuring a good fit of all joints. Cut the top rails (for arm support) a little longer than required. Cut the tenon to fit in the front leg only and extend the rail to the back leg mortise. Mark the location on the back leg and trace the angle (approx. 5°) that intersects the back leg. It is important to note that the mortise is cut at the angle of the back leg (and not at 90°) because the leg face is angled back. Cut this rail 1/2" longer and cut the tenon to fit. If there is a slight gap at this location, it will be covered when the arm is attached to the top rail.

Assemble Back Rest Frame

Remember to make the stiles 1/2" wider so that the long tenon will go into the rear legs. I used biscuits, but other joints could

be have been used. Dado out about 1/2" wide and 1/4" deep (plus the thickness of the fabric or leather around the inside of the frame) to accept 1/4" plywood back of the cushion. Trim pieces will cover the edge and hold the cushion in place. To avoid damage during construction, the cushion will be added after finishing. Cut the upper back support. You can assemble the upper back with the rest of the chair before staining. Any additions, such as a scroll sawn pattern (or decorative applique), or painting, can be done after final assembly. This is the final dry fit for the main part of the frame. At this point, mark where the through mortises need to be trimmed off. The mortise length is a matter of preference, but 1/4" - 1/2" is standard. Disassemble all parts and sand to the final finished level. Sanding at this point is important because, after assembly, it is difficult to get to all areas. Chamfer the ends of the through mortises for a softer look.

Chamfer Tenons

A slight chamfer on the leg bottoms stops them from splintering when the chair is moved. Mitre the tops of the rear legs at 15°. to form a pyramid shaped top. On all pieces, soften the edges by hand sanding.

Assembly

Do glue-up in stages to ensure all clamping is squared. Make two side assemblies, using the side frame with spindles, arm rail, and front and back legs. After glue is set, countersink and pin the through tenons with #8 screws. Plug and sand off flush. Put the two side assemblies together using upper backrest, cushioned backrest, and front and back rails.



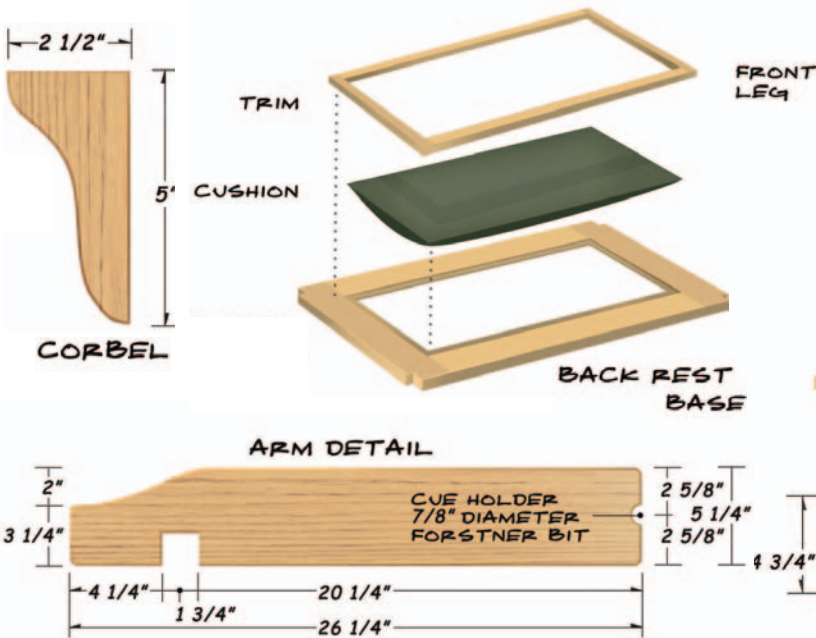
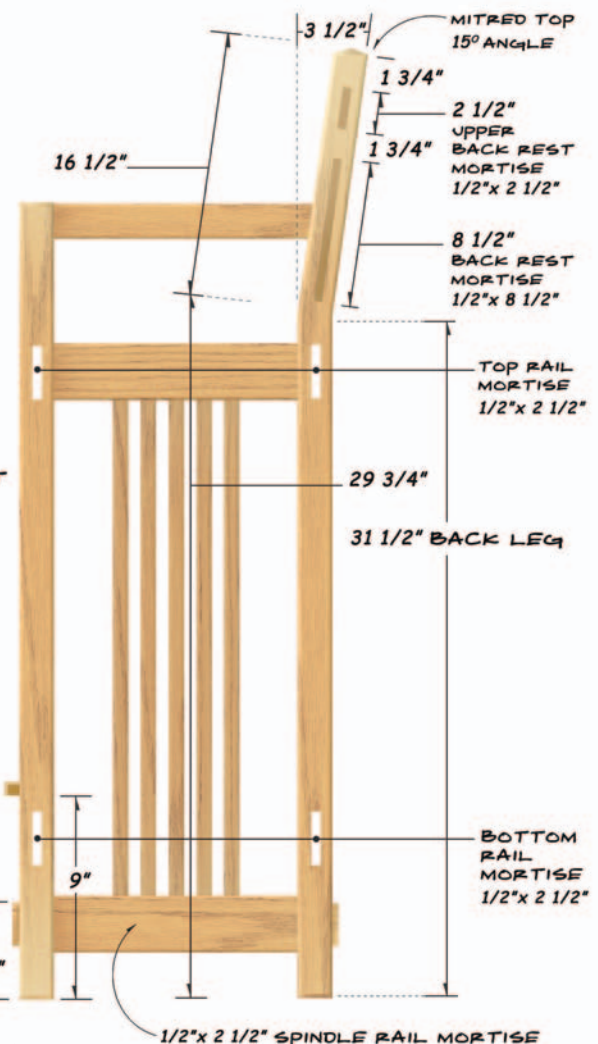
Upper Back Rest Options

The accent piece for the upper backrest is the final touch. You have a number of options here:

- Leave the back natural wood.
- Leave the scroll sawn pattern (or decorative appliqué) natural and let the dark stain show from behind.
- Paint it a matching colour to the cushioned backrest, or stain it the same colour as the rest of the chair.
- Accent the pattern with some colours that blend with the chair. With scroll sawn accent (or decorative appliqué), be sure to varnish it before attaching. Centre and brad nail on.



FRONT AND BACK LEG DETAIL/MORTISE LAYOUT



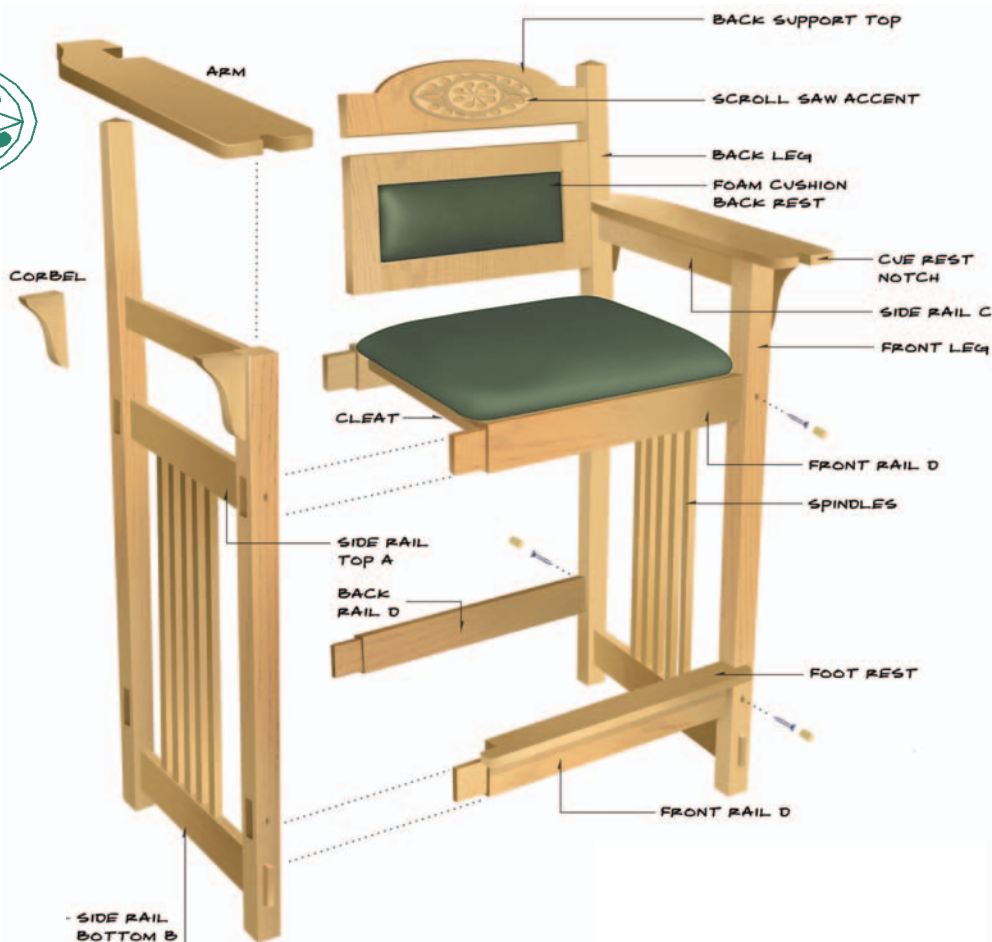
Illustrations by Mike DelRizzo



• Enlarge pattern 400%

PARTS/CUTTING LIST

2	1 3/4" x 1 3/4" x 37 1/4"	Front Legs
2	1 3/4" x 1 3/4" x 48"	Back Legs
2	3/4" x 5 1/4" x 26 1/4"	Arms (*Cut longer and size to fit)
2	3/4" x 3" x 17"	Side Rails Top (For Spindles)
2	3/4" x 3" x 20 1/2"	Side Rails Bottom (For Spindles)
2	3/4" x 2" x 17 1/2"	Side Rails (For Arm Support)
4	3/4" x 5" x 2 1/2"	Corbels (Cut from pattern)
10	3/4" x 1/2" x 24"	Spindles (final length determined after dry fit of rails & legs)
4	3/4" x 3" x 22 1/2"	Front & Back Rails (Through Mortises) (trim after dry fit)
1	3/4" x 2 1/4" x 20"	Foot Rest
1	3/4" x 4 1/2" x 19"	Back Support - Top (Cut from pattern)
2	3/4" x 2" x 14"	Back Support Frames (Cushion)-Rails
2	3/4" x 2 1/2" x 9"	Back Support Frames (Cushion)-Stiles (1/2" wider for tenon)
1	1/2" x 19" x 17"	Seat Base - 1/2" Plywood (Cut 1/8" smaller all around for fabric)
2	3/4" x 1" x 19"	Cleats - For Seat Support (Custom Fit)
2	3/4" x 1" x 16"	Cleats - For Seat Support (Custom Fit)
1	1/4" x 14 1/2" x 5 3/4"	Backrest Base - 1/4" Plywood
42"	1/2" x 1"	Trim For Holding Cushion (Cut to fit - Chamfer Edges)
1	2" x 19" x 17"	Foam Cushion - Seat
1	1" x 14" x 5"	Foam Cushion - Backrest
1	1/4" x 3 1/2" x 9"	Scroll Sawn Accent (See Pattern)



Attach Arms

Use an arm length slightly longer than the finished size. Begin where the arm notches into the rear leg. Take one arm and mark the notch at the rear leg to ensure that you have a minimum 2" overhang at the front leg. Cut the notch carefully to get the correct angle (approx. 5°), and fit. Next trim the front and rear of the arms to the right length. Cut the notch in the centre of each arm for the cue rest using a 7/8" inch Forstner bit. Cut the corbels for the arm supports using the profile.

Attach Corbels

The front leg corbels are attached flush with the top of the leg centred on the leg. The back corbels are attached at approx. 5° to adapt to the angled back legs. They should be test fitted with the arm temporarily on so the correct location on the leg is such that it is flush with the bottom of the arm. These can be glued and brad nailed on. Attach arms using glue and countersunk and plugged #8 screws into the arm rail and corbels.

Attach Foot Rest

Cut and fit the footrest so that it is snug between the front legs and attach again using countersunk screws and plugs.

Attach Seat Cleats

Attach seat cleats to the inside of the frame, approximately 1" below the top of frame rails.

After cleaning up any glue squeeze out, sand where necessary, and finish with an appropriate stain. I used Minwax dark walnut. Because this is a tricky project to finish with a brush, I sprayed three coats of a water based semi-transparent polyurethane. Sand with 220 grit paper before the final coat.

The seat is constructed with 1/2" plywood as the base. The final size should leave about 1/8" all around for leather (or seat fabric) to wrap around the base. Cut out notches where it meets the four corners of the legs. Measure the leather/fabric to cover a 2" thick dense foam and overlap the bottom of the base. Attach the seat from the bottom using screws into the cleats. The back cushion is done the same way as the seat, except using 1/4" ply. It should fit into the dadoed out part of the frame. Be sure to leave a little room for the leather/fabric. Attach to the dadoed back frame and add trim.

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Serving Cart

The idea for this project came to me while I was helping a friend Bar-B-Q hamburgers and hot dogs for a little league baseball team that he coached. As with most Bar-B-Q's, there were two small side tables, attached. Those tables provided only room for the food that was cooking. We still needed room to place our sauces, utensils, and other Bar-B-Q essentials.

It became obvious that we needed a serving cart. One of those fancy dining room tea wagons would be ideal, but would have to be adapted for outdoors as it would take a fair amount of abuse from the weather. It would also need to be designed so that the wheels would be large enough to roll easily across many different surfaces.

This serving cart provides ample room for all of the things that you will need

when you are preparing your food. It also provides a very convenient method of getting the prepared food to the table. There is a lower table for even more carrying capability. A condiment rack is built on the top tray to hold bottles of sauces and relishes needed both at the Bar-B-Q and the table. The rack also holds bottles, so it can easily be used as a portable bar for deck parties.

Since most of this project is built with

1 1/2" wide material, I salvaged all the boards from my pile of ash and birch.

The serving cart is constructed using very simple butt joints. The majority of joints are secured with glue and screws.

Other than a lathe to turn the wheels, you don't need any special tools to build this cart. If you don't have a lathe, you could simply cut the wheels with your jig saw. Cut the two main side rails.

Slightly round over one end of each rail with a belt sander.

Locate a point 3/4" from the edge and 3/4" back of the rounded end of the side rail. Drill a hole in each side rail (1/4" deep, 1" diameter). Use a 1" spade bit to drill the hole. The spade bit's point will slightly exit the other side of the rail when you reach the 1/4" depth. That will mark the centre of the hole.

Cut dowel rod to size. Inset the rod into the rail holes. Drill a pilot hole using the spade bit exit mark as a guide.

Counterbore the pilot hole. Insert the screws, and plug the holes. Sand the wood plugs flush when the glue has dried.

Cut two cross rails. Attach them to the side rails. Glue and screw the assembly. Make sure to counterbore the screw holes so they can be filled with a plug.

Sand all wood plugs flush and final sand the rail assembly. Round over the outer surfaces of the assembly (top and bottom) with a 1/4" round over bit or sandpaper.

Cut the two front legs and the two rear legs. Note the different leg lengths and their position on the frame assembly. These are cut to specific lengths to accommodate the cart's wheels.

Round over and sand smooth all edges of the legs.

