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DRILLING ACCESSORIES

CANADIAN
Woodworking & HOME IMPROVEMENT

AUGUST/SEPTEMBER 2016
ISSUE #103

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Patio Table
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5 SIMPLE SUMMER PROJECTS

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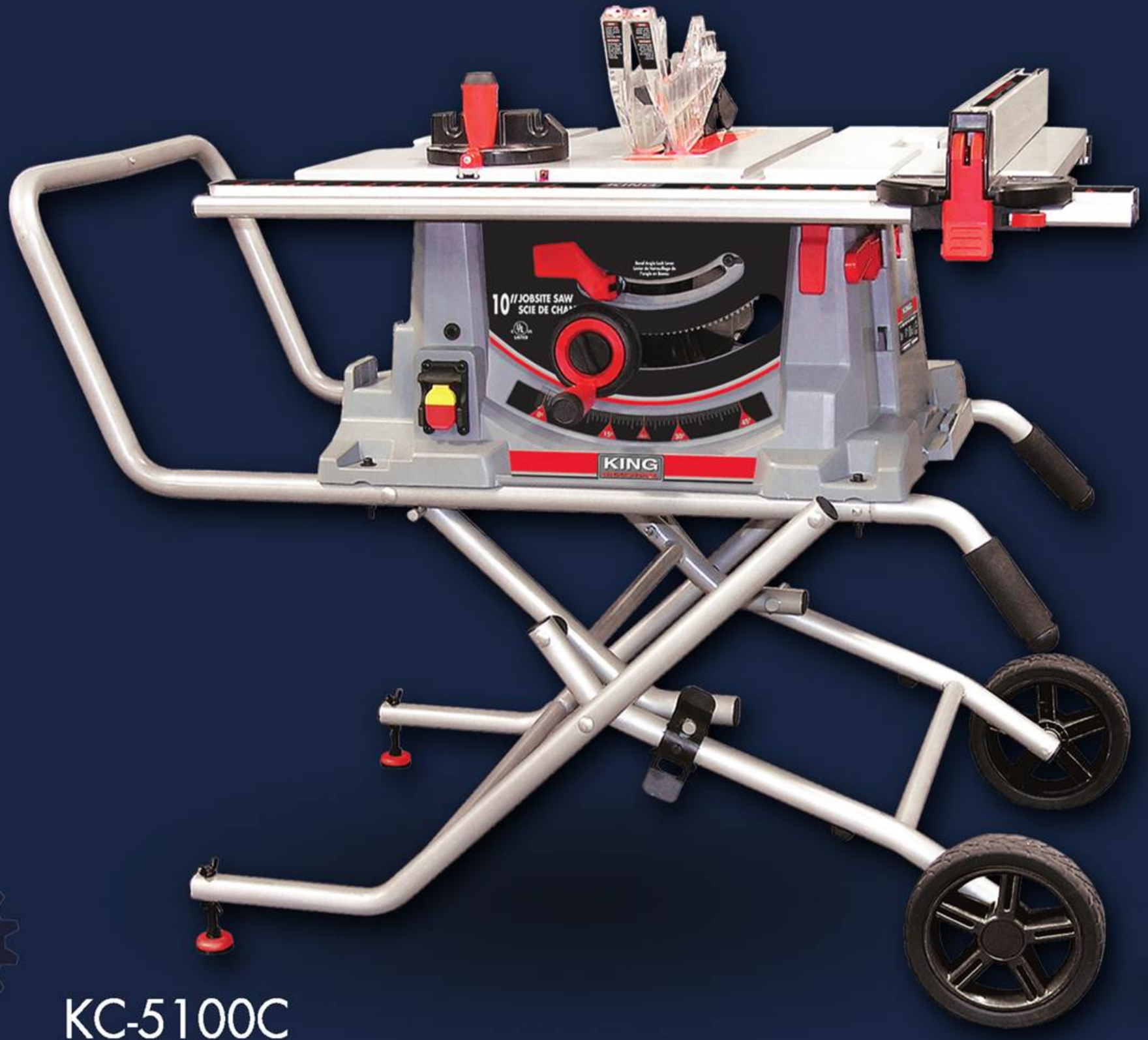

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COVER STORY

Cover photo by Rob Brown

editor's letter

Simple Summer Projects

rbrown@canadianwoodworking.com

Projects are the main focus of woodworking and home improvement. Sometimes woodworkers realize a need for a piece of furniture, then go about designing and building it. Other times, there isn't necessarily a true need for a specific piece of furniture, but we like either a detail from the project or the piece as a whole and go about completing it. Sometimes the project isn't even for us, but is built as a gift for a friend or family member. Whatever the reason for the projects you build, I think you'll find something in this issue that's worth building.

Summer is a great time to build, as the warm weather may allow you to temporarily expand your shop into the great outdoors. As wonderful as it is, summer also poses some challenges when it comes to finding time for woodworking and home improvement projects. Trips, family reunions, camping and gardening are just a few of the things that compete with your valuable shop time. It's really difficult to start into a complex project that you know will take many months, or even years, to build. This is why this issue is dedicated to simpler projects that can be completed in anywhere from a few hours to a few days.

If a few hours is all you have, then check out the article on bottle openers. If you have a bit more time to spare, we have a kids' bench, a patio dining table and an outdoor gate design that can be incorporated into a fence. My personal favourite is a "little library" project that will bring neighbours together to chat and share stories about the books they've enjoyed over the years.

Rounding out this issue are a few of our regular columns. Canadian Quotes shines the spotlight on Karen McBride, our Community column discusses the little library movement in general, that's happening right now, and if you really haven't found anything interesting yet (say it ain't so!) then have a look at our Top 10 column – it showcases 10 drilling accessories that every woodworker and DIY'er should have around their shop at all times.

—Rob Brown

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Issue #103

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letters

Magazine Index?

I was wondering if you publish a yearly index of your magazine on your web site.

Jean F.
Via email

We do not have an index, but we do offer an excellent alternative. Are you a subscriber? I ask because subscribers have full access to our entire digital library, so you can easily search anylall issues and have immediate access to any projects or articles that you are looking for. Just go to 'Magazine Library' on our website's homepage, and search any project or topic that you wish.

— Paul Fulcher, Publisher, Canadian Woodworking & Home Improvement Magazine

shoptested

by Rob Brown

Fuji Mini-Mite 3 Platinum

Spray finishing is one of those things that, until you do it, you won't believe how easy and quick it is. Producing a professional quality finish doesn't take years of practice and today's 100 percent self-contained units are surprisingly easy to set up. Fuji's Mini-Mite 3 has always been a very solid performer, but they've recently improved their turbine in a couple of ways. Fuji channeled the heat created from the turbine through a heat dissipation box. This box has a series of 60 holes that evenly, gently and quietly remove heat. This has the additional benefit of not blowing air around the shop and stirring up dust. The newly designed filters also play a role in reducing noise. I found the results to be very impressive – a three-stage turbine that's quiet, keeps dust down and produces a beautiful, even finish.

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Robert L.
St. Andrews West, ON
has won a a 12V Laser from DEWALT.

Alfred M.
Glaslyn, SK
has won a $250 gift card from **Lee Valley**.

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- Motor: 1/2 HP, 120V, single-phase, 5A
- Speed: 1725 RPM
- Spindle taper: B16 • Spindle travel: 4 1/4"
- Chuck size: 1/2" • Number of speeds: 1
- Max. stock width: 13 3/8", Thickness: 4"
- Max. chisel travel: 4 7/8"
- Max. mortising depth: 3"
- Max. distance column-to-chisel: 5 1/8"
- Chisel size range: 1/4"–1/2"
- Table size: 13 1/2" x 6" • Overall height: 29"
- Approx. shipping weight: 60 lbs.

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- Collar size: 2.160"
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- Swing: 33 1/2" maximum
- Table swing: 360°
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- Tool rest width: 5 7/8"
- Spindle size: 1" x 8 TPI RH
- Spindle and tailstock taper: MT#2
- Overall dimensions: 38 3/4" long x 12" deep x 17" high
- Approx. shipping weight: 89 lbs.

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12 1/2" LEAN & MEAN PLANER

- Motor: 2 HP, 110V, single-phase, 15A
- Max. cutting width: 12 1/2" • Max. cutting height: 6"
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- Feed rate: 32 FPM
- Number of knives: 2 double-edged HSS
- Knife size: 12 1/2" x 23/32" x 1/8"
- Cutterhead speed: 10,000 RPM
- Number of cuts per inch: 52
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- Table size: 6 5/8" x 47 3/8"
- Number of knives: 3
- Cutterhead speed: 5000 RPM
- Cutterhead diameter: 2 1/2"
- Maximum depth of cut: 1/8"
- Cuts per minute: 15,000
- Fence size: 29 1/8"L x 4"H
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14" ANNIVERSARY BANDSAW

- Motor: 1 HP, 110V/220V, single-phase, TEFC, 11A/5.5A
- Precision-ground cast iron table size: 14" sq.
- Table tilt: 45° R, 10° L
- Cutting capacity/throat: 13 1/2"
- Max. cutting height: 6"
- Blade size: 92 1/2"– 93 1/2"L (1/8"–3/4" W)
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- Precision-ground cast iron table with wings measures: 40 1/2"W x 27"D
- Table height: 35 3/8"
- Footprint: 21"L x 19 1/2"W
- Arbor: 5/8" • Arbor speed: 3450 RPM
- Capacity: 3 1/4" @ 90°, 2 1/4" @ 45°
- Rip capacity: 30" right, 15" left
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- Cutterhead knives: 4 HSS, 8 1/8" x 13/16" x 1/8"
- Cutterhead speed: 4800 RPM
- Cutterhead diameter: 3"
- Max. depth of cut: 1/8"
- Max. rabbeting depth: 1/2"
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Woods to Know

Lignum Vitae

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Best Build

Check out the "Best Build" sub-forum in our **Woodworking** section of our forum for our latest "Best Build" thread – a kitchen island. This month's winner, Tom McCrea, receives a **Veritas dual marking gauge** from **Lee Valley.**

To find out more about this project, go to: **forum.canadianwoodworking.com** or simply go to **CanadianWoodworking.com** and click **FORUM**.

Free Plan

Lily Pad Box

This summer-themed project is simple and fun – just what you need for this time of year.

View this plan and more at:
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Canadian Quotes: **Karen McBride**

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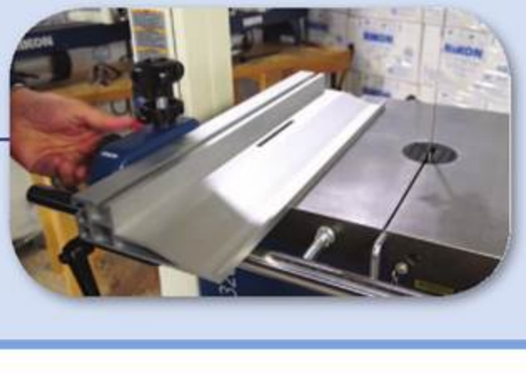

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Top 10 Drilling Accessories

Creating holes is simple … as long as you have the right tools. With so many types of boring implements on the market, which ones should you have in your shop? This list takes care of almost every single boring operation I need to do.

BY ROB BROWN

1 Twist Bit Set – A full set of bits, from 1/16" up to 1/2" diameter, aren't truly great for much, but they are pretty good for so many tasks. I added a couple of 1/32" bits for use in marquetry, and have had to buy a few more 1/16" and 1/8" bits as a few have broken over the years.

2 Brad Point Bit Set – Though it nearly broke the bank, I purchased a full set of Brad point bits. The pain of the sale has worn off, and now only enjoyment in using them remains. Because of their lipped tips they cut clean holes. If you can only afford a few, go for the standard sizes – 1/8", 3/16", 1/4", 5/16" and 3/8" diameter. Whether drilling dowel holes or boring holes for hardware, these bits will do a nice job. It's a good idea to have a few metric Brad point bits for dealing with specialty hardware. I use my 5 mm and 10 mm bits often.

3 Spade Bit Set – A set of spade bits from about 1/2" to 1-1/2" diameter comes in really handy for many shop and home improvement jobs. High-end spade bits cut cleaner, but aren't necessarily required.

4 Hole Saw Set – For installing door handles, or boring large holes, a hole saw is fairly quick and easy. Small sets are fairly common, and you can purchase others as needed.

5 Forstner bits – Forstner bits are tough to beat when drilling flat-bottomed holes. Again, a medium-sized set is your most cost effective way to purchase these bits, but you may be able to get by with a few of the main sizes. I seldom need anything other than 1/16" increments, and generally use bits in 1/8" increments, starting at 1/4".

6 Extra-Long Twist Bits – There are times when a really deep hole is needed. I almost always need these types of holes to be small – in the range of 1/8" or 3/16" diameter. I don't use them often, but when I do there's nothing else that will do the job. Bits around 12" long are fairly easy to find in most hardware and big-box stores.

