

TIPS FOR PERFECT PANEL GLUE-UPS p.34

MUST-HAVE TRACKSAW UPGRADES p.70

ISSUE 295 MAY 2024

13

CABINETMAKING
ESSENTIALS
p.58

WOOD

POSTCARD DESK

CRAFT THIS
STICKLEY-STYLE,
SKILL-BUILDING
CLASSIC
p.38

SHOP
PROJECT
Miter Saw
Station

p.46

GREAT PLANS

- Backyard Storage Center p.28
- Toy Train Container Car p.50
- Super-Comfy Couch p.62
- Tabletop Book Nook p.68

The World's
MOST
TRUSTED
Woodworking
Resource



EVERYTHING
for the Woodworker

grizzly.com[®]

800-523-4777 #GRIZZLYTOOLS



- Financing Available -

Please visit grizzly.com for up-to-date pricing.

Due to rapidly changing market conditions, our advertised prices may be changed at any time without prior notice.

⚠ WARNING! †¹ : Cancer & Reproductive Harm

Some products we sell can expose you to chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov



**Quality Machines,
Great Prices!**

10" 2 HP CABINET TABLE SAW

Rip boards with precision

- » Micro-adjustable easy-glide fence with narrow rip attachment
- » Fully enclosed blade guard
- » Cast-iron tables and trunnions
- » Dust ports at top and bottom of blade
- » Table size: 40 $\frac{1}{8}$ " x 27"



MADE IN AN ISO 9001 FACTORY

G0899 ONLY \$1395

\$249
FREIGHT

15" 3 HP PLANER W/ HELICAL CUTTERHEAD

Complete heavy production work

- » 4-Row helical cutterhead with 52 indexable inserts
- » 5,000 RPM cutterhead speed with 16 & 28 FPM feed rates
- » Magnetic safety switch with thermal overload protection
- » Extra-large ball-bearing return rollers
- » Four heavy-duty support columns



MADE IN AN ISO 9001 FACTORY

G1021X2 ONLY \$2695

\$329
FREIGHT

6" X 48" JOINTER W/ CABINET STAND

Experience convenient mobility

- » Heavy-duty cabinet stand for stability & reduced vibration
- » Center-mounted, fully adjustable fence
- » V-belt drive for efficient power transmission
- » Precision-ground cast-iron tables on dovetail ways
- » Table size: 6 $\frac{5}{8}$ " x 47 $\frac{3}{8}$ "



MADE IN AN ISO 9001 FACTORY

G0814 ONLY \$995

\$199
FREIGHT

14" 1 HP DELUXE BANDSAW

Accurately crosscut, scroll, and resaw

- » 13 $\frac{1}{2}$ " Cut capacity
- » 6" Resaw capacity
- » Precision-ground cast-iron table
- » Sturdy T-shaped fence
- » Computer-balanced wheels



MADE IN AN ISO 9001 FACTORY

G0555LX ONLY \$795

\$199
FREIGHT

21" VARIABLE-SPEED SCROLL SAW

Saw tilts instead of table

- » Stationary 20 $\frac{1}{8}$ " x 28 $\frac{7}{16}$ " table
- » Blade and arm tilt 45°
- » Positive indexing pin holes
- » Foot pedal
- » Flexible sawdust blower
- » Foot pedal included



New!

MADE IN AN ISO 9001 FACTORY

G0969 ONLY \$629

Scroll Saw Stand

T33905 ONLY \$89⁹⁵

Saw/Stand Bundle

T33906 ONLY \$689

\$49⁹⁵
SHIPPING

FREE
SHIPPING

\$49⁹⁵
SHIPPING

14" FLOOR DRILL PRESS W/ LED LIGHT & LASER GUIDE

New!

Increase efficiency with unique features

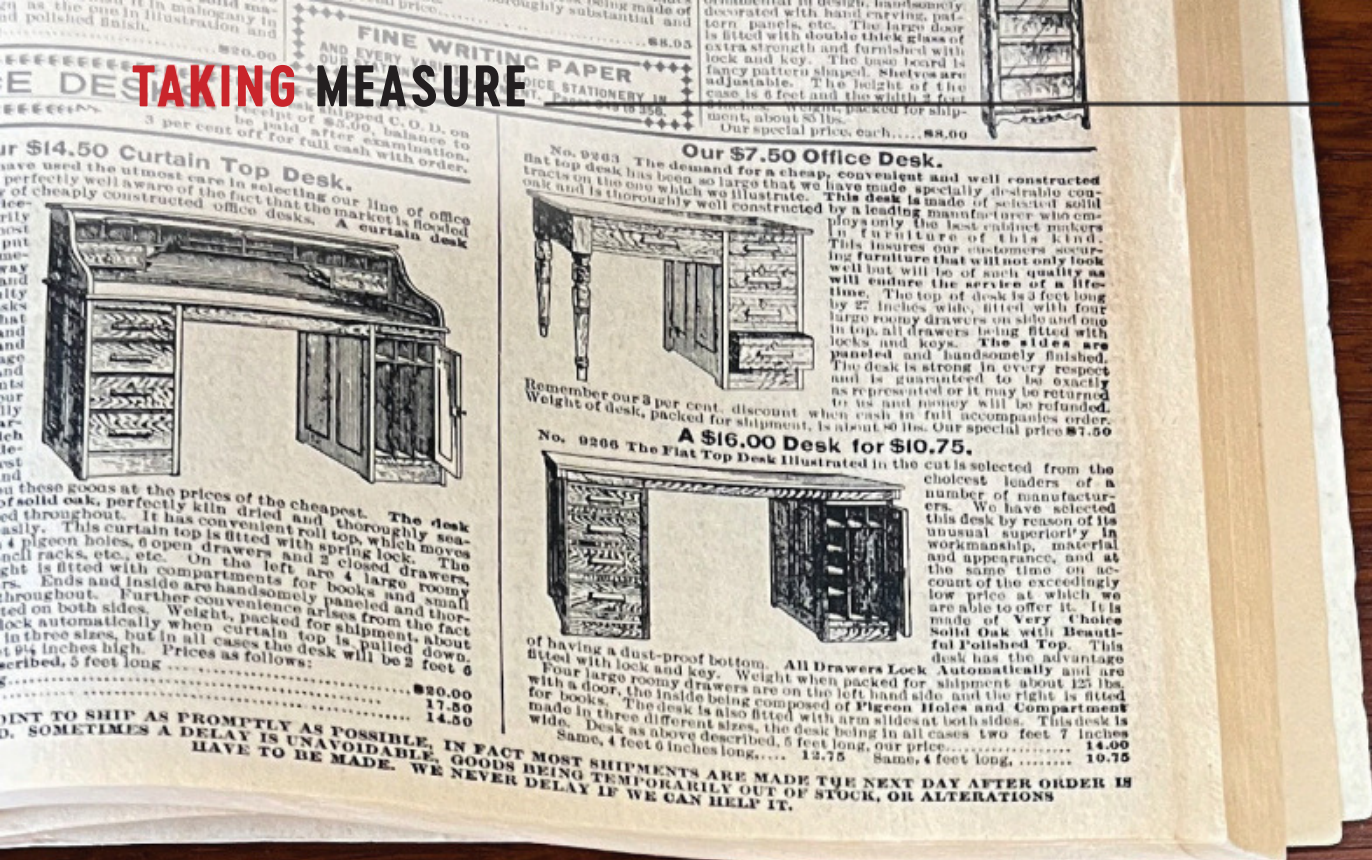
- » 12-speed spindle, 340 to 2860 RPM
- » LED light increases visibility for drilling precision
- » Push-button spindle depth stop for repeatable drilling
- » Crank handle-operated rack-and-pinion vertical table movement
- » Cast-iron table with four T-slots



MADE IN AN ISO 9001 FACTORY

T33902 ONLY \$525

\$199
FREIGHT



TIME TRAVEL

“THE LYF SO SHORT, THE CRAFT SO LONG TO LERNE”

Don't get me wrong: being Editor-in-Chief of a large woodworking magazine is pretty darn cool. I'm constantly grateful for the opportunity. But there will always be a small part of me that considers myself to be a failed science-fiction novelist. When I was a kid, I tore through the books in our small school library, then our county library. The nearest bookstore was an hour's drive away, but if I was in town, all of my spending money went toward books and comics. Reading fantastical stories under the giant sky of the rural plains gave me an exhilarating sense of the wider world and the possibilities for the future.

It was a feeling that I felt compelled to share, which led me to pursue a career in writing, myself. In my studies, I accidentally got a minor in history after I discovered the same feeling—the same sense of connection across space and time—came from reading about the past.

I think that's why I enjoy reading articles like the *Stickley-Style Postcard Desk* on page 38 so much. Gustav Stickley's thinking on design and its relationship to lifestyle shaped the latter years of the Arts and Crafts movement in the early 20th century. And I like to imagine an anachronistic conversation with the designer about the details that have stood the test of time both in form and function.

If you choose to build the desk, you'll see that our Senior Design Editor, Kevin, has incorporated the ambitious joinery techniques found in the original that inspired it—dovetails in multiple flavors, tenons both single and double, and stopped dados throughout. Don't let them deter you. Take to heart the motto, *above*, that Stickley printed on the cover of the early editions of his *Craftsman* magazine. It's a phrase he borrowed from Chaucer, who likely adapted it from Hippocrates' *ars longa, vita brevis*: “The art is long, the life is short.” You sit in a very distinguished lineage of lifelong learners who considered their understanding perpetually incomplete.

Once you craft its rock-solid joinery, whether by long-earned skill or by the skin of your teeth, that desk becomes your own form of time travel, cast forward in time for generations. It's your little greeting to that future craftsman wondering what it would be like to speak with you.

The life so short, the craft so long to learn. But the results? Timeless.
Get out to the shop and make something. We'll help. 🌱

Lucas
LUCAS PETERS

✉ lucas.peters@woodmagazine.com

📷 @peters.lucas

WOOD

Issue No. 295 | May 2024
Vol. 41, No. 2

EDITOR-IN-CHIEF LUCAS PETERS
MANAGING EDITOR DAVE STONE
CREATIVE DIRECTOR JESSICA ENO
SENIOR DESIGN EDITOR KEVIN BOYLE
DESIGN EDITOR JOHN OLSON
ADMINISTRATIVE ASSISTANT CHRISSY TASSIN

CONTRIBUTING CRAFTSMEN JIM HEAVEY, BRIAN BERGSTROM

PHOTOGRAPHERS JASON DONNELLY, CARSON DOWNING,
JACOB FOX, BRIE GOLDMAN, KELSEY HANSEN

CONTRIBUTING EDITORS VINCENT ANCONA, ZACH BROWN,
KERRY GIBSON, RANDY MAXEY, CRAIG RUEGSEGER

CONTRIBUTING ILLUSTRATORS LORNA JOHNSON,
ROXANNE LEMOINE, CHRISTOPHER MILLS

PROOFREADERS SAM CADY, JOE HURST-WAJSZCZUK,
BABS KLEIN, MARK LANE

ADVERTISING AND MARKETING

PUBLISHER

MARTY WOLSKE

ACCOUNT EXECUTIVE BRIAN KOSSACK
brian.kossack@woodmagazine.com

ONLINE MEDIA KIT woodmagazine.com/mediakit

BUSINESS MANAGER DARREN TOLLEFSON

CONSUMER MARKETING MANAGER ED LICHINSKY

SENIOR PRODUCTION MANAGER COURTNEY PETERSON

PREPRESS DESKTOP SPECIALIST SOPHIA MOZENA

COLOR QUALITY ANALYST JOHN SANTUCCI

PRESIDENT, LIFESTYLE

ALYSIA BORSA

SVP & GROUP GM, TECH & SUSTAINABILITY

TIM FISHER



► **For subscription help:** Log in to woodmagazine.com/myaccount;
e-mail wdmcustserv@cdsfulfillment.com; or call 800-374-9663, option 1.

► **To contact the editors:** E-mail woodmail@woodmagazine.com;
write to WOOD Magazine, 1716 Locust St., LS-237, Des Moines, IA 50309;
or call 800-374-9663, option 2.

► **To order past articles and issues:** For articles, search
woodstore.net. For issues, visit woodmagazine.com/backissues.

► **For syndication or international licensing requests, email**
syndication.generic@dotdashmdp.com.

► **For reprint and reuse permission, email**
mmc.permissions@dotdashmdp.com.

Our subscriber list is occasionally made available to carefully selected firms whose products may be of interest to you. If you prefer not to receive information from these companies by mail or by phone, please let us know. Send your request along with your mailing label to Magazine Customer Service, PO Box 37508, Boone, IA 50037-0508.

© Copyright Meredith Operations Corporation 2024.
All rights reserved. Printed in the U.S.A.

Meredith Operations Corporation allows
the purchaser of this magazine to
photocopy the included patterns solely
for personal use. Any other reproduction
of these patterns is strictly prohibited.



To download patterns from this issue, visit
woodmagazine.com/295patterns



BUILD YOUR DREAM ROUTER TABLE



ROCKLER®

CREATE WITH CONFIDENCE

Shop online or find a store near you at [Rockler.com](https://www.rockler.com) | Call to order at 800-279-4441

SAVE 20% OFF ONE ITEM! Exclusions apply - Offer expires 5/31/24

FREE SHIPPING ON \$49+ ORDERS! (Code 1097)

WOOD

Issue No. 295 | May 2024

PLANS

- 28 BACKYARD MINI-SHED**
Lawn gear in the shop? Not on your watch! This compact clutter-buster stows it away.
- 38 CRAFTSMAN'S DESK**
A classic reproduction serves today's emailer as well as it did the past's postcard writer.
- 46 MOBILE MITERSAW STATION**
Mobilize your mitersaw's accuracy with this expansive jobsite workhorse.
- 50 TOY TRAIN CARGO HAULER**
Time to put the Timber Line Express to work hauling cargo in kid-sized containers.
- 62 LAID-BACK SOFA BUILD**
DIY your dorm room or den with this easy-to-build, modern-looking, cozy couch.
- 68 COMPACT BOOK NOOK**
Corral your reading addiction with on-the-spot storage.



ON THE COVER



This reproduction Stickley postcard desk remains an attractively functional design whether you're stowing charging cords or greeting cards. Build it to step up your skills and your storage.

TOOLS & TECHNIQUES

- 34 NO-FAIL PANEL GLUE-UPS**
We walk you through the 10 steps you need to know before your next large panel glue-up.
- 40 STOPPED DADO TIME**
Our down-and-dirty jig lets you strengthen joinery for shelves and dividers while hiding it at the same time.
- 58 CABINETMAKING HELPERS**
We make the case for 13 tools and accessories that speed cabinet construction and ramp up accuracy.
- 70 TOOLS & MATERIALS**
Transform your tracksaw from a one-cut-wonder to a well-rounded rock star with these accessories and add-ons.



CONNECT WITH WOOD



/woodmagazine



@woodmagazine



@wood



@woodmagazine

E-MAIL woodmail@woodmagazine.com

WRITE WOOD magazine,
1716 Locust St., LS-237
Des Moines, IA 50309

CALL 800-374-9663, option 2

WOOD® magazine never uses outside parties to solicit subscription renewals. The safest, easiest way to renew your subscription is with a credit card online at woodmagazine.com/myaccount. If you have questions about a renewal offer you've received, please call our customer service line at 800-374-9663, and select option 1. We're happy to help.



DEPARTMENTS

2 TAKING MEASURE

Time travel

6 WOOD-WIDE WEB

Improve your hoarding skills.

8 YOUR VOICE

We hear the trains a'comin'.

10 YOUR PROJECTS

A kitchen in a cupboard and more

14 YOUR SHOP

A meeting place for friends

18 ASK WOOD

How do I pick glass for a project?

20 SHOP TIPS

Miter mending jig, and more

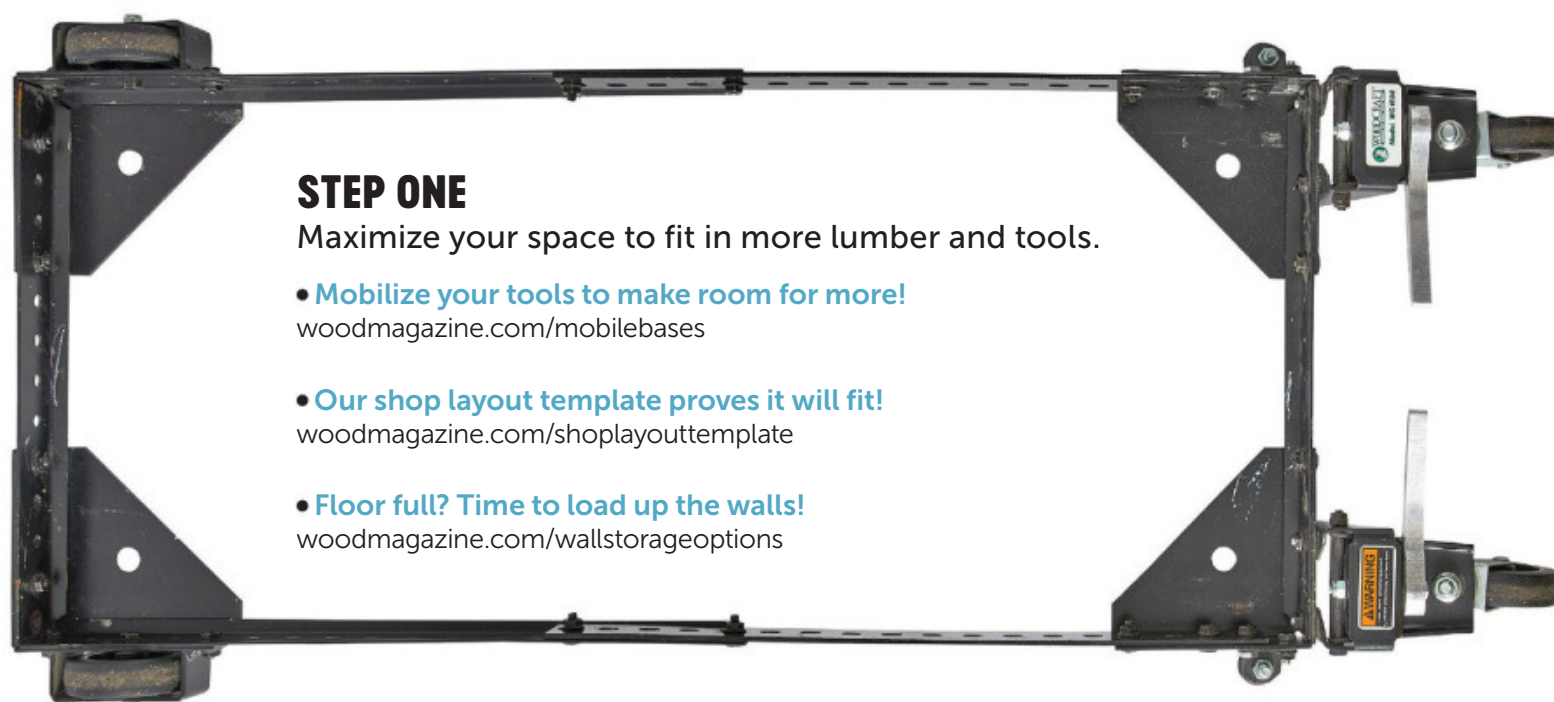
75 WHAT'S AHEAD

A sneak peek at your next WOOD



ADVANCED HOARDING

Does your scrap pile still have embarrassing air gaps? Do your friends wonder why you skipped that last estate sale? Are you ashamed to admit that you can still walk through your shop? Then this three-step guide to advanced hoarding is for you.