Attach the two 34" legs inside the front cross rail. Attach the two 33" legs inside the rear cross rail. Use 1 1/2" long screws, glue, and wood plugs to secure the legs. Install two screws per leg, one through the

side rail and the other through the cross rail into the leg. Slightly stagger the screws on the rails so they won't hit each other when driven into the leg.

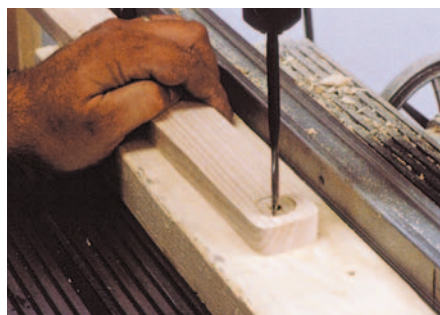
Install an additional cross rail midway between the two end rails. This centre rail will help keep the side rails parallel to each other.

Install the two lower side rails to the inside of the front and back legs. That will support the lower platform. These two rails are set back 3/4" from the outside edge of each front and rear legs. They are 7" up from the bottom of the rear legs and 8" up from the bottom of the front legs.

The 3/4" lower rail is set back to allow installation of the lower rear cross rails, between the cart legs. Cut the two rails and install.

Turn two 3/4" thick by 8" diameter wheels on your lathe. Alternately, you can cut them out them with a band or jig saw.

Drill a 5/8" diameter hole in the centre of



With spade bit, mark hole centres on side rail



Inset rod into rail holes



Attach legs inside front cross rail



Install lower cross rails



Block rear legs with 1" spacer and mark legs



Apply glue to holes in wheels and press onto dowel ends



Install slats with 1/4" spacing and 1/4" overhang



Condiment rack is supported by four pieces of vertical stock



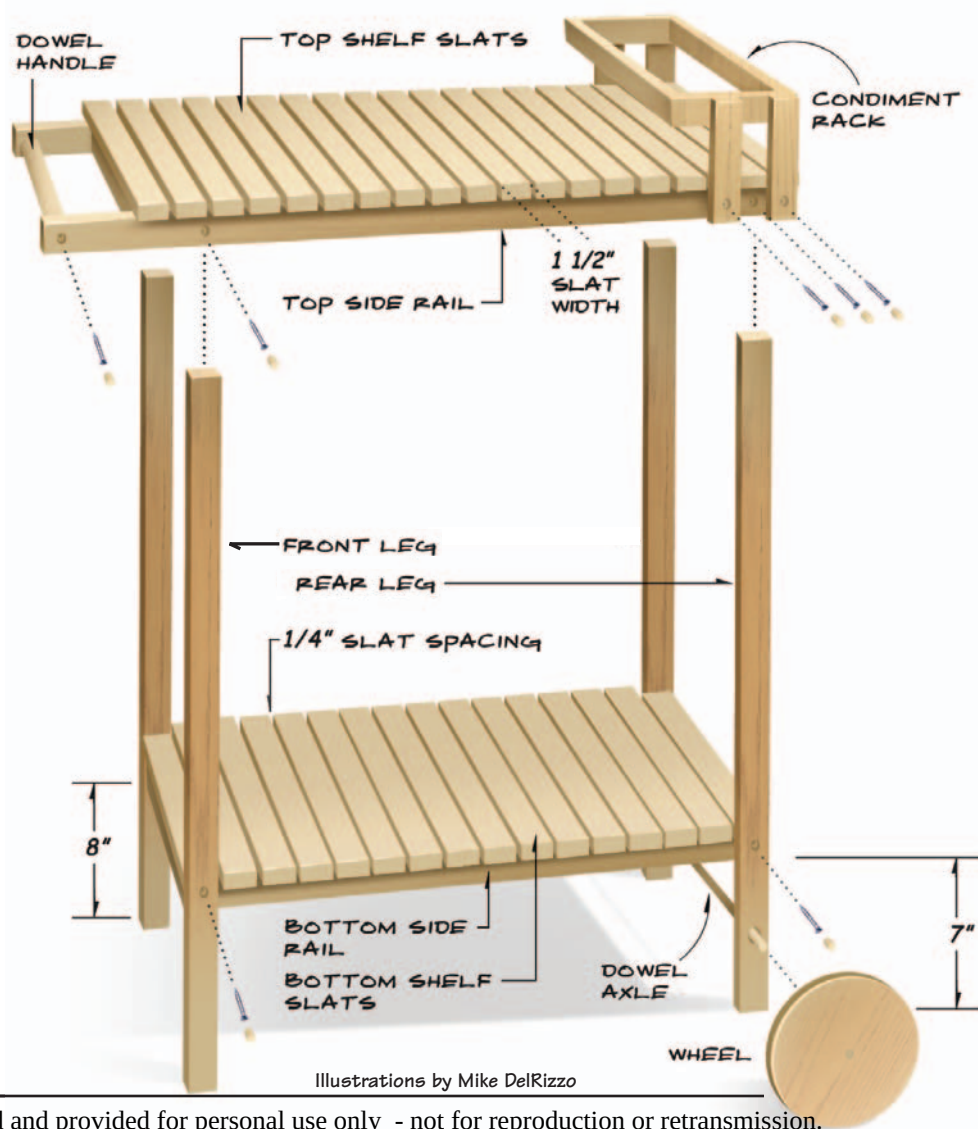
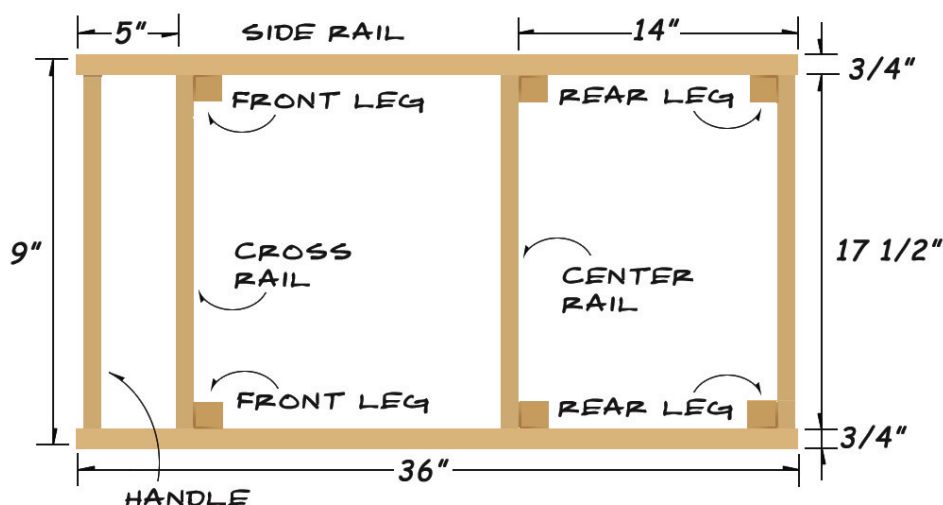
Horizontal frame consists of 2 long and 2 short boards

MATERIALS LIST

- | | |
|----|---|
| 2 | 3/4" x 1 1/2" x 36
Top Side Rails |
| 1 | 1" diameter x 18" Dowel
Handle |
| 3 | 3/4" x 1 1/2" x 17 1/2"
Top Cross Rails |
| 2 | 1 1/2" x 1 1/2" x 33"
Rear Legs |
| 2 | 1 1/2" x 1 1/2" x 34"
Front Legs |
| 2 | 3/4" x 1 1/2" x 14 5/8"
Bottom Cross Rails |
| 2 | 3/4" x 8" diameter
Wheels |
| 18 | 3/4" x 1 1/2" x 20 1/2"
Top Shelf Slats |
| 16 | 3/4" x 1 1/2" x 17 1/2"
Bottom Shelf Slats |
| 4 | 3/4" x 1 1/2" x 6"
Condiment Rack Stiles |
| 2 | 3/4" x 1 1/2" x 5"
Condiment Rack Stiles |
| 2 | 3/4" x 1 1/2" x 19"
Condiment Rack Stretchers |

LUMBER LIST

- | | |
|----|------------------------------------|
| 13 | 1" x 2" x 8'
Frame Slats |
| 1 | 2" x 2" x 12'
Legs |
| 1 | 1" x 18" Dowel
Handle |
| 1 | 5/8" x 20" Dowel
Axle |
| 1 | 1" x 8" x 24"
Wheels |



Illustrations by Mike DelRizzo

each wheel. Block the rear legs of the cart with a 1" thick spacer so the cart is level on the work bench. Place the wheel in position, mark the legs, then drill a 5/8" hole in the centre of each rear leg. Use a 5/8" spade bit to mark the centre of the hole on the rear legs. The flanges of the bit, through the hole in the wheel, will force the drill bit's point to centre.

Enlarge the holes in the rear legs with a wood rasp. You'll want your piece of dowel to act as an axle for the wheels, and to turn freely.

Apply polyurethane glue to the holes in the wheels and press them onto each end of the dowel rod. The moisture cured polyurethane glue will expand and lock the wheels securely to the dowel.

Prepare 15 pieces to be used as top shelf slats. Sand and round over the top surface with a 1/4" round over bit.

Three additional pieces are needed to complete the top shelf. They are 1 1/2" shorter, so we can install the condiment rack.

Install the slats with a 1/4" space between them. Start with a 1/4" overhang on the front cross rail. The 15 slats overhang the side rails equally on both sides.

The 19" rails are installed flush with the outside surface of the side rails. Use 1 1/2" screws to secure the slats, one per side. Counterbore the holes and install tapered wood plugs.

The bottom shelf slats are installed in the same manner. Cut 14 boards to be used as top shelf slats. Cut two additional slats at 14 5/8" long. These will be installed between the legs as the first and last board for the shelf. The spacing between the slats is approximately 1/4". Lay all the boards in place and verify your spacing before securing them to the bottom rail.

Plug all screw holes and sand them flush.

The condiment rack is simply four pieces of 3/4" thick by 1 1/2" wide by 6" long stock. They are installed vertically, two per side.

The horizontal frame, supported by the four vertical boards, consists of two long boards and two shorter ones. Assemble, round over the inside and outside surfaces and attach.

That completes the construction of the serving deck. Now all you have to do is finish it off.

The deck serving cart is complete and ready to be stained.

I stained the cart with Sikken's Cetol 1 #014 Driftwood exterior stain to even out the colour of the wood. I applied three coats, and added a little extra stain to the areas where water would collect.

This serving cart is a great weekend project, that is sure to serve you well at all your outdoor Bar-B-Q's and parties.

Construction Notes

Pay special attention to the width of the shelf slats. A 1/64" increase or decrease in slat width will add up over 18 boards.

Use any width slat, as long as you dry fit the boards before securing them in place. Even if you're sure of the slat width, it is always wise to dry fit.

Regarding the process of hole counterboring: Invest a little money in a carbide tipped drill and counterbore bit. It will cut clean, perfectly round holes in the slats and allow you to tightly fit the plugs. After sanding, the holes/plugs will be almost invisible.

Take your time enlarging the holes for the wheel axle. If possible, use a fine rasp and gently file the hole so that it remains round but still opens up a little to allow the rod to spin freely. If you have a 16 mm metric drill bit, try a test hole in a scrap piece of lumber as this bit is slightly larger than 5/8".

Variations and Options

This cart can also be used as a gardener's potting cart. You may want larger diameter wheels if your terrain is rough. The rear legs can be shortened by another inch and twelve inch diameter wheels could be installed. The cart can be equipped with commercially available wheels. The axle for commercial wheels is normally a bolt that can be attached to the rear legs.

The slat width and board width is easily changed for special applications. The width of the cart can also change to any dimension without causing any major changes to the cart's frame.

A heavy duty model could also be built. Increase the side and cross rail widths to 3 1/2" and you'll dramatically increase the load capacity of the cart.

This deck serving cart can be built of any wood species you prefer. If you already have outdoor furniture, use the same or a matching wood. You might even want to paint it.

If you plan on using this cart as a Bar-B-Q accessory, change the side board slats on your Bar-B-Q to match the cart - it's a nice touch.

*DANNY PROULX is a woodworking author and teacher.
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Pet Urn

Several times now I've been asked to build a box to hold the ashes of someone's beloved and departed pet. Each time it's a challenge to design a box that remembers the pet with respect and dignity yet remains low-key enough so it doesn't attract too much attention.

MATERIALS LIST

2	1/2" T x 9 1/4" L x 3 1/2" W Sides, Maple
1	3/4" T x 9 1/4" L x 6 3/8" W Top, Maple
2	3/4" T x 7 5/8" L x 4 1/4" W End Caps, Walnut
1	1/4" T x 9 1/4" L x 5 3/4" W Bottom, Plywood
2	3/4" T x 1 1/4" L x 3/4" W Assembly Clips, Maple
4	1/2" T x 2 3/4" L x 1/2" W Glue Blocks, Scrap
8	1/8" diameter x 1 1/4" L Assembly Pegs, Walnut
2	#6 x 1 1/4" L Top Screws, Steel
4	#4 x 1/2" L Bottom Screws, Brass

This is one such box, made of mineral coloured maple with walnut end caps. The woods can be chosen from trees your pet may have lived near. You can even choose different colours of woods to represent your pet. Notice with this box that the main portion is off the ground, and the top is gently curved, inviting someone's hand to touch, and rest a minute. The design is reflective of the pet in whose honour it is made.

This project takes a weekend to construct and uses about 5 bd. ft. of lumber. It's design follows the basic rules of the "golden rectangle". Joinery is decidedly simple. The plywood bottom is screwed on, completing and sealing the final resting place.

Prepare the Stock

Begin by squaring and thickening your stock. Rip your stock to the appropriate widths and cross cut to their appropriate lengths. Be sure to use a stop-block when cross cutting the lid and the sides. This will ensure that the pieces are of identical length.

Shape the Wood

Putting the angle on the faces of the end caps can be done several ways. I chose to use the bandsaw. Clamp a tall fence to your bandsaw table. Make sure the spacing between the fence and the blade is matched to your stock's thickness (use your stock for reference rather than meas-

uring). Place a 1/4" x 1/4" spacer on the table and at the fence. This spacer will assure that you maintain the correct angle while you make the cut. Set a feather-board to hold the stock tight to the fence just ahead of the blade. Make the cuts slowly but with a steady feed rate. Use the appropriate push-sticks for safety.

Don't cut the angles into the ends of the end caps yet, as you will need square stock to create the rabbets.

Cut the Rabbets

Mount a dado blade in your table saw and add a sacrificial fence to your existing rip fence. Make sure it's at least 1" thick. Set the blade height to 1/4" and set the fence to give you a 1/4" wide cut. Run the rabbets in the bottom of each side as well as along the ends of the top piece. Reset the fence to 1/2" and run the rabbets along the long sides of the top piece. Set the fence for a 3/4" cut and run all four sides of each rabbet. Set the fence one more time to 1 1/8" and run the short dimension (cross grain) portions of each end cap. After the rabbets are finished you can cut the tapers in the ends of the end caps.

Cut the Curves

If you have a large enough bandsaw you can rough cut the curve on the top piece. I chose to use a hand plane as it gives me a little time to be part of the magic that transforms wood into something people appreciate. It sounds like a lot of work but

after about 20 minutes with a sharp #4 hand plane (and some final touches with an apron plane) you can complete the top curve. When the top is shaped, run it through the table saw with your blade set to 45°. Running it through the table saw clips the long edges off and creates the bevels. If you like, you can also use a block plane to remove the bandsaw marks from the angled faces of the end caps. The block plane can also be used to shape the curves on the tops.