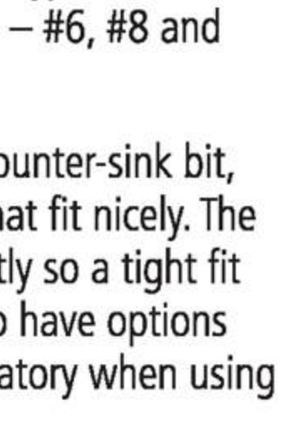
7 Adjustable Bit – If you've ever used store-bought dowels, you've realized they are never the exact size they say they are. In this case, and many others, an adjustable bit will allow you to fine-tune the diameter of a hole to end up with exactly what you want.

8 Counter-sink Bit – If there was only one drill bit I could have, it would be a tapered counter-sink bit. If you need to install screws into furniture, jigs, cabinetry or many other things, this type of bit will make life easy. As an added bonus, if you set the collar to bore a deeper hole, you can later plug the hole to cover the screw head. Cheap ones are okay for occasional use, but the best counter-sink bits work wonderfully. These types of bits are available according to the screw size you're using – #6, #8 and #10 are the most common.

9 Plug-Cutters – Now that you have a counter-sink bit, you'll need a special cutter to make plugs that fit nicely. The best plug-cutters taper the sides of the plug slightly so a tight fit is ensured. I mainly use 3/8" plugs, but it's nice to have options for 1/4" and 1/2" plugs too. A drill press is mandatory when using plug-cutters.

10 Masonry Bits – I'll admit that I don't enjoy using them, but when needed, they work wonders. When doing some home improvement projects there are times when fixing something to concrete is necessary and all other bits are useless. You can use a regular drill, but a hammer drill is far quicker and easier, especially if boring large or deep holes.

Brace and bit? Gimlet? What boring or drilling tools would you add to this list? Share your thoughts at the end of this article on our website.



ROB BROWN
rbrown@canadianwoodworking.com

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Photo by Rob Brown

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RAM COMMERCIAL

Karen McBride

… on painting furniture, her lack of love for hand tools and her love for curves.

BY ROB BROWN

Nonie's Bed – The Karelian birch and walnut headboard is constructed from three independent 4' × 8' curved panels that serve to wrap the Karelian birch veneered headboard around the bed's occupants. The headboard is canted back to make sitting in the bed as comfortable as sleeping.

Woodkilton Studio,
been in business 10 years,
www.woodkiltonstudio.com
Location & size of studio –
Dunrobin, Ontario, 1000 sq. ft.
Education – BSc Eng., University of Guelph

How long have you been building furniture?
20-plus years

What sort of furniture do you specialize in?
I am compelled to make furniture with sculptural forms and curves.

Tell us a couple of interesting things about your personal life
I restored a 1972 VW bus in 1986 when I was apprenticing as a mechanic. It's my main vehicle in the summer months. I'm a vintage woodworking machinery junkie.

In order, what are the three most important items in your shop apron?
Pencil, lumber crayon, eraser.

Do you prefer hand tools or power tools?
To quote Michael Fortune, "If it don't plug in, it ain't worth …" but I do own some wonderful hand tools that I would never be without.

Solid wood or veneer?
Veneer – the options are endless

Figured wood or straight-grain?
Figured wood.

Inherited Vintage Stanley Sweetheart or fresh-out-of-the-box Veritas?
Sargent VBM.

Flowing curves or geometric shapes?
Curves, curves, curves and more curves!

Favourite wood?
Love them all.

Least favourite wood?
Love them all, even MDF and particle board. They all have their uses.

Photos by Chris Solar

quotes

My studio is a 200-year-old log house that I dismantled, moved and reassembled on our farm. The large machinery sits downstairs on the concrete pad that serves as the radiant floor heat source. My bench is upstairs as well as two small bandsaws, a scroll saw and a morticer. I do most of my finishing upstairs in a fold-away spray booth. It is a nicer building than our house – as it should be.

I live on a farm so there is always work to do first thing in the morning so I rarely get to the shop before 10 a.m. I like to work until 6:30 or 7 p.m. and then have dinner. I rarely work at night.

I was drawn to woodworking through my love of Canadian antiques, especially painted furniture. I suspect that is why I am not afraid to paint or stain wood.

My design process is sketch, mock-up/model, full-scale drawing, prototype, perfect, build.

I think every design falls short of my expectations. When you first imagine a piece the concept is so vague that it's perfect. As you gradually take a concept and make it a reality you are forced to make compromises.

The urge to move away from the "current work" drives us to create new furniture forms – that's a good thing. Nakashima and Krenov have covered the live-edge slab and cabinet on a stand so I think it's time to move on.

Name an overused technique and I will design a unique piece of furniture, using that technique, that will make the technique look new and exciting.

Schools need better shop programs. Every school should have a shop and teach woodworking. Woodworking should also be tied to school art classes.

People misunderstand that building custom furniture is not the romantic profession it is made out to be. I don't spend hours making nice curly shavings with my hand tools. I spend a good part of my day trying to work at peak efficiency to make a living.

I am drawn to sculptural furniture makers such as Marc Fish, Jere Osgoode, Joseph Walsh and Matthais Pliessing. I love the fluid lines and sculptural quality of their work. It is a joy to wonder, "How the hell did they do that?"

I will go anywhere to hear Michael Hosaluk speak about his work. He is a very creative man who speaks from the depth of his soul.

The nicest piece of furniture I've ever seen would be a toss-up between Marc Fish's Nautilus table and Jere Osgood's Dome Desk.

Michael Fortune has been my biggest influence. He taught me how to design furniture and how to run an efficient business. A lot of the techniques I use to build furniture are a result of what I learned from Michael. No other teacher packs as much information into a course as Michael does.

Stern Chair – This chair is a reproduction of a classic Danish chair. It was a commission for a client who needed two chairs to add to their original set of six rosewood chairs.

I am most proud of the Patience cabinet I created. It was inspired by the natural shape of the maple burl veneer pieces that grace the cabinet doors. It was a challenge to create bow front doors that pivot open around circular drawer fronts to reveal the interior of the piece. There are no right angles and few flat surfaces on the wall hung cabinet – I revel in that.

For me, the quintessential Canadian piece of furniture has to be the majestic Quebecois armoire. When I was a kid, my parents collected and refinished antiques for our house. The milk paint finishes and patinas on the old Quebec furniture are fabulous.

ROB BROWN
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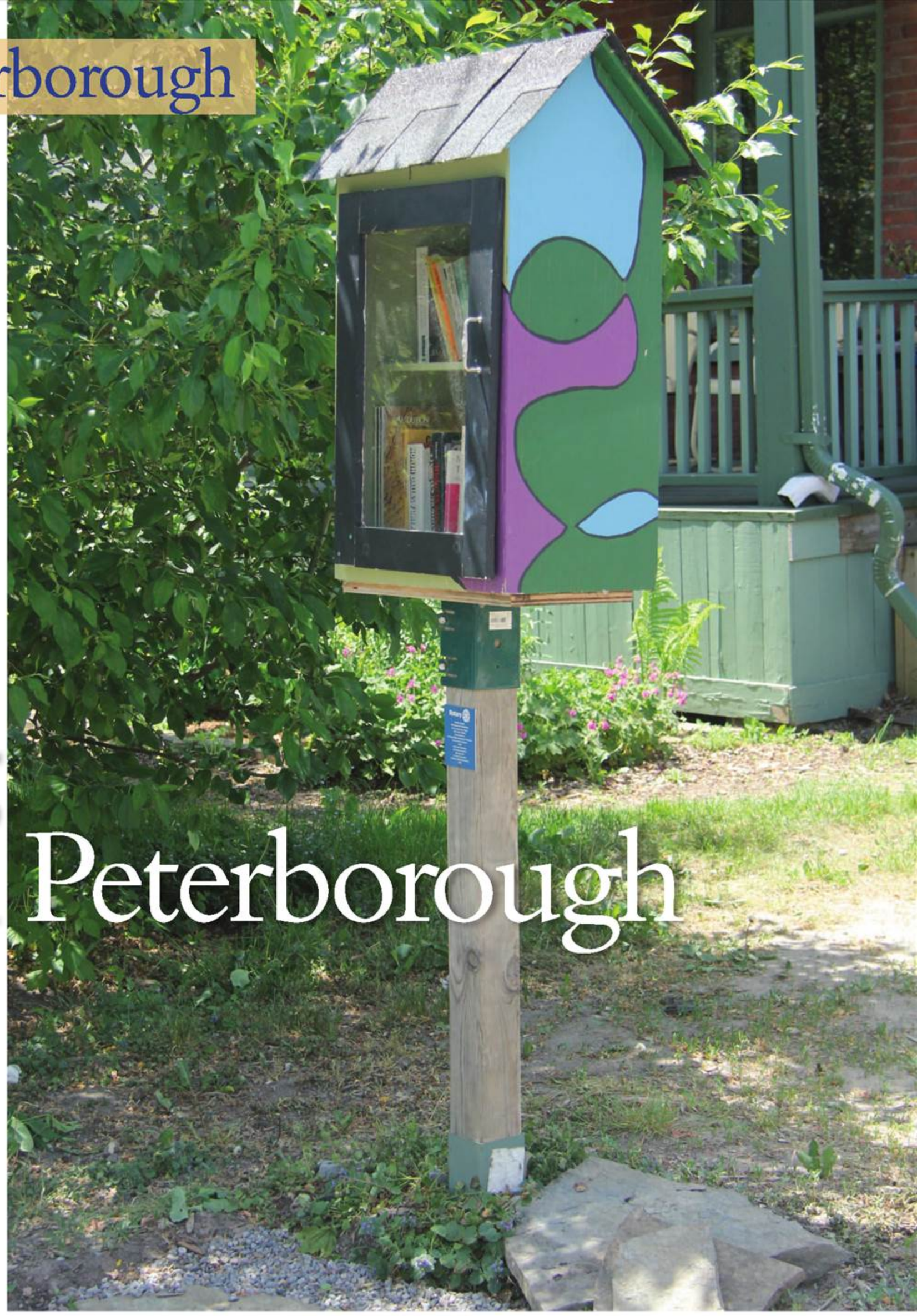
Little Libraries Opening Doors in Peterborough



The Rotary Club of Peterborough-Kawartha has recently opened 25 new little libraries across Peterborough to celebrate their 25th anniversary. Learn about what it took to start a project like this, and how you can do something similar.

BY ROB BROWN

The Rotary Club of Peterborough-Kawartha recently completed their goal of building and installing 25 little libraries in the Peterborough area. The club has always focused on literacy in the community, and this project is no different. Their main goal was to strengthen community ties with the help of books, and the collection of artfully decorated little libraries has done just that.

As with all little libraries, these small, simple structures resemble one-room schoolhouses from times past; they're just large enough to house a few dozen books or magazines, but are small enough to be easily built. The libraries were built by Fleming College students in the Carpentry Techniques Program, and were painted by local high school students. When you factor in the support of local businesses – Nefab and Merrett Home Hardware both pitched in with this project – you realize how it really was a team effort.

"I've seen these little gems popping up all over the place," said Peterborough

Photos by Rob Brown

A Big Thanks – When The Rotary Club of Peterborough-Kawartha completed their goal of 25 little libraries they posted small signs on each library post thanking all the groups who participated.

resident Alison McElwain, as she reached for a novel from one of the 25 little libraries near her home. "Even in the cold weather my kids want to walk down the street to see what they'll find," she continued. "There's always something new, and we often meet other kids and families while we're out."

Canada and abroad

All of these 25 libraries are registered with *Little Free Library*, an American organization that has popularized building small

Different Design, Same Great Purpose – Though not part of The Rotary Club's 25 little libraries, this Peterborough-based little library was registered with Little Free Library, and now has a sign, with registration number, above the door.

libraries and freely sharing books with anyone who walks by. In order to use the name "Little Free Library" your little library must be registered with the organization. The cost to do so is around US $50, depending on the type of sign you would like. By registering you receive a charter sign and number, as well as some support literature. If you don't plan to use the name, or need a sign, it's not necessary to register your library with this organization. There are over 36,000 registered Free Little Libraries across the world. You can learn more at www.littlefreelibrary.org.

Construction tips

If you plan on building your own little library there are a few things you should keep in mind, as you don't want your gorgeous community library to turn into an eyesore a few years down the road. First, build it to last. These structures are going to be outdoors, and in Canada this means they'll be up against a little bit of everything. Properly select wood that will stand up to the elements and use strong, lasting construction methods. Second, ensure the finish on your library is always in good condition. Cracked paint or caulking doesn't keep the weather out, and allows the library to deteriorate quickly. To protect against getting the books wet and ruining them, do your best to design your library to shed water. Also, a clear, easily read sign is a must. People aren't expecting a library, so a sign will quickly let them know what they happened to stumble upon. Another thing to consider is your hardware; use exterior hardware that will not only function, but will look good over the years. Lastly, either put the mounting post inside a deep hole or use a strong, stable base to support the library.