STEP ONE

Maximize your space to fit in more lumber and tools.

- **Mobilize your tools to make room for more!**
woodmagazine.com/mobilebases
- **Our shop layout template proves it will fit!**
woodmagazine.com/shoplayouttemplate
- **Floor full? Time to load up the walls!**
woodmagazine.com/wallstorageoptions

STEP TWO

Learn new techniques to rationalize more tool purchases.

- **Tool restoration is also woodworking!**
woodmagazine.com/handplanerrestoration
- **No tool is expendable when you can sharpen!**
woodmagazine.com/sharpeningstones
- **Other people selling bargain tools? Suckers!**
woodmagazine.com/buyingusedtools



STEP THREE

Leave no scrap of lumber behind.

- **The top techniques of master board hoarders!**
woodmagazine.com/boardhoardersunite
- **Reclaim lumber to top off your collection!**
woodmagazine.com/reclaimedlumber
- **Toss that sawdust? Not on our watch!**
woodmagazine.com/usesforsawdust

NEW
OPTIONS

FREE UPGRADE

BUY ANY NEW PCS — GET ONE OF THESE

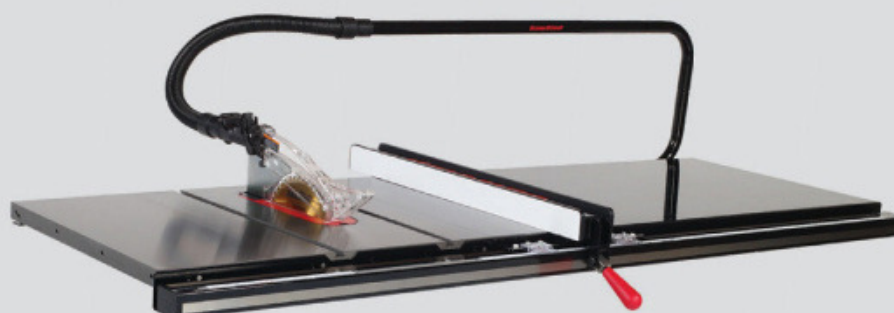


Buy any 1.75 HP
or 3.0 HP PCS
and choose a
free upgrade



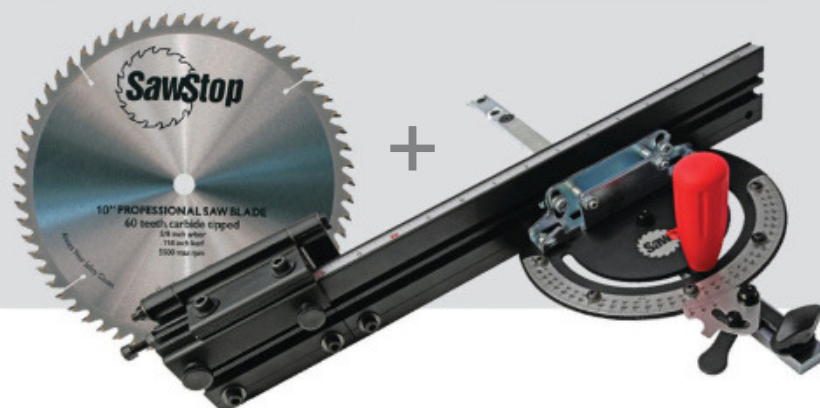
Premium
Dado Set

OR



Overarm Dust
Collection

OR



Scale Miter Gauge
and 60-Tooth Blade

\$299+ Value

Offer valid March 1 - April 30, 2024

Choose your upgrade at SawStop.com/Upgrade

Visit SawStop.com/Upgrade for full offer details



TRACKING THE TRAINS

The Classic Steam Engine and Tender from issue 291 (October 2023) was a really fun project! I elected to turn my own wheels, axles, and boiler. With easy-to-follow plans, it turned out great. Thank you!

Thomas Lagonegro
Elmira, New York



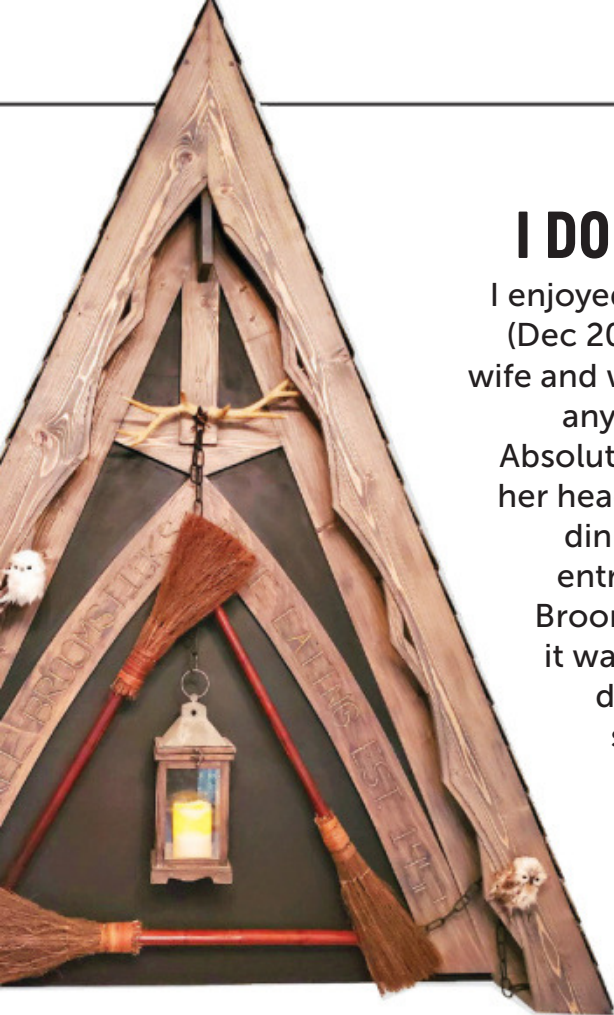
I loved issue 291 the minute I saw the train. Enclosed is a picture of the train I built in Maine. The Locomotive Treehouse Sugarhouse is a working sugarhouse for boiling down maple sap that we turn into maple syrup and candy.

Daniel Giguere
Auburn, Maine



I enjoyed the article on the steam train. Here's one of the many railroad projects I've done. No plans—I just print out photos and go from there. I've always loved trains. My grandfather was a general manager of a shortline. My dad was a gandydancer (a track maintenance worker) for a while and I worked on a tourist steam train in college.

Skip Christensen
Homosassa, Florida



I DO THE HONEY-DON'T

I enjoyed "Honey-Don't" in issue 293 (Dec 2023/Jan 2024). I read it to my wife and when I came to the line "Was anybody asking for this project? Absolutely not!" she quickly nodded her head to my latest creation in the dining room. It's a replica of the entrance to Harry Potter's Three Broomsticks restaurant. I thought it was essential for displaying our decorative broomsticks, but a simple jerk of my wife's head quickly corrected me that it was on the "Honey-Don't list." Guess I better get back to the Honey-Do's.

Alan Talley
Irondale, Alabama



I had to read your article, "Honey-Don't" aloud to my wife. I wasn't halfway through when she turned her head to look at the statement piece in our family room. I had finally put aside all the other "practical" projects on my list and made this table to push my limits as a woodworker. I included several techniques that I've always wanted to try: gate legs, wooden hinges, crafting and installing inlay, rule joints, off-center turned legs, and hidden compartments. Thanks for the article and the chuckle it gave my wife and I. 🌿

Robert Reed
Grayslake, Illinois

I, in turn, read your letters to my wife. Somehow we both felt vindicated and glad that we're not alone in this particular dispute.

Lucas Peters
Editor-in-Chief

Moisture Meters

Dependable - Accurate - Built-to-last



Pin Meters are versatile.

Everything woodworking:

Flat, round and oddly shaped work pieces.



Order as #MD-1



Pin Meters are versatile.

Monitor your kiln from the outside.

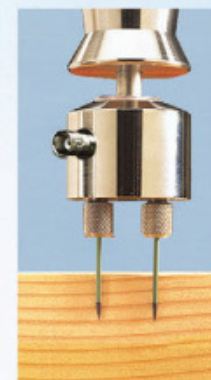
Fast and easy.



Order as #M-11



Slide-hammer for core measurement in thick wood.



Order Package #M2-M

Call 800-227-2105
www.lignomat.com

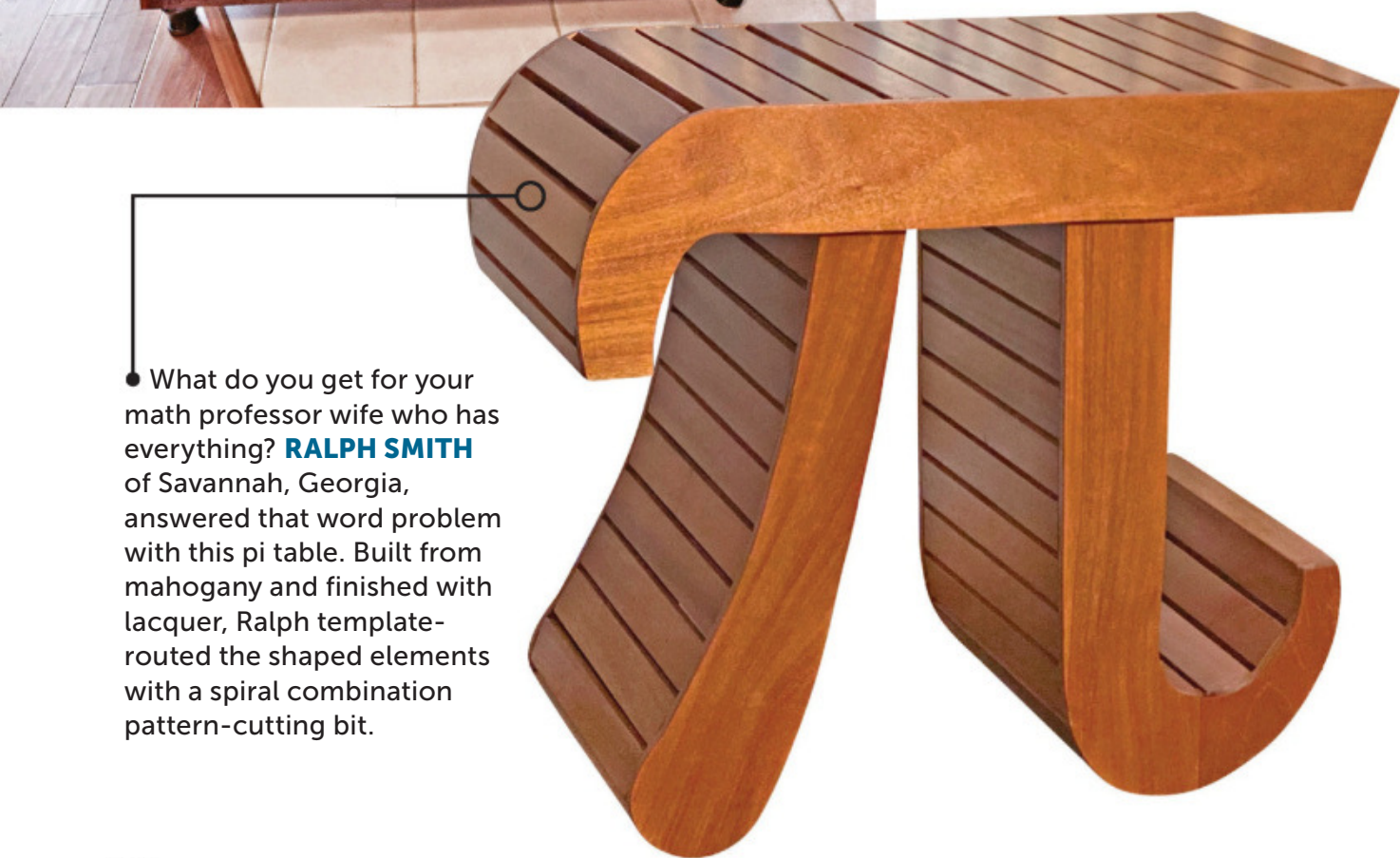
Lignomat



DANIEL MOCK of Apollo Beach, Florida, came up with this coffee bar design for his wife who wanted a place for the coffee maker, dishes, and her new microwave/convection oven. The drawers offer space for cups and coffee, as well as room to spare for accessories. The wood is alder finished with satin polyurethane.



Find plans (minus the electronics) to build your own Skill-Ball game at: woodstore.net/skillball



What do you get for your math professor wife who has everything? **RALPH SMITH** of Savannah, Georgia, answered that word problem with this pi table. Built from mahogany and finished with lacquer, Ralph template-routed the shaped elements with a spiral combination pattern-cutting bit.



ROBERT ROYKO of Vancouver, Washington, added an electronic spin to the Skill-Ball game from issue 279 (Dec 2021/Jan 2022). He incorporated an Arduino Mega 2560 microcontroller that keeps score for up to four players. Five different game options along with a selectable number of frames and balls in play add a ton of variety. Great job, Robert!



SEND US A PHOTO OF YOUR WORK

Want to see your work showcased in *WOOD*® magazine? Send a high-resolution digital photo of your completed project to woodmail@woodmagazine.com.



NEW!
**Wall Mount
option**

Other drum
options and
stands available.

Dust Cobra®

"...All I can say is WOW!"
- Eric D.

Learn more about
the wall mounted
Dust Cobra®



Superior Performance on 2.5" Ports • Touchless Filter Cleaning

Made in the USA since 1993  **800-732-4065 • oneida-air.com**



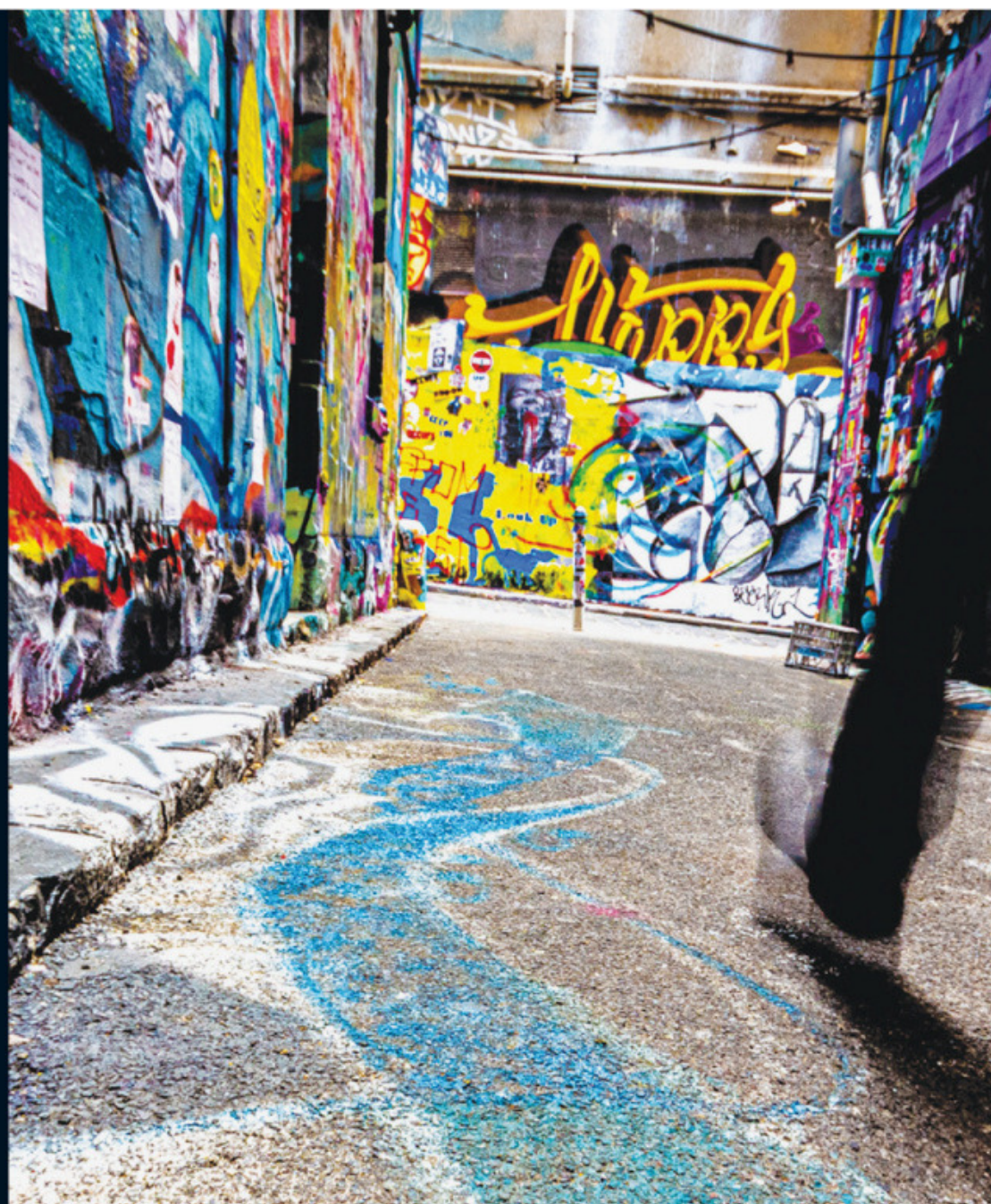
**Introducing a New
Brand of Woodworking
Hand Tools.**