Prepare Pieces for Assembly

Use your biscuit joiner to machine the slot in the inside face of each end cap. Now make the clips that hold the top on. Clips can be made from cut-offs. They are simply nibbled away on your table saw. The clips will be hidden and do not need to be of "finished" quality. Use more of your scrap to make the glue-blocks to use during assembly. Cut a 1/8" x 1/8" strip on the table saw to make the contrasting pegs that hold the sides on.

Shape The Pegs Round

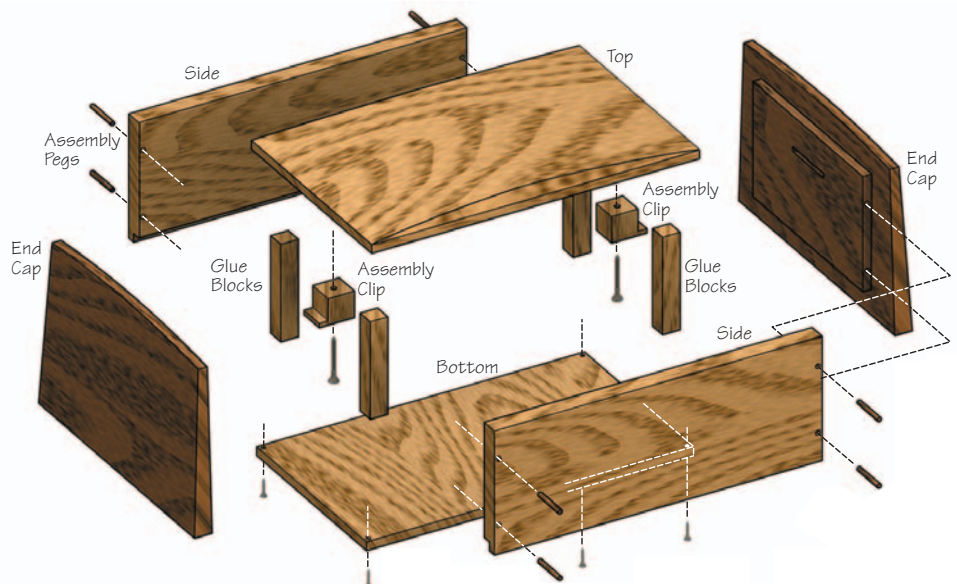
Shape the pegs round using a plane clamped to your bench. Cut your pegs to 1 1/4" long. That way you will be sure your pegs can be installed and removed by hand during the dry fits.

Drill the Peg Holes

Using a clamp-assembly, carefully drill the 1/8" diameter holes (1" deep) that will be used for the assembly pegs. Be sure to drill these accurately, as they will breakout if not drilled properly. Be sure to clean the bit often while drilling to prevent any binding. Note the clamp blocks used to pre-assemble the box for drilling, shown on the edge of the drill press table. For gluing up boxes, and for procedures such as this, they're indispensable.

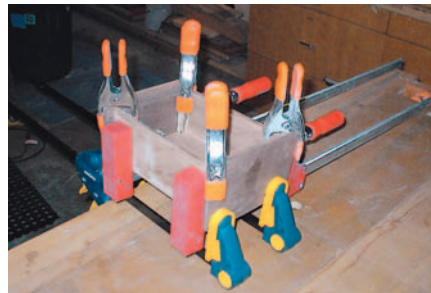
Gather Pieces for Dry Fit

Dry fit your pieces and check for fit. I used an old Stanley #75 Rabbet Plane to help me fine-tune the rabbets. I used an



apron plane to finish removing the tool marks left by the machinery. Mark your pieces, to show which side is mated to which corner, and decide which faces give you the nicest effect. Use the pegs you made to hold it all together. Fit the top-clips into place and drill the pilot holes. Be careful not to break through the top.

Glue and Clamp



When you're satisfied with the components and their fit, disassemble the box and give each piece a final sanding, breaking all the edges and corners. Apply glue to the mating surfaces. Make sure not to use too much glue. Assemble the sides with an end cap first. Dip the pegs in glue and place them into their holes. Make sure

they seat. Add the second end cap and the pegs. Place a small dab of glue on the middle of each rabbet, of each end cap, for the top to sit down on. Do not glue the outer edges. The top will need to expand and contract with changes in humidity.

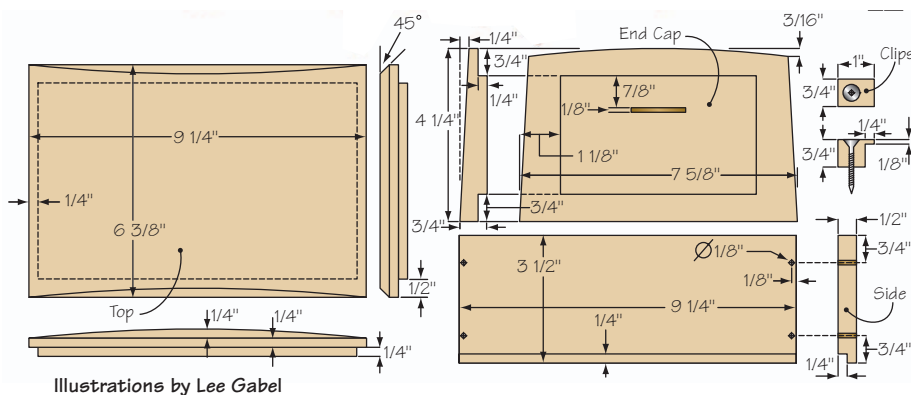
Assemble the top to the rest of the assembly and turn the whole thing over to install the top clips. Place glue on two surfaces of each glue block and press them into each of the inside corners. Make sure to slide them against the top. Place the completed glue-up in clamps until it's dry.

Finishing

Remove the box from clamps and square the bottom by running the box across 80-grit sandpaper sitting on your table saw. Use a flush-trim saw and sharp chisel to pare the pegs flush. Clean up any glue squeeze out using scrapers. Final sand the entire piece, and fit the bottom, using four screws. Be sure to run a steel screw in each hole, first, to cut the threads. Wipe the box down with a tack rag and apply your favorite finish. I used four coats of tung oil, wiped on, scuffed with 0000 steel wool, and finished with paste wax.

If you build your own version of this cremation box, be sure that it is sized appropriately (i.e. approx. 1 cubic inch of space per pound of weight of the pet). This box is dimensioned to have approx. 135 cubic inches total.

Some locations will return the pet encapsulated in a sealed rectangular metal can and others will use a plastic bag. Be sure to understand the exact space requirements for your project prior to setting down the dimensions.



ROB STOKES is a hobby woodworker living in North Vancouver. His website can be found at: <http://www.robwoodworking.com>

His & Hers Lighthouse

This is a fairly simple Intarsia project that took on a life of its own. My wife is an avid quilter and she made the observation that intarsia patterns could work for stained glass/quilting projects. So, I took up the challenge and converted this wood pattern into a stained glass/quilting pattern. Then it occurred to me people might enjoy working on similar projects at the same time. A great many couples share an interest in crafts, and often, it's the women who are into fabric and the men who are into wood. So, this is the first offering of such a project. As a special offer to Canadian Woodworking readers, both patterns in full size form will be available for \$10.95 postage included. The pattern can be ordered by writing to: Sawbird Designs, Box 549, Stoughton, Sask., S0G 4T0, 1-800-729-2473, fax 1-306-457-2713, e-mail, intarsia@sawbird.com

MATERIALS LIST

Red	1 piece 6" x 6"
Yellow	1" x 6" x 18"
White	1" x 6" x 12"
Pine	1" x 8" x 12"
Medium	1" x 4" x 12"
Dark	1 piece 1" x 2"
1/4" Plywood for backing	12 1/4" x 16 1/2"



Intarsia by Garnet Hall

Fabric allows for more latitude in colour selection. I have been dragged around to many fabric shops and am amazed at all the different fabric colours and patterns they have to work with. My wife made the one pictured here and, since then, we have found material with a brick pattern that would look great. Us poor old woodies have to scour the planet to find the nice woods.

This project is a fairly simple, straight forward, Intarsia project. The pieces, for the most part, are big. As a result, you will not encounter too many fitting problems.



Quilt by Barbara Hall

Select the Wood

Use the woods suggested, or use your imagination to make unique wood choices. This is a very creative step and can make or break the look of the project. Remember, if your wife is working on this pattern in fabric, yours has to look better.

Transfer the Pattern

Transfer the pattern to the wood, with whichever method you prefer:

- trace from the pattern onto the wood
- make a template of the pattern and trace onto the wood
- photocopy and cut and paste

Cut the Pieces

Cut as carefully as you can, right on the line. Make sure your blade is square to the table.

The better the cutting, the better the pieces will fit, and the less frustrating the fitting process will be.

Fit the Pieces

Assemble and check the fit. Pieces may have to be adjusted and, occasionally, a piece may have to be remade. Try to fit the pieces to within a saw kerf.

Big gaps are unsightly. Small spaces will be disguised by the rounding over process.

Raising and Lowering

Once the pieces have been fitted, do the raising and lowering as required. I use scrap plywood to raise. Lower by resawing or sanding the pieces smaller.

Shaping

Make sure you wear a dust mask for the shaping and sanding.

Assemble and draw reference lines to help with the shaping. Shape down to these reference lines. Try to give the lighthouse a rounded look.

Sanding

I don't sand past 220 grit anymore. I feel that's fine enough and no need to make anymore dust than I have to.

Assemble and Glue

If you want to frame the piece make sure you make the back board big enough to accommodate the frame. I used 1" thick walnut for my frame, afterwards I thought that driftwood would have looked good.

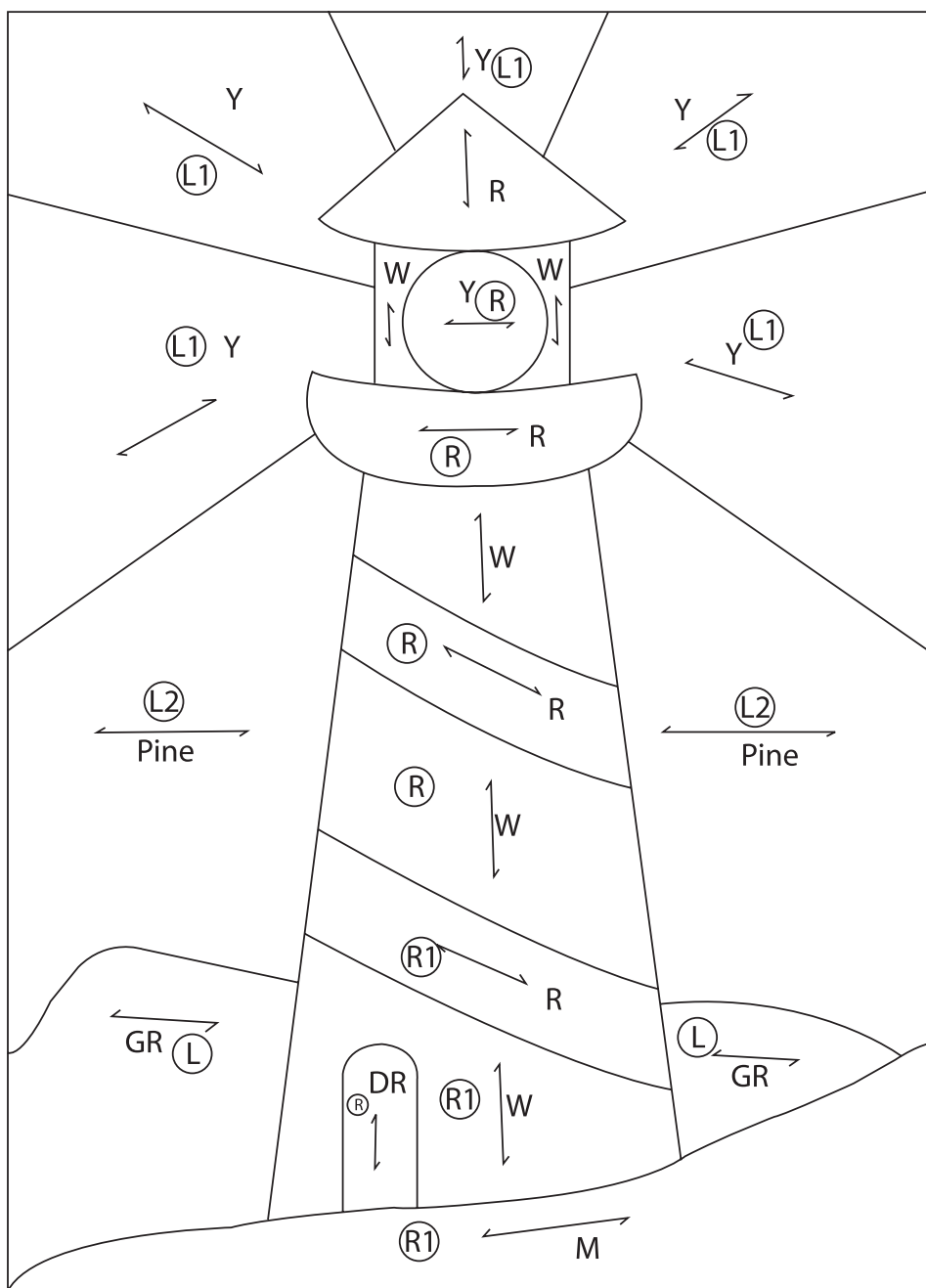
Assemble on the backing material, trace around, then cut out the back. Reassemble the project on the back and start the glue up. Use ordinary white carpenter's glue.

Finish

Once the glue has dried, apply the finish. You can use any finish designed for wood that you like. Brush on, spray, or wipe. I usually put 3 coats on the front and one on the back. You can also apply the finish to the pieces before you glue up. This method is slower but still works.

Attach a hanger and you are done. If your wife has made this pattern in fabric, hang the two side by side. They will make a nice display, and provide hours of entertaining discussion about which one looks best.