As an extra bonus, feel free to design a library that will look great. Not all little libraries need to look exactly the same. A bit of design flair and attention to detail will help your library stand out and look great.

Something else you might want to do when building a library for your front lawn is to canvas your neighbours and ask them if they want to help out. When people have time and energy invested in a project they tend to do more to ensure it succeeds, and there's nothing quite like having an extra few sets of hands, along with some great ideas, to help out with getting this community project off the ground. After all, that's exactly what the Rotary Club of Peterborough-Kawartha did, and look at the success they had.

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INFO: DIFFICULTY – **2/5,** LENGTH/TIME – **3/5,** COST – **2/5**

Add a Woven Gate to your Yard

A gate is a bit like a necktie – it gives you the opportunity to add some pizzazz to an otherwise simple look. This is a unique gate that will draw some attention, even though it's pretty easy to build.

Photos by Chris Palmer Illustration by Len Churchill

The Same Length – So that mating parts are the same length, line them up side by side and cut them at the same time.

Check for Square – In order to quickly check if the frame is square or not, measure both opposite corner-to-corner distances. If the two measurements are within about 1/8" there's no need to make any adjustments.

Seal the Wood – Whenever you make a cut in treated wood be sure to seal it with a preservative. This will greatly extend the life of your gate.

BY CHRIS PALMER

I'm not a fan of very plain-style gates. I prefer something more creative, something that's never been seen before, or, at the very least, a unique twist on an old standard. After living with a simple and boring open-concept gate for the past few years, I thought it would be a nice change to give the entrance to my backyard some style, and to show a little bit of my creative side.

This woven gate was influenced by a memory of an old school fence I saw as a child. I recall that it wasn't very well executed, but it was unique nevertheless. I haven't seen anything like it to this day.

When building my woven gate, I found the friction and tension so interesting. I didn't have to use one screw to hold the gate boards in place, except for on the initial frame and outer face frames.

In my yard I have a 67" high × 42" wide gate. I used MicroPro Sienna material for all the wood parts. Based on these dimensions, I used the following material:

8 1 × 6 × 8' fence boards
4 1 × 6 × 6' fence boards
2 2 × 4 × 10' lumber
1 2 × 4 × 12' lumber
1 box of 100 qty. 2.5" brown deck screws
1 box of 100 qty. 3" brown deck screws
2 6" T-hinges
1 gate latch kit
1 container of MicroPro Sienna Cut n' Seal
4 6" flat L-bracket or corner braces
1 can of Krylon "Brown Boots" Spray Paint + Primer in One
1 can of spray paint for the hinges

Start with the frame

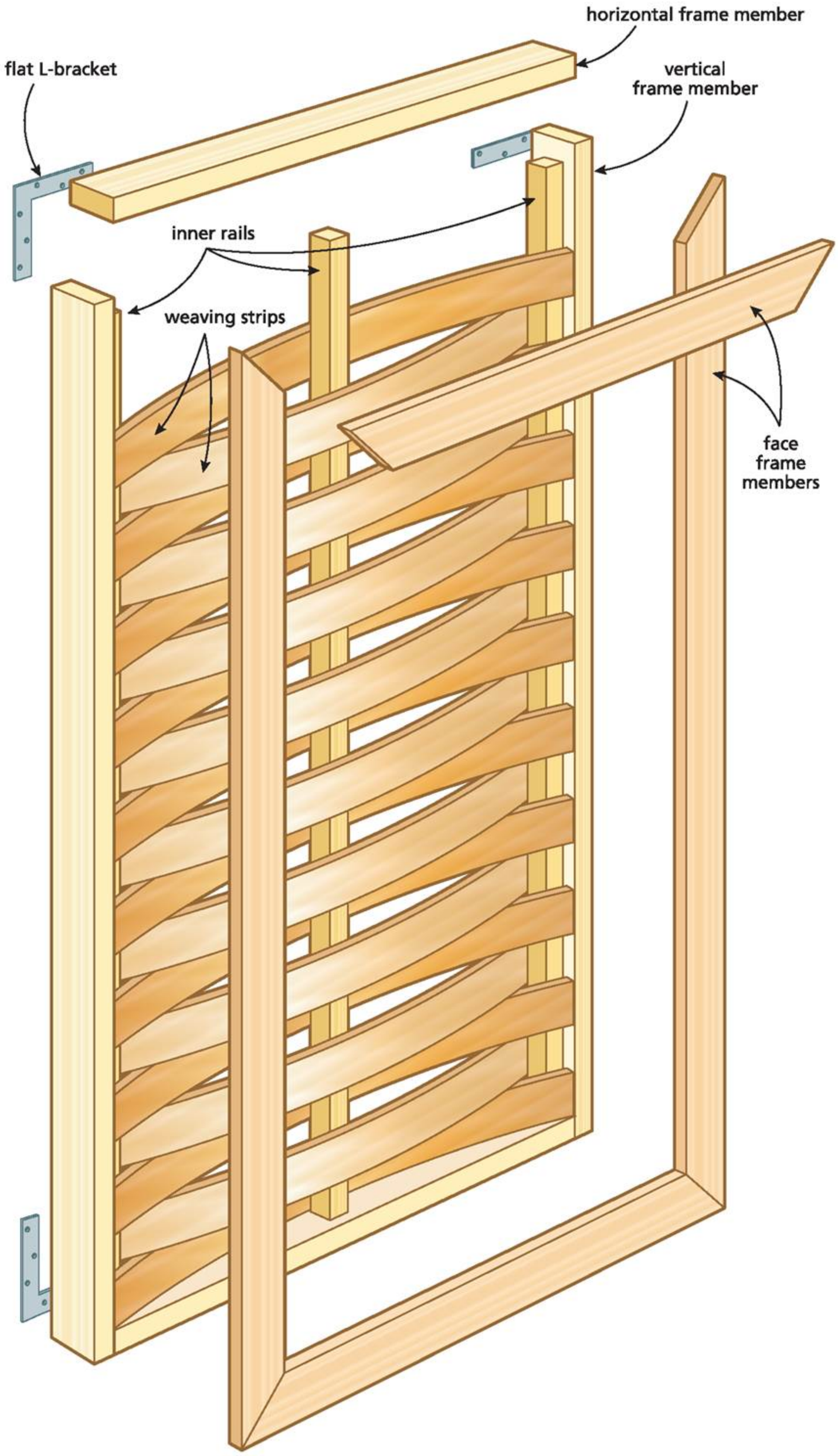
To get started, I cut my 2 × 4 frame using the 10' pieces to make up one long frame piece, and the remainder to create the horizontal cross-member. The key to having the exact same measurements on all pieces is to cut both boards at the same time.

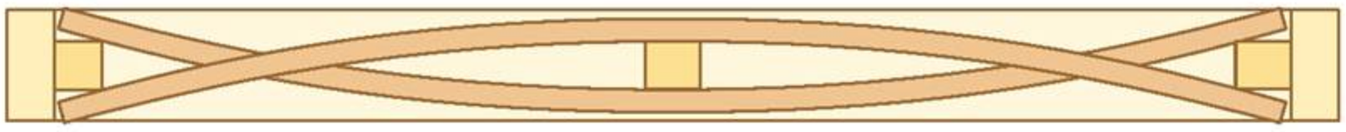
Keep the factory uncut end facing up when you assemble the frame. Even though you apply a wood sealer to the cut ends, I find that it's good practice to have the most exposed ends being the ends you never cut.

Next tip, for those who don't know how to make sure something is square without using a square, is to take your tape measure and measure the diagonal outside measurement. If you have the same number from corner to corner in both diagonal directions, you have a square frame. If you are off by more than 1/8" you will need to make some adjustments to your frame's positioning. With the outer frame laid flat, I used 3" deck screws to hold the frame together.

Add Inner Rails – Once the 2 × 4 material has been ripped in half and cut to length, clamp, predrill and screw the pieces centered on the inner face of the vertical frame members.

Center Divider – Rip another 2 × 4 in half then attach it to the frame, centered on the upper and lower rails.





TOP VIEW

Add inner rails

Next, I cut the 2 × 4 × 12' to the same length as the inside vertical dimensions of the frame, then ripped them in half to make the inner rails that allow the wood to be woven through. Make sure you use a wood preservative on the whole ripped edge. Even though the wood is not fully exposed, it's good practice.

Centre the 2 × 4 strips on the inner vertical frame portion and clamp them in place to avoid the piece from moving off-center. Pre-drill five holes equally spaced, which will prevent any splitting. Next use the 2-1/2" deck screws to secure it in place. After the sides are complete add one more piece in the middle of the frame. Use the 3" deck screw to secure this in place.

Weaving the strips

When choosing the boards for weaving, try to get the freshest boards in the pile. Look for the wettest boards as these make for easier bending. You'll also want to avoid knots and splits as much as possible.

Before you begin to weave the boards, cut all the 8' lengths of fence board to the inside dimension of the gate's width. Don't worry, the ends will be slightly short, but not by much. I bet they will be a lot closer than you think and you will also be adding a face frame afterwards to conceal any exposed edges.

Seal all the ripped edges and cut ends. When you begin to weave the boards, make sure to put the ripped edge facing down to keep that factory-rounded edge facing up.

To weave a board you simply start on one side of the inside rail and wrap the board around the center rail. You will need to start with the board pointing diagonally up to get it onto the opposite side without catching it. Then simply push the board down, gently tapping it into place. I used a rubber mallet for the stiffer boards.

Cut extra boards. Since the fence boards are being woven, the bending may cause a couple of the pieces to crack, especially if there are larger knots in the pieces. If any do crack, be sure to replace them, as they'll compromise the look and integrity of your gate.

Start Weaving – Start weaving the thin boards into the frame at the bottom of the gate. Keep the factory edge facing up, and the freshly ripped and sealed edge facing down.

Getting Tricky – With most of the boards weaved into place, you'll find it hard to continue. Attach a temporary strip to the face of the frame, remove the top piece of the frame and add the remaining thin boards. When done, reattach the frame top and remove the temporary strip.

As you move up towards the top you'll notice there will be a point where you can no longer weave the boards without being stuck on the frame. At this point, you will need to take a scrap piece of 2 × 4 and fasten it to the frame,

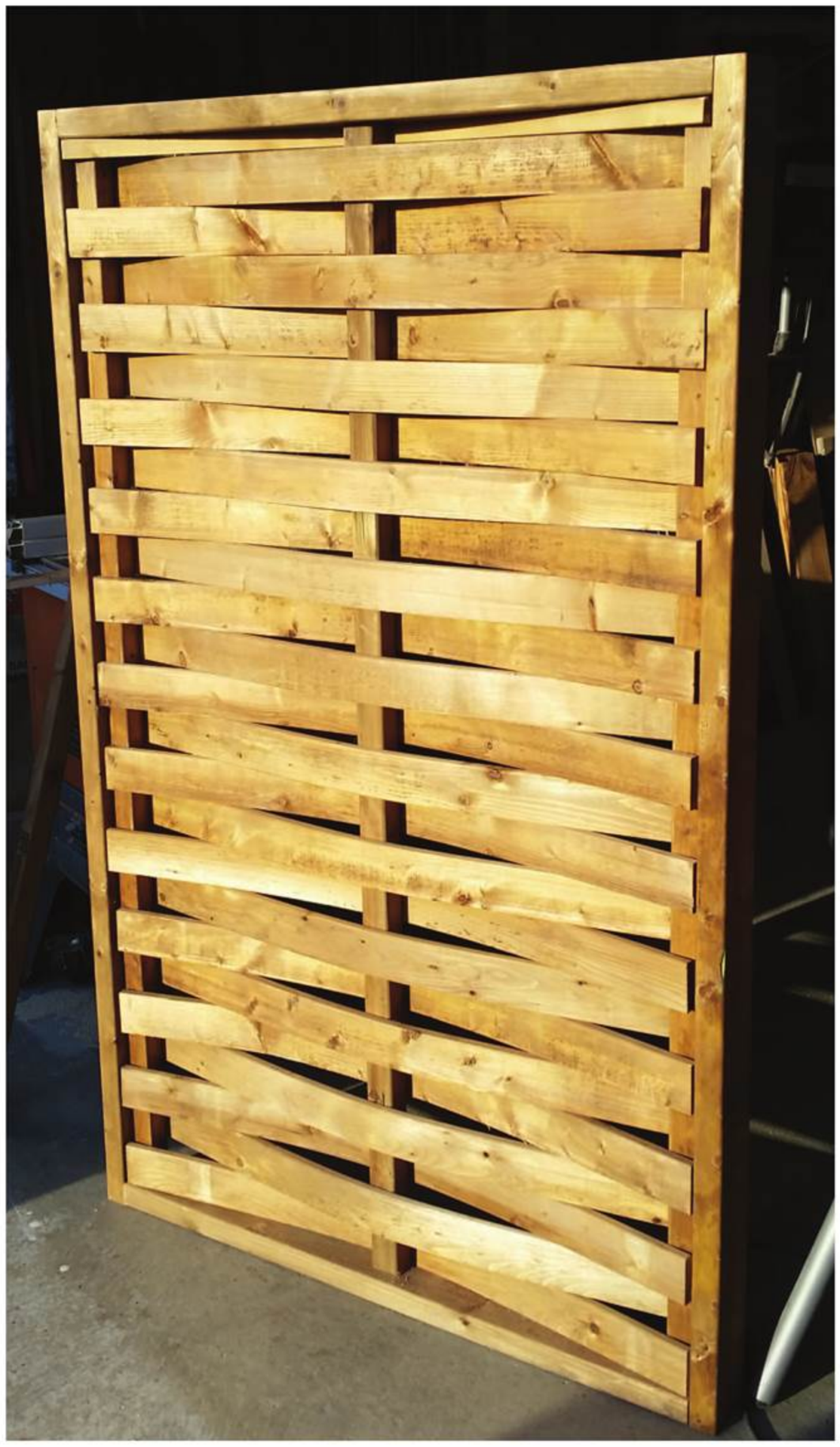
securing the gate's width in place. This acts as a temporary brace. Next, remove the top horizontal 2 × 4 and begin to weave the boards from the top opening. Once complete, you can reinstall the horizontal piece and remove the temporary brace.