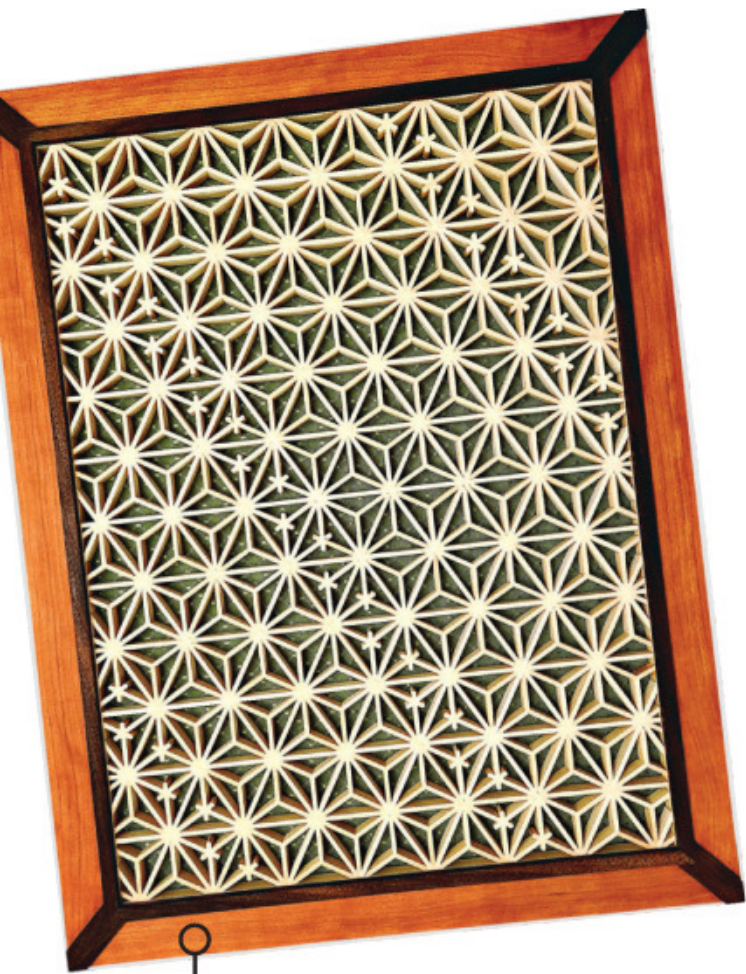
Scan to view the range.

Join our mailing list for exclusive access
to news, product releases, and more.



www.melbournetool.com





● **MARK BEHRENS**, of Orlando, Florida, has been learning woodworking for the last 20 years and has even begun to teach. His latest pursuit? The Japanese art of Kumiko. He says he enjoys the geometric patterns. This screen was crafted for a friend.



Try your hand at Kumiko with plans for a tea box.
woodstore.net/kumiko



● The first project that **TOM COWLES**, of Mechanicsville, Virginia, built was a dining room table for the woman he was about to propose to. Forty-eight years later, he claims his latest project saved that very marriage after he took up metal detecting. To appease his wife, he made this display-case coffee table to house his growing collection of treasure. Built from poplar with a walnut stain, it sports soft-close drawers beneath, holding nearly 200 spoons that he's found!



Tom's favorite find? A 1920s-era Naval Academy class ring that he was able to return to the family.
woodmagazine.com/classring



● **ALEXA PRATER**, of Fairlawn, Virginia, a self-professed beginner woodworker, took a road-trip to visit her great uncle, **JACK MCMILLEN**, of Crucible, Pennsylvania. Health issues mean that Jack's woodworking days are winding down, but he talked Alexa into helping him restore a keepsake box that was made by Jack's then 16-year-old great-grandfather. The box features hand-cut appliqué starbursts on five sides. They replaced some pieces and repaired the box in Jack's basement shop. In the process, they realized that they were completing the project on the original craftsman's birthday. Kudos on great work, Alexa. And kudos on passing down the craft, Jack. 🌲

ULTRA·SHEAR™

by Woodpeckers®

Check out Woodpeck.com
for a full line of
Ultra-Shear™ Saw Blades
and Router Bits.



ROUTER BITS

SAW BLADES

Save money and
enjoy the
performance of
premium grade,
American Made
Ultra-Shear Router
Bits when you buy
direct from the factory
in Strongsville, Ohio.

CARBIDE INSERT RABBETING

This 3-flute rabbeting bit creates smoother
rabbets faster than typical 2-flute designs.
Inserts can be rotated four times.

US5RBT Carbide Insert 3-Flute Rabbeting,
1/2" Shank.....\$57.93 \$49.99
More sizes & options available at woodpeck.com.

AMERICAN MADE
QUALITY
FACTORY DIRECT
PRICING



CARBIDE HEAD COMPACT SHALLOW PATTERN

The perfect bit to clean out dadoes. 3-Flute,
1/2" diameter design leaves glass smooth finish.

US2250CSP 3-Flute Compact Shallow Pattern,
Carbide Headed, 1/4" Shank, 1/2" Dia.,
1/4" Cutting Length.....\$29.54 \$27.99
More sizes & options available at woodpeck.com.



FLUSH TRIM SPIRAL

With 2" of cut length this 1/2" diameter bit
is perfect for template routing furniture parts.

US5200FTU Solid Carbide Spiral
Flush Trim, 1/2" Shank, 1/2" Dia.,
2" Cutting Length, Up-Cut,
2-Flute.....\$105.86 \$89.99

+FREE* Shipping!

More sizes & options available at woodpeck.com.



COMPACT COMPRESSION PATTERN & FLUSH TRIM

The ultimate bit for creating tearout-free
cabinet parts from thin veneer plywood.

US2512UC Solid Carbide Compact
Compression Pattern & Flush Trim,
2+2 Flute, 1/4" Shank, 1/2" Dia.,
1-1/8" Cutting Length.....\$118.74 \$99.99
+FREE* Shipping!



SOLID CARBIDE FLUSH TRIM COMPRESSION

The perfect furniture making bit when
working with templates and a table
mounted router. Leaves razor sharp top
and bottom work piece surfaces.

US5202FTC Solid Carbide Spiral 2-Flute
Compression Flush Trim, 1/2" Shank, 1/2" Dia.,
2" Cutting Length.....\$148.75 \$129.99 **+FREE* Shipping!**
More sizes available at woodpeck.com.



SOLID CARBIDE SPIRAL

One of the most commonly used router bits. 1/4"
diameter and 1" length of cut is perfect for mortising.

US2100U Solid Carbide Up-Cut Spiral,
1/4" Cutting Dia., 1" Cutting Length,
1/4" Shank.....\$21.96 \$19.99

More sizes & options available at woodpeck.com.



For the first time in
a generation,
woodworkers have a
new and better choice for
their table saws. Introducing
Ultra-Shear Saw Blades,
meticulously crafted
American-made saw blades
engineered and built for
professional woodworkers.

These new carbide-tipped
saw blades are constructed
using the best American-made
steel saw plates. Each plate
is carefully heat treated,
tempered, tensioned, and
smithed to ensure glass
smooth cuts in hardwood,
softwood and man-made
materials. Every carbide
tooth is brazed and ground
to perfection on modern,
cutting-edge equipment with
hook, top and side clearance
angles optimized to deliver
unmatched cut quality and
whisper-quiet operation.

So, if you're ready to
experience a top-quality
table saw blade, produced
right here in America, look no
further than Ultra-Shear.



SALE
\$149.99*
Reg. \$169.99

**FREE
SHIPPING***

40 TOOTH CROSS CUT & RIP BLADE

Get great quality, fuzz free crosscuts and
rips with our new 40 tooth Cross Cut & Rip
Blade. The ATB grind and clearance angles
of these blades are optimized to minimize
tear out on even the most challenging of
wood species. Whether you're making
plywood cabinets or solid wood furniture,
you'll love this blade.

US1040ATBKF 10 x 40 ATB
Cross Cut & Rip Blade,
Full Kerf, 5/8" Arbor

US1040ATBTK 10 x 40 ATB
Cross Cut & Rip Blade,
Thin Kerf, 5/8" Arbor

30 TOOTH GLUE LINE RIP BLADE

Our new 10" Glue Line Rip Blades
produce glass smooth rip cuts in hardwoods
and softwoods of any thickness. When
invisible glue lines are the goal, this is the blade.

US1030RIPFK 10 x 30 ATBF
Glue Line Rip Blade,
Full Kerf, 5/8" Arbor

US1030RIPTK 10 x 30 ATBF
Glue Line Rip Blade,
Thin Kerf, 5/8" Arbor



SALE
\$129.99*
Reg. \$164.14

**FREE
SHIPPING***



Visit **Woodpeck.com** for hundreds of other American Made Tools!
Woodpeckers, LLC • Strongsville, Ohio • 800-752-0725

*All prices subject to change without notice. FREE Shipping valid for a limited time and to US 48 states only.



WHERE FRIENDS GATHER

A spacious layout offers wide walkways between tools. Careful planning for receptacle locations results in a floor without trip hazards.

A friend's old tools combine with a brand new building to create a shop filled with workspace, memories, and more.

WRITER: RANDY MAXEY



SHOW US YOUR SHOP

Send high-resolution digital photos of your shop to woodmail@woodmagazine.com and we may showcase it in the magazine!

Woodworking for Roger Fjelstul began over 25 years ago when his good friend, Harvey, built a shop and encouraged Roger to spend as much time there as he wanted. Eventually, as health issues slowed Harvey's woodworking, he offered Roger a chance to buy all the tools. Roger accepted the offer and built a new shop on his rural, Midwestern property to house them. Once the shop was built, Roger reciprocated and let Harvey use the shop whenever he wished.

Roger built his new shop onto an existing structure, completing all the construction himself after his contractor framed it in. To make the shop more cozy in all seasons, he installed 6" of insulation in the walls and sheathed them with 1/2" oriented strand board (OSB). White steel panels make up the 9' ceiling with 16" of blown insulation on top.

A ceiling-mounted Reznor LP gas heater takes the chill out of the air. During warmer weather, Roger cranks up a window air conditioner mounted through the wall into the adjacent building.

Before pouring the 5"-thick concrete floor over 2" foam insulation, Roger ran conduit to the workbench and stationary tool locations and stubbed it out for receptacles. He hired an electrician to install the main 100-amp power panel but he finished the rest of the work himself. He is proud of the fact that he has no drop-cords hanging from the ceiling or cords laying on the floor that could be trip hazards.

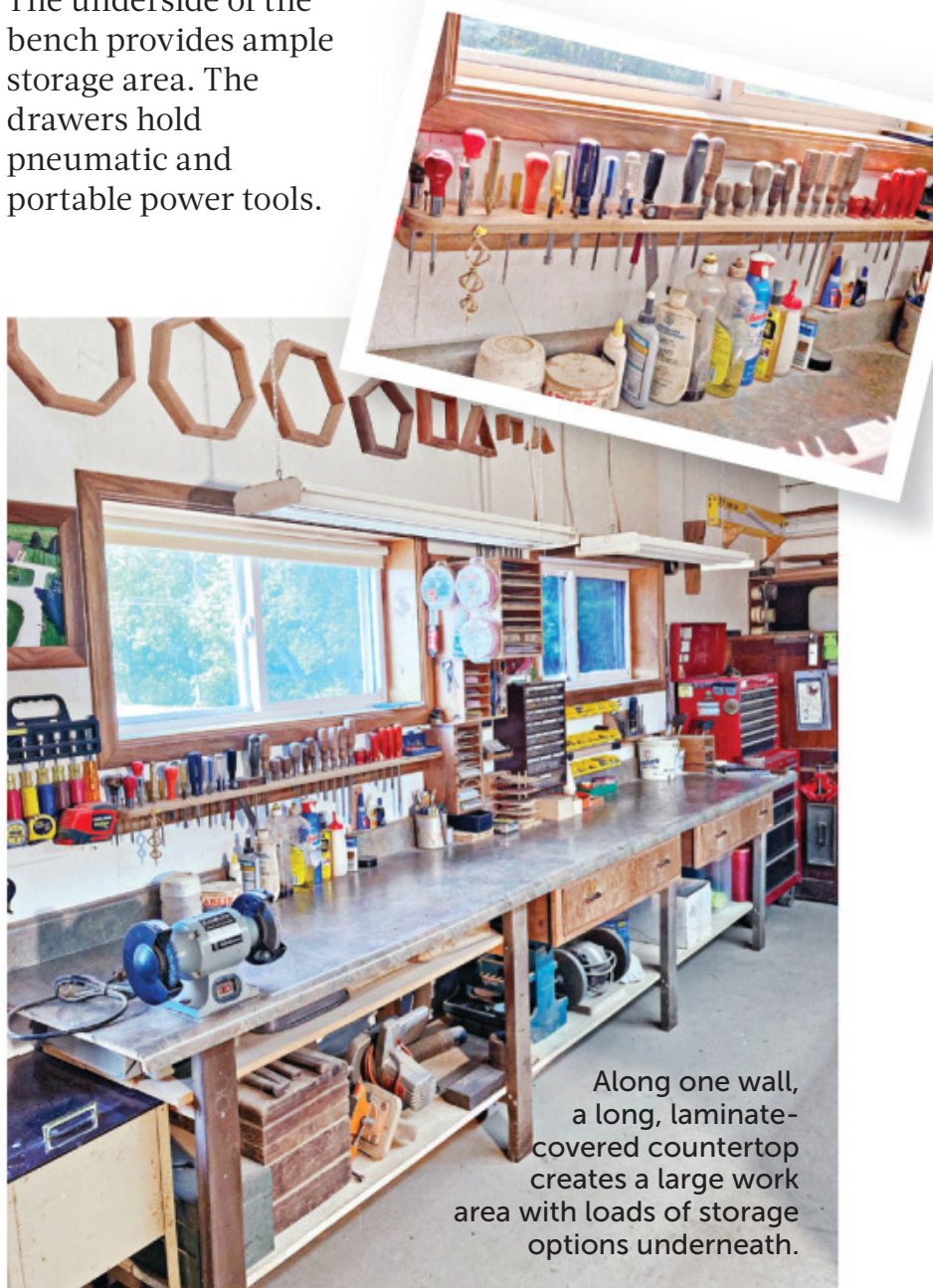
Windows, combined with ceiling-mounted fluorescent fixtures, provide plenty of light, while high-gloss white paint helps to brighten the shop space. Task lighting consists of two 4' ceiling-

ILLUSTRATORS: ROXANNE LEMOINE, LORNA JOHNSON

mounted LED fixtures at the ends of the workbench, along with LED fixtures mounted over the drill press, bandsaw, and belt sander.

A section of floor salvaged from a bowling alley makes a sturdy top for Roger's main workbench. The underside of the bench provides ample storage area. The drawers hold pneumatic and portable power tools.

Work efficiency means keeping your most-used tools within easy reach. This simple, wall-mounted rack fulfills the need.



Along one wall, a long, laminate-covered countertop creates a large work area with loads of storage options underneath.



Under-bench storage for pipe clamps and accessories makes it easy to select and assemble the right pipe clamp for the job at hand.



Router not included

Woodpeckers® Slab Flattening Mill-PRO



woodpeck.com

Woodpeckers, LLC • Strongsville, Ohio • 800.752.0725

- Adjustable height router carriage with built-in dust ports.
- Standard width of 48-1/2" expands to 62" with optional extension.
- Standard length of 59" expands to 132" with optional extension.
- Flatten stock as thin as 3/4" & up to 3-7/16" without shimming.
- Straight-line edges on stock up to 2" thick.



Blue Spruce
TOOLWORKS



CHISELS | MARKING KNIVES | MALLETS | SCRAPERS | SAWS

BlueSpruceToolworks.com | 877-828-0332

YOUR SHOP

Roger is a huge fan of pipe clamps. So much so that he fashioned a rack system under the workbench to organize black pipe. He maintains a selection of 30"-, 42"-, and 54"-long sections of pipe in 1/2" and 3/4" sizes. He also keeps couplers handy to assemble clamps of any length.

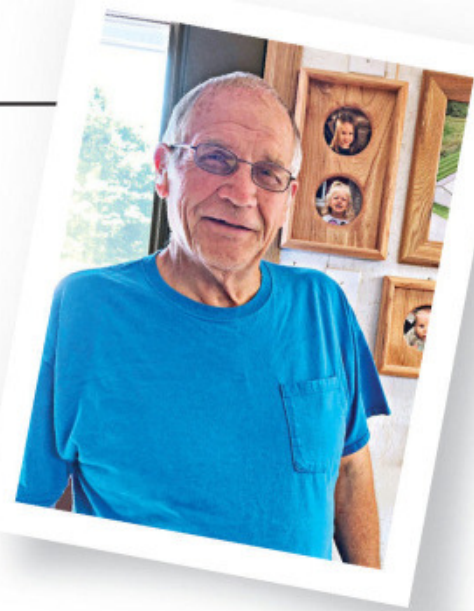
The bench height is matched to serve as an infeed table for one of Roger's more unusual tools: a vintage Craftsman 8" tablesaw. It serves him well and he sees no immediate need to replace it. "I decided to stick with this saw because I have all the accessories that go with it."