GARNET HALL is an intarsia artist
living in Stoughton, SK
www.sawbird.com



• Enlarge pattern 150% or size to preference

WOOD SELECTION

21 pieces. Overall size: 12 1/4" x 16 1/2"

R - Red: Paduak or Bloodwood

Y - Yellow: Pau Amarillo

W - White: Aspen

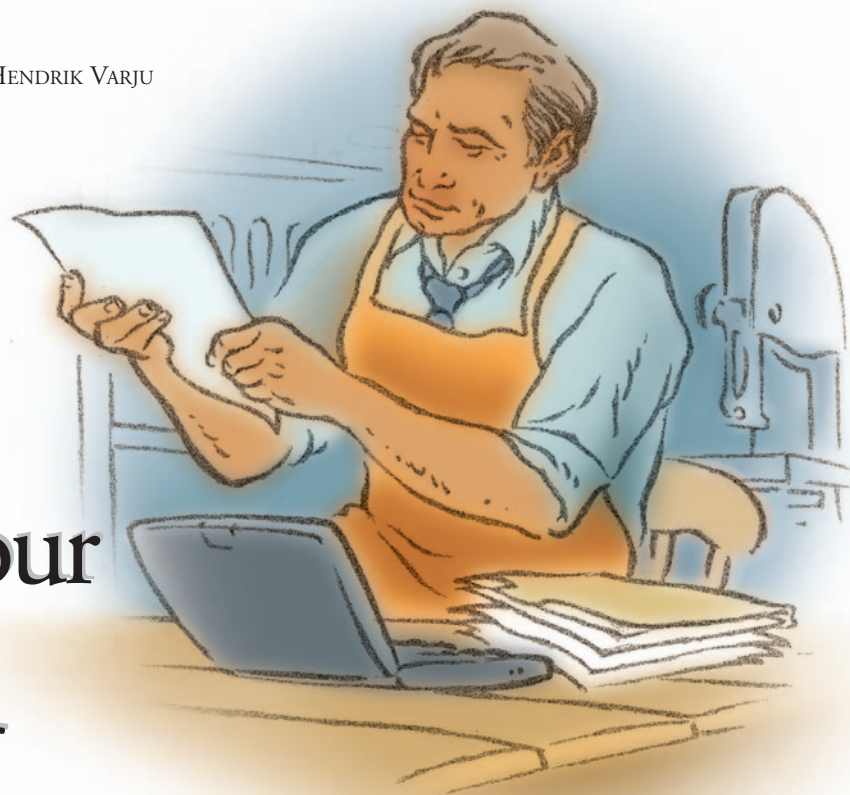
GR - Green: Vera Wood or Green Caste Poplar

M - Medium: Western Red Cedar

DK - Dark: Dark Western Red Cedar

Pine - i managed to find a wide pine board that had some bluish/gray splating on each side, for the sky. it is hard to find, but worth the search.

R - raise 1/8"
L - lower 1/8"
R1 - raise 1/4"
L1 - lower 1/4"
L2 - lower 3/8"



Follow Your Dream

So you want to start a woodworking business?

Who doesn't? Let's face it, if you're reading this magazine, you probably have a passion for wood and woodworking. And there is no better dream than turning a hobby you absolutely love, into your daily work. Wouldn't it be great to walk into your workshop each morning, ready to make some sawdust and create with your hands?

What makes the concept even more tempting is that many careers are somewhat "artificial", in the sense that one works with computers, insurance policies, statistics, or in areas where a "tangible" result at the end of the day simply doesn't exist. This doesn't make those careers any less important, but it can be hard to stay motivated without tangible results.

In a woodshop, one can point to the results of the day, even if it's only a jig or a template. And every once in a while, you have a spectacular creation that seemingly came out of nowhere, something that might very well survive for decades or centuries, with your mark on it.

In this 6-part article series, we will explore your motivation for starting a woodworking business, and whether you have what it takes to survive. I will also review some of the technical requirements in terms of legal obligations and taxation. My hope is that you can analyze your own financial and emotional needs, as you'll never ride such a rocky road as when launching a start-up business. Just as quickly as you can "hang out your shingle", you can start to dread your hobby-turned-business due to financial pressures and deadlines. Think hard before you take the plunge.

Defining "Success"

We all have different goals in business, but all businesses share one; to be profitable. If you're not profitable, you're not a business. Call it a hobby, a pastime, or anything else, but not a business.

Money is a thorn in our sides when starting up a new business. It's hard to be creative while recording every minute that you work on a project. And it becomes very stressful as bills pile up and

nobody wants to pay enough for your "hand-crafted" wares.

Just keep in mind that while money is necessary and important, there are other goals that define success. (See the sidebar on "Examples of Success".) Not everyone has to make their living entirely from their business. For some, it's a way to pass the time in retirement, while making a few extra dollars and financing some new equipment along the way. There's nothing wrong with that, but be clear and honest with yourself about what your goals are. A part-time business person will operate differently than someone who has to make a full-time living from the same business.



Myth And Reality

Myth: When you run your own business, your time is "yours". You can flex your time any way you like.

Reality: Your time belongs to your customers, not you. And there is no time to flex if you're already working 60 plus hours per week.

Starting a new business is not a walk in the park. It takes guts, energy, and commitment like you may have never needed before. If you intend to make a full-time living from this venture, don't expect to go golfing every Wednesday and sleep in every other day. Even people who devote everything to their new business may fail; the failure rate is even higher if you aren't committed.

One of the reasons so many people start their own business is because they want to "have control" over their lives. Don't confuse "control" with being able to take time off whenever you want. It isn't so simple, and you may work harder and longer hours than ever before.

Most people agree that a new business won't turn a profit for at least 3 years. Some say 5 years is more realistic.

Examples of Success

- 1) Financial wealth
- 2) Recognition
- 3) Reputation
- 4) Creative expression and growth
- 5) Controlling your own destiny

Tips for Success

- 1) Start small.
- 2) Even when you can't control revenue, you can always control spending.
- 3) Concentrate on "conquering" your neighbourhood or city - not the world.
- 4) Have a second income to support you (e.g. from a spouse), or start your business on a part-time basis only.
- 5) Be ready for a tough uphill climb. Think before you act and don't do anything that doesn't reflect well on your business.

Supporting Yourself During Start-Up

In my opinion, it's vital to have some kind of a back-up source of income to pull you through those first years. Plan ahead and be patient about when to launch your business.

Back-up sources of income:

- 1) Spouse who is willing and able to support the household.
- 2) Severance package from past employment.
- 3) Parental support or support from another family member who believes in you.
- 4) Part-time employment (which leaves you with only a part-time business).
- 5) Inheritance money (giving you an opportunity to reassess your life).
- 6) Lottery winnings (we can always dream, but don't count on it).

Nothing Good Comes Easy

In my opinion, the single most important reason that businesses fail is overspending. This includes borrowing too much or just buying a lot more capital items than you need to get started. Others have the opposite view - that most businesses fail because they are undercapitalized. But the way I started my own business was to be completely self-financed and take things slowly - one step at a time. Grow slowly, and keep your overhead low and then, if your business fails, then you will not have a mountain of debt, or face bankruptcy. If you can walk away virtually debt free, at least you can say you tried.

Slow and steady is my preferred method of growth. We live in an

impatient society, where we expect instant gratification. But nothing good comes easy.

In the next article in this series, Hendrik will review the nuts and bolts of organizing the business, insurance, zoning, and sales taxes.

In future articles, he will tackle questions like "What will I build?", "How will I price my work?", and "What do clients want?"

If you are serious about starting your own woodworking business, start thinking hard about these questions. Only you can decide if this is the business for you and whether you are likely to succeed. While some luck might be involved, you can also make your own luck through good old hard work.

HENDRIK VARJU is a fine furniture designer/builder who provides woodworking instruction and seminars near Acton, ON. (519) 853-2027
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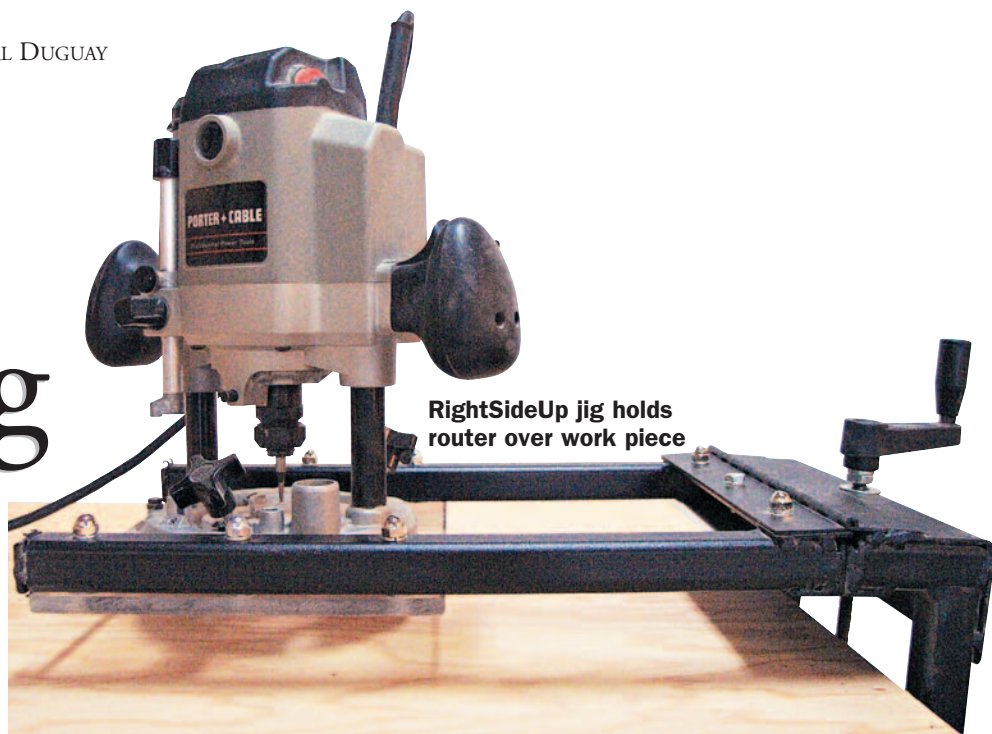
Jjam Router Jig

The router is an indispensable power tool in the woodworking shop. Once you begin using a router, you quickly realize that mounting it underneath a worktable significantly increases its functionality, providing many of the features of a commercial shaper. But hold on! What about mounting the router above your worktable?

Jjam Tools of Langley BC has recently introduced a new twist to routing: the **RightSideUp** Router Jig.

The **RightSideUp** jig is essentially a router stand that holds your router over the work piece, pretty well the converse of the router table. As when routing by hand, you have complete 'bit visibility'. An advantage of using the **RightSideUp** jig is that you don't have to hold the router - you hold the work piece being routed. Used in conjunction with a guide pin (inserted into the tabletop directly under the router bit), you get some of the benefits of a pin router. Pin routing is excellent for doing intricate template routing, inlaying work, and in relief or incised routing.

Don't confuse the **RightSideUp** jig with a pin routing machine. A pin routing machine has a router motor mounted in its base (like a router table) and an overhead



arm with a guide pin that extends over the work. The work piece is sandwiched between the tabletop and the template. The guide pin is in line over the cutter, and guides the template and work piece during routing. In other words, you see the template clearly, but the cutter bit is obscured.

That is not the case with the **RightSideUp** jig. Its template is sandwiched between the tabletop and the work piece. The guide pin is in line under the cutter. You see the cutter bit, but the template is obscured.

The **RightSideUp** jig goes together easily, but do take the time to read the assembly instructions. Allow yourself about 40 minutes to set things up. The main body of the jig and the mounting bracket are solidly constructed, and should provide years of shop use. The jig comes in two configurations: manual adjustment, and crank adjustment. The crank adjustment consists of a threaded rod and coupling attached to the main body of the jig. With the crank adjustment model you pretty well have to use a dedicated table, because the adjustment rod is bolted to the side of the table. It's impractical to remove the bolts each time you're finished using the jig. You'll need a dedicated router to use with this jig, as you do for a conventional router table. The router is not easily removed from the jig; it's screwed to the lexan plate, which in turn is screwed to the arms of the jig.

If you install the supplied guide pin to the top of your worktable you can do very precise template work. You'll want to

attach your work piece to your template. I use double sided tape. Then place the template face down over the guide pin to guide the work piece for routing. I use carbide spiral bits available from Lee Valley Tools because they come in narrow diameters (down to 1/16") and cut very cleanly. By using the height adjustment rod to raise and lower your router, and the micro adjustment feature on your router, you get an extremely high degree of precision.

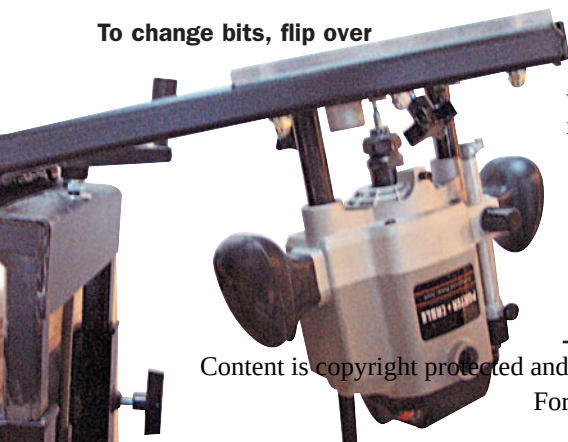
A really great feature of the **RightSideUp** jig is that changing bits is very easy; you simply swing the head of the jig up.

Initially, I found the **RightSideUp** jig less intuitive to use than an overhead arm pin router jig. That's probably because I'm uncomfortable with the bit hanging over the work piece (and by extension over my hands). However, being able to see the router bit do its business definitely has its advantages.

In summary, the **RightSideUp** jig does a good job. If you do a lot of intricate template routing, inlaying, relief or incised routing, and you prefer to have the cutter visible as you work, then you should have a closer look at this jig.

The **RightSideUp** jig comes with mounting hardware, assembly instructions, and a lifetime warranty. Available direct from Jjam Tools for \$179 (plus S/H) 604-572-7282 or www.jjamtools.com

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- Electronic variable speed control (8,000-22,000) maintains constant speed and power under load
- Includes: 1/4" collet and edge guide
- Large micro-adjustment knob simplifies setting of bit height
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JS102 - 5 AMP Adjustable Fence Biscuit Joiner

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French polished
humidor

French Polishing

In the last article I described shellac as an easy to use finish: easy to apply, easy to clean up, and easy to repair.

In this article we'll look at an elegant nature of shellac: French polishing.

A Technique, not a Finish

According to Bob Flexner's "Understanding Wood Finishing", French polishing refers to a technique for applying shellac, not a finish in and of itself. Essentially you apply a very large number of thin coats of shellac using a pad, a wee bit of oil, and a lot of elbow grease. There's no need to get too caught up in the 'right' way of doing it. Like anything in life, with ample practice your French polished pieces will look better and better, and you'll work out a sequence of steps that suit you best.

Do keep in mind that while a French polished surface has a high water vapour resistance, it has relatively low abrasion resistance. So it's best used for pieces that won't get a lot of heavy use, or be subject to water or alcohol spills.

What You Need

French polishing doesn't require much in the way of materials. You'll need some freshly made shellac (begin with a 1-pound cut which is thinner and easier to apply; later you can use a 2-pound cut if you want to speed up your finishing); a rubbing pad, and some mineral oil (which keeps the rubbing pad from sticking to the freshly applied shellac). If you're using pre-mixed shellac remember that it's likely a 3-pound cut, so you'll want to thin it by adding some alcohol (methyl hydrate or mineral spirits will do). Because you only need to apply a bit of shellac at a time, things go easier if you pour some shellac into a squeeze bottle (old mustard bottles work great; it's also a convenient way to dispense the alcohol).

To make a rubbing pad you'll need some lint-free cotton, or linen, for the 'cover' (about 8" by 8") and some cotton, wool, or cheesecloth for the 'core'. Make a wad about the size of a tennis ball with the core material, and then wrap the cover over it, ensuring that the bottom of your pad is smooth. Before using a new pad you can 'condition' it by delivering a couple of good squirts of shellac onto the core of the pad. Store the pad in a jar or zip lock bag when not in use, as you don't want to let it completely dry out. When the cover material gets dirty or torn just replace it; the core will last for ages.

You'll be exerting a lot of pressure when applying the shellac, so it's a good idea to secure your work piece to your work surface (I used padded battens).