Outer frame

I added a small scrap of wood on the underside of the mitre joints to prevent them from becoming misaligned in the future. I pinned the scrap in place before adding the face frame on top of it.

For the face frame, simply take two pieces of your 6' lengths of fence board and mitre them to the height of the gate. Now do the same for the horizontal widths. I also ripped these board widths to 3-1/2" as the full board width was a little overwhelming to the eye for the size of gate I was making. Again, use Cut n' Seal on all ripped edges and cut ends.

Dry fit your corners before securing them, to make sure the mitres line up perfectly. Once you have them set, clamp them in place and pre-drill all your holes to prevent any splitting. Use 1-1/2" deck screws to secure the face frame in place.



Weaving Complete – The project is now ready for the mitred face frame.

Face Frame – Mitre the ends of the face frame so they meet right at the corners of the main frame.

Add Brackets – Adding brackets to the back of the gate helps strengthen the gate for years to come. You don't have to paint them, but it is a nice touch.

Hardware

The last step is to paint four 6" flat L-Brackets with an outdoor spray paint that matches your material. Once dry, screw one bracket per corner on the back face of the gate. This will help keep your gate from sagging over time.

Congratulations, your gate is complete! Now you can add your T-hinges and mount the gate on your fence post. Next time you host a backyard party you will receive many compliments from guests for the creative flair you've added to your yard!

CHRIS PALMER
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Chris is a designer carpenter, Global Morning Show handyman expert and father. He is a graduate of the Humber College Industrial Design program.

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INFO: DIFFICULTY – **2/5,** LENGTH/TIME – **2/5,** COST – **2/5**

Colourful Kid's Bench

This simple yet colourful kid's bench can be completed in a weekend, but will stand up to years of use.

BY DAVID BEDROSIAN

I chose to build the bench from Baltic birch plywood, since it is free of voids and finishes well, but there are many other options. Standard plywood or solid wood would work fine too. The bench consists of a seat and back, which are held in place by two shaped sides. The seat and back are both edged with maple for added rigidity and to provide a smooth surface. I finished the bench with bright yellow milk paint followed by a clear topcoat, but it could be stained or even left unfinished.

You'll notice a small gap between the seat and the back. This makes the bench easier to clean and I also liked the look slightly better. It makes the bench a little bit weaker, though I've checked it closely with an adult sitting on the bench and there is very little deflection. If you want to eliminate this gap, and make the bench even stronger, it's easy to do. Attach a solid wood cleat along the lower, back face of the bench's back, increase the width of the seat by 3/4", and screw upwards through the seat, into the back cleat. You will also have to make the back slightly wider.

Side template

I recommend making a template for the sides using 1/4" Masonite or MDF. It doesn't take long and it will allow you to make more benches in the future. It also ensures your two sides are the exact same shape and size. Transfer the scale drawing to the template material, knowing that the exact shape of the curves is not critical. Using a bandsaw or jigsaw, cut the template as close to the line as possible. Follow up by sanding all of the curves with 120-grit paper. The template material sands easily so it should not take long to smooth the curves. Run your fingers along the template to find any imperfections and remove them now so they do not get transferred to the plywood sides.

Make the sides

With the template complete, use it to mark out the two sides on the plywood and cut them slightly oversize using a jigsaw or a bandsaw. Each side is then routed to the final size using a router and a bearing-guided bit. To do this, I clamped the template and the side at one corner of my outfeed table so that I could guide the router with a template bit around the template. Sand the

Template for the sides – To create the template, start with a 1/4" thick piece that's cut to the finished width. Once the shape is drawn out, and cut to size, fair the curves with a sanding block or other hand tools.

Photos by David Bedrosian Illustration by Len Churchill

routed surface smooth before rounding over the edges with a 1/4" roundover bit. The feet and the inside back edge are not rounded over but should be sanded with a slight chamfer to prevent chipping.

Two types of cleats

The seat and back are fastened to the sides using wooden cleats that are glued and screwed in place. I made the seat cleats from 1-1/4" thick maple and tapered the ends to about 3/4" so the cleats are hidden by the edging on the seat. The cleat length should be just less than the width of the seat before the edging is applied. Counter-bore and pre-drill the four screw holes in each cleat, ensuring the screws will not go all the way through the plywood.

The back cleats are made from 3/4" thick maple and do not need tapered ends. Cut these cleats to be just less than the width of the back without the edging and then counter-bore and pre-drill the four screw holes in both pieces. The exact location of the cleats is shown on the seat drawing and should be followed carefully so the seat does not interfere with the back.

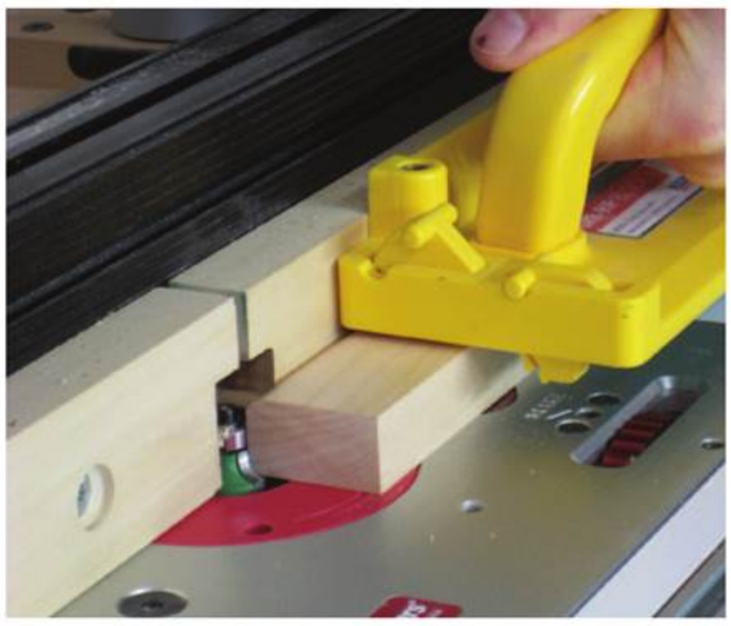
Seat and back

Rip the plywood for the seat and back to finished width, but leave them an inch or two longer than needed. They will be cut to length once the front and back edging has been applied. This edging is machined from 3/4" thick maple and is also cut an inch or two longer than needed. To protect little fingers from sharp corners, a 1/4" roundover is applied to the edging. The two bottom edges can be rounded over before the edging is applied; the top edge cannot be rounded over until the edging has been attached and trimmed flush with the plywood.

The long grain of the plywood veneers will provide enough glue surface for a secure bond to the edging, but I like to use some form of mechanical fastener to help with the alignment of the pieces while I apply clamping pressure. Biscuits, dominos, dowels or splines could be used, but for simplicity, I used my pin nailer and stayed clear of the top edge so I would not

Flush-trim the sides – Clamp the template and workpiece to a stationary object then rout each side to final size with a bearing-guided router bit riding against the template.

Hardwood cleats – Counter-bore and pre-drill the screw holes in the cleats before they are glued and screwed to the sides.



Materials List

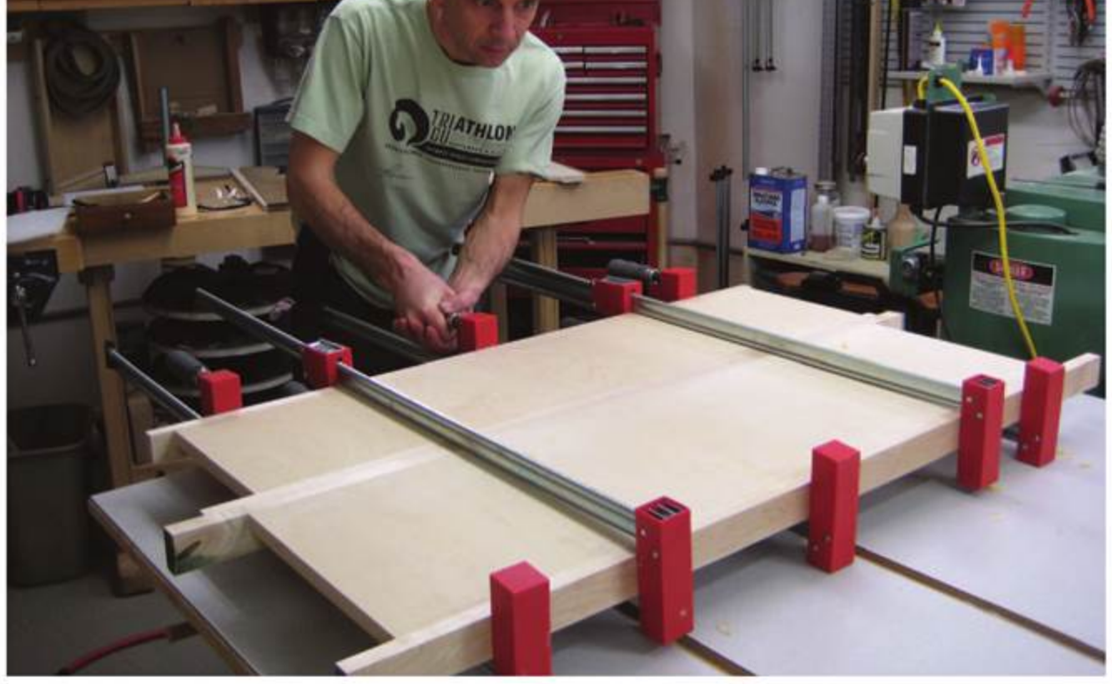
Part	Ltr	Qty	T	W	L	Material
Sides	A	2	3/4	14	25-1/2	Baltic Birch plywood
Seat	B	1	3/4	11-1/2	38-1/2	Baltic Birch plywood
Back	C	1	3/4	9-1/2	38-1/2	Baltic Birch plywood
Seat edging	D	2	3/4	1-3/4	38-1/2	Maple
Back edging	E	2	3/4	1-3/8	38-1/2	Maple
Seat cleats	F	2	1-1/4	1-3/4	11-3/8	Maple
Back cleats	G	2	3/4	1-1/2	9-3/8	Maple

Round over the maple edging – Rout a 1/4" roundover on two edges of each piece of edging before it is fastened to the plywood.

Glue the edging – Bedrosian uses a few pin nails to keep the maple edging from shifting when clamps are applied.

hit the pins when rounding over that edge. Since the edging and the plywood are both oversize in length, you don't have to worry about the end alignment.