Roger's rural location lets him use an unconventional dust-collection system. He purchased a blower from an industrial supplier and installed it under the workbench where his lathe resides. He routed the exhaust through the exterior wall to blow the dust outdoors without collecting it. He simply connects the vacuum hose to his belt sander or drum sander as needed. A ceiling-mounted air cleaner removes fine dust particles from the air.

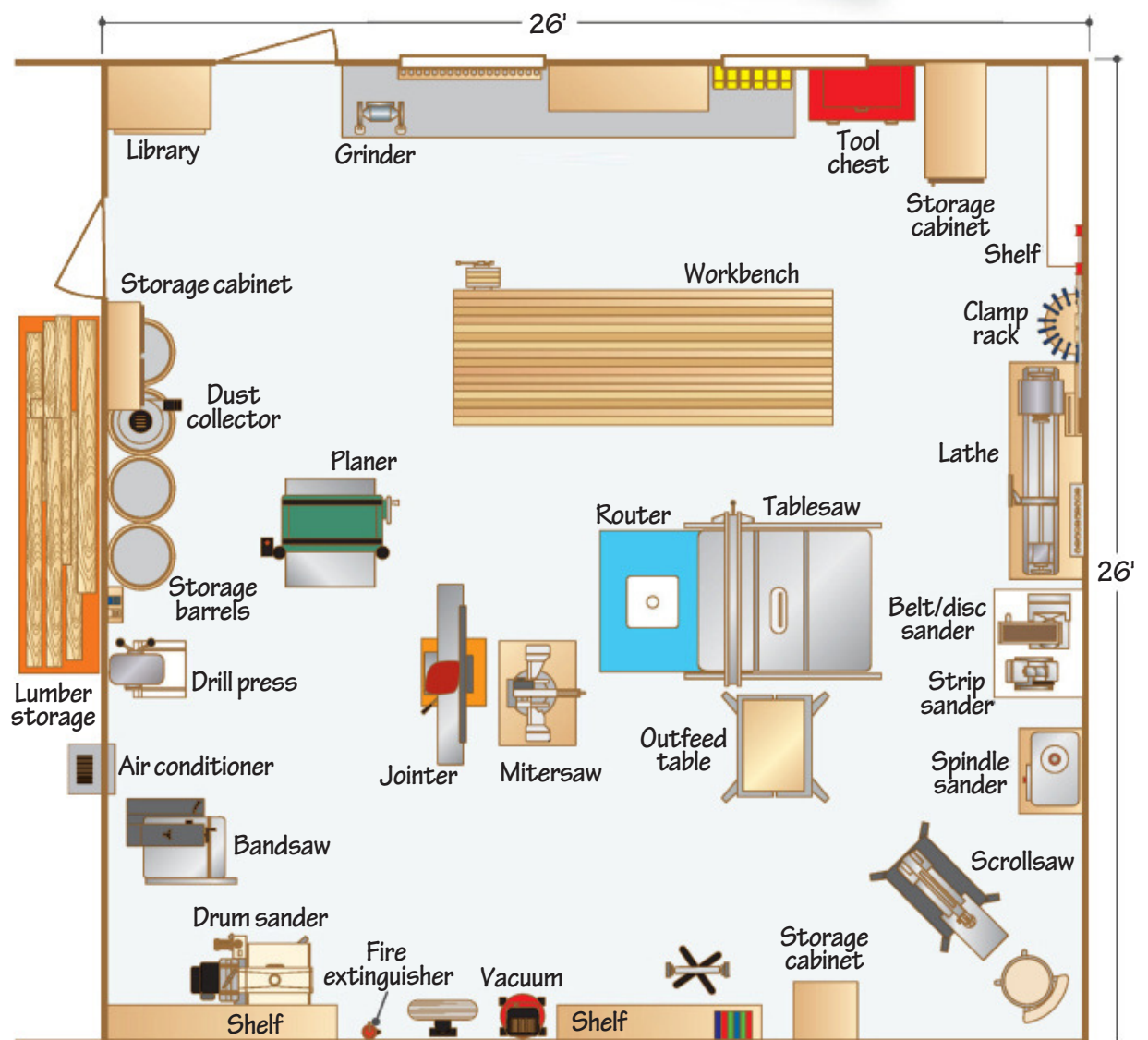
For the thickness planer, Roger fashioned a dust collection system from a drum-mounted dust collector blower and motor. The base of the blower assembly just happened to fit inside the grooves in the tops of the fiber drums he uses to collect chips. The chips are destined to become landscape mulch.

Because Roger's shop is plenty large enough to arrange his tools in permanent locations, the only mobile tool he owns is the drum sander.

After retiring from his career as a project inspector for an engineering and construction company, woodworking fills a lot of Roger's time. But to keep from going stir crazy, he went to work providing transportation for the elderly and disabled. "I enjoy this and find it very rewarding," he says. 🌱



◀ Roger enjoys making projects for friends and family. He's made over 80 cell-phone holders and gives most of them away.



OSB-lined walls simplify attaching racks for hand tools, and other accessories. The semicircular clamp rack reduces their storage area.



Roger's drum-mounted dust collection system easily handles large volumes of chips and dust from the planer.

PantoRouter



Elevate Your Craftsmanship

The PantoRouter® Joinery Machine is a game changer.

- ✓ Professional-level quality and accuracy
- ✓ Precision and speed
- ✓ Minimal setup without complicated jigs
- ✓ Predictable and repeatable results

Transform your woodworking today!



PantoRouter.com



Forrest Blades

Experienced woodworkers know that nothing beats Forrest saw blades for building high-end cabinets and fine furniture.

NEW Website!
More Blades!



Craftsmen appreciate the way our blades deliver smooth, quiet cuts *without* splintering, scratching, or tearouts. They know our unique grade of C-4 micrograin carbide, proprietary manufacturing process, and hand straightening produce exceptional results. In fact, independent tests rate us #1 for rip cuts and crosscuts.

"From the first cut on, I realized that this blade was a bargain at any price! Nothing else I have cuts comparably."
Calvin Brodie, Spanaway, WA

Forrest Quality Shows

Woodworker II — Best rated, all-purpose blade for highest-quality rips and crosscuts on all hard and soft woods.

Chop Master — Perfect for tight, precisely cut miter joints without splinters, and smooth crosscuts at any angle.

Order from any Forrest dealer or retailer, online, or by calling directly. Our blades are manufactured in the U.S.A. and backed by our 30-day, money-back guarantee.

FORREST
The First Choice of Serious Woodworkers Since 1946

www.ForrestBlades.com
1-800-733-7111
(In NJ, call 973-473-5236)

Woodworker II
Fine Woodworking

Chop Master
Woodshop News



© 2024 Forrest Manufacturing

Code WOOD

EPOXY LIKE A PRO



The most comprehensive set of user-friendly epoxies on the market. Every one of our products is formulated with your next successful project in mind.

SYSTEMTHREE

systemthree.com



MADE IN LACEY,
WASHINGTON 98516



Q: CLEARING UP THE CONFUSION OVER GLASS

I recently went to a glass shop to buy some glass for a cabinet I'm making and I was overwhelmed with all the choices available. How do you choose the glass that you use in your projects?

Richard Fogel
Clayton, Georgia

A: Unlike wood, glass seems like it would be a no-brainer to choose because it's a generic, manufactured product. But as you discovered, Richard, there are a lot of variables to consider. Here are some of the main ones.

Glass is sold in various thicknesses. Single-strength glass is $\frac{3}{32}$ " thick; double-strength is $\frac{1}{8}$ " thick. For most of the projects we build with wood-framed, divided light doors or sides, single-strength glass provides a good balance between strength and weight. For projects that have a single, large pane of glass, you may want to step up to double-strength glass simply as a precaution. Hardware stores typically carry single- and double-strength glass and can cut it to the size you need.

Glass shelves or tabletops are another story. Here, strength is often more important than weight. Choose $\frac{1}{4}$ " glass for small shelves; $\frac{3}{8}$ " for larger shelves. Glass tabletops typically range from $\frac{1}{4}$ " to $\frac{1}{2}$ " thick, depending on their size. You'll probably have to order thick glass like this from a glass supplier, who should also be able to suggest the correct thickness based

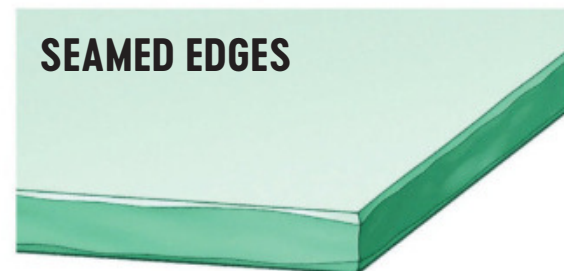
on the span of your shelf or table and the weight it will bear.

In addition to thickness, consider whether you want tempered or non-tempered glass. Tempered glass is treated to withstand greater impact than non-tempered. And if it does break, it shatters into hundreds of tiny pieces rather than large shards. Although more expensive, tempered glass is the better choice wherever there is a risk of injury if the glass breaks, such as tabletops, shelves, or floor-level windows or doors. Be aware that tempered glass cannot be cut after the tempering process, so double-check your measurements before ordering.

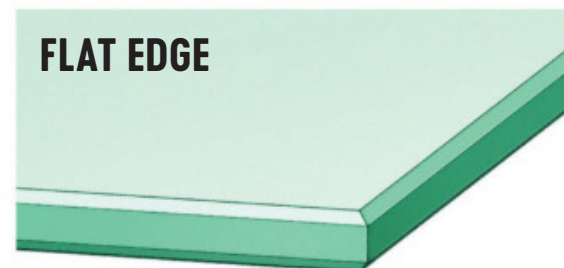
One final detail to consider is edge treatment (*right*). If you're installing glass panels in a wood frame where the edges won't be seen, order your glass with seamed edges. This term refers to glass that is cut and then lightly sanded to minimize any sharp edges.

For a more decorative look on exposed shelves, choose a flat or pencil edge. A flat edge is ground and polished so the edge is smooth and then chamfered along both the top and bottom faces. A pencil edge is rounded to a bullnose profile, and can also be either polished or ground. For mirrors or thicker glass panels, beveled edges are also an option. 🌲

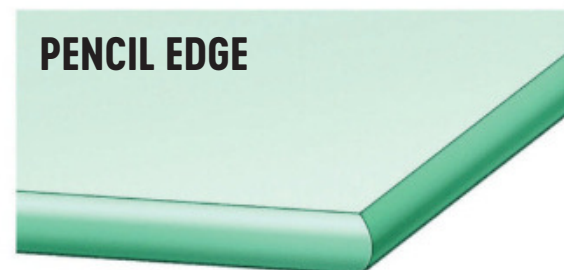
SEAMED EDGES



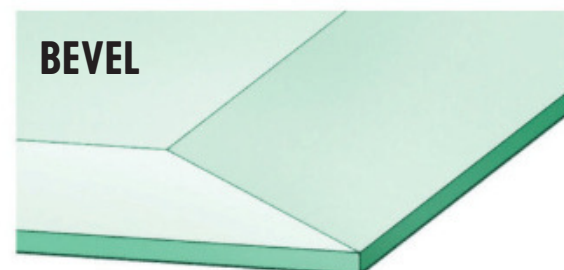
FLAT EDGE



PENCIL EDGE



BEVEL



Have a question? Drop us an e-mail.
askwood@woodmagazine.com

FROM FOREST TO FINAL FORM®

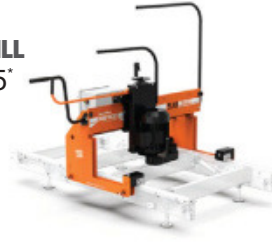
Cherry coffee table milled and made
by Nino Cocchiarella of Indiana.

Proven in workshops
throughout the world,
Wood-Mizer equipment is
quality-built and backed
by legendary service so
you can successfully
take your woodworking
dreams *From Forest to
Final Form®*.



LX50 START SAWMILL
Starting at \$3,295*
+ \$0 SHIPPING*

PORTABLE SAWMILLS
15 MODELS



**MB100 SLABMIZER
SLAB FLATTENING MILL**
Starting at \$9,995*

SLAB FLATTENING MILLS
2 MODELS



**MP180 JOINTER
PLANER MOULDER**
Starting at \$8,995*

PLANER/MOULDER
6 MODELS



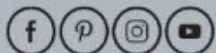
©2024 Wood-Mizer LLC
*Prices subject to change. Free shipping on
select products in contiguous U.S.



woodmizer.com
800.553.0182
Financing Available!



Wood-Mizer®
from forest to final form®



**Explore Our Complete
Line of Safety Products!**

Scan,
Learn,
Build.



www.Milescraft.com
(224) 227-6930

3403

Grabber™

3405

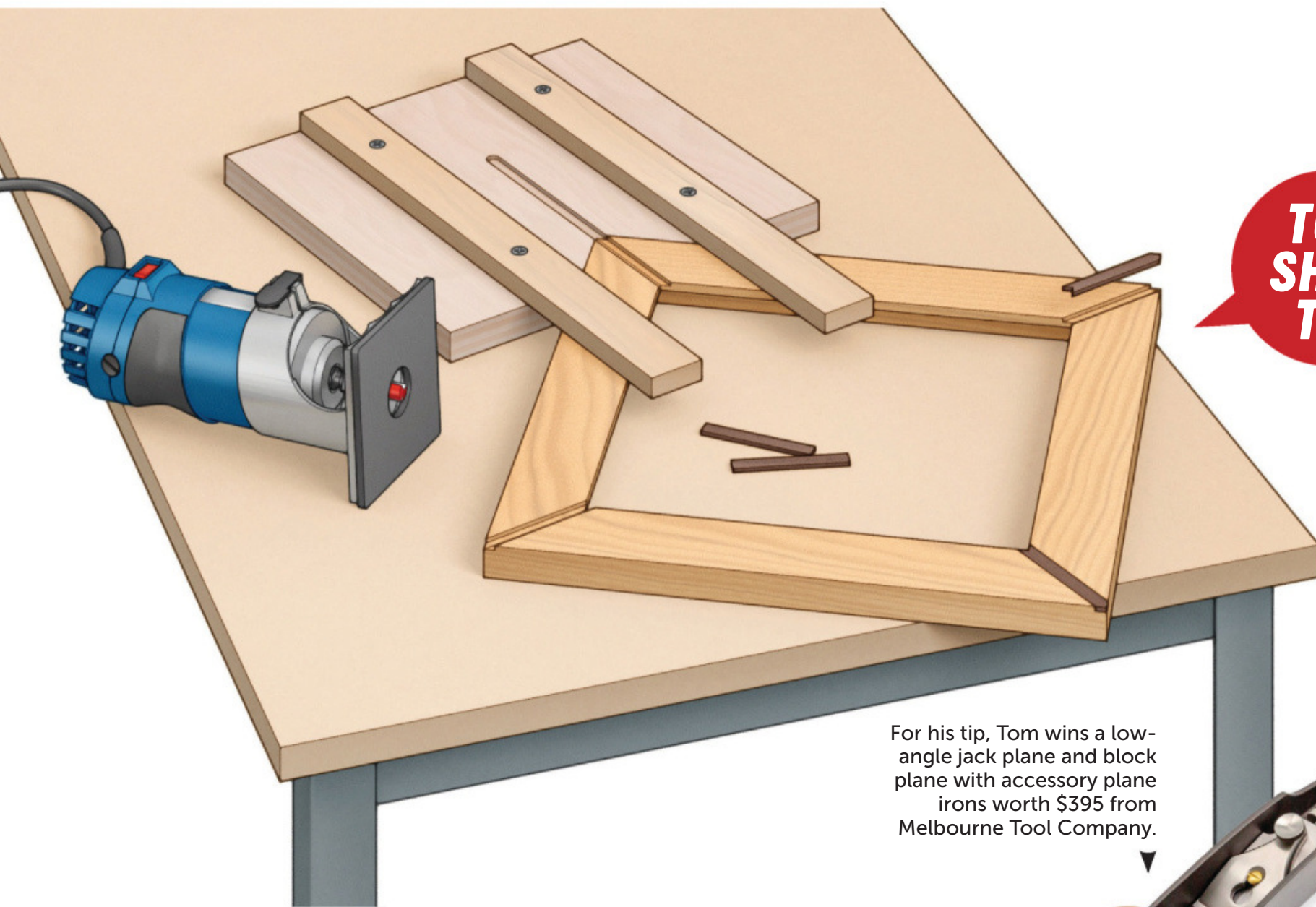
GrabberPLUS™

3406

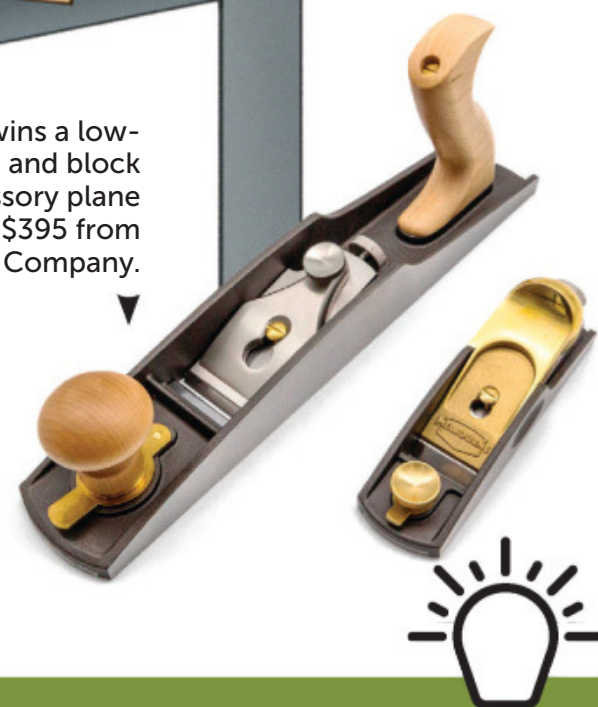
GrabberPRO™



NON-MARRING DIAMOND GRIP



For his tip, Tom wins a low-angle jack plane and block plane with accessory plane irons worth \$395 from Melbourne Tool Company.