Fill the Pores

For wood with small pores, such as maple or cherry, you go straight to work with the shellac. For large pored woods, such as oak or walnut, the finish will look smoother and glossier if you fill the pores. The easiest and quickest way to fill the pores is to brush on consecutive coats of shellac, sanding between coats, until the pores are filled. If you're a purist and want to fill the pores the old-fashioned way, you can read about it in Flexner's book. On darker woods, like cherry, I lay a thin coat of boiled linseed oil on the surface before filling the pores, to increase the depth of the finish.

Rub On

When you are ready to apply the shellac, squirt enough shellac onto the pad to dampen it (damp, but not 'sodden'). This process is called 'charging your pad'. Then give it the traditional 'French kiss' (smack the pad against the palm of your hand) and you're ready to go.

The first step is called 'bodying'.

Three things to keep in mind at this stage: 1) keep the pad moving. If you let it sit on the surface it will stick; 2) once you've padded over an area, wait until it's dry before going back over. If you don't do this, your pad will stick; and 3) begin with light pressure then increase pressure as you polish. Good lighting is important so that you can see whether you're applying the shellac consistently across the whole work surface.

Begin your bodying by pressing the pad on the work surface and simultaneously begin moving in circles or figure '8s'. No need to go too fast, just keep your pad moving. As you start to feel some resistance when moving the pad, apply more downward pressure. When you start to feel a lot of resistance, it's time to lift the pad off the surface. Add another squirt of shellac, plus a drop of mineral oil which you'll add each time you recharge your pad with shellac from now on. Give it the French kiss, then rub on. Once you begin

adding the mineral oil, you will begin to notice streaks (called 'clouds') of oil on the surface. You will remove those clouds later. Remember that shellac dries pretty quickly, so by the time you've applied one coat it's dry enough for the second coat. The idea is to lay down as many coats as it takes to make the surface look smooth and level. And don't forget those edges. You don't have to complete the polishing all at one go. Try applying six or seven coats then let it dry overnight. That will give the shellac time to cure. Lay on another six or seven coats the next day, and so on. You've completed this stage when you've built up a mirror like finish on the surface.

The next step is called 'spiriting' or 'clearing'. It consists of removing the oil that's still left on the surface. It's a good idea to let the shellac cure for a few days before you clear off the oil. The traditional way is to use alcohol. Make a new polishing pad and charge it with a few drops of alcohol. Use the pad in a sweeping motion across the wood surface: begin on one side of the surface like an airplane coming in for a landing, sweep across the surface, then lift it off at the other edge, like a plane taking off. Continue until you have a glossy sheen. Be careful not to damage the shellac by rubbing too hard. A quicker and easier way to remove the oil is simply to wipe the surface with naphtha (camp stove fuel).

The final step is to apply a wax and buff it out.

French polishing isn't for everyone. But, like Alexander Keith's Pale Ale: people who like it, like it a lot!

The process of French polishing is like any recipe: it has as many variations as the people who use it. For another variation of French polishing, see Canadian Woodworking Magazine: August 1999 and October 1999.

You can get shellac flakes or pre-mixed shellac from Wood Essence, www.woodessence.com or 306-955-8775

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(250) 888-5067 carl@finewoodworking.ca www.finewoodworking.ca

French polishing kit



Mineral oil

Shellac

Alcohol

Linen cover

Cheesecloth

Rubbing pad



Carver's Vise

In the last article, I showed you a "two-hand" method for carving with gouges. It follows then, that if both your hands are occupied with your gouge, you will need some method of holding the wood while you carve.

In this article, I will describe methods I have used for holding wood while I carve. There are many ways to hold your piece, so be sure to change your method if the wood you are carving comes loose, or if it is not held as firmly as you want it to be.

Some of the items I have used (in different combinations) for holding wood: double-faced tape, C-clamps, wood screws (of various lengths), scrap plywood, carver's screws, bench vise, Work-Mate, and Carver's Vise (both manufactured and home-made).

Let's have a look at their use from the simplest to the more complex.

If you are going to work on a flat piece of wood, the simplest approach is to clamp it to your workbench. To eliminate the obstruction caused by the clamps, use double-faced tape to attach your wood to a second board and clamp that to the workbench. I use "turner's tape", a thick double-faced tape used by wood turners.

With larger pieces, you need more robust approaches. Carver's screws are useful for holding a piece of wood securely to a workbench. To use these, however, you must be prepared to drill holes through your workbench. The alternative is to use a portable workbench familiarly known as a Work-Mate. Many of these devices have holes in them. Another alternative is to pass the carver's screws through a second piece of wood under the jaws of the Work-Mate.

For even larger pieces, I use wood screws to attach my wood to a base-plate which is then clamped to my workbench. Be sure to measure the length of the screws carefully and mark a line to show the depth of screw penetration (or wrap a piece of masking tape around the bottom of the block being carved). That way you have a reference point below which wood **MUST NOT** be removed.

Each of the methods described above are effective at holding wood securely. But, it

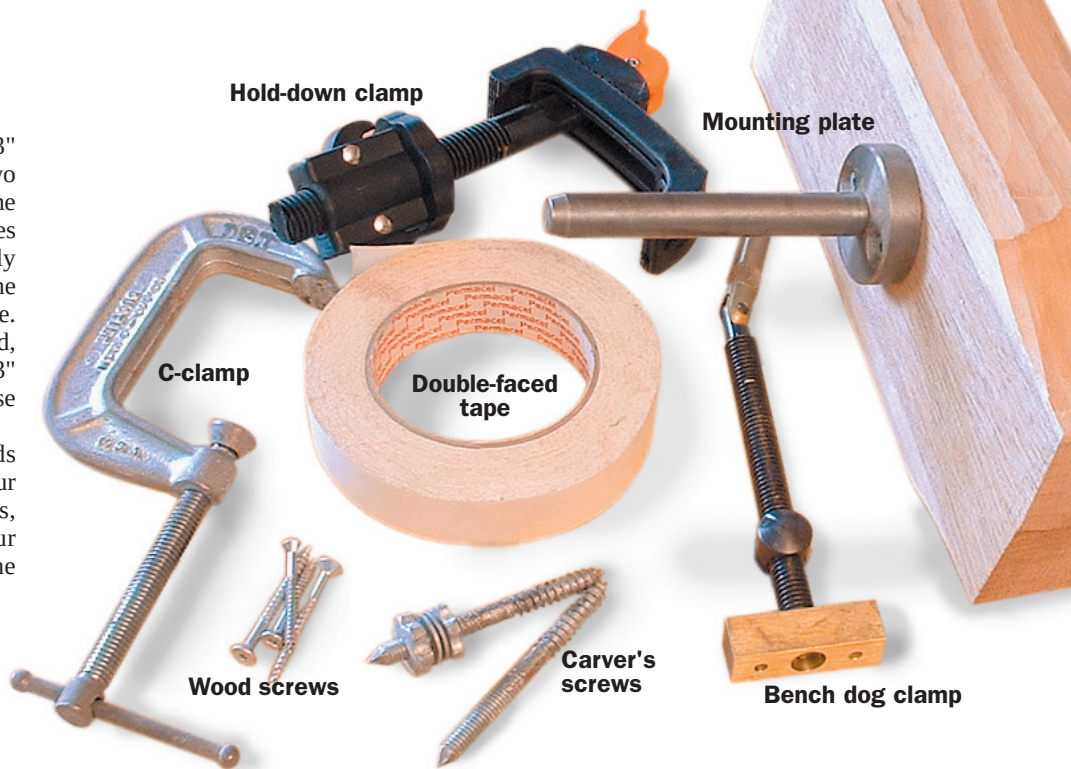
doesn't take long before you need to change the position of your wood to make it accessible for carving "the other side". A Carver's Vise is used for that purpose.

A home-made carver's vise enables you to rotate your carving on two axes. It also allows you to make adjustments in height. To make this, I used a piece of an old shovel handle, a scrap of flat wood (preferably something smooth and hard), a block of wood 3" square, one wood screw, a bit of wood glue, and one rubber band.

Two holes are drilled through the "base-plate" (i.e. scrap of flat wood). Wood screws are used to attach the base-plate to the carving block. A hole slightly smaller than the diameter of the shovel handle was cut in the 3" block of wood. That block was also cut in half. One of the halves was trimmed smaller to ensure that it would clamp tightly against the handle when secured in a vise. It is more effective if the hole through the 3" block is rough since that adds more friction for holding the round handle.

When completely assembled, the 3" block is clamped in a vise so that the two halves can be compressed together. The rubber band is used to hold the two halves in place. To reposition the carving, simply slacken the grip of the vise, adjust the carving's position, and retighten the vise. Depending on the type of bench vise used, it may be helpful to have a second 3" block available to help the bench vise clamp evenly onto your carver's vise.

Try using some of these methods the next time you need to secure your piece. Whether using gouges, knives, or even power tools, having your work held securely will facilitate the carving process.



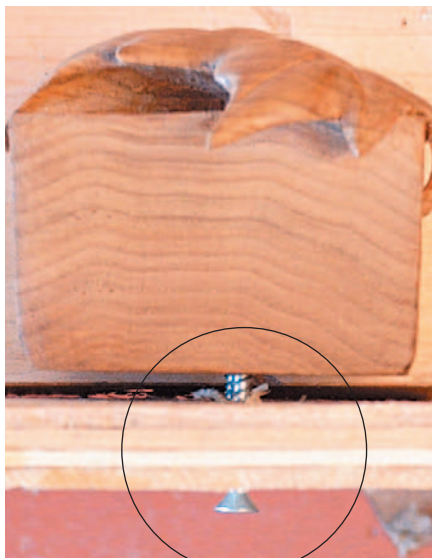
Carver's screws hold work piece to workbench



Double-sided turner's tape attaches work piece to clamped board



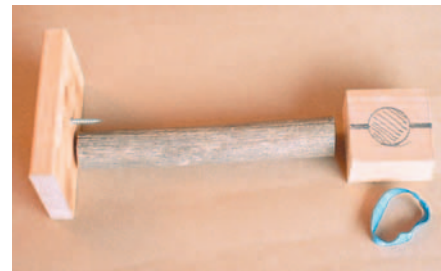
Carver's screws with second piece of wood under jaws of a Work-Mate



Wood screw attaches wood to base-plate



Masking tape marks depth of screw



Materials to make a carver's vice

NEXT ISSUE

David's next article will be a carving project. The project will incorporate the skills, outlined in the first three articles (Dec/Jan04; Feb/Mar04; Apr/May04), and give you the opportunity to put basic carving skills into practice.

DAVID BRUCE JOHNSON is a carver living in Hawkestone, ON
You can view his work at <http://www.magma.ca/~davidbj>.



Deacon's Bench

This red oak Deacon's Bench provides both convenient entryway seating, and storage for winter boots and clothing. The inside of the box is lined with aromatic Western red cedar. A full width hinged lid of jointed solid red oak allows access to the 6.5 cubic feet of storage space. In total the bench measures 46"Lx25"Wx41"H.

The design of the bench is centred around a box, based on interlocking face and side frames. All joints are glued only, with no screws or nails. The assemblies rely on blind mortise-and-tenons, groove-tenon, and dowel joints.

Cut Legs And Mortises

Cut the legs (A) and (B), approx. 1" longer than necessary, and mill to 1 5/8"

square. Mark on their bottom end-grain.

Reference all measurements and draw the location of offset mortises, as per illustration, 3/8" from the outside edge. Cut the mortises (centred on the leg) for the back, and upper and lower rails.

Make The Box

Cut the upper face frame (H) and lower rail (J), the two edge stiles (M), and two muntins(N) that divide the frame into three equal panels. Cut the three oak plywood pieces (Q) that will be trapped in the groove that runs inside each panel. This groove forms the joinery between the stiles and muntins and rails. Cut the side frames (P) which are single panels without muntins.

Cut the rails, stiles, and muntins to length. Cut a groove to accept the plywood

thickness. Centre and cut the groove (1/2" deep x 15/32" wide) in one long edge of the stiles and rails. Do the same for both edges of the muntins. Cut a similar groove on the upper and lower back rails.

Cut Tenons

Cut tenons on both ends of all frame rails and the lower back rail (see tenon detail). Use a dado blade and miter gauge on the table saw. Sneak up on the final width and length to provide a snug fit into the leg mortises. Label each tenon with its mating leg reference.

Cut long tenons on the upper back rail in the same manner. Use a bandsaw to trim the tenon to the correct length from the top of the rail. Sneak up until you get a snug fit into the top leg mortises.

Cut Groove

Cut a 15/32" wide, 3/8" deep groove 1 1/4" from the lower edge of the lower face (G) and side rails (J) to accept the base panel.

Dry Fit Frames

Dry assemble frames with the legs you have cut to length.

Select two stiles and cut the end tenons. Sneak up on the length and thickness of the tenons until they fit snugly into the rail grooves. Label the stiles.

Face frame: select two stiles and two muntins, and cut the tenons.

Tip

To ensure good clamping pressure (when you glue up the frames) use a file to shave 1/16" off the upper edge of the lower rail tenons. That will allow the lower rail to move just enough to squeeze the stiles and muntins during glue-up.

Back Frame

Cut the curve on the upper back rail. Using a drawing bow or piece of springy wood, trace a curve starting 1/2" above the top of the tenon to the centre of the top of the rail. Cut out on the bandsaw and sand smooth. Cut the back legs to length at a 15° angle so the top "peaks".

Cut the nine back slats to length and cut tenons in the same manner as cutting the stile and muntin tenons. Cut the ends of the tenons. That will "hide" the slat spacers and make the back easier to assemble. Mill stock for the spacers and cut 16 pieces to 2 3/8" length. Centre the middle slat on the rails and assemble from the centre outwards. Trim the four outer spacers to fit into the width of the back.

Cut The Arches

Cut the arches on all lower rails (G) & (J). Draw an arc which starts 3" from the ends of rails (G) and rises to 1/4" below the bottom of the panel groove, at the centre. Repeat for panels (J) but start the arc 2" from the ends of the rail. Cut and sand smooth.

Prepare Pieces

Separate frame pieces. Apply two coats of Danish oil to all faces (except faces of mating joinery).

Assembly Tips

The glue-up of so many interlocking pieces may appear a little daunting at first but can be dramatically simplified by gluing up smaller sub-assemblies one at a time. Assemble the bench in the following order:

Glue slats (E) and filler (AB) pieces into the upper and lower rear rails. (C) and (D). Assemble with the rear legs to ensure it is flat and square. Don't glue the rail tenons to the legs yet.

Glue stiles (M), muntins (N), and panels (Q), into the upper (H) and arched lower (G) rails of the rear face frame. Use the legs (A) and the back assembly to ensure it is square and flat.

Repeat to glue the front frame, using the front legs (B) to ensure square and flat.

Glue stiles (L) and panels (P) into upper (K) and arched lower (J) rails of both side frames using front and back legs.

Dry fit the frame with the pre-assembled panels. Measure and cut the base panel (R) to fit into the groove in the lower rails allowing 1/16" clearance on all edges. Cut notches in each corner to fit around the legs. (Apply a couple of coats of Danish oil to both faces of the panel prior to main assembly.)

Glue the rear legs (A) to the two back assemblies. Glue the front legs (B) to the front face assembly.