To apply even clamping pressure along the length of the edge, I recommend gluing one edge at a time and clamping the back and the seat back-to-back to act as a long clamping caul. Apply clamps above and below the boards to keep the maple

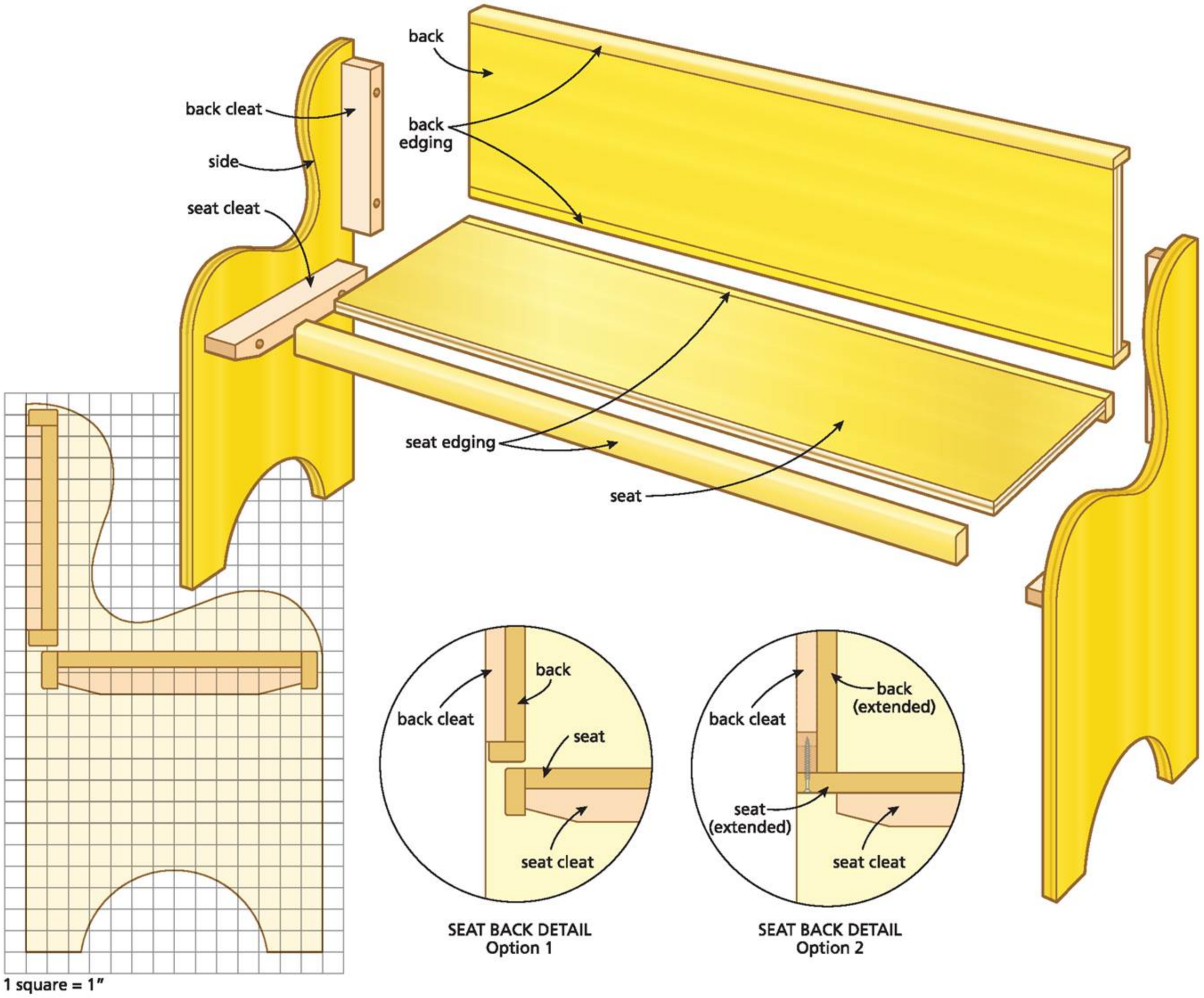


Back-to-back clamping – The back acts as a clamping caul when gluing the edging to the seat. Just be sure the long edges of the plywood are straight or you will not have even clamping pressure.

flat against the edge of the plywood. I aim for an even bead of glue squeeze-out along the entire length of the edging to know that I have sufficient glue and pressure. Once the four edge pieces are glued, cut the back and the side to final length and plane or sand the edging flush with the top of the plywood before rounding over the edge.

Finishing

I'm set up for spraying, but the finish on this bench could be applied with a brush, roller or pad. Everyone has their favourite finish, and as long as it's durable you can use it on this project. I chose to finish this bench with easily applied bright



SEAT BACK DETAIL
Option 1

SEAT BACK DETAIL
Option 2

Reader Survey Draw Winner

Ken Brightling
London, ON

Prize:
Festool 5"
Brushless Random
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Cut to length – Use a cross-cut sled to cut the back and the seat to the same length. It's imperative these two parts are identical in length.

yellow milk paint. Milk paint is very easy to work with, and it comes in some great colours. It can be brushed on, but I sprayed two coats onto this project. The polyurethane on top of the milk paint offers a lot of protection, and is also relatively easy to apply.

When possible, I prefer to finish my projects before assembly since it allows me to keep the surfaces horizontal, which helps to prevent runs. It also allows me to reduce overspray. If you're brushing the finish on, applying a finish before assembly will allow you to get into corners far easier. For these reasons, I

Final Assembly – Use screws and glue to secure the seat and back to the cleats. If you think you might need to disassemble the bench for storage or moving you can skip the glue, but that creates a weaker bench.

Touch up any defects – Automotive spot putty is used to fill chips and dents in the plywood before applying a finish. A painted finish will highlight any cracks, dents or lack of smoothness in the finished surface.

finished the sides, back and seat before assembly.

The first step in a painted surface is surface preparation. The uniformity of the paint means any defects in the wood will stand out more than if a natural finish is used. Fortunately, these dents, scratches, chips and pin-nail holes are easily filled with glazing or spot putty, which is available anywhere that sells automotive supplies. Thin scratches and chips can be filled with a single coat, but larger chips may need several coats. Pay particular attention to the plywood edging on the sides and fill any imperfections. The putty dries quickly so you should be able to sand away any excess in less than an hour.

Mask off the glue surfaces of the cleats and apply the first coat of primer to all pieces. I used Zinsser 1-2-3 primer, but there are many different types that will work well. The primed surfaces will be quite rough because of the raised grain, so sand them smooth with 180-grit paper. You'll likely discover more chips and other defects in the wood at this stage. They should be filled with the spot putty if you want a top-quality finish. Apply a second coat of primer, followed by two coats of the milk paint and two or three coats of polyurethane, sanding lightly between each coat to remove any dust nibs.

The final step is to secure the seat and the back to the cleats on the sides. For maximum strength, I apply glue to the surfaces of the cleats before driving in the screws. If the bench will need to be disassembled, you can skip the glue.

DAVID BEDROSIAN
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David is an avid woodworking hobbyist who enjoys using his engineering background in the design and construction of his work. He has an ever-expanding basement workshop in Waterloo, ON and is a competitive triathlete.

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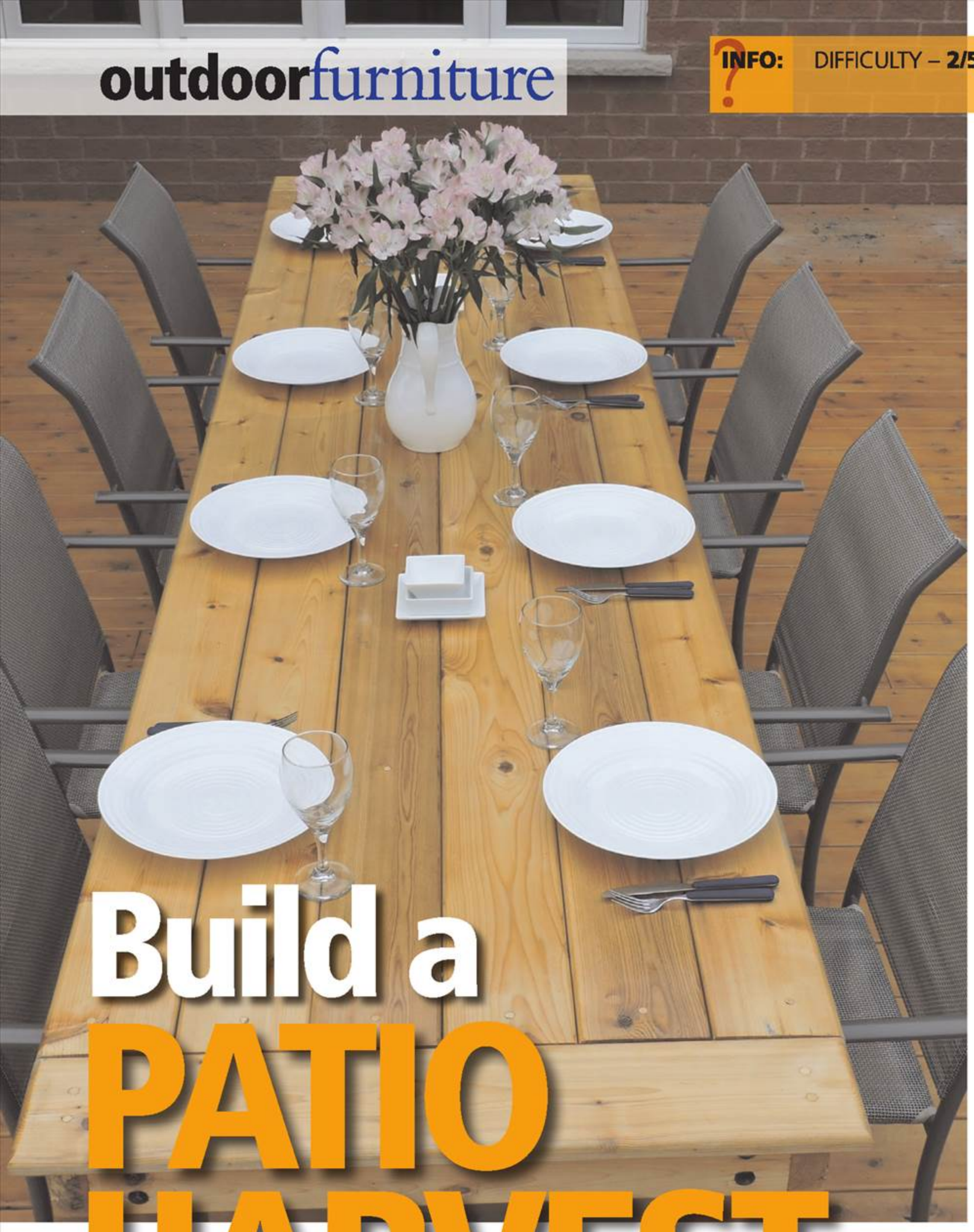


Build a PATIO HARVEST TABLE

INFO: DIFFICULTY – **2/5,** LENGTH/TIME – **2/5,** COST – **3/5**

BY WAYNE BROWN

There's something about the simplicity of a table, and the joy of sharing a meal with friends around a handcrafted piece of furniture that brings a smile to the heart. What makes this table even more attractive to build is the fact that it looks a lot more difficult to build than it actually is.

The first step in building any table is determining its overall dimensions. Height is typically 30", so this is a dimension you do not want to change significantly. If you already have patio chairs you might want to check that they will fit under the aprons. Adding an inch or so to the overall height won't throw things off too much, but any more might be too much.

The width of the table is determined purely by personal preference. However, for aesthetic reasons, I like to use a width that is a full increment of the 5/4" × 6" deck boards that will be used as the table top. This avoids having to rip boards to meet the width requirement. Another thing to consider when determining the width of the table is whether an umbrella will be incorporated into the design. If this is the case, you may want to choose a width that requires an odd number of deck boards, so the hole for the umbrella pole is cut in the center of a board instead of on the join between two boards.

The length of the table is also a personal preference, but there are of course a few considerations to take into account. You will want to measure the width of each chair to make sure the length of the table will accommodate a full set of chairs. The space to accommodate the chairs will be approximately 12" less than the overall length of the table, due to the legs, skirt and tabletop overhang. Additionally, you may want to avoid building a table longer than the maximum available length of 5/4" deck boards, as you would have a horizontal join in the center. Finally, if the table is over 8' long, I would suggest installing a center leg to prevent the table from sagging in the middle.

Material options

This table can be made of standard board dimensions and building materials like spruce, or from more exotic woods like cedar, oak or ipe. I personally like working with cedar as it is a light wood that looks quite rich once sanded. It also

Photos by Wayne Brown Illustration by Len Churchill

First, the Frame – With the four aprons cut to size Brown uses a pneumatic nailer to lightly pin them together. You can use screws for this, but just make sure their locations won't interfere with carriage bolts, if you choose to use them.

Strengthen the Corners – Brown built this table without carriage bolts, so he added screws to secure the leg/apron corner joints now. If you're going to use carriage bolts you should drill clearance holes now, then add the bolts, washers and nuts to the four corners.

holds up very well outside and can be left untreated if you do not want the extra maintenance each year. However, be aware that unprotected cedar will gray over time when exposed to water and sunlight. The materials are 4 × 4s for the legs, 2 × 4s for the aprons and cross-rails and 5/4" × 6" deck boards for the table top. I found carriage bolts give a rustic look to the table (especially when the heads are painted black) and provide excellent strength. Additionally, the carriage bolts provide the flexibility of being able to remove the table legs when moving or storing the table.