MITERS: WE'VE GOT YOU COVERED

No matter how carefully I cut miter joints for frames, I often end up with a slight gap in one or more of the corners. To hide them, I made a jig to rout a recess over the joints that accepts an inlaid piece of contrasting wood. This hides the gap, looks great, and adds strength.

To a piece of $\frac{3}{4}$ " plywood, I screwed (not glued) two extra-long parallel guides spaced to fit the base of my trim router. Then I marked the centerline on the plywood between the guides, as well as the inside edge of each guide. After removing the guides, I laid out and cut a 90° notch connecting the edge lines and centerline. Then I reattached the guides with glue and screws.

To use the guide, clamp it to each frame corner and use a straight bit to rout a shallow groove over the miter joint. Cut wood inlays to fit the grooves, then glue them into place and sand them flush.

Tom Peters
Midland, Michigan

**TIPS EARN
UP TO \$150.**

If your tip is the best submission of the issue, it wins Top Shop Tip honors, and you receive a

**PRIZE PACKAGE WORTH
AT LEAST \$300.**

Send your tip, photos or drawings, and contact info to
shoptips@woodmagazine.com

Because we try to publish original tips, please send yours only to **WOOD**® magazine.



**PENN STATE
INDUSTRIES**



TURN RAW INTO AWE

At Penn State Industries we make it easy for you to make beautiful, functional things on a lathe. And with the largest selection of unique, well-engineered woodturning project kits, supplies and tools in the world, you have unlimited possibilities to transform raw materials into something awesome.

PENNSTATEIND.COM | 1-800-377-7297

I USE A WAGNER
MOISTURE METER BECAUSE:

These are
family
heirlooms



80% of all problems in wood projects are caused by moisture content issues. A quick and simple, non-damaging moisture meter reading can save you from angry customer calls, unnecessary repair time, and a bad reputation. Call today and learn why Wagner's industry-leading Orion Meters may just be the most important tool for your shop.



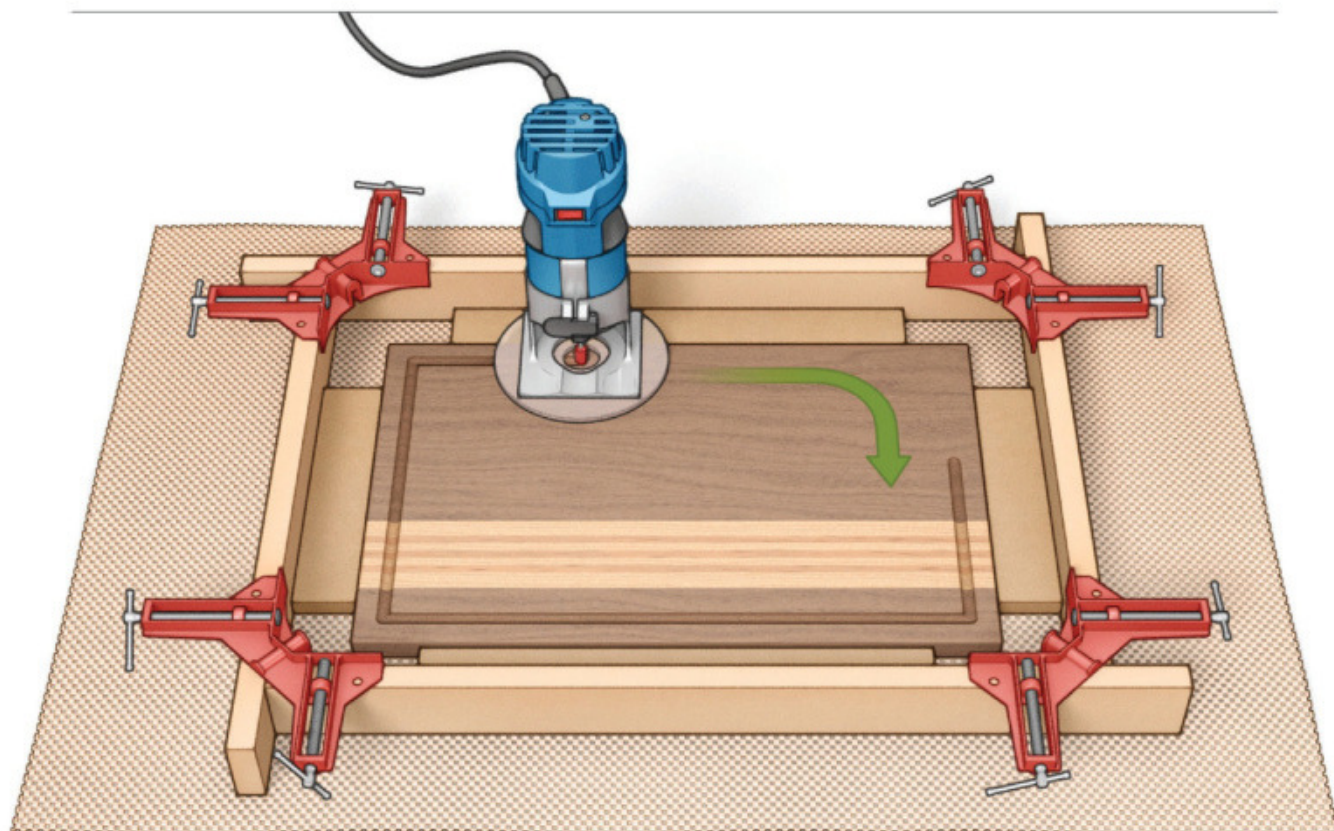
(800) 795-9916 | WagnerMeters.com

SHOP TIPS

BASTED, NOT WASTED

When I need a small amount of paint or finish from a can, I don't pour it into another container. Instead, I use an inexpensive turkey baster to draw the liquid out of the can and dispense it into the smaller container. I get just the amount I need, and I don't have to wipe the rim of the can clean to get a good lid seal. Afterwards, I wash out the baster for its next use.

Edouard Piche
Troy, Michigan



ADJUSTABLE JUICE JIG

This adjustable jig makes it easy to rout consistently positioned juice grooves in the cutting boards I build. It's made up of MDF rails that guide the router, scrapwood spacers to set the groove position, and a set of corner clamps to hold it together.

To size the spacers, first measure from the edge of the router subbase to the bit center (2" on my trim router). Subtract how far you want the grooves inset, and then cut four spacers to the width of the remainder.

Place the spacers against the ends and edges of your cutting board, snug the guide rails against the spacers, and then tighten the clamps. Rout clockwise, keeping your router against the rails. Arranging the guide rails in a pinwheel fashion allows adjusting the jig for different cutting board sizes.

Ken Wright
Russiaville, Indiana

INFINITY
CUTTING TOOLS

Shop 1000's of Innovative Tools!

New
DRILL PRESS PACKAGE
w/ Pro Fence!

Aluminum Extruded
Fence w/ Integrated
Dust & Chip Collection

Now with Integrated
Dust Collection
To Pair Perfectly
with Your Shop Vac!

Watch Video Online
Item # DPT-200

Built-In Dust Port For
Dust Collection Options

INFINITYTOOLS.COM • 877-USA-BITS

WEEKEND
Shop Spruce-ups

25 DOWNLOADABLE
PLANS FOR **ONLY**
\$25!

woodstore.net/weekend



We've lowered the prices on many of the
essentials woodworkers need. Look for our
New Everyday Value items storewide.

HELPING YOU MAKE WOOD WORK®

To Find Your Local Woodcraft Store, Visit
woodcraft.com or Call 800-225-1153.



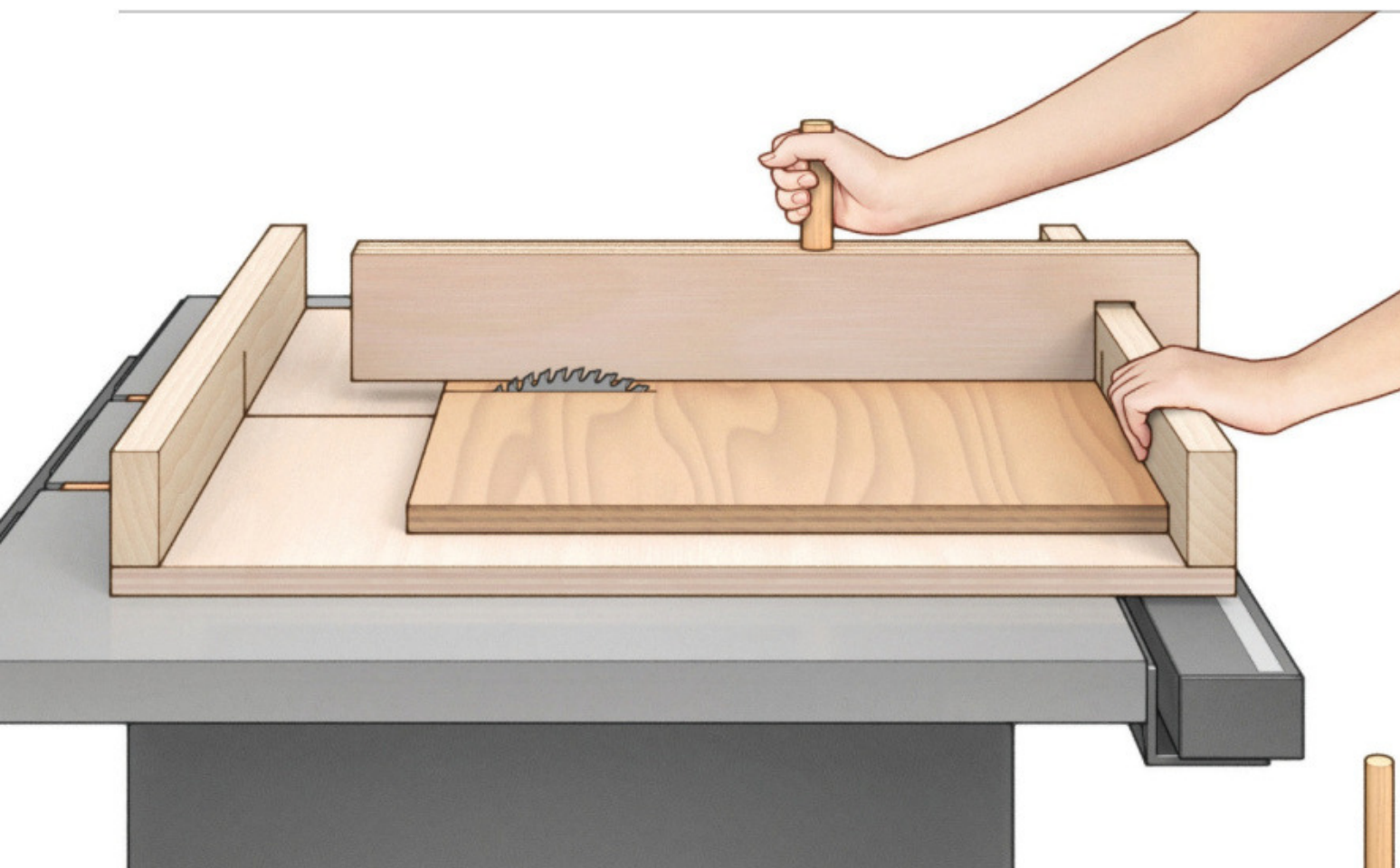
PULL AT THE FRONT OF YOUR DRAWERS

The “Multi-Drawer Storage Center” in issue 287 (March 2023) reminded me of the one I inherited from my dad and still use. It features integral pulls that he turned into the fronts of the small drawers.

To make them, secure the drawer front to a faceplate on your lathe. A skew chisel creates a simple tapered pull, or you can get creative with the shape. Then turn a recess to provide clearance around the pull.

William Vavra

Rose Hill, Kansas



SAFER SLEDDING

My table saw sled sees a lot of use, but I was always a little nervous securing the workpiece with my hands during the cut. This hold-down fits over the fence of my sled, reaching across the sled's full depth. I made it from three 4"-wide plywood strips laminated together. A notch at one end fits over the back fence of the sled. A 1" dowel glued into the hold-down provides a comfortable grip and allows me to hold workpieces on my sled with my hands out of the way.

Logan Newman

Rochester, New York





Survive Just About Anything for Under \$20

On any outdoor adventure, Mother Nature's job is to present you with challenges. Some days she's more demanding than others. And on those days, you'd better come prepared. **The Stauer Survival Box is a near-guarantee you'll be up to the challenge.** The stainless steel multitool offers wire cutters, knife, bottle opener, file, a set of screwdrivers, a pair of pliers and much more. The powerful flashlight has three different settings, and the tactical loop watch is a reliable, water-resistant timepiece that clips to your hip and never leaves your side. All told, opening the Survival Box gives you instant access to nine different tools for **JUST \$19.50**.

Regularly sold for \$99, we're offering this collection of survival essentials to you for **A FIFTH OF THE NORMAL PRICE!** Why? Because we've had an incredible year and we feel like giving back to our valued customers. As this kit has proven to be one of our all-time best sellers, we can only extend this offer while supplies last. Of our initial run of 1,737, **more than half have already sold.** Your move, Mother Nature.

Survival Box Specifications:

- Multitool: 3 1/4" x 1" folded
- Flashlight: 3 1/2" x 1", 260 lumens, takes AA batteries (not included), three LED light modes: strong, medium and caution flashing
- Watch: 2 3/4" x 1", battery type SR626SW (included)

Survival Box ~~\$99~~ \$19.50* + S+P **Save \$79.50**

***You must use Insider Offer Code: SVB242-01 to get this price.**

California residents please call regarding Proposition 65 regulations before purchasing this product.

1-800-333-2045

Your Insider Offer Code: SVB242-01

Regularly priced at \$99, take advantage of this special offer while supplies last!



Praise for Stauer's Survival Box

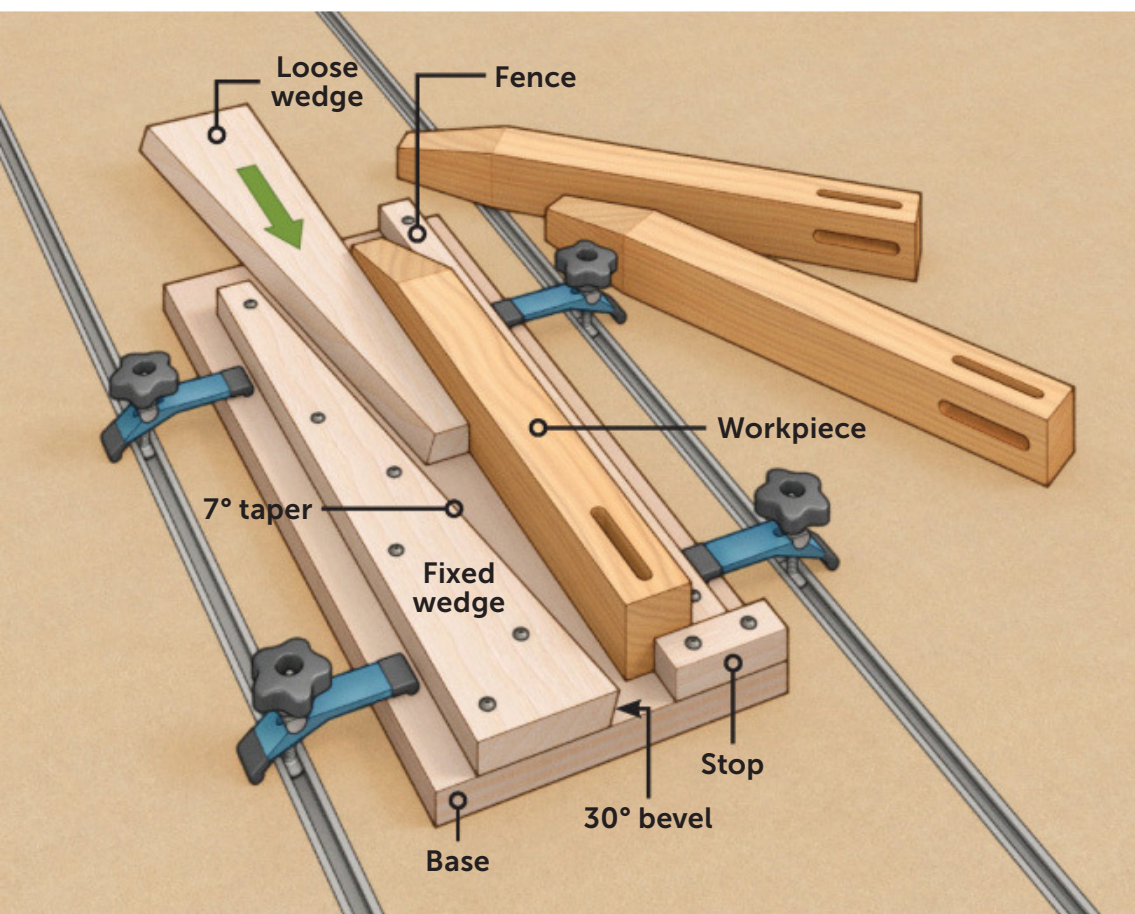


"[It] has everything!"
— Carol T.,
Anaheim, CA

Box includes flashlight, watch and multitool with wire cutters, knife, bottle opener, file, screwdrivers, pliers and more!

Stauer, 14101 Southcross Drive W., Ste 155, Dept. SVB242-01, Burnsville, MN 55337 www.stauer.com

Stauer | AFFORD THE EXTRAORDINARY®



WORKHORSE WEDGES

Wedges came in handy when I needed a jig to repeatedly cut accurately positioned mortises in table legs using my CNC router.

The illustration shows the key components of my clamping jig and how they're assembled. I started with a $\frac{3}{4}$ " plywood base. From a wide board, I cut two wedges by making a tapered ripcut at 7° with the blade tilted to 30°. I fastened one wedge to the base, leaving room for hold-down clamps on the bed of my CNC. A fence and stop locate the workpieces for consistent cuts.

With the workpiece against the stop and fence, slide the loose wedge until it contacts the workpiece and fixed wedge. A couple of light taps with a mallet jam the wedge in place to secure the workpiece.

This quick, secure clamping setup proves so handy that I find myself using it other places, including on my workbench and drill press.