Glue up the side assemblies into the rear and front legs along with the base panel.

Bench Lid

Choose the boards for the lid (W) and set aside to settle for a couple of days. Mill flat and to required thickness. Cut as many as required for approx. 22" width and cut them an inch longer than required (I ripped 6 boards to 4" width). Arrange the boards for the best grain match. Alternate the grain orientation of adjacent boards to minimize cupping. Apply a coat of Danish oil to top and bottom faces and joint adjacent edges. Glue up a couple of pieces at a time and clamp alternatively top and bottom making sure that the panel is flat. Clean up each sub panel when the glue is cured, re-joint and glue final lid assembly. Leave to cure.

Rip and cut the lid surround moulding. Centre the back piece (Y) and mark the leg notches. Use the bandsaw and miter the ends to meet the side molding (X). I used



an angle of 48°. Rout a bullnose on the outer edges and round over the ends where they transition to the legs. Join the lid surround molding to the box with dowels; use dowel centres for accurate hole locations. Use a large square to ensure that the sides meet the back at 90° and adjust the miter accordingly. Dowel, glue, and clamp.

Cut the corbels (V) and glue centred on each front leg. Use masking tape and small clamps to hold it flush with the top of the front leg.

Cut two lid supports from scrap stock and countersink three screw holes (2", 6" and 8"), centered on the stock. Screw to the side top trim (S).

Arms

Cut out the arm rests (F) from 3 1/4" wide stock. Tape the two pieces together (top face in). Cut the rear leg notch. Cut front and back curves. Sand smooth. Separate the pieces and lightly sand to relieve the edges.

Drill a couple of 3/8" diameter, 1/2" deep holes into arm rest where it joins the rear leg. Clamp a straight edge to the bench back and use dowel centers to transfer the hole locations to the rear leg. Drill to 13/16" depth.

Drill similar depth holes in the centre of the top of the front leg and its corbel. Install dowel centers. Align arm rest and mark front dowel locations. Drill the arm rest to 1/2" deep. Install the arm rests with 3/8" diameter 1 1/4" long fluted dowels. Glue and clamp.

Attach Lid

Cut the lid (W) to size leaving a 1/8" gap on both sides and a 3/4" overlap at the front. Rout a bullnose on the front and



lightly relieve all edges. Cut a piano hinge ~1/4" shorter than the lid opening and screw it to the lid. Drill pilot holes for the screws. Rest the bench on its back, centre the lid in the opening and screw the hinge to the surround molding. Try a couple of screws first and adjust as necessary.

Cut three stiffeners (Z) from scrap oak to size. Position them on the lid 3" from the front. The outer ones are 6 1/2" from the edge. The middle one is centered on the lid. Mark screw hole positions, so that each hole is centred on one of the four boards used to make up the lid. Drill countersunk pilot holes and counterbore from beneath to allow the lid to move with humidity. Attach to the lid using screws.

Option

To enhance this storage space, line the box with aromatic cedar.

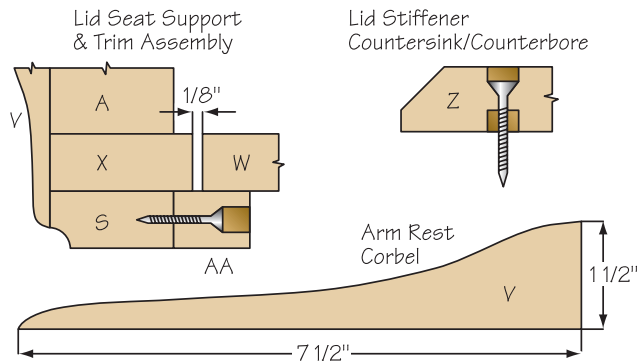
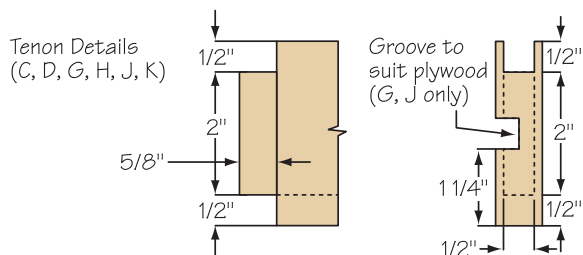
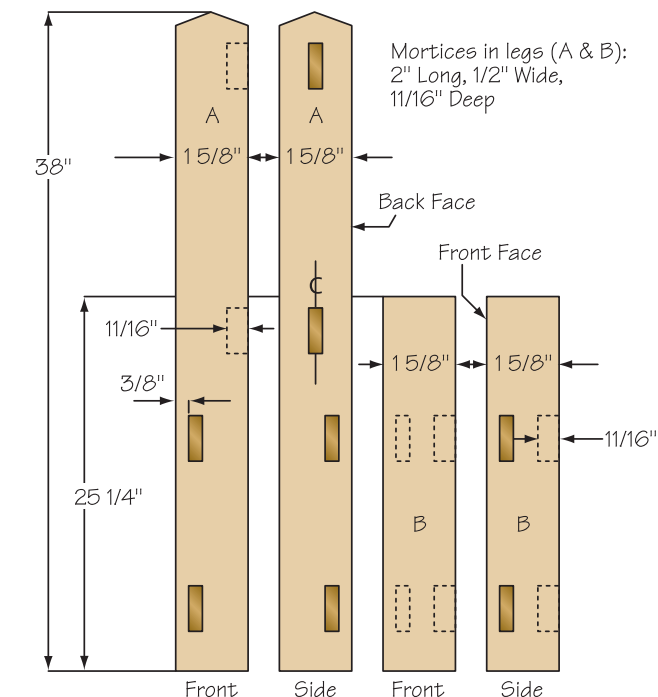
Final Finishing

Attach a pair of lid stays to the sides and to the lid. Attach felt pads to the legs.

Final sand to 220 grit and apply the final coat of Danish oil. Allow to dry for several days. Then, apply a top coat of paste wax. Buff to a shine.

Put your deacon's bench in your hallway entrance and enjoy!

*ADRIAN JONES runs WoodsGood, a custom furniture business in the Ottawa area.
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www.woodsgood.ca*



Mortises in legs (A) and (B) are 11/16" deep; Tenons on all rails (C),

MATERIALS LIST

- 2 (A)** 38"L x 1 5/8"W x 1 5/8"T
Rear Leg, 8/4 Oak
- 2 (B)** 25 1/4"L x 1 5/8"W x 1 5/8"T
Front Leg, 4/4 Oak
- 1 (C)** 41 1/4"L x 6 1/2"W x 3/4"T*
Back Upper Rail, 4/4 Oak
- 1 (D)** 41 1/4"L x 3"W x 3/4"T
Back Lower Rail, 4/4 Oak
- 9 (E)** 11"L x 2 1/8"W x 3/4"T
Back Slats, 4/4 Oak
- 2 (F)** 24 1/2"L x 3 1/4"W x 3/4"T
Arm Rests, 4/4 Oak
- 2 (G)** 41 1/4"L x 3"W x 3/4"T
Lower Face Rail, 4/4 Oak
- 2 (H)** 41 1/4"L x 3"W x 3/4"T
Upper Face Rail, 4/4 Oak
- 2 (J)** 21 1/4"L x 3"W x 3/4"T
Lower Side Rail, 4/4 Oak
- 2 (K)** 21 1/4"L x 3"W x 3/4"T
Upper Side Rail, 4/4 Oak
- 4 (L)** 10 1/4"L x 3"W x 3/4"T
Side Stiles, 4/4 Oak
- 4 (M)** 10 1/4"L x 3"W x 3/4"T
Face Stiles, 4/4 Oak
- 4 (N)** 10 1/4"L x 2"W x 3/4"T
Face Muntin, 4/4 Oak
- 2 (P)** 10"L x 14 3/4"W x 1/2"T
Side Panels, Oak Veneer
- 6 (Q)** 10"L x 10 3/4"W x 1/2"T
Face Panels, Oak Veneer
- 1 (R)** 43"L x 23"W x 1/2"T*
Box Base, Oak Veneer
- 2 (S)** 20"L x 1 5/8"W x 3/4"T*
Side Top Trim (optional), 4/4 Oak
- 2 (T)** 40"L x 1 5/8"W x 3/4"T*
Face Top Trim (optional), 4/4 Oak
- 2 (V)** 7 1/2"L x 1 1/2"W x 3/4"T
Arm Rest Corbels, 4/4 Oak
- 1 (W)** 40"L x 24"W x 7/16"T*
Lid, 4/4 Oak
- 2 (X)** 20"L x 1 7/8"W x 3/4"T*
Lid Surround Side, 4/4 Oak
- 1 (Y)** 43 1/2"L x 3 1/2"W x 3/4"T*
Lid Surround Back, 4/4 Oak
- 3 (Z)** 15"L x 1"W x 3/4"T
Lid Stiffener, 4/4 Oak
- 2 (AA)** 12"L x 1"W x 3/4"T
Lid Support, 4/4 Oak
- 2 0 (AB)** 2 3/8"L x 1 1/2"W x 1 1/2"T*
Back Filler, 4/4 Oak

*Material List Notes

C, W

Laminated from multiple pieces to form required width.

A B

Plane to fit width and depth of back upper and lower rails; trim outside filler pieces to center slats.

R

Trimmed to fit during assembly of the frame.

S, T, X, Y

Trimmed to length after frame assembly is completed



Venetian Blinds

When we decided to finish off our basement recreation room, it was easy to find suitable furniture pieces, but when it came to window finishing I wanted wooden slat Venetian blinds. Although, I could find some in the decor stores they were quite expensive and came in only a limited selection of colours. No colour available suited the room and so I set out to make my own.

Pick out a regular set of inexpensive blinds and have them cut at the store to the correct width for your window. That will give you the basic hardware to build the blind, the mounting strings/cords and the rewind mechanism. Temporarily hang this in your window to determine the necessary number of slats that you will need for your window. Once that's done, you can completely disassemble the blind. Note the construction so that you can reassemble it later. You will only need to keep one slat to use as a template.

The new slats can be made from almost any type of wood. I chose poplar or, as it is frequently sold in the lumberyard, whitewood. This wood is generally very

clear and has good flexibility in thin strips. It also takes a stain easily.

Cut from a 3/4" thick board, pieces 1" wide (or as wide as the slats from the disassembled blind) and add about 1/8th" in width for finishing the edges. Make the length equal to the template. The new slats will be cut from this material. Each piece should yield 4 slats. Cut enough pieces to make all the slats you will need. Use the jointer to clean up the sawcuts and give a finished piece 3/4" x 1".

Each slat needs some holes for the strings to pass through. The template you saved before can be used to locate these holes on the 1" face of your stock. Usually a hole about 1/2" x 1/4" is suitable. Drill these with two 1/4" holes and square with a chisel. Or, use a mortise jig cutter to make two 1/4" holes side by side.

On a bandsaw you can slit each piece into four equal 1" wide strips. These are your new slats with neatly located holes. Cut sufficient slats to do the job. Sand all surfaces. Prep for stain and finish.

(Tip: use a wide saw blade for splitting, it will make a straighter cut. 1/2" X 4 teeth/inch is suitable)

On your assembly there may be a

valance slat. Cut a piece of whitewood to this size. Sand, stain and finish.

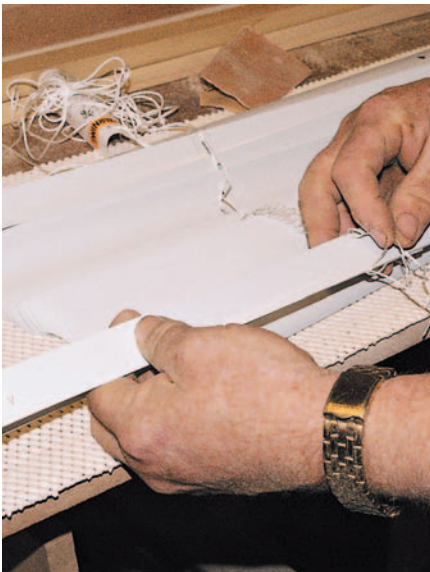
The bottom slat is similar to the main slats, but double the thickness of the main slats. For the holes in this slat just drill a 1/8th" hole for the strings to pass through and be knotted in the final assembly. If the knot is too small for the hole use a small washer or a pushpin to keep the knot from pulling through. Sand, prep for stain and finish.

Paint the metal frame and mounting hardware, a suitable colour to match the desired stain colour.

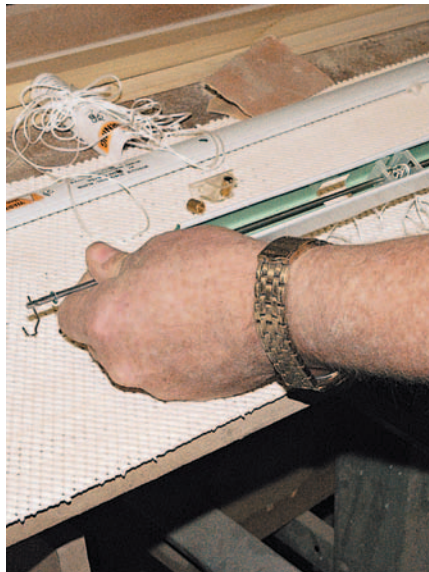
Stain all wooden parts and apply a finish of shellac or varnish to all surfaces. You will likely need 2-3 coats of finish with sanding in between each coat before the surface is smooth. Be sure the surface is smooth, as a rough surface will make cleaning more difficult. At the end, a light rub with 000 steel wool and carnuba wax, will give a great finish to each slat.

Now it's time to reassemble the blind, and mount it in the window.

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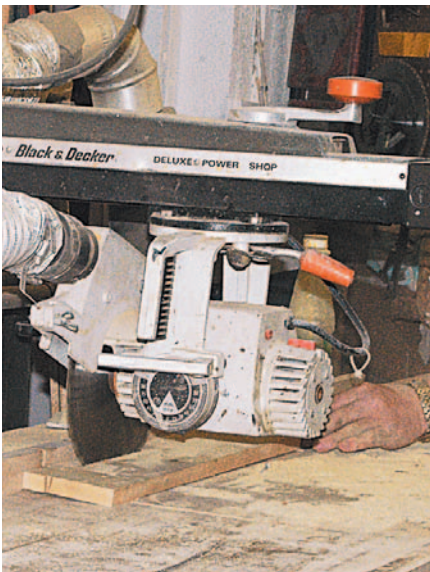
Dissassemble store blinds



Remove drive rod



Use wedge to remove parts from the basic assembly



Cut blanks for slats



Cut stringing holes with a mortise jig



Cut strips for blades



Sand strips for valence



Dissassemble valence



Fit new strips into valence

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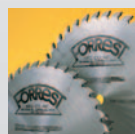
Patrick T. Hankard-South Windsor, CT

"[Forrest blades] cut true, with no vibration. I was a carpenter by trade for over 60 years and continue to be an active woodworker. So, I can say with confidence that Forrest blades are the best."

Carl Stude-Burbank, CA

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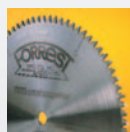
Our Most Popular Blades:



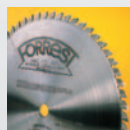
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Shaker

“Fancy articles of any kind, or articles which are superfluously finished, are not suitable for believers, and may not be used or purchased”
- From The Millennial Laws of 1845.