Paint the bolt heads

If you plan to use 1/2" carriage bolts to fasten the legs, paint the heads with a black outdoor spray paint as your first step as you want the heads to be dry when you are ready to use them. Drilling holes in a scrap piece of wood and dropping the bolts through the holes is a practical way to temporarily mount the bolts while they are being painted. Don't forget to buy a matching nut and washer for each bolt, and be sure all materials are galvanized. Each bolt should be long enough to accommodate the width of the material being fastened, and provide enough thread length to completely tighten the nut. A 6" bolt will usually work, but be sure to check the thread length before purchasing as some manufacturers use different thread lengths.

Build the apron assembly

The outside length and width of the frame should be 2" less than the overall length and width of the table, to accommodate the 1" overhang on each side of the tabletop. Cut the two long and two short aprons to length. You may also want to cut the cross-rails to length now as they will be the exact same length as the short aprons. I have found at this step that it's best to air nail the four aprons together with 2" brad nails near the edges of each board. This will prevent problems later when trying to secure the legs, especially if you'll be using carriage bolts, as these take up a fair amount of real estate – you don't want to run into a screw when drilling out the holes for the carriage bolts.

An important note about the photos in this article – I've built two of these tables; one with carriage bolts, the other without. The process photos in this article are all of the table without carriage bolts, which is why there's no gap between the inner surface of the legs and the inner cross-rails. When I built the table with the carriage bolts I kept those two cross-rails a few inches away from the inner surface of the leg so I could remove the nuts, washers and legs down the road to better allow me to move and store the table.

Time for legs

Once the outside frame is tacked together, cut the legs to length. Use clamps to temporarily mount the legs to the inside of the frame. If you're working by yourself you can clamp blocks to the sides of the legs so the aprons can sit on the blocks, with their upper surfaces flush with the tops of

First Cross-Rails – The first two cross-rails to install are at either end of the frame, between the long aprons. Brown secured these cross-rails to the legs and the apron with exterior screws. If you're using carriage bolts ensure these two cross-rails are a few inches away from the ends of the bolts so you can remove the nuts and legs later on.

the legs. If you're using carriage bolts, drill three 1/2" holes through the frame and the leg – two on one side and one on the perpendicular face – spaced such that they do not intersect. Use a rubber mallet to tap the bolts through the holes so that you minimize the damage to the paint on the heads. You may need to touch up this paint later once the table is completed.

Add cross-rails

Attach the cross-rails to the frame to give the table rigidity, and to prevent the top planks from sagging. The first two rails to install will be near each end of the table. The purpose of these rails is to catch the end of the lengthwise planks so they don't sag when weight is placed on them. If you have installed carriage bolts these rails can be installed about 1" away from the bolt ends, providing there is enough room to remove the bolts and legs if required. If no carriage bolts were used, the two outermost rails can be installed flush with the inside surface of the legs. Pre-drill and counter-sink the screws.

The length of the table will determine the number of extra cross-rails to be installed – one every 24" will be fine, though it's more important the cross-rails are placed evenly, as plugs used to cover the screws are going to be visible. However, if you plan to add center legs you'll need a cross-member on each side of the leg. Finally, if you're planning on putting an umbrella in the center of the table you need to ensure there is no cross-rail obstructing the umbrella pole.

Tabletop boards

Now that the frame is completed and the legs are installed, it's time to attach the tabletop, which is comprised of the 5/4 × 6" deck boards. The first deck board to install is one of the false breadboard ends. Cut the board to length based on the width of the frame, plus 2" for the total overhang. Lay the first breadboard across the end of the table with a 1" overhang on three sides. Clamp and screw the board to the frame using the counter-sink drill bit.

The Right Length – Now that the first false breadboard has been screwed in place, cut and clamp the second false breadboard end in place, but don't screw it down yet. Measure and cut all the top boards, then position them in place.

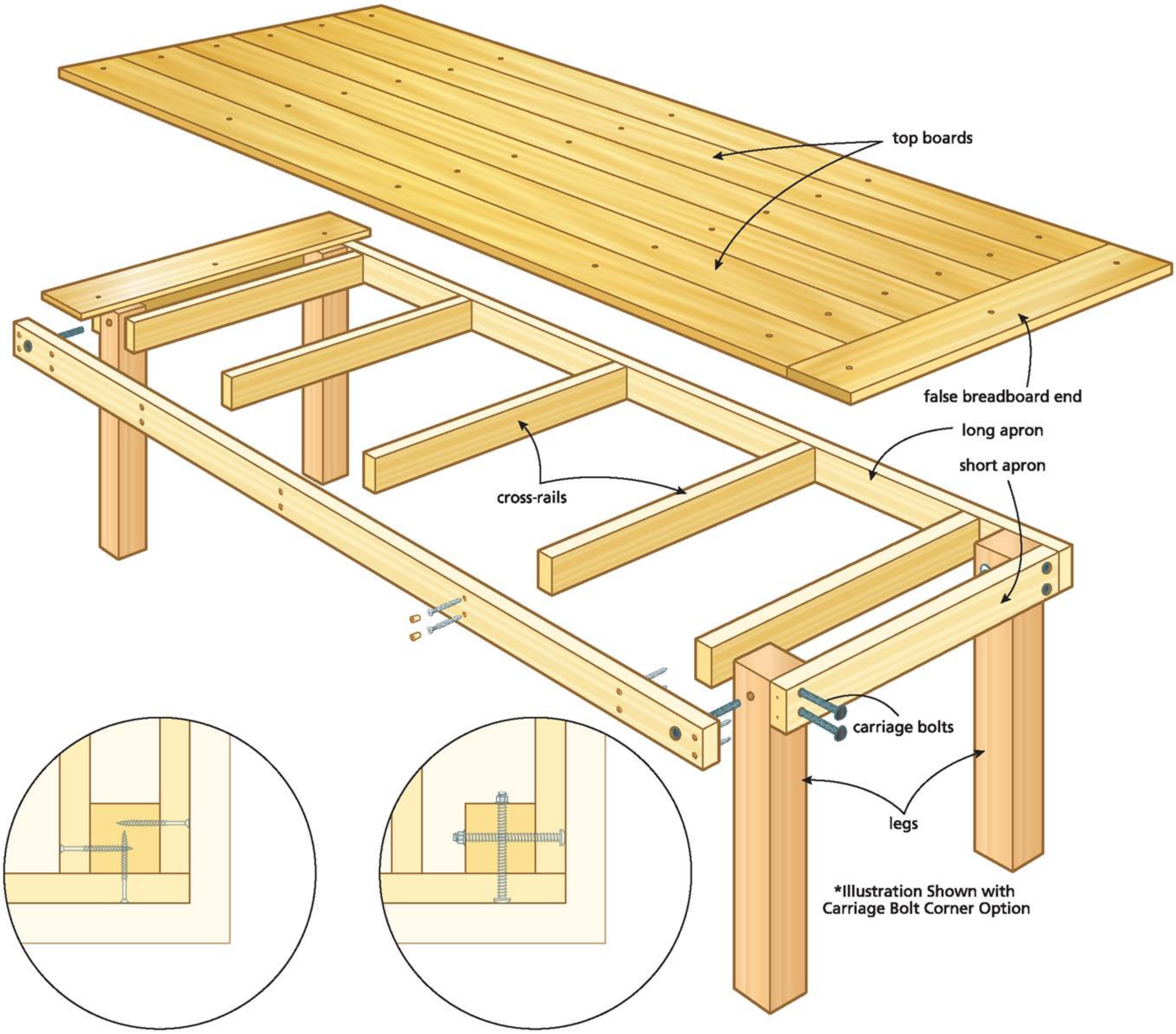
Materials List

Part	Ltr	Qty	T	W	L	Material
Top Boards	A	6	1-1/4	5-1/2	85	5/4 Cedar Deck Boards
False Breadboard Ends	B	2	1-1/4	5-1/2	32-7/8	5/4 Cedar Deck Boards
Legs	C	4	3-1/2	3-1/2	28	4x4 Cedar
Long Aprons	D	2	1-1/2	3-1/2	94	2x4 Cedar
Short Aprons	E	2	1-1/2	3-1/2	27-7/8	2x4 Cedar
Cross-Rails	F	5	1-1/2	3-1/2	27-7/8	2x4 Cedar

Hardware List

Name	Qty	Size	Details	Supplier
Galvanized Carriage Bolts	12	1/2" dia. × 6" long		Hardware Store
Galvanized Nuts	12	1/2"		Hardware Store
Galvanized Washers	12	1/2"		Hardware Store
Exterior Screws	As Needed		3"	Hardware Store

Even Spacing – Measure for the locations of the remaining cross-rails. They should be spaced evenly, as when the long top planks are screwed and plugged the plug locations will be visible. If they're spaced evenly, the table looks that much nicer.



Square Cross-Rails – With the rails in place, and perpendicular to the long aprons, counter-bore for screws through the aprons and drive the screws home.

False Breadboards – With the frame complete, cut the false breadboard end to length so there's a 1" overhang on both ends, center it over the width of the frame, then ensure there's also a 1" overhang at the end of the table before screwing it to the frame.

Attach the Top Boards – Brown makes sure the top boards are lightly clamped together, as his boards were slightly wet, and they will shrink slightly. He then drove screws through the top boards, into the cross-rails, then removed the clamps, before installing the second false breadboard end. If the boards you're using are dry then maintaining a small gap between boards is a good idea.

Carriage Bolt Option – If you use carriage bolts to secure the leg/apron joints, this is the look you will end up with. Brown went the extra mile to paint the carriage bolt heads before assembling the table.

Once this first false breadboard end is in place, cut the second false breadboard to the same length and place it on the opposite end, also with a 1" overhang. Don't screw this board down at this time; just clamp it in place. Measure the distance between these two false breadboard ends and cut the longer tabletop pieces to length.

Once all the tabletop pieces are cut, lay them on the table to confirm they align with the outside edges of first breadboard when laid together. If there is a slight offset between the breadboard ends and the edge of the long tabletop board, use a circular saw to trim the edges of the first breadboard piece.

Screw the long tabletop pieces to the frame using the counter-sink bit. Be sure to check the 1" overhang along the full length of the first lengthwise board. Once the first board is attached, lay the second board down and use clamps to pull the second board flush with the first, repeating this until all of the boards are attached to the frame. The final step is to attach the second breadboard end, confirming the width is correct. If the boards you're using are fairly wet, they can be

Round Over – A medium-sized round-over bit in a router will make quick work of easing some of the outer edges of the top.

assembled tight to each other. If they are fairly dry it's safest to leave a small gap between each board.

Finishing touches

The next step is to cut enough wooden plugs to fill each hole in the top and frame. Add glue then tap each plug into the holes with a light hammer, then sand them flush when dry. To give the table a finished look, rout the entire perimeter of the table with a round-over bit. Sand the entire table surface, apron, legs and edges with 80-grit then 120-grit sandpaper.

Coat the bottom of the legs with waterproof glue to prevent water from wicking up into the legs and rotting them. You can also install small feet under each leg to keep the wood off the ground. Coat the table with three or more coats of teak oil, or other finishing product. Teak oil is easy to apply, and provides some protection. I also like the look it provides. Test a scrap of the wood you made your table with to ensure you like the look the finish gives you. Another option is to use exterior polyurethane, though film finishes tend to require more maintenance to keep looking new and fresh when they spend lots of time outside. A third option is to not use any finish; however, if left outside in the elements, cedar will eventually turn gray from exposure to moisture and sunlight, but being cedar, the wood will not rot.

Now you're ready for your first dinner party – enjoy!

WAYNE BROWN
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Proud to be a Newfoundlander, Wayne comes from a long line of boat-builders, but after building one boat has switched to building tables.

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INFO: DIFFICULTY – **2/5,** LENGTH/TIME – **3/5,** COST – **2/5,**

Open a Little Library at your Home

If you're looking for a way to get to know your neighbours, and show off your woodworking skills, this project is for you. The little library movement is gaining strength, and woodworkers everywhere are playing a large role.

BY MIKE PEDLAR

Photos by Rob Brown Illustration by Len Chruchill

Angles – Though it's covered by the painted white vertical trim, the top end of side directly behind it is cut at a 45° angle to mate with the roof boards.

Roof Construction – One side of the roof is 3/4" longer than the other, so they overlap, and get screwed together, at the peak.

I wasn't really looking for an idea for a weekend project, but just couldn't pass up the opportunity when I saw a small wooden box with a glass door in it, on a post, on someone's front lawn, in a Toronto neighborhood. While driving home, I went through a mental inventory of what I had in the way of materials in the garage that I could turn into a "Little Library" for my own neighbourhood. At home I measured a few books and decided to make one with a double shelf. I made a quick sketch, turned it into a plan and started building.