John Gunter

Stevensville, Maryland

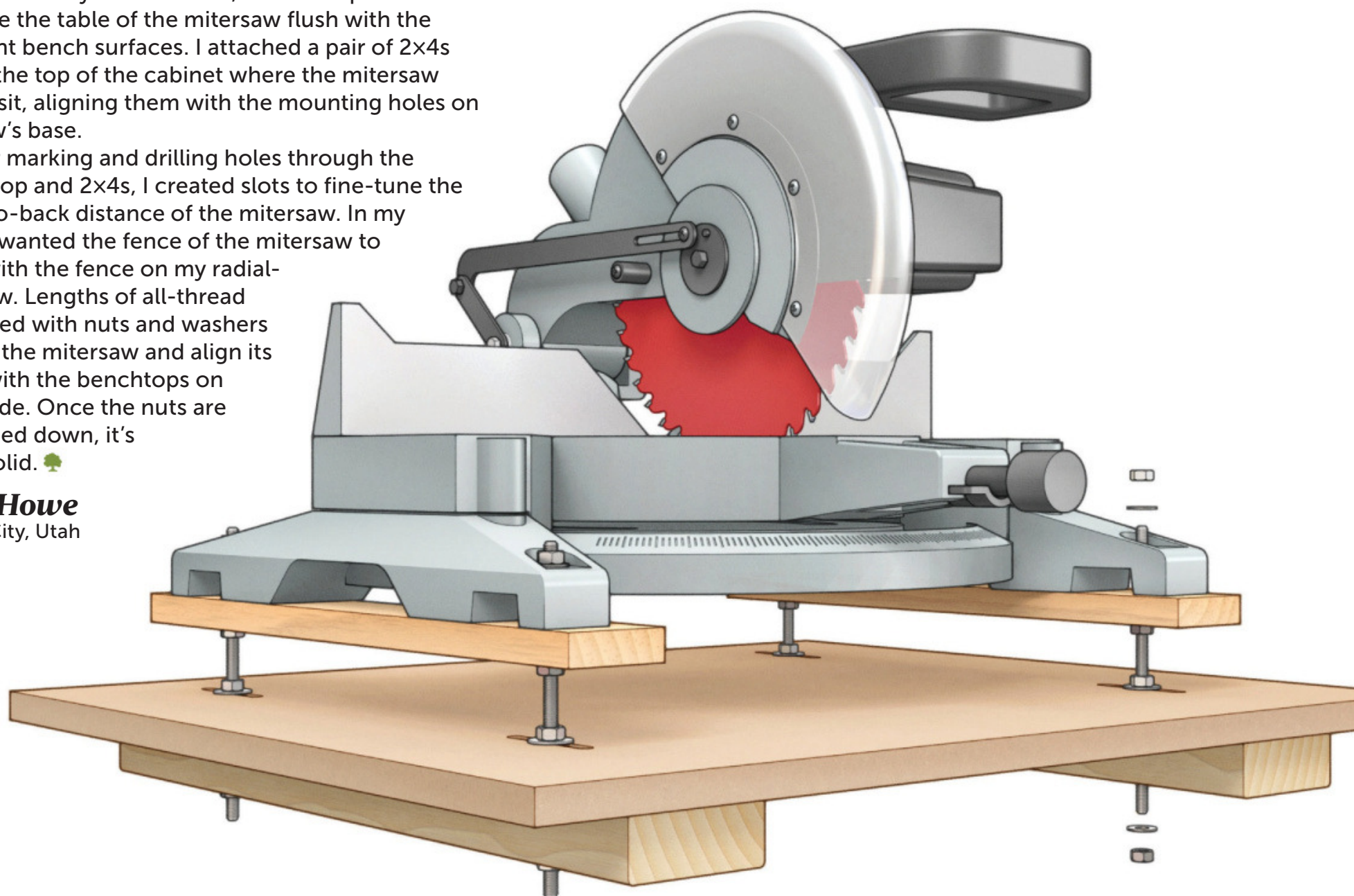
LEVEL UP

When I built my miter station, I used simple hardware to make the table of the miter saw flush with the adjacent bench surfaces. I attached a pair of 2x4s under the top of the cabinet where the miter saw would sit, aligning them with the mounting holes on the saw's base.

After marking and drilling holes through the benchtop and 2x4s, I created slots to fine-tune the front-to-back distance of the miter saw. In my case, I wanted the fence of the miter saw to align with the fence on my radial-arm saw. Lengths of all-thread equipped with nuts and washers secure the miter saw and align its table with the benchtops on each side. Once the nuts are tightened down, it's rock-solid. 🌲

Sam Howe

Cedar City, Utah





Plant Faster, Easier With **SUPER PLUGS!**

Pre-cut
plugs
are 10x
bigger!



OR...Plant Your Way With **FREESTYLE PLUGS!**

Cut any size
plugs from
sheets!



**SAVE
OVER
50%**

**THE ONE-TIME,
LIFETIME LAWN
SOLUTION**

Stays
lush and
green in
summer

Mow your Zoysia lawn once a month – or less! It rewards you with weed-free beauty all summer long.

7 Ways Our Amazoy™ Zoysia Lawn Saves You Time, Work and Money!

- 1 CUTS WATER BILLS AND MOWING BY AS MUCH AS 2/3**
Would you believe a lawn could look perfect when watered just once? In Iowa, the state's biggest Men's Garden club picked a Zoysia lawn as "top lawn—nearly perfect." Yet, this lawn had been watered only once all summer!
- 2 NO NEED TO DIG UP OLD GRASS**
Plant Amazoy in an old lawn or bare ground. Set plugs into holes in the soil checkerboard style. Plugs spread to create a lush, thick lawn, driving out weeds. Easy instructions included with every order.
- 3 ENVIRONMENTALLY FRIENDLY**
No weeding means no costly chemicals. Amazoy Zoysia lawns naturally resist insects, so you'll save money, while helping to protect the environment. Never expose your family and pets to weed killers and pesticide poison.
- 4 FOR SLOPES, PLAY AREAS, BARE SPOTS AND PARTIAL SHADE**
Can't beat Amazoy as the low-cost answer for hard-to-cover spots, play-worn areas, partial shade and erosion on slopes.

Meyer Zoysia Grass was perfected by the U.S. Gov't, released in cooperation with the U.S. Golf Association as a superior grass.

- 5 IT STAYS GREEN IN SPITE OF HEAT AND DROUGHT**
"The hotter it gets, the better it grows!" Amazoy Zoysia thrives in blistering heat, yet it won't winter-kill to 30° below zero. It goes off its green color after hard frosts, and begins regaining its green color as temperatures in the spring are consistently warm.



Thrives from partial
shade to full sun.



Plant it from
plugs.

- 6 CHOKES OUT CRABGRASS AND WEEDS ALL SUMMER**
Your established Zoysia lawn grows so thick, it simply stops crabgrass and most summer weeds from germinating!
- 7 NOW 3 WAYS TO START YOUR AMAZOY ZOYSIA LAWN!**
 - 1) Freestyle Plugs** come in uncut sheets containing a maximum of 150–1" plugs that can be planted up to 1 ft. apart. Freestyle plugs allow you to make each plug bigger and plant further apart — less cutting and planting — you decide.
 - 2) Precut Super Plugs** come precut into individual 3"x3" plugs ready-to-plant (minimum 1 per 4 sq. ft.). They arrive in easy to handle trays of 15 Super Plugs. Save time and get your new lawn faster!
 - 3) Amazoy Approved Seed** – As The Zoysia Specialists for 70 years, we now have a Zoysia seed that meets our standards and homeowners expectations.

**ORDER TODAY – GET UP TO
1,500 FREESTYLE
PLUGS – FREE!**

Your Assurance of Lawn **SUCCESS**
**Amazoy Zoysia Grass is
GUARANTEED**

Guaranteed to grow new green shoots within 45-60 days or we'll replace it **FREE** – for up to 1 year – just call us. Valid on one order at a time, typically the most recent. We **ONLY** ship you mature, hardy field grown genuine Amazoy Zoysia grass harvested direct from our farms. Easy planting and watering instructions are included with each order.

© 2024 Zoysia Farm Nurseries, 3617 Old Taneytown Rd, Taneytown, MD 21787

Freestyle Plugs You decide how big to cut the plugs. Each grass sheet can produce up to 150-1 in. plugs. Plant minimum 1 plug per sq. ft.					
Max Plugs	Free Plugs	Grass Sheets	Your PRICE	+Shipping	SAVINGS
450	—	3	\$ 47.50	\$26.50	—
750	+150	6	\$ 72.50	\$32.50	29%
1100	+400	10	\$110.00	\$47.50	36%
2000	+1000	20	\$185.00	\$75.00	47%
3000	+1500	30	\$245.00	\$90.00	55%

Super Plugs Precut plugs 3 inches by 3 inches READY TO PLANT Packed in trays of 15 Super Plugs. Plant minimum 1 plug per 4 sq. ft.					
Super Plugs	Free Plugs	Tray	Your PRICE	+Shipping	SAVINGS
15	—	1	\$ 27.50	\$18.00	—
25	+5	2	\$ 42.50	\$25.00	26%
60	+15	5	\$ 97.50	\$37.50	41%
120	+30	10	\$150.00	\$60.00	54%
240	+60	20	\$270.00	\$97.50	60%

EVERYTHING YOU NEED TO START AND MAINTAIN A CAREFREE BEAUTIFUL ZOYSIA LAWN

Scan QR code
to learn more



PLANTING TOOLS • PLANT FOOD • WEED AND PEST CONTROLS
ORGANIC PRODUCTS • SOIL TESTS • GARDEN GLOVES • EDGING and more!

www.ZoysiaFarms.com/mag OR 410-756-2311

Harvested Daily from Our Farms and Shipped to You the Same Day the Plugs are Packed
Amazoy is the Trademark Registered U.S. Patent Office for our Meyer Zoysia grass.
Savings shown over aggregate base price and shipping

Zoysia Farm
NURSERIES
Improving America's Lawns Since 1953

Use Promo Code **5313**

LAWN & GARDEN LEAN-TO

Sitting alongside the house or garage or freestanding in the yard, this sharp-looking shed shelters lots of gear.

WRITER: CRAIG RUEGSEGG
DESIGNER/BUILDER: KEVIN BOYLE

OVERALL DIMENSIONS
112½"W × 62"D × 107"H

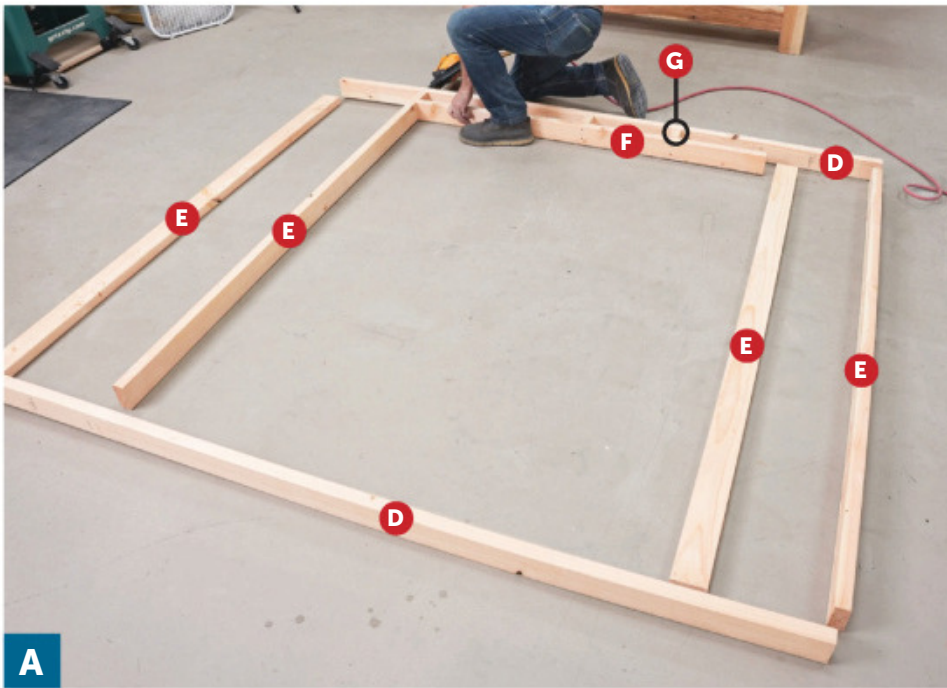


PHOTOGRAPHER: JASON DONNELLY;
ILLUSTRATORS: ROXANNE LEMOINE, LORNA JOHNSON

Gather yard tools inside their own home where they're easily accessible without having to climb past cars or reach way up on a shelf or wall hook. The structure rests on paver blocks allowing you to easily install it without having to dig footings, and even move it if needed. Build most of the shed in sections in the protection of your shop, where the floor can serve as a flat, dry surface, then move everything to the site for a fast final assembly with a helper.

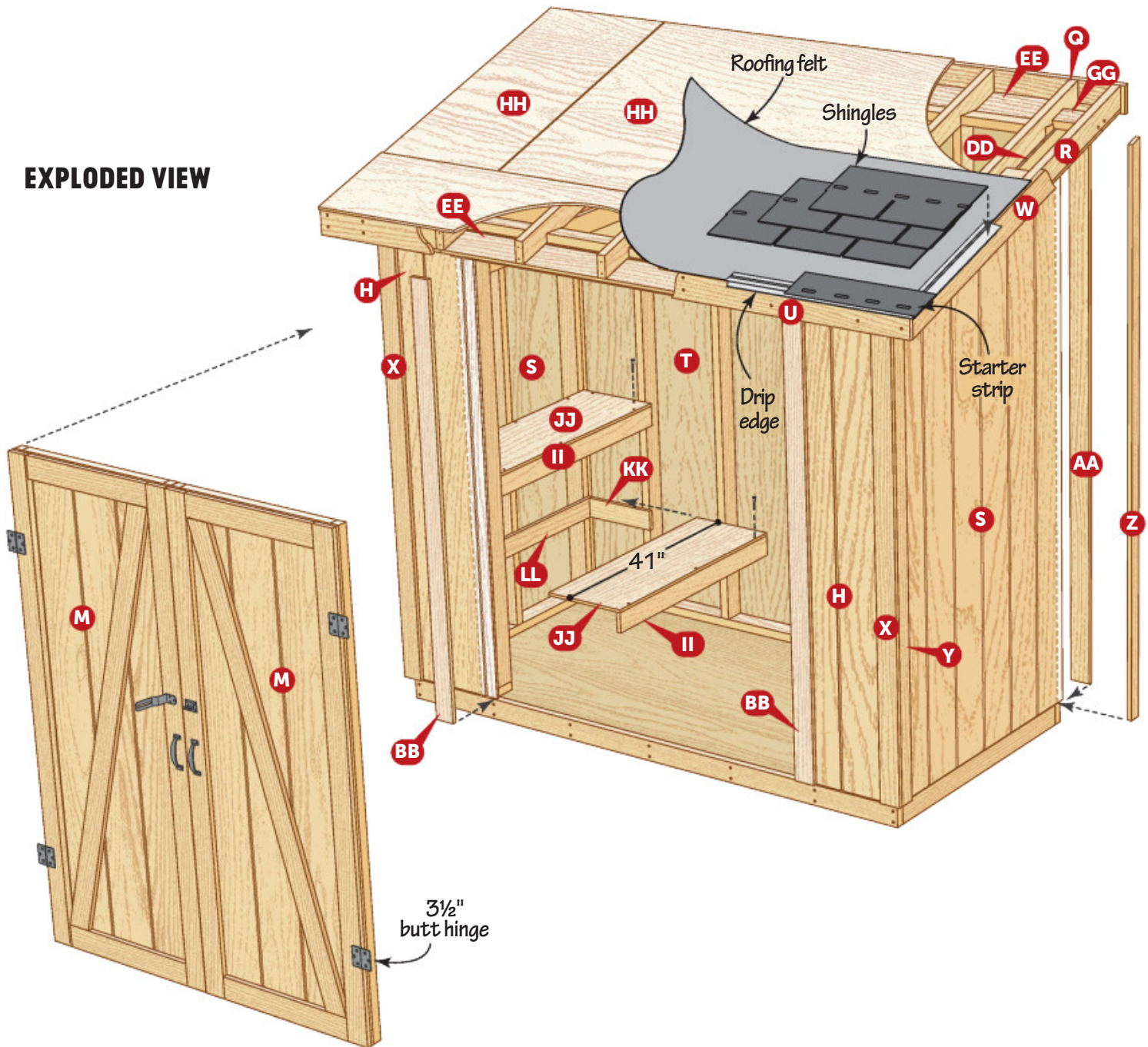
BUILD BASIC STUD FRAMES

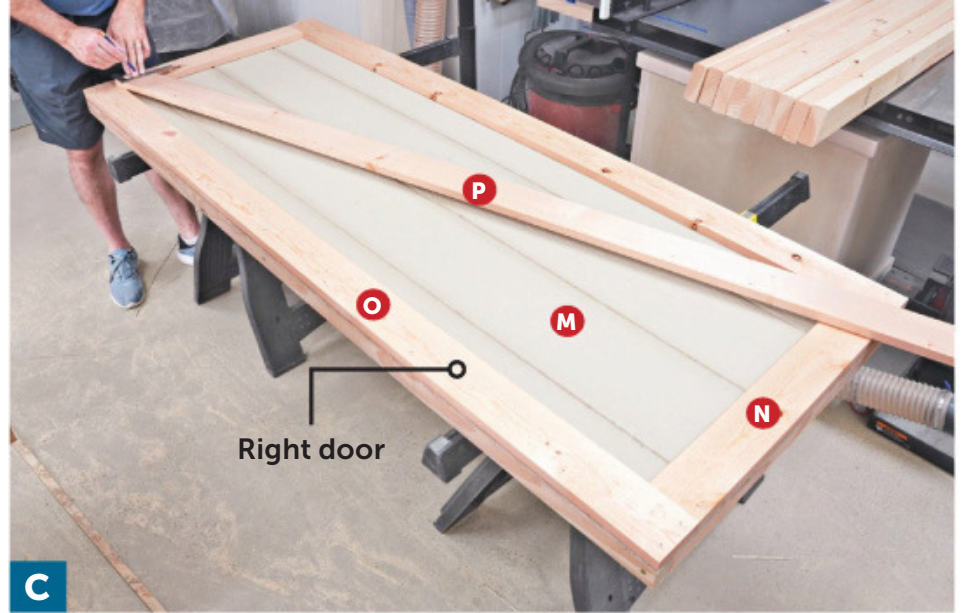
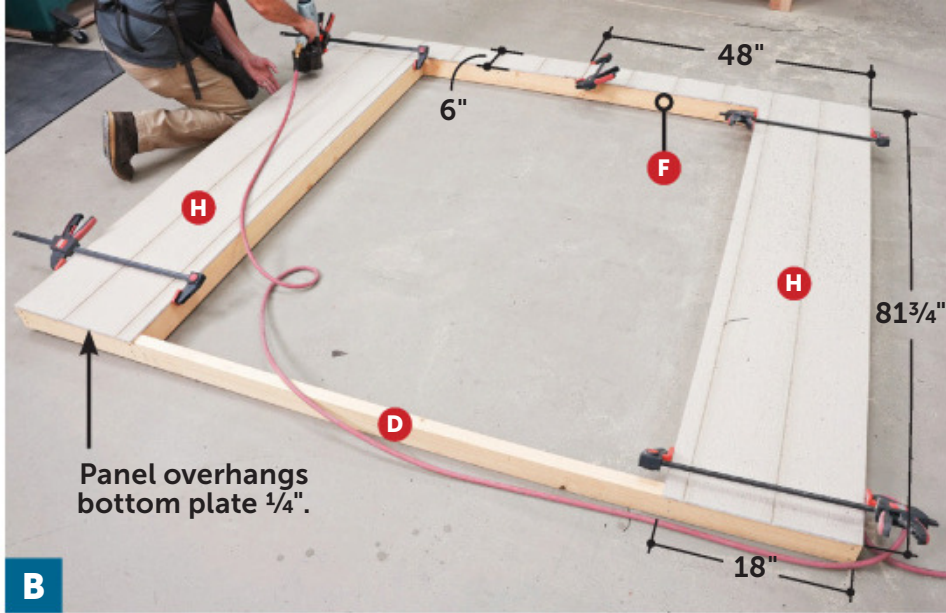
- 1** Cut the rim and floor joists (A, B) to length [Materials List, Drawing 1]. Nail or screw the two outer floor joists (B) to a rim joist (A), then install the remaining floor joists, spacing them as shown. Add the other rim joist.
- 2** Check that the frame is square; then apply a bead of construction adhesive on the top of the joists and nail down the floor (C).