The Shaker style reflects the lifestyle and beliefs of Shakers, who made furniture for their own use. Except for the ladder back chair, which became a commercial enterprise, very little of what the Shakers made was sold - it was made by Shaker craftsman for use within the communities.

The dominant period for Shaker communities was between 1800 and 1860, where craftsmen in more than 20 different communities made furniture that adhered to their beliefs. Since the early furniture was made by many different craftsman who learned their craft before becoming Shakers, the furniture was not completely uniform. However, it did adhere to the

basic elements of simplicity, quality, and lack of ornamentation. Coming from outside of the Shaker community, craftsmen would have been influenced by other styles of the day, including Sheraton, Hepplewhite, and Chippendale. Even with other influences, Shaker furniture became an identifiable style, as it was stripped of ornamentation and had a simplified design.

Since Shakers lived communally, much of their furniture was built on a larger scale than other furniture built at the time. This can be seen in the cupboards, long tables, benches, and large chests of drawers.

While it did vary among communities, the essence of the Shaker furniture style is easily recognized. The Shaker style is dominated by attention to detail, lack of ornamentation, excellent joinery, functionality, clean light lines, and highly figured wood. Hardware such as latches and knobs were typically made from wood, with simple handwrought hinges.

The joinery was comprised of dovetails and mortise and tenon joints. The use of frame and panel construction in Shaker furniture was motivated by a primary concern with the efficient use of wood. In modern times, an additional motivation to use frame and panel design, is to counter the effects of wood movement because of central heating.

Shaker design is consistent in some aspects, however variations exist. The function of the furniture, and its location, often took precedence over design characteristics, such as symmetry, or width/height ratios.

While most of what we see today as Shaker clearly displays the natural beauty of wood, early in the Shaker community's development, all furniture was required to be painted since wood grain was too ornamental. This requirement was eventually relaxed, and the paint was stripped off much of the furniture. In order to add style to a piece, without adding ornamentation,



**Shaker Chair, courtesy
Shaker Roads, Ancaster, ON**

highly figured wood was often used. Shaker furniture makes use of different wood species, both for the different properties in the wood, as well as for the aesthetic appeal.

Since it was made exclusively for use in Shaker communities, original pieces are rare and highly sought after. This popularity, and rarity, means that it is copied and produced by modern furniture manufacturers in kit form as well as finished pieces.

Style: Shaker

Timeline: 1800 - 1860

Key Design Elements:

- Lack of ornamentation
- Excellent joinery
- Functional and clean
- Light lines
- Tapered legs
- Highly figured wood
- Dovetails, mortise and tenon joinery
- Frame and panel construction

Typical wood types: Maple, Birch, Chestnut, Butternut, Cherry, Birch, Clear Pine, Walnut, Poplar

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mjtheriault@sympatico.ca



**Shaker Bench, courtesy
Luc Beaulieu, Montreal, PQ**



Two Cherries Chisels

A good set of chisels is an important shop purchase.

Next to hand planes and saws, chisels are the next most frequently used hand tools.

Buy a cheap set and you'll regret it; buy a good quality set and you'll not only enjoy using them, you'll do better work.

Up to now you may not have heard about Two Cherries tools; but the folks at European Hand Tools in Manitoba are changing that. They are the exclusive Canadian distributor for the Two Cherries line of German made firmer chisels, gouges, carving knives and turning tools.

The Two Cherries line was started in 1858 by the Wilh Schmitt Company. They must be doing something right to be in business for over 145 years. Among wood carvers, their products are very well respected.

During the past four weeks I've been using the set of six bevel edge chisels, and my reaction to date is: Das ist gut! Das ist sehr gut!

These chisels are hand forged from high carbon steel, heat treated by hand in an immersion bath, and hardened to Rc 61. The blades are polished to a mirror finish and fitted with hornbeam handles and steel hoops. The set I tested consisted of 6, 10, 12, 16, 20, and 26 mm chisels with plastic tip guards, all in a nicely made storage box. The chisels are from 10" to 11" overall in length. Other blade sizes are available from 2 mm to 40 mm.

The chisels are very well made. Well fitting handles, nicely balanced, no pitting or scratching on the blades, cleanly ground, nicely tapering bevel edges. I measured the width of the chisels and found minimal variation. For example, the 16 mm chisel measures 16 mm at the tip, 15.68 mm halfway up the blade, and 15.50 mm near the tang. You have to expect some variation in hand forging, and these variations are within

acceptable limits. I was pleasantly surprised that the backs of the blades were consistently flat across their width and along their length. My experience has been that chisel backs invariably require flattening before use. Not, however, in the case of the Two Cherries. However, I must admit that, being the masochistic type, I did lap the backs on all the chisels. It didn't require much work given how flat the blades already were. The blades do come sharpened (flat ground) but not honed, which I promptly attended to. The factory grinding was excellent. The grind is uniform across the width of the cutting edge and 90° to the side of the tool.

I enjoyed using the Two Cherries chisels. They seem to hold an edge very well, and I particularly like how well balanced they feel. They are definitely lighter than the equivalent Marples and Sorby chisels I'm familiar with. After using the set extensively for two weeks I reground the tips with a hollow ground bevel then honed a micro bevel. The results have been great!

At \$179.95 CDN this set is a bit more expensive than other brands on the market, but you do get an excellent product. Good value for good tools! You can buy individual chisels as well. For more information visit www.europeanhandtools.com or call 888-222-8331.

Blades polished to a mirror finish

DMT's DuoSharp



I've been using Japanese waterstones for quite a few years. Although they work very well, I find that they require frequent flattening, and a soft touch, as they gouge and chip rather easily. Recently I tested the DMT DuoSharp two grit diamond sharpening stone. Diamond stones are not new on the market, but they are not as widely known as waterstones.

For the technically astute, DMT diamond stones are comprised of a perforated steel plate that is injection-moulded onto a glass reinforced polycarbonate resin base, in which are embedded precision sized micron diamonds in an electro-plated nickel matrix. In layman's terms, this means you get the latest in sharpening technology: a precision-engineered stone that is absolutely flat (expect a surface tolerance of about 0.005"), and one that will never hollow or groove.

The DuoSharp, as the name implies, is a combination stone, with a different grit on each side. The stone I tested has a fine (600) grit on one side and a coarse (325) grit on the other (model #W250FC-NB). It measures a generous 4" wide, 10" long, and is 3/8" thick. One of the first things I noticed, is that diamond stones cut very aggressively and produce a very consistent scratch pattern. This is due, in part, to the spacing of the diamonds on the plate, and also to the circular perforation pattern on the plate. The perforations create tiny reservoirs that hold swarf, reducing the tendency to clog. Liberal use of water flushes the swarf away. The stones come with a non-skid mat that worked well (I used it on a marble surface).

Because of the aggressive cutting nature of the stones, I found that you don't have to apply as much pressure as with a waterstone. The coarse grit is excellent for reshaping blades and it also did a super job flattening the backside of a chisel. The fine grit produced an edge good enough to take to my 4000 waterstone. An added bonus of these stones is that you can also use them to sharpen your tungsten carbide router bits. I used the coarse side to flatten all my waterstones, a job I previously accomplished with coarse sandpaper (and a lot more elbow grease). I was very

impressed with the performance of the DuoSharp, and would recommend it as a primary stone for reshaping and fine honing prior to finish sharpening with a 4000 or 6000 grit waterstone.

DMT DuoSharp stones come in 8" and 10" sizes of the following grit combinations: extra fine (9 micron/1200 grit) and fine (25 micron/600 grit); extra fine and coarse (45 micron/325 grit); fine and coarse; coarse and extra coarse (60 micron/220 grit). An optional stand is available (item B8250) and holds either the 8" or 10" stone.

By the way, DMT makes a wide array of sharpening products that use the monocrystalline diamond technology for just about any shop application you can think of.

The stones are competitively priced, considering that they should give years of use in a small shop (and probably a lifetime of use for the hobbyist). 8" stones are available for about \$120, and 10" stones for \$153, from Jacques Coulombe Inc call (1-877-866-5799) or check out www.jacquescoulombe.com and Lee Valley Tools (www.leevalley.com). More information can be had at www.dmtsharp.com. Highly recommended as a general shop bench stone.

CARL DUGUAY is a writer and woodworker from Sidney, BC
(250) 888-5067 carl@finewoodworking.ca
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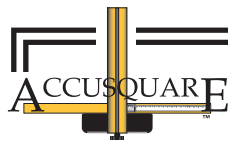
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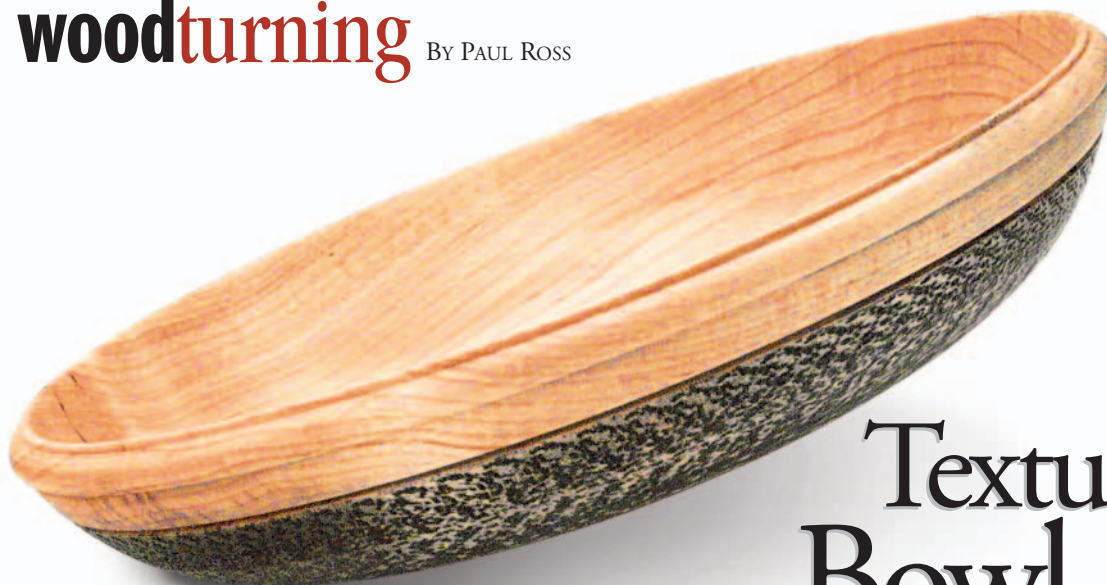
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Textured Bowl

This is a fairly plain, semi-shallow bowl. However, add a little texturing on the bottom, and a lovely bead just below the rim, and you have a much more attractive bowl.

To really show off the texturing, I selected some fairly clean maple for the project. The timber I started with was about 8 inches in diameter and 2 inches thick.

Mount Blank On Lathe

Bandsaw the blank round. Choose the side that will be opposite the bottom, and drill a 3/8" pilot hole. This hole accommodates a 1/2" screw chuck, which fits into the 'ONEWAY' stronghold chuck. After mounting the chuck on the lathe, lock the spindle of the lathe, and screw on the bowl blank. Make sure that the wood of the blank is FLAT against the jaws of the chuck. Doing so ensures the screw chuck's tremendous holding power. Once you have the blank mounted on the lathe, set the rest to the outside of the piece and make the outside cuts.

Face Cut

When you have trued the outside, move



Face cut

the rest to the face, and cut from the outside, into the middle. A few things to consider: this cut should be as flat as possible; you are just preparing the wood, not shaping. Also, the centre is spinning more slowly, so you must slow down the speed as you move across the rest towards the centre.

Create Spigot

Next, use a parting tool to create a spigot, so that you can grab the blank with a stronghold chuck. Start with the tool in a low position and lift the handle. Let the tool fall into the wood.

Scrape

To make sure that the chuck jaws sit flat and square on the chuck, scrape a little area with a 3/4" square-end scraper.

Shape

After preparing the wood, move on to shaping. The direction of cut, for shaping the bottom, is from the centre out towards the edge. The reason you cut in this direction, is so that you cut with the grain, not against it. Start the first cut from the edge, a little in towards the centre, and pull the



Create spigot with parting tool

gouge towards yourself. The next cut brings you a little closer to the centre, and the next a little closer and so on. Finally, the last cut will be as close to the centre as the design allows.

Create Bead

Next, create a small bead slightly below the rim on the outside of bowl. To do this, I used a 1/4" parting tool, using the same technique as I would use with a skew.

Apply Mineral Oil

All the tool work left to be done now is scraping the "imperfections" or "high spots" with a 1 1/4" scraper. I used some mineral oil here, to lubricate the scraper, and to raise the end grain so that it shears off more cleanly.

Use Oil To Sand

Using oil to sand accomplishes two things: it eliminates dust as the oil mixes with the dust, and it raises the grain, allowing it to be sheared off more cleanly.

Texture The Bowl

Although there are many ways to texture a bowl, I chose a 'Sorby Texturing Tool'.



Scrape with a 3/4" square-end scraper



Pull the gouge toward yourself



Use 1/4" parting tool as skew to create bead



Apply mineral oil to raise grain



Sorby texturing tool



Use 3/4" skew to form 'v' grooves at texture borders



Highlight texturing with heavy tipped black marker



Scrape, using your hand for support



Turn off spigot for smooth round bottom

There are many patterns and variations that can be achieved with this tool. I created a herring bone pattern by slightly tipping the tool and pulling it towards me.

Form Grooves At Corners

I found that the texturing looked great, but it didn't stand out enough on the bowl. So I put 'v' grooves on either side of the texturing to define the bowl from the texturing. I did this with a 3/4" skew, using the toe or the long point.

Highlight Texturing

There are also many ways to highlight the texturing (i.e. India ink, special effects wax, etc.). I decided to use a heavy tipped black marker.

Flip the bowl into the stronghold chuck and make a facing cut across the face. Clean the front of the bowl. First, with a 1/2" bowl gouge, rough out the inside, outside to centre.

Finish Cuts And Scraps

For the last few finishing cuts, use a 3/8" gouge. Use your hand behind the bowl for support. Then scrape, using the same technique for support.

Turn Off Spigot

After sanding, flip the bowl onto a vacuum chuck, and turn off the spigot to create a smooth round bottom. Sand this area to conclusion.

You can leave the texturing dark, or lightly sand over it to remove some of the colouring, as I did with this bowl.

This is a simple, straight forward bowl, but with the added texturing and beading, it becomes an exquisite piece.

PAUL ROSS owns and operates Chalet Woodcraft and teaches woodturning in Boston, ON.
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Joinery Overview

This is the first of a series on Joints. Subsequent articles will focus on specific joints, highlighting their key features, uses, and how to make them.

Joints are a fundamental part of woodworking. They have the practical function of joining pieces of wood together into a finished project while they can also provide a decorative element to your work.

There are a wide variety of different joints, from traditional (i.e. dovetails and mortise and tenons) to modern (i.e. biscuit, dowels, and pocket hole joints). Some joints can be made by hand in the traditional way, while others need power tools or special jigs. This wide variety of options allows you to select the joinery that is best for your particular project; the tools you have, your skill level, and how much time you want to spend making joints.

Some joints have a variety of applications, while others are used for very specific purposes. The best joint to use in a particular application will depend on several factors, including whether you want the joint to be visible or not, the types of forces the joint will encounter, and the nature of the joint.