Cedar stands up to the elements very well. I chose to use pine, as that is what I had on hand, but feel free to use whatever you think works best for your situation. A few coats of paint go a long way to protecting whatever wood you end up using.

The main structure

I started by rough-cutting to length the sides, back, bottom and roof sections. I then cut them to width on the table saw. I

Siding All Around – The siding on the sides and back of the library gets cut to fit in between the vertical trim pieces. There is also a small piece of siding on the front of the library, above the door, that is applied over the front gable.

decided to dado the bottom and shelf into the sides. This took some time since I don't have dado blades for my table saw. I set the fence to guide the sides through one blade width at a time. It took six or seven passes with each with 1/8" adjustments to the fence each pass. Once the sides were done, I cut a 45-degree bevel on the top of each side to mate with the roof pieces.

Front Details – Here you can see the front gable (upper, right white piece), the front siding to its left and the wider drip moulding sitting directly above the door.

Many Options – Pedlar ran the horizontal trim piece all the across the front of the library, then rested the vertical trim pieces on top of it, though it can be done the opposite way too. Notice the mitred door construction and how the glass is permanently captured in the doorframe. Another option is to run a rabbet around the door frame and hold the glass in place with a stop.

Materials List

Part	Ltr	Qty	T	W	L	Material
Sides	A	2	3/4	11-1/2	24	Cedar
Bottom	B	1	3/4	11-1/2	12	Cedar
Shelf	C	1	3/4	10-3/4	12	Cedar
Roof	D	2	3/4	18	11-1/4 / 12	Cedar
Front Gable	E	1	3/4	As Req'd	As Req'd	Cedar
Back	F	1	3/4	12	As Req'd	Cedar
Vertical Trim	G	4	3/4	1-1/2	As Req'd	Cedar
Horizontal Trim	H	2	3/4	1-1/2	11-1/2	Cedar
Clapboard Siding	I	As Req'd	3/4	As Req'd	As Req'd	Cedar
Drip Moulding	J	1	1-1/4	1-1/2	As Req'd	Cedar
Door Frame	K	1	3/4	1-1/2	As Req'd	Cedar
Sign	L	1	3/4	3	4	Cedar
Main Support Post	M	1	4	4	30	Cedar
T-Brackets	N	2	1-1/2	3-1/2	12	Cedar
Base Stretchers	O	2	4	4	48	Cedar
Cross-Rails	P	2	4	4	30	Cedar
Platform Boards	Q	3	1-1/2	5-1/2	30	Cedar
Angled Supports	R	2	4	4	As Req'd	Cedar
Shingles	S	As Req'd	As Req'd			Cedar
Ridge Cap	T	1	As Req'd			Cedar

Hardware List

Name	Qty	Size	Details	Supplier
Door Handle	1			
Hinges	2			
Glass	1			
Sign Hooks	2			
Magnetic Catch	1			
Weather Stripping	1			
Tar Paper				
Exterior Screws				
Door Latch	1			

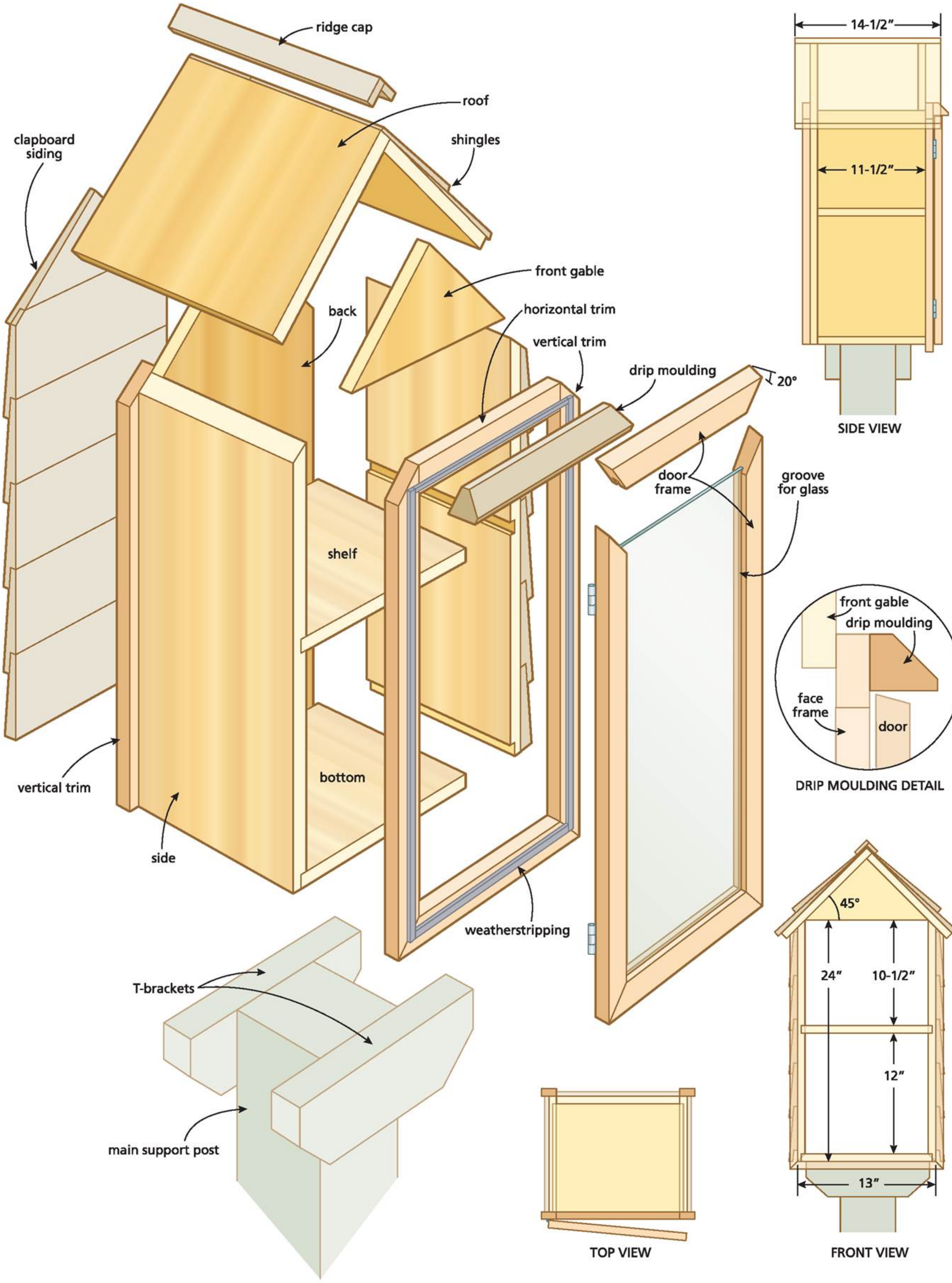
Next, I cut the bottom and shelf to fit in the dado. I dry-fitted them in place and pre-drilled a couple holes in each. I put exterior glue in the dado and onto the shelves and bottom, then fit them together using the screws to secure them in place. Wipe up any glue that seeps out soon after the parts are fitted together and still wet, to make clean-up easier.

Once I had my bottom, sides and shelf assembled, I measured for the back, front gable and roof pieces. I traced the front gable and the back using the assembled structure and cut it on a mitre saw, but you could do this with a jigsaw if you want. The two roof sections differ in length by 3/4" as one roof section will overlap the other. I then glued and nailed the rest together using 18-gauge brad nails.

To keep water out, I caulked all the joints and corners, then painted it inside and out with exterior primer and one coat of exterior paint. I sanded lightly before painting and between coats.

Time for siding

I put the four vertical trim pieces on the front and back of the library, making sure they overhung the outer surfaces of the structure by the thickness of the siding. The upper edge of these four pieces must be cut on 45° angles to mate with the roof. With these four pieces attached I cut pieces of siding to fit in between the vertical trim rails. The hardest part of this aspect was cutting the angles on the front and back siding to mirror the roof angle. Both cuts should be 45°, but some



SIDE VIEW

DRIP MOULDING DETAIL

TOP VIEW

FRONT VIEW

Drip Moulding – Mitred and fitted between the roof sections, Pedlar cut a large bevel on the front upper edge of the drip moulding and installed it on the front siding.

fine-tuning may be in order. I then caulked all the edges. I nailed all these pieces on with short brad nails.

Shingles

I put on peel-and-stick waterproof roof membrane over the whole roof. I used "shim shingles" and cut them back so they weren't too thick, then stapled them on. The ridge cap was glued and installed over top.

Doors

I rough-cut the four pieces to length and, using the table saw, cut a 1/2" deep groove in one edge of each piece to receive the glass. I mitred the four ends of the door together, but a tongue-and-groove joint would have also worked nicely. I cut a 20° bevel on the upper edge of the door to help shed water. Another way to make the door frame would be to machine a rabbet in the back of the door, on the inside of the frame, so glass can be installed and replaced easily, if needed.

When the glue was dry I put on the hinges, handle and the magnet closer. I added weatherstripping around the inside of the door to keep any rain out. To keep out water I added a drip moulding to the front of the library, about 3/8" above the upper edge of the door. It helps shed water very nicely. It's mitred on both ends and has a 45° cut on its upper front edge to shed water.

The base

Meanwhile, I decided to build a base out of some 6 × 6 cedar pieces I had. I originally thought I would just use a metal fence post leg that you pound into the ground with a 4 × 4 post for the library to sit on, but thought that might not be stable enough. You could easily use 4 × 4 material for the base, as it's cheaper and strong enough. I screwed the base together with the main support post coming up to support the library. I dug up some of the lawn to set the base in the ground and made sure it was level.

Attach the Library – To fix the library to the base Pedlar attached two 2 × 4 T-brackets to the underside of the library, the exact distance away from each other as the width of the main support post. He then placed the library in place and screwed through the 2 × 4s into the post.

I cut and attached two 2 × 4 T-brackets to the bottom of the library, separated by the width of the main support post. I set the library on the center of the post and screwed the 2 × 4s to the 6 × 6 when it was level.

Open for sharing

I put a few books in it to get things going. My daughter and I handed out a flyer to people on our street to introduce them to our tiny library.

I watched during the first heavy rain and wind to see how it would perform. Unfortunately, the door blew open when the wind caught it at the right angle, so I added a hook and eye to keep it closed in bad weather. The base turned out to be a good spot for kids to sit and look through some books before choosing which ones they wanted. It's now a couple of years old, and the shingles have weathered a bit, but it's dry inside and there are new books regularly. Happy reading.

MIKE PEDLAR
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When not renovating other people's homes, Mike finds several projects inside and outside the house to get started on... and actually finishes most of them.

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INFO: DIFFICULTY – **1/5,** LENGTH/TIME – **1/5,** COST – **1/5**

Bottle Openers: 3 Takes on a Theme

There's nothing like a nice cold one after some time in the shop. Make one (or all) of these bottle openers and you can reap the rewards of your shop time with each drink you enjoy.

Photos by Rob Brown

BY ROB BROWN

All three of these openers are quite easy to make. In fact, the most time-consuming version – with veneered faces – only took about 90 minutes in total, and it can easily be made without veneer, which cuts about an hour off the build. All of these openers can be made in about an hour, though once you start making one you might want to go that extra mile and add a certain detail, or personal touch, to customize yours.

At its simplest form, you can grab a cold one and place it on your patio table, break out a small piece of wood, drive a pan-head screw into one face, adjust its depth to work properly and use it to open your beer on the patio five minutes later.

For two of these openers I used pocket-hole screws as the edge that removes the bottle cap. For the last one I used a washer that is sold with rare earth magnets. You could also use any pan-head screw; as long as the surface on the underside of the head is flat it will grip the edge of the cap.

The openers I made are all on the large side. I'm not usually a "bigger is better" kind of guy, but I liked the look of the larger versions. You could probably make any of these models about half the size if you wanted to. The important dimension is the thickness of the opener, as you don't want your screw to protrude through the opposite side. And as long as there is enough material on the far side of the screw or washer, the opener should, at the very least, do its job. The rest is strictly "wow" factor.

Use a fairly dense wood for these openers, as a softer wood will compress slightly with repeated use.