A Lay out the stud (E) locations on the plates (D). Nail the interior studs against the header assembly (D/F/G). Then add the remaining studs and the bottom plate (D).

EXPLODED VIEW

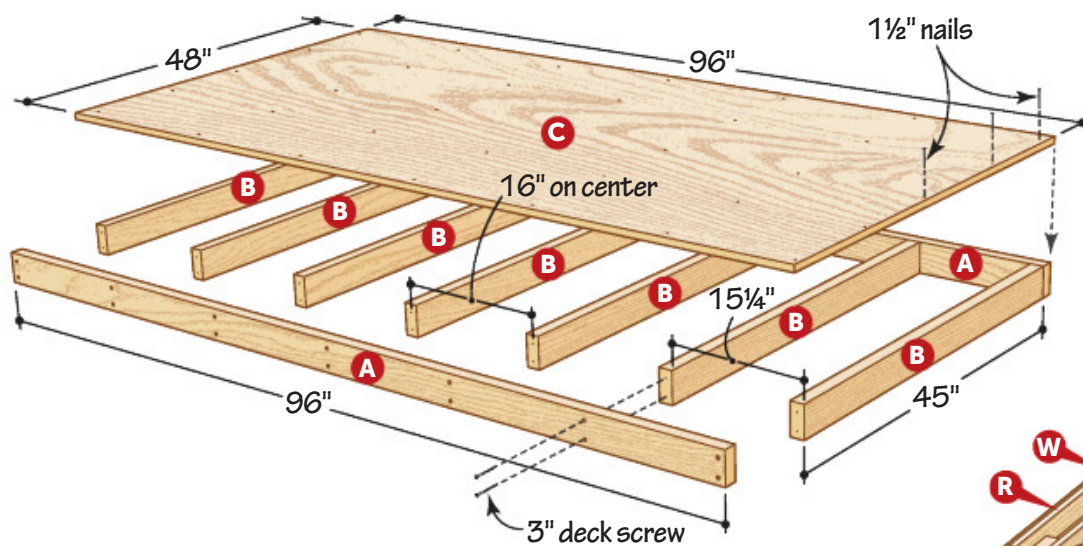




Apply a bead of construction adhesive to the studs and plates. Align the front panels (H) flush with the edges of the studs with $\frac{1}{4}$ " overhang below the bottom plate. Check for square, then nail the panels.

Align the corners of the brace trim (P) with the inside corners of the door trim (N, O). Then transfer the edge of the rail to one end of the brace trim.

1 FLOOR

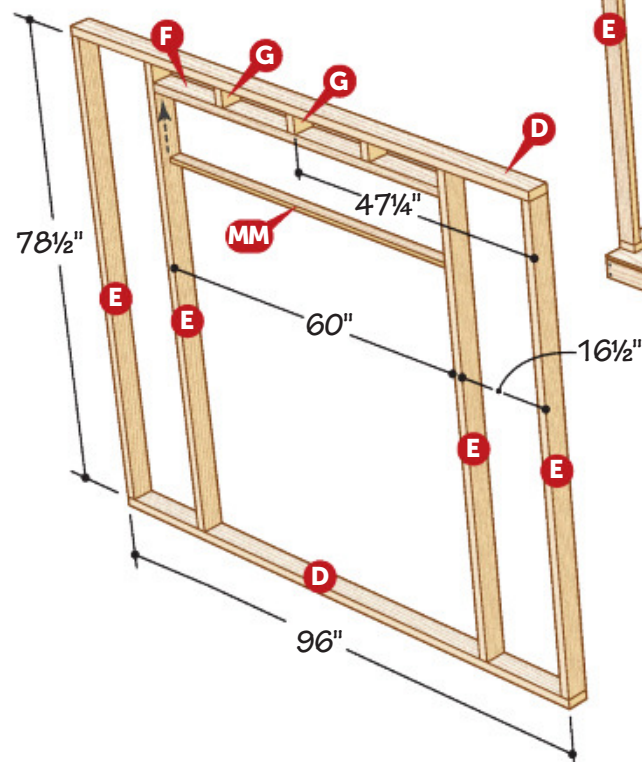


3 Cut the front wall framing pieces (D-G) to length [Drawing 2].

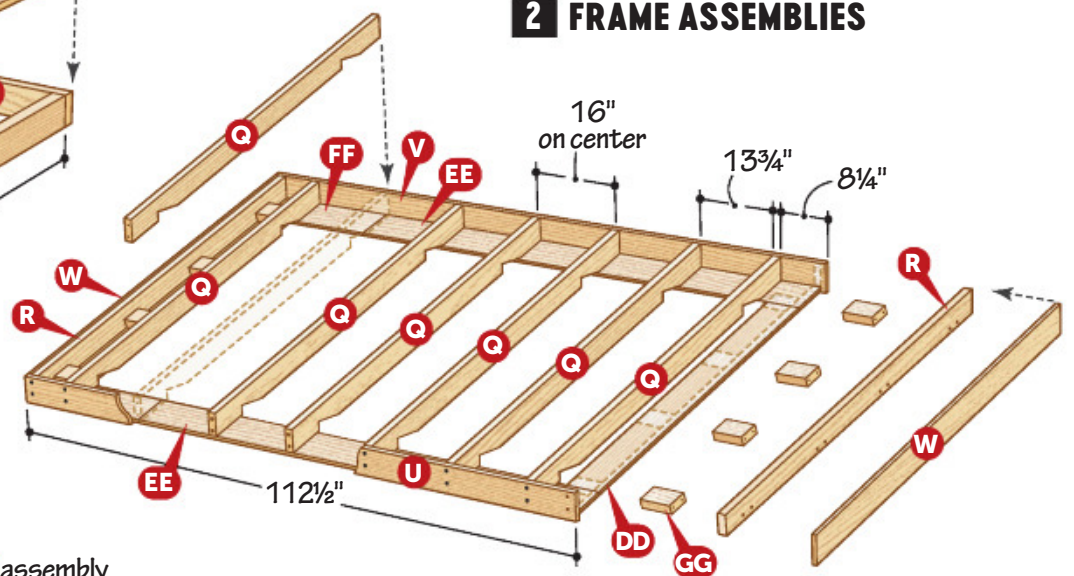
Assemble the top plate (D), header (F), and blocking (G). Nail a stud (E) to this assembly before adding the remaining pieces [Photo A].

4 Cut the L-shape front panels (H) to size [Photo B]. Save the cutouts to make the door panels (M) later. Attach the front panels.

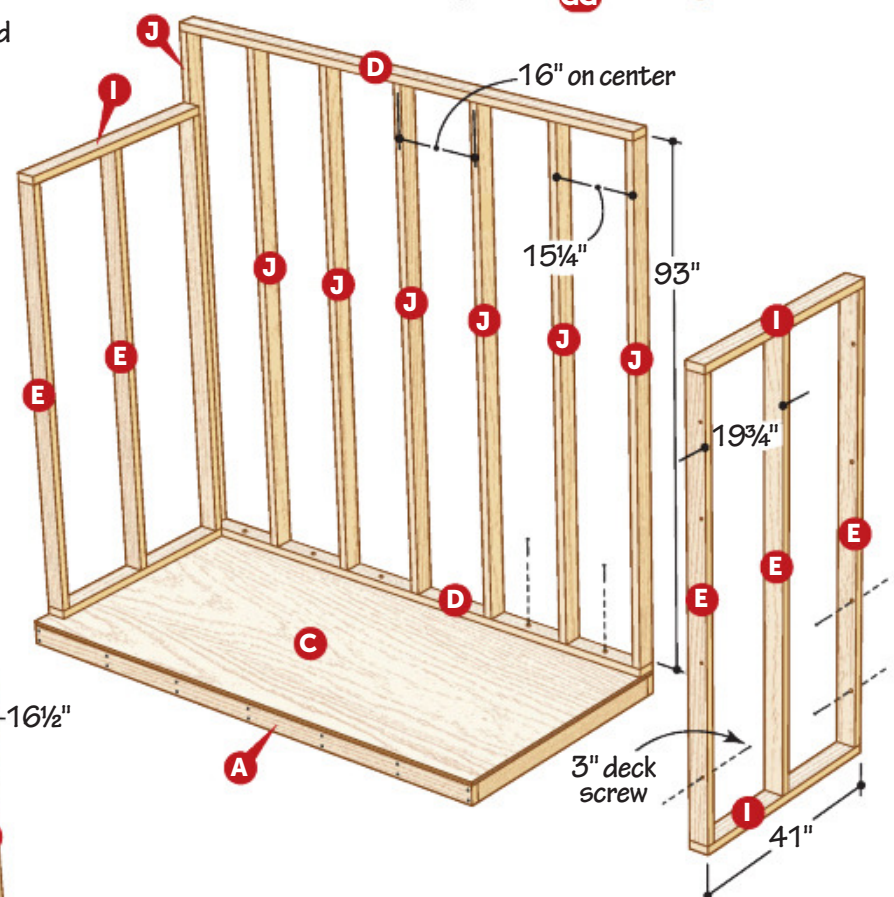
5 Cut the side and back wall plates and studs (D, E, I, J) to length. Frame the two side walls (E/I) and the back wall (D/J) [Drawing 2].



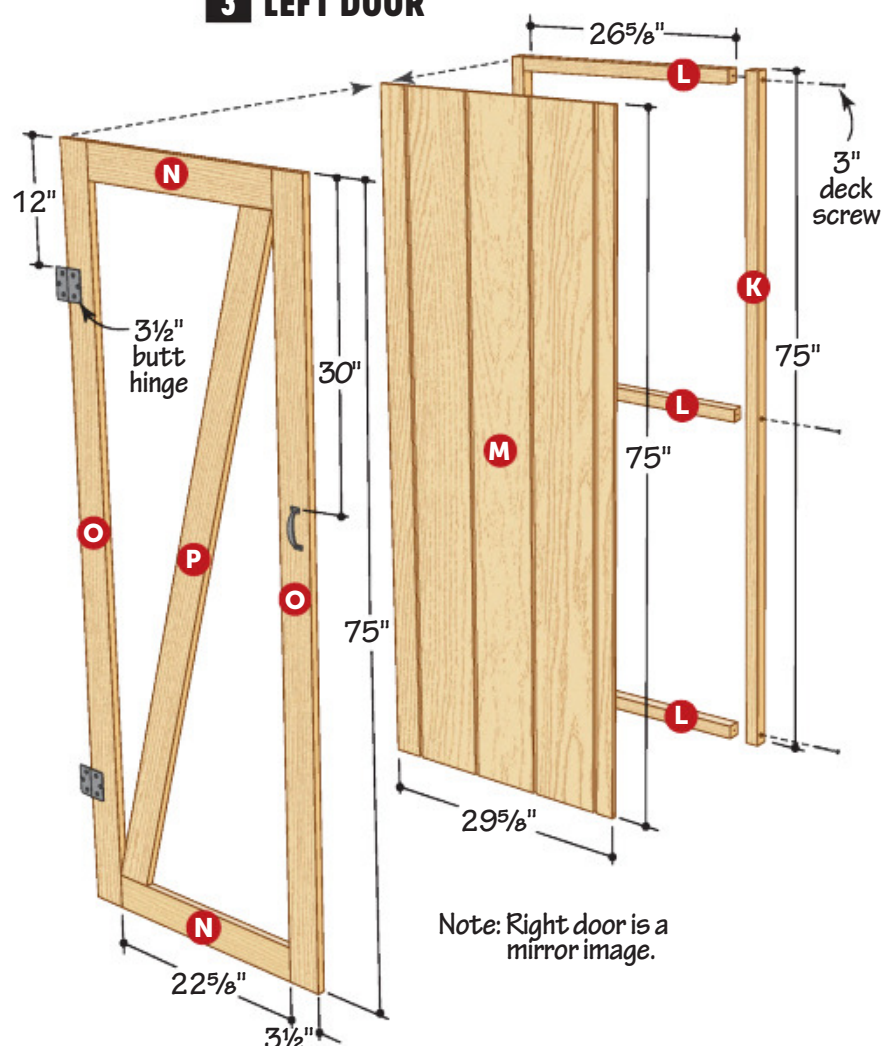
2 FRAME ASSEMBLIES



Note: **Q U V** assembly secured to front and rear walls before adding remaining roof parts.



3 LEFT DOOR



DO THE DOORS

- 1 Cut the door stiles and rails (K, L) to size [Drawing 3]. Clamp each assembly together and drill pilot holes. Assemble the door frames with 3" deck screws.
- 2 With the front wall lying face-up on the shop floor, set 2x4s on edge in the door opening to support the door frames. Use 1/4" spacers to center the frames in the opening.
- 3 Retrieve the cutouts from the front panels and position them on the door frames, aligning the grooves in the door panels (M) with those covering the header. Reach under and mark the corners of each frame onto the panels. Cut the panels to size, then glue and nail them in place.
- 4 Cut the door rail and stile trim (N, O) to length, and the brace trim (P) overlong. Glue and nail the stile and rail trim to the door panels (M).
- 5 Lay a brace trim (P) across a door, aligning the corners as shown in Photo C. Mark the straight edge of a rail trim (N) across the brace and cut on the line. Reposition the brace trim to mark the opposite end and cut the angle. Glue and nail the brace trim.

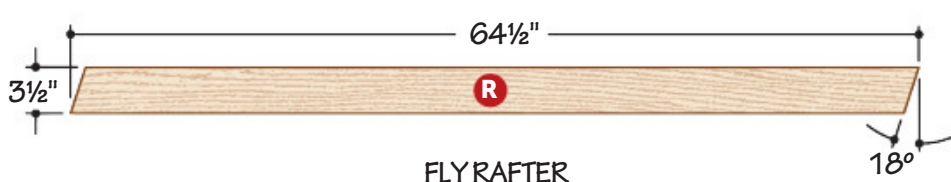
4 RAFTERS



Position a common rafter (Q) temporarily against the side panel (S) and trace along the rafter's top edge. Repeat with the opposite side, then cut the panels to shape.

BUILD RAFTERS ON THE FLY

- 1 Place the floor assembly on a flat, level surface. Stand the walls on the floor assembly and temporarily screw everything together [Drawing 2], checking for square and plumb.
- 2 Cut the common and fly rafters (Q, R) to length [Drawing 4]. Jigsaw the birdsmouths in one common rafter and check the fit on the top plates (D) of the wall assemblies. If the fit is satisfactory, transfer the notches to the other common rafters and cut them. Miter-cut the ends of all the rafters.
- 3 Cut the side panels (S) to size. To position the panels, temporarily screw a cleat to the floor assembly 1/4" below the floor's top face. Rest the side panel on the cleat and clamp it to the side wall, flush with the outer face of the front panel (H). Trace a rafter's top edge [Photo D]. Repeat for the other side. Attach the panels to the side walls with construction adhesive and nails, but do not attach the side panel to the front or back wall so they can be removed for transport to the shed site.
- 4 Dry-fit the back panels (T) to check their fit. We did not attach these yet, to minimize the weight of the back wall until it is moved to the site.
- 5 Cut the front and rear fascia (U, V) to length [Materials List] and side fascia (W) 1" overlong [Drawing 2]. Rip the trim and soffit pieces (X-FF) to width and cut them 1" overlong [Exploded View, Drawing 2]. Prime and paint the exterior pieces and assemblies. See Sources for the colors we used.





E Paver block

Align the back wall with the rear of the floor and screw it in place. Plumb the wall and screw a temporary brace to it and the floor.



F

Check the side wall for plumb and square, then screw it to the floor and back wall. Repeat for the other side wall.

SET IT UP ON SITE

Haul the subassemblies and precut parts to your site and enlist a helper for putting everything together.

1 Place 12" paver blocks at each corner of the site where your shed will stand. Level the blocks to one another. Rest the floor assembly on the blocks.

2 Secure the back panels (T) to the back wall, flush at the top and ends, using construction adhesive and nails.

3 Stand and brace the back wall on the floor [Photo E]. Then add the side walls [Photo F] and the front wall [Photo G].

4 On a solid flat surface, lay out the common rafters (Q) and front and back fascia (U, V). Assemble these parts as shown in Drawing 2. The outermost common rafters should fit inside the side panels (S).

Note: If your shed sits against an existing structure, as our does, cut the back trim (AA) to length and attach it now.



G

Cut out plate after securing wall.

Tilt the front wall into place and screw it to the floor. Do not place screws in the door opening. Screw the side walls to the front wall. Use a handsaw to cut away the bottom plate in the door opening.



H

Miter-cut one end of a side fascia (W) at 18°. Butt this end against the rear fascia and mark the side fascia to fit behind the front fascia (U). Cut on the line; then, glue and nail the side fascia in place.

5 Lift the rafter assembly onto the shed, checking that the birdsmouths rest tight to the top plates. Toe-screw through the rafters into the top plates.

6 Measure from the outside face of the side panels (S) to the end of the front fascia (U) and cut the fly rafter blocking (GG) 2 1/4" shorter than this dimension. Screw the blocking to each fly rafter (R) [Drawing 2], then secure these assemblies against the side panels with screws through the common rafters (Q). Scribe and cut the side fascia (W) to length [Photo H].

7 Cut and attach the roof sheathing (HH) with construction adhesive and nails [Exploded View]. Staple roofing felt to the sheathing, overlapping the bottom runs with the top runs. Nail the drip edge in place. Cut the tabs from enough shingles to bridge the width of the shed to create starter strips.

Note: The back trim extends 3/4" beyond the edges of the back panels.

(Save the tabs for the top row of the roof.) Nail the starter strips along the lower edge of the roof with the cut edge overlapping the drip edge. Begin laying shingles in an offset pattern [\[Exploded View\]](#). Apply roofing tar to exposed nail heads on the top row of tabs.

CLOSE IT IN AND PRETTY IT UP

- 1 Cut the soffits (DD–FF) to length and nail them in place [\[Exploded View\]](#).
- 2 Cut the corner trim (X–AA) to length, miter-cutting Y and Z, and bevel-cutting X and AA, then nail them in place [\[Photo I\]](#). Likewise, attach the doorway trim (BB, CC) around the door opening.
- 3 Cut and assemble the shelves (II/JJ) [\[Exploded View\]](#). (We built two; build as many as you need.) Install the shelf supports (KK/LL) and screw the shelves to them.
- 4 Screw the hinges to the doors [\[Drawing 3\]](#). Rest the doors in the opening on 1/4" scrap with 1/4" spacers between the wall studs and doors. Drive 3" screws through the hinges into the studs.



Use a scrap to align the side front trim (Y) flush with the face of the front panel (H). Align the outside edge of the front trim (X) with the face of the side trim. Install the rear trim (Z, AA) the same way.

Cut the door stop (MM) to size and attach it to the door header (F) [\[Drawing 2\]](#).

- 5 Attach the door handles and hasp. Touch up the paint on all fresh-cut ends, screw and nail heads, and any areas needing it. Then begin organizing your yard and garden supplies in their new outdoor home. 🌳

MATERIALS LIST

PART		FINISHED SIZE			Matl.	Qty.
		T	W	L		
A	FLOOR RIM JOISTS	1½"	3½"	96"	PTP	2
B	FLOOR JOISTS	1½"	3½"	45"	PTP	7
C	FLOOR	¾"	48"	96"	PTply	1
D	FT/BK WALL PLATES	1½"	3½"	96"	P	4
E	FT/SIDE WALL STUDS	1½"	3½"	78½"	P	10
F	DOOR HEADER	1½"	3½"	60"	P	1
G	HEADER BLOCKING	1½"	3½"	3"	P	3
H	FRONT PANELS	½"	48"	81¾"	S	2
I	SIDE WALL PLATES	1½"	3½"	41"	P	4
J	BACK WALL STUDS	1½"	3½"	93"	P	7
K	DOOR STILES	1½"	1½"	75"	P	4
L	DOOR RAILS	1½"	1½"	26⅝"	P	6
M	DOOR PANELS	½"	29⅝"	75"	S	2
N	DOOR RAIL TRIM	¾"	3½"	22⅝"	P	4
O	DOOR STILE TRIM	¾"	3½"	75"	P	4
P*	DOOR BRACE TRIM	¾"	3½"	71⅝"	P	2
Q	COMMON RAFTERS	1½"	3½"	64½"	P	7
R	FLY RAFTERS	1½"	3½"	64½"	P	2
S	SIDE PANELS	½"	48"	96"	S	2
T	BACK PANELS	½"	48"	96"	S	2
U	FRONT FASCIA	¾"	5½"	112½"	P	1
V	REAR FASCIA	¾"	5½"	112½"	P	1
W*	SIDE FASCIA	¾"	5½"	64⅓/16"	P	2
X*	FRONT TRIM	¾"	3½"	79⅝"	P	2

PART		FINISHED SIZE			Matl.	Qty.
		T	W	L		
Y*	SIDE FRONT TRIM	¾"	2¾"	80½"	P	2
Z*	SIDE REAR TRIM	¾"	2¾"	94⅓/16"	P	2
AA*	BACK TRIM	¾"	3½"	95½"	P	2
BB*	DOORWAY SIDE TRIM	¾"	3½"	75¾"	P	2
CC*	DOORWAY TOP TRIM	¾"	3½"	68"	P	1
DD*	SIDE SOFFIT	½"	7"	51½"	PTply	2
EE*	FT/BK LONG SOFFITS	½"	6"	87½"	PTply	2
FF*	FT/BK SHORT SOFFITS	½"	6"	23½"	PTply	2
GG	FLY RAFTER BLOCKING	1½"	3½"	5½"	P	8
HH*	ROOF SHEATHING	¾"	Cut to fit.		OSB	2
II	SHELF LIPS	¾"	3½"	41"	P	2
JJ	SHELVES	½"	14½"	41"	PTply	2
KK	SIDE SHELF SUPPORTS	¾"	3½"	13"	P	4
LL	BACK SHELF SUPPORTS	¾"	3½"	41"	P	2
MM	DOOR STOP	¾"	2"	60"	P	1

*Parts initially cut oversize. See the instructions.

MATERIALS KEY: PTP—pressure-treated pine, PTply—pressure-treated plywood, P—pine, S—sheathing, OSB—oriented strand board. **SUPPLIES:** 1⅝" and 3" deck screws, 1½" nails, construction adhesive, 12" paver blocks (4), drip edge, roofing felt, shingles, 1" roofing nails, roofing tar.

SOURCES: 3½" black hinges no. 2503598 (4), \$3 each; door hasp no. 308988, \$7; pulls no. 803447 (2), \$4 each, Lowe's, lowes.com. Sherwin-Williams White no. SW7757 and Tricorn Black no. SW6258 sherwin-williams.com.

PROJECT COST: It cost us about \$1,100 to build this project. Your cost will vary by region and source.

GLUING & TRUING LARGE PANELS

Follow these simple, effective steps to ensure your beautiful boards become perfect panels.

WRITER: DAVE STONE

PHOTOGRAPHER: JASON DONNELLY

Creating attractive glued-up panels starts with selecting great boards, but that's just half the battle. Once you've matched their color and laid them out to optimize grain match, you need to ensure that they go together well. Here, we'll share our favorite techniques to create large panels with tight joints, flat faces, and square edges.





A triangle on the face ensures correct panel reassembly. Marks on the ends help orient your boards while jointing. Laying out in the clamps lets you know how many boards you can glue up at once.

▶ GO LONG—AND WIDE, AS WELL

As you're cutting boards to create your panel, size them so your panel starts out about an inch overwide and a couple of inches overlong. That leaves plenty of material to work with as you joint the edges, and it eliminates the difficulty of aligning the ends during glue-up. Trim the panel to final width and length after it's complete.

▶ LOCK DOWN THE LAYOUT

Note: We don't bother alternating the cup of the end grain as we select the best face for our panels. Cupping after glue-up is generally a sign that the wood wasn't fully dried. Use kiln-dried wood and invest in a moisture meter to save heartache down the road.

After carefully selecting and positioning your panel's boards for the best grain and color match, it's all too easy to mix them up in the haste of gluing up. Avoid that by laying the boards out in order and marking them. A carpenter's triangle drawn across the entire panel face with chalk (*above*) provides a clear, visible marking that wipes away easily after assembly.

In addition, draw an arrow on the end of each board that points toward the good face, then mark each side of every joint with a number, 1/1, 2/2, etc.

▶ GET FACE TIME WHILE JOINTING

With your panel layout locked down, you can joint the mating edges. That's where the end markings come into play. Place two adjoining boards face to face so the arrows point toward each other and the corresponding joint numbers are aligned on one edge. Then run both boards across the jointer at the same time (*above, right*).

Jointing two boards at once puts a wider surface on the jointer bed to help resist



Joint adjacent boards face to face to ensure matching edges. Hold the boards tightly together and against the fence. Working with boards of similar width makes this easier.

tipping. Plus, even if the jointer fence isn't perfectly square to the bed, this creates supplementary angles on the edges that cancel each other out when the boards are laid flat.

After jointing boards 1 and 2 continue to boards two and three, etc., always making sure the arrows point toward each other and the matching numbers sit against the jointer bed.

▶ DO A DRY RUN

Note: We don't recommend a sprung joint—one in which you create a slight gap in the center of the boards. The increased pressure required to draw the centers together can starve the joint of glue at the ends.

With all the boards jointed and laid out, tighten the clamps and look for gaps along the edges. Your joint line should be gap-free along the full length of the board using minimal clamp pressure.

If you see gaps, joint those pairs again, placing them face to face as before. Place them back in position and tighten the clamps again to check that the joint draws tight.

▶ GET THE GLUE RIGHT

Adding glue might not be the most technically challenging part of creating a panel, but its importance can't be overstated. Too little glue results in a starved joint that won't form a strong bond. Too much glue can also inhibit bond strength, cause boards to slip excessively as you tighten the clamps, and make a mess due to excessive squeeze-out.

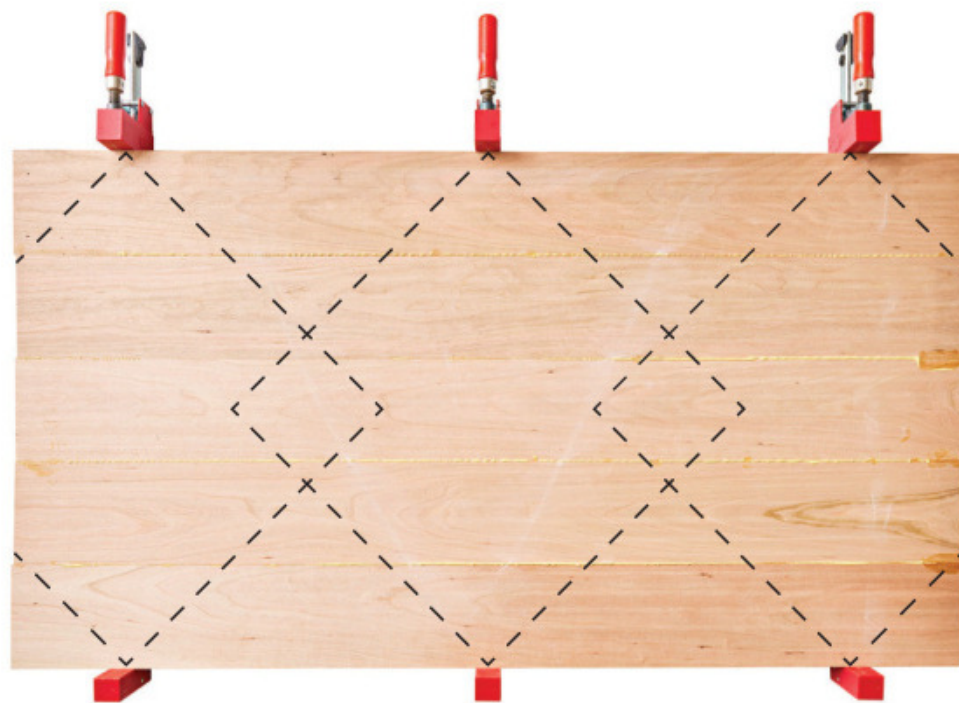
Start by laying down a bead of glue on only one of the two mating edges. A solid bead that covers about one-fourth of the edge width should suffice. Then use your finger or a glue brush to spread the glue evenly (*top right*).

You'll need to work quickly, but don't rush. Most wood glues offer at least 3, and up to 10, minutes of open time (how long you have to get the boards touching) and about 15 minutes of total assembly time (how long you have to get the clamps tight before the glue starts to set).

Note: If your glue-ups slip around as you clamp, don't introduce grit to create friction. Foreign substances reduce glue bond strength. Instead, rub the joint together a few times to establish tack. And use a bit less glue next time.



Spread glue across one mating edge, making sure to cover the entire surface. You should still be able to barely see the wood underneath the glue film. Add more glue if needed, or wipe excess away.



Clamps exert force at 45° angles from the clamp heads, so make sure you have enough clamps to producing overlapping pressure along the length of your panel.



Large panels with more than five or six boards can be unwieldy to assemble and can require more time than your glue allows. Break those down into pairs of boards, then join the pairs together.

▶ BUILD IN SOME OVERLAP

Figuring out how many clamps you'll need and where to position them for panel glue-ups can be challenging. Understanding clamping force makes it easier (*above*).

Whether you'll need clamps underneath and on top of the panel depends on the clamps you use. With parallel-jaw clamps, you can get away with clamps on one face. We recommend alternating lightweight bar clamps or pipe clamps under and over the panel to neutralize clamp flex.

▶ DIVIDE AND CONQUER

If you don't think you'll have time to assemble all of your boards, you can break large panels down into smaller sections of two or three boards (*left*). Then glue these smaller sections together to create your larger panel, making sure you pay attention to board order.

► USE GENTLE PERSUASION

With glue on the edges, it's time to tighten the clamps. Snug the clamp at one end of your panel, but don't tighten it completely. Work your way along the panel's length, tightening each clamp as you press the boards into alignment along the joint line (*right*).

Note: Smooth, gap-free joints don't require excessive pressure. Glue manufacturers usually recommend about 125 pounds per square inch for softwoods and 175 psi for hardwoods. Most panel clamps are capable of far greater pressure.

Your dry run should have highlighted any areas where you may have to align boards as you go. Don't get too concerned with minor misalignments. You can work those away after the glue dries. With the boards aligned as best you can, tighten the clamps until you get a small bead of squeeze-out along the length of each joint. Resist the temptation to overtighten, which could starve the joint of glue or even bow the panel.



Feel the joint lines as you tighten the clamps. Gentle taps from a dead-blow mallet can help push boards into position in the field. Clamps spanning the joint lines vertically help to align the ends.



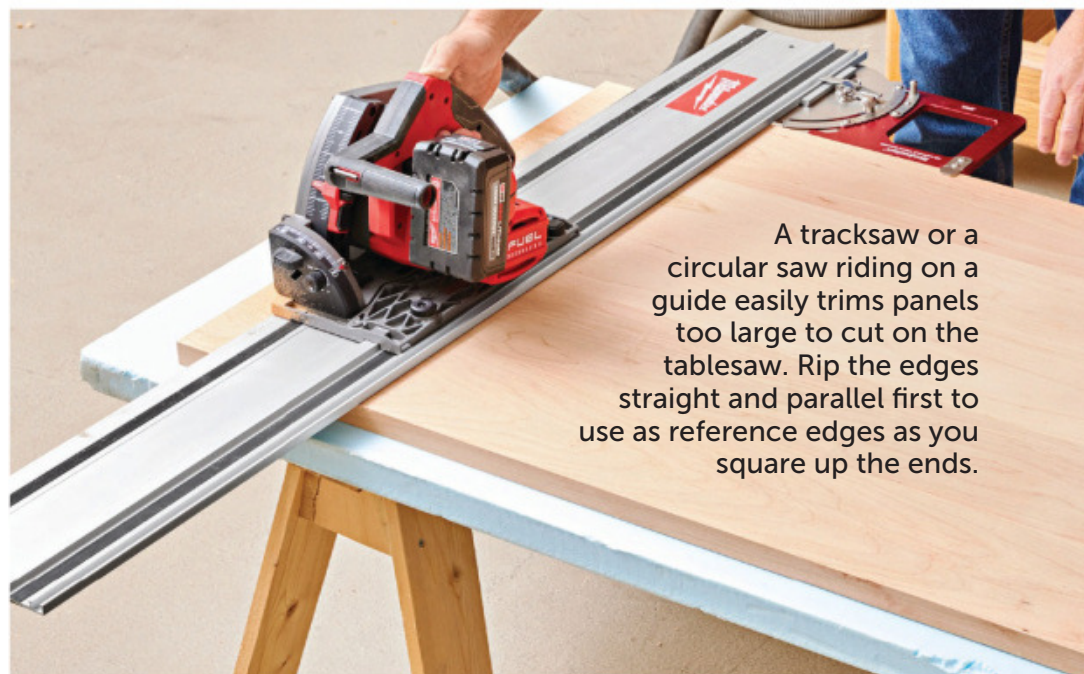
Use a hand plane to level out high spots along joint lines. A low-angle jack or smoothing plane set for a shallow cut does the job quickly. Follow up with a random-orbit sander for final smoothing.

► KNOCK OFF THE HIGH SPOTS

On large panels, aligning every joint perfectly proves challenging. That's okay. After the glue dries, a few passes with a hand plane (*above*) can knock down the high spots.