Many joints can be made in various forms, depending on your needs. Butt joints, for instance, can be screwed together, joined with pocket-holes, dowels, or biscuits. Mortise and tenon joints can be made in a variety of forms, including simple, loose, round, haunched, angled, and multiple

t e n o n .

Dovetails can be through or half-blind, depending on what they are for, and the degree to which you want them to be visible.

Joints that are specifically used for their visual appeal include dovetails, box joints, keyed mitres, and through mortises. Other joints are generally hidden, such as mortise and tenon, mitre, and butt joints

Joints are typically used for specific purposes, and can be generally divided into two basic categories (with some joints found in both categories). One type joins long edges together, such as the sides of a blanket chest. Such joints include rabbets, dados, splines, finger joints, and dovetails. The second type joins narrower edges together and includes lap joints and bridle joints. Some joints are used for both types, including the mortise and tenon, mitre joints, and butt joints.

The strength of a joint depends on how much cross grain is glued together in the joint. That is why a butt joint generally needs screws, splines, biscuits, or dowels to add strength. With a butt joint, at least one surface is end grain and, therefore, they provide a very weak joint. On the other hand, joints such as finger joints, dovetails, and mortise and tenons provide lots of cross grain surfaces to be glued together.

That makes a very strong joint, without the need for mechanical fasteners, splines, or other means of adding cross grain surfaces.

In order to be strong and to look good, a certain amount of accuracy is needed when making

Dovetail

joints. You need a snug fit that will avoid gaps. At the same time the joint must not be so tight that the joint is starved of glue.

If you are using power tools to make your joints, use jigs where possible, to ensure accuracy and repeatability. Also, use a scrap piece of wood to set-up the tools and jig. That will ensure the best fit before cutting your project pieces.

Hand made joints simply require patience and practice. Before cutting dovetails on your blanket chest, practice on some scrap pieces until you get it right. When working on your project pieces, take it slowly and sneak-up on the correct size. It also helps to test the fit regularly. You can always trim a little more wood from the joint to get the best fit, but you can't add it back.

Since joints are an important part of woodworking, don't shy away from tackling projects that use joints you think are beyond your ability. Even if you don't feel comfortable making some of the classic joints by hand, most of them can be made with power tools and home made jigs. A little practice and patience, and you will soon be able to make every joint you need.

Watch for future articles in this series. In them, Michel will focus on a different joint each issue. He will explain the joint in detail, and give instructions on how to make each one. Future joints will include: dovetails, butt joints, mortise and tenon, mitre joints, finger joints, lap joints, and edge joints.

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Mortise and tenon

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Cordless Vac

The **DeWalt DC500** is a portable cordless/corded, two-gallon wet/dry vacuum that you will love to have in your shop. You read right, the **DC500** will run on any of the **DeWalt** 12, 14.4 and 18-volt battery packs. You can also plug it in. The tool includes a rubber hose that stretches to six feet and includes both a 'floor/tools' and a 'crevice' attachment. The hose may be locked in for suction or used in the exhaust end as a blower.

A Gore-Tex wet or dry filter traps 99.7% of the dust particles within the vacuum so it doesn't add dust to the air in your shop. And the **DC500** is no slouch at picking up. In the dry mode (and with a **DeWalt** 18-volt XR+Pack) it has enough run-time to pick up 200 pounds of drywall dust. In the wet mode, you can expect to extract 100 gallons of water before you have to rely on the AC power. For convenience, a drain plug is provided.



Belt Sander



DeWalt keeps their hand on the pulse of woodworkers. In doing so recently, they have come out with some new and innovative products.

For example, the 3" x 21" Belt Sander.

The portable belt sander has been around for many years and one would have thought that there wouldn't be much room for improvement, if any. **DeWalt** found that room. Until now the most noticeable shortcoming of a belt sander has been its inability to get its nose close to a vertical surface. The new **DW433** belt sander does just that.

The innovative three-roller design allows the sander to get within a half-inch of a vertical surface which is great if you are finish sanding floors. The

front bale or handle may be removed or placed in one of two positions.

The three-roller design gives the **DW433** a much larger sanding surface due to a larger ultra-smooth platen. The third roller is also flanged to keep the sanding belt on track.

The **DW433** is a variable speed tool that runs 850 - 1,400 SFPM (surface feet per minute) and the sawdust that it generates is handled efficiently in one of two ways; an on-board filter bag, or vacuum adaptor.

The **DW433** is a heavy-duty belt sander. The tool weighs in at 11 pounds and therefore requires little downward pressure by the user. The 8-amp motor looks after that weight quite handily. The three roller design, with the motor low in the middle provides good stability.

DeWalt has an inverter as an accessory for the **DW433** that will convert it to a bench-top sanding station.

Laser Guide

Want to cut that perfect line? More and more saw manufacturers are now building in a laser-generated guideline that tells you precisely where the saw blade is going to cut.

That's great if you have a brand new saw, but what if you have an older model compound or mitre saw? They aren't equipped with such helpful laser guides.

That is until now. **Bladepoint** has just come out with a perfect accessory to update your saw, so that you too can cut that perfect line.

Bladepoint is an after-market Laser Guide that will adapt to most existing compound mitre saws and some circular saw models. The

Bladepoint Laser Guide replaces the blade washer on your saw and is powered by three hearing-aid batteries with a centrifugal switch.

When you turn on your mitre saw it activates the switch as you lower the blade to within three inches of your workpiece. When adjusted, the right edge of the laser line will touch your pencil mark (when the off-cut is on the right). No more guesswork here.

The **Bladepoint** Laser Guide is available from M&D Wooland Enterprises. 1-877-778-5585
www.thesawshop.com

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Jailhouse

The object of this puzzle is to open the jailhouse by removing two bars.

Cut out two circles of solid wood 6-3/4" in diameter, for the top and bottom.

Find the centre of the bottom and the top and from that centre make a circle with a 2 3/4" radius. This circle will act as the centre for the bars.

Mark a bar centre every 30° on the circle. (If you do not have a 60/30° set square,

MATERIAL REQUIRED

- | | |
|---|---|
| 1 | 3/4" x 6 3/4" x 6 3/4"
Top, Solid Wood |
| 1 | 3/4" x 6 3/4" x 6 3/4"
Bottom, Solid Wood |
| 1 | 3/4" x 7 3/4" x 7 3/4"
Base, Solid Wood |
| 9 | 1/2" dowel x 10" long
Regular Bars |
| 2 | 1/2" dowel x 10 3/8" long
Slip-out bars |
| 1 | 1/2" dowel x 10 7/8" long
Locking Bar |
| 1 | 1/4" x 1"
Machine Bolt, plus a washer & nut |
| 2 | 3/4" diameter
Plugs, Solid Wood |

use a protractor, to measure the 30°).

Drill 1/2" holes, 1/4" deep at all the bar locations.

For the locking bar, drill straight through the bottom and in 5/8" on the top.

For the slip-out bars, drill straight through the two holes in the bottom.

Fit the bottom to the base with a 1" machine bolt, countersunk. Tighten the nut so that the bottom will turn freely but snug. Peen (flatten) the end of the bolt so that the nut will never loosen.

Plug the bottom and base to hide bolt.

Drill through the locking bar hole into the base 1/2" deep.

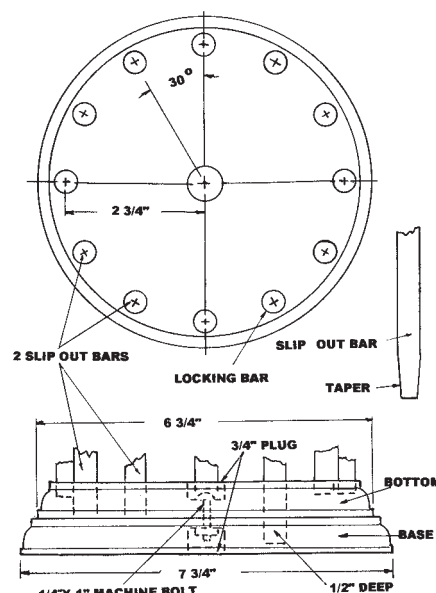
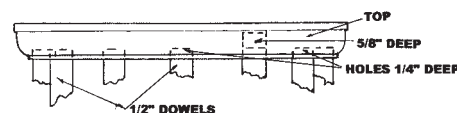
Cut the dowels to the length shown in the materials list.

Assemble the jailhouse without glue to make sure everything fits together as it should.

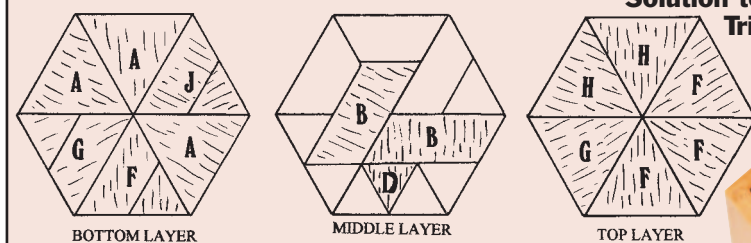
The slip-out bars will have to be tapered slightly at the bottom so that they will swing out past the top and be released when they are turned and dropped into the locking-bar hole.

When you are satisfied that the puzzle works well, glue six (6) of the twelve (12) bars at the top and bottom. By leaving the others without glue it makes it more difficult to find the locking-bar and the slip-out bars.

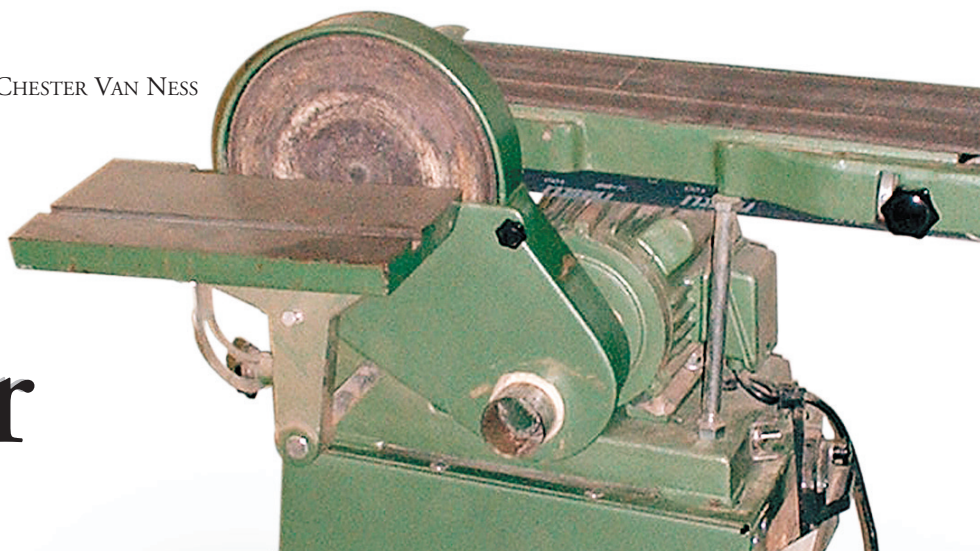
REA GIBSON owns and operates Forest Hill Studio and is the author of *The Wooden Puzzle Book*. He lives in Mount Forest, ON
email: egibson@golden.net



Solution to last issue's Triangle Puzzle



Belt/Disc Sander



Original sander with first dust collection port

This older floor model belt/disc sander did not have any dust removal ports on it originally.

When I first got it, I installed a dust collection port for the disc sander. That port turned out to be too small for effective dust collection. It also didn't service my belt sander, so I decided to do the overhaul that you see here.

Disc Sander

The location of the original modification seemed good, because it didn't interfere with the tilting of the table located at the

disc. However, if you remove the table, and open the front access door, there's a build up of dust below the motor pulley.

After measuring the present enclosure (and considering the flow of materials from the disc) I decided to move the location of my original pick-up port. I removed the old port and patched the remaining hole. The new opening would be in direct line with the natural flow of materials being thrown off the disc as it rotates.

To allow easier access to the cover (and allow me to cut out the new port with power tools) I removed the guard from the disc and drive belt. When I removed the drive pulley from the motor shaft, I noticed a large oblong opening in the guard around the motor drive shaft. That opening would require some type of seal to make the dust collection effective.

Next, I removed the disc to get at the three bolts that hold the guard in place. Once the guard was removed it was a good opportunity to clean the whole machine and lubricate the bearings prior to reassembly.

Notice that the original opening has been covered and the leading edge of the access door has been trimmed away. That creates better airflow on the downward side of the disc, which helps to carry the dust into the guard and on to the dust port.

To increase dust collection, I did the following: at "A" the flange was coated with silicone to provide a seal, at "B" the motor shaft hole was fitted with a seal made from a galvanized metal plate with rubber gasket (i.e. old inner tube). I also ran a thin piece of weather stripping around the inner edge of the access door to provide a seal when the door is closed.

Belt Sander

The guard wraps around the end of the belt and extends the same distance underneath the belt as it does on top. I wanted to modify the guard to act as a dust pick-up. To make that an easier task, I modified a 4"-3" heating/ventilating pipe reducer and riveted it in place.

It could be further improved by installing a strip of nylon brush along the underside edge of the guard, to assist in controlling the flow of air and dust to the pick-up port.



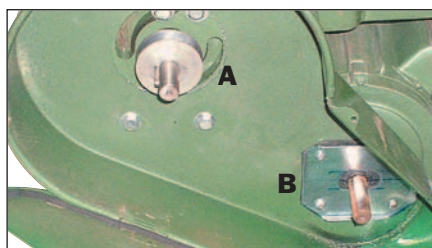
Dust build up below motor pulley



Large oblong opening needs seal



**A. New port installed
B. Old port covered**



**A. Flange coated with silicon.
B. Motor shaft hole fitted with seal**



Original belt guard (at driven end of belt)



Heating/ventilating pipe reducer, modified and non-riveted into place

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■ continued from page 2

Paul:

... seeing the review that you did on the Little Ripper (Feb/Mar.04) gave me all kinds of ideas, and justified all those small pieces of wood that I have been saving over the years.

The saved pieces were too small to put through a wood mill, but were too large to put through a band saw (without all kinds of smoke and noise).

Now, thanks to the Little Ripper, all of the small pieces of Plum, Walnut, Lilac, Apple, etc. will be put to good use in my shop.

Ray, Ottawa

Thanks Guys,

I had much more luck selling my used machinery on your website than I did using the local paper.

Dr. Peter/ON

Linda:

I am glad you could use the photo I sent you for the Shaker Furniture article.

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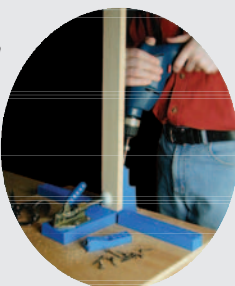


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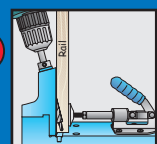
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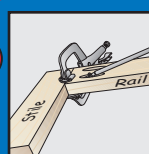


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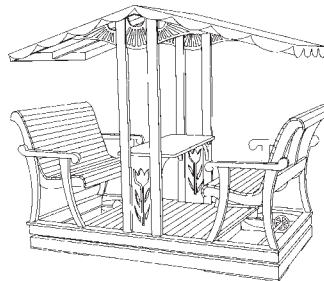
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