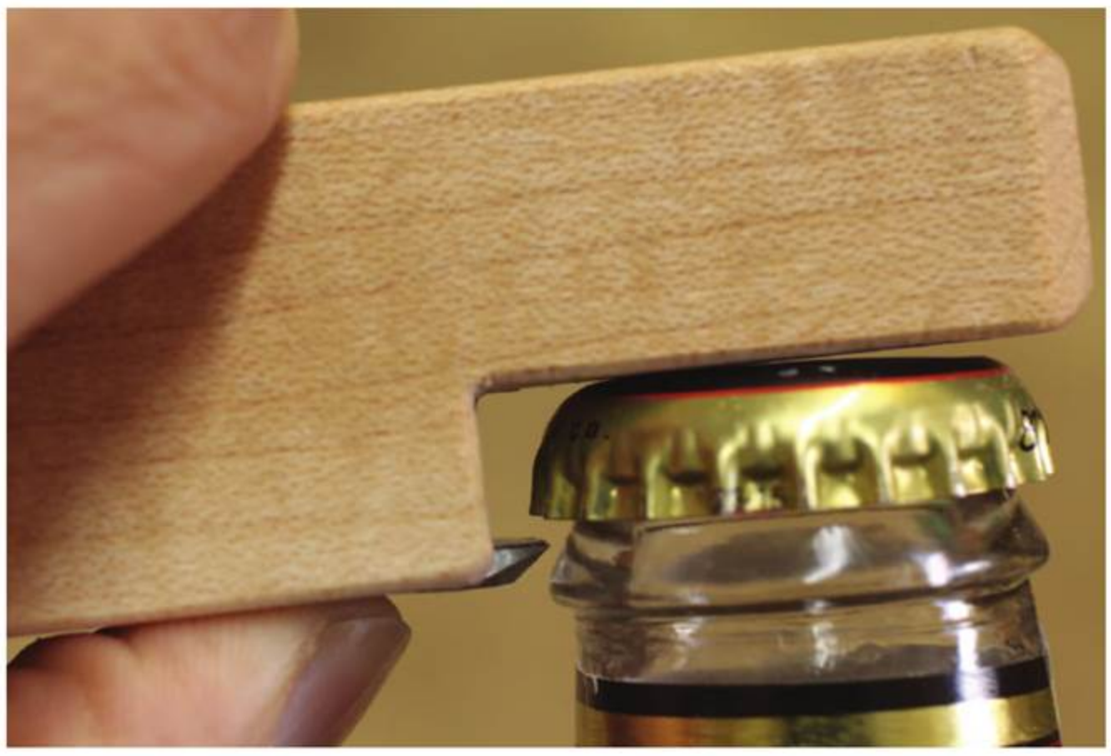
Also, if you wanted to embed a magnet into the side of one of these openers so it could be stored on the side of the fridge, go for it. Another option is to drill a small hole in the end and use a piece of string or rope to hang the opener from a hook.

When it comes time to finish your opener, select a durable finish that won't be damaged by alcohol. Shellac is out, but an oil- or water-based polyurethane will work well. Your opener will likely get lots of use over the years, and also spend a decent amount of time banging around in a drawer. Even a wipe-on finish that could be reapplied every few years would be fine. For small projects like this I like using a small spray bomb.

Slight Protrusion – Brown drilled the hole to accept the washer, then marked a line 1/8" inside the outer quadrant of the hole. When the waste is removed, and the washer installed, it will protrude about 1/8" from this line.

Remove the Waste – The waste removed from the front, lower face of this opener will allow the bottle cap to fit over the protruding washer.

Eased Edge – While the edge of the washer was held by needle-nosed pliers, Brown chamfered it so it would fit underneath the edge of the bottle cap a bit easier.



Perfect Fit – Once the washer is installed it will fit under the cap nicely.

Simple opener

As long as you already have a washer, and a long enough #4 screw on hand, this is the simplest of the three versions in this article. Start by breaking out the blank to about 7/8" × 1" × 7". Mark a line on the 3/4" wide face that's 1-1/2" from the end of the blank. With a Forstner bit, drill a hole centered on the line, to accept the washer, and allow it to finish flush with the underside of the blank. I used a 5/8" diameter washer and a #4 × 1" flat-head screw.

Mark a line on the underside of the opener located 1/8" inside the front quadrant of the newly bored hole. Extend this line about 3/8" up either side of the blank. Mark another line, perpendicular to the first one, 3/8" from the bottom surface of the opener. The second line should extend from the end of the blank to the first line. Use a handsaw to remove the rectangular piece of waste. Don't remove too much

Cut Some Veneer – Mark out pieces of oversized veneer, then trim them with a sharp knife. Use the workpiece to ensure the veneer will be large enough.

Cauls and Clamps – Brown sandwiches the blank and two slices of veneer between cauls, then clamps them in place. You can use masking tape at the ends to keep the veneer from shifting while pressure is being applied.

Thumb Locator – The curved end of a belt sander produces the perfect radius for a notch your thumb can rest on.

material at this stage. You can always trim a bit more off down the road.

Position the washer in place with finger pressure and see how it fits on a bottle of beer. If the washer doesn't protrude down far enough to hook onto the bottle cap, use a rabbet plane or chisel to remove a bit more material until you have a good fit.

Add any cosmetic details to the opener at this stage. I just added a facet to each corner and ensured there were no sharp edges. A final sand and I was ready to apply a finish to the opener. While it dried I removed some material from the one edge of the washer, so it would fit under the bottle cap a bit easier. With the washer held in my needle-nose pliers I held it against my belt sander at about a 45° angle while I rotated the washer slightly.

Veneered opener

Break out the base wood for the opener to 3/4" × 1' × 7". Select veneer to cover all four sides, and both ends, and cut out oversized pieces. I used tightly figured wood, as more loosely figured wood will not show well at this small size. Use cauls and clamps to glue pieces of veneer to opposing faces on the blank. When dry, trim the edges flush and glue the other two longer pieces of veneer to the blank.

You can trim the veneer flush with the ends of the blank, but I chose to cross-cut the blank on my mitre saw. To protect against chipping on the backside of the workpiece I set the workpiece against another piece of solid wood during the cut to support the wood fibres. Cross-cut both ends flush, then apply a very light "glue-sizing" layer of glue on the end grain, let it dry for a few minutes, then apply a regular coat of glue to either end of the workpiece and clamp the veneer in place. When dry, trim the veneer flush and sand the piece smooth.

Drill a pilot hole in the 3/4" wide face, about 1-1/2" from the end of the workpiece. On the opposite face of the workpiece, about 3-1/2" from the end of the workpiece, use your belt or drum sander to create a medium sized depression in the edge. This depression will locate your thumb during use.

Grasp the opener as if you were going to use it. Notice where your four fingers cross one of the lower, outer corners, and mark

Finger Notches – A small drum sander in a drill press creates four notches for fingers.

Draw Two Arcs – Brown lined the blank up so the end of the workpiece was even with the edge of the work surface. He then located a point about 3-1/2" in from the edge of the work surface and drew an arc with a 12-1/4" radius. This arc represented the underside of the opener, and is shown in this photo. To mark the top edge of the opener Brown located a point about 1-1/2" away from the edge of the work surface and marked an arc with a 16" radius.

Whitetail Crossing 2054 sq. ft. 50' x 40' 2853-582

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EXPERT ADVICE

Tapered Sides – Both sides taper in about 3/16" so the handle is narrower than the working end.

Smooth the Tapers – You can use a bandsaw, handsaw or plane to remove the material, and leave a smooth surface.

some lines where your fingers meet. Using a smaller diameter drum sander than for your thumb, create four small depressions to comfortably locate your fingers during use.

Ease the sharp edges, and final sand the opener, before applying a finish and driving the screw into place.

Shaped opener

This is much more of a free-form approach than the veneered version. Which details to use, and how to use them, can be up to you. If you want to practice first, grab a bit of softwood and shape a prototype before starting on the real thing.

When viewed from the side, this opener tapers from about 1-1/2" at the business end to about 1/2" at the handle end, but feel free to adjust as you wish. Looking at the opener from above it tapers from 7/8" to 1/2". Once two arcs are drawn onto the rough stock you can use a bandsaw or jigsaw to cut the workpiece out. Don't worry too much about accuracy at this stage, as there's some flexibility with the design of this opener.

With the blank laid out you can either bandsaw or jigsaw the workpiece from the board. On the upper, curved edge, draw a rough line that marks how much the opener tapers along its width. Though you can use a handsaw or hand plane to remove this material, I chose to use a bandsaw. I then used a block plane to smooth the two surfaces.

General Shaping – A belt sander will make quick work of rough-shaping the contours of this opener.

Quick, Easy Finish – Brown finds spraying coats of finish on these small openers is often the best approach, as they can be difficult to brush or wipe a finish onto.

With an assortment of hand tools, as well as my belt sander on edge, I gave shape to the opener and smoothed all its surfaces. Because this opener has a lot of curved surfaces, and it will be handled a lot, do your best to ensure the curves are fair so it feels good in the hand. At this point I drilled the pilot hole for the pocket screw, finish-sanded the project and applied a few coats of finish.

Whichever opener you decided to make, even if it was completely different from one of these versions, send me a photo of your finished project with a few details about it. You can also share it with us at the end of this article on our website.

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woodchuckle

Carl's House

BY DON WILKINSON

The other day, my new neighbour, Carl, showed up at my door looking a little frazzled. Maybe he looked scared; it's kind of hard to tell with Carl. He and his young wife had recently moved into the old house just behind my place. They had somewhat grandiose plans to completely gut and rebuild it. Unfortunately, neither Carl nor what's-her-name had a clue as to how to swing a hammer, let alone renovate a house, not that they even owned a hammer. It was true that the house they had so gleefully purchased was in serious need of renovating, but a clueless young married couple should not have been attempting to do the work, not unless at least one of them knew how to operate a D10 bulldozer. Preferably both.

Their first project was to strip the carpet that covered every square inch of the main floor, including around the toilet and under the stove and refrigerator, which happened to all be in the same room. After tasting what's-her-name's cooking I could see a certain logic in the appliance placement but I was informed they planned on changing that somewhat. They also planned on installing a tub-surround and possibly tile the walls once they had built some. They had even briefly considered installing a bathroom door. Radicals!

The previous owner of the somewhat eccentric house had been a somewhat eccentric lady who had died the previous winter without bothering to let her neighbours know beforehand, so we all felt bad once she had finally been discovered. We were just happy she hadn't been a cat lady. She had performed many of the previous renovations herself using a limited number of tools and an even more limited amount of knowledge of house construction. There were light switches and outlets scattered across every wall surface throughout the house, some of which powered absolutely nothing that anyone ever discovered and several that had either no wires attached or had wires curled up inside the junction box that were fully live, but attached to nothing at all. The fuse panel was worse. I closed the door and ran away. Fast.

And then there was the plumbing. The basement had a toilet in one corner perched on a platform with the drain pipe rising straight up to the main sewer pipe suspended under the main floor … seven feet above the toilet. Science and gravity were clearly not this woman's strong point.

As I implied at the beginning, Carl didn't have much in the way of tools. He also didn't have much in the way of a clue, or skills, woodworking knowledge or patience. However, he did have a great and rather endearing line in bashful hopelessness.

What I had was a garage, a shed and a basement full of tools left over from when I ran a custom furniture business. And some from when I built log homes. And a few from when I operated a woodturning school. Plus a vast assortment of others from when I just liked to buy tools, whether I needed them or not. And more than several, just because.

Unfortunately for me and my tools, the previous weekend, Carl and what's-her-name had been walking past my house at the same time I had been sitting in my garage contemplating doing something about straightening the place up enough to walk from one end to the other and actually set at least one foot on the floor. I didn't really care which one.

Carl, upon spotting the stacks and heaps of tools and equipment had immediately become my best friend and wanted to borrow each and every one of them, even the ones he couldn't identify with any degree of certainty.

He never did explain why he might need a dedicated bowl lathe at this point in his reno. The chainsaw I could understand, seeing as he didn't know how to operate a D10 bulldozer. I got a real kick, and a sense of ominous foreboding, when I started up the chainsaw and he was startled by the noise it made. It was as if he didn't know chainsaws were operated by an engine. Hmmm! Oh! Oh!

It was at that point I decided that for the sake of my toys, and in the interest of keeping noisy ambulances from the neighbourhood as much as possible, it might be advisable for me to assist Carl with his renos. Thus began the end of my retirement.

I've always said it never pays to be nice to someone.

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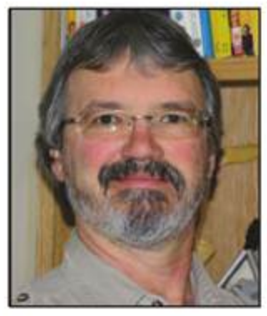

Illustration by Mike Del Rizzo

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Karen McBride

Patience

Made of maple burl, ebony and maple, "Patience" was inspired by the natural shape of the maple burl veneer pieces that grace the cabinet doors.

The bow front doors are supported on large triangular steel hinges that share a common pivot point with the drawers below. The larger secret drawer is accessed when the small drawer is removed. For Karen this cabinet was a rite of passage into the world of complex, curved, mechanical cabinetry. It tested her patience – hence the cabinet's name. (Photos by Brittany Gawley)

Turn to page 10 to read a collection of Karen's quotes, and learn how you can view an online slideshow of her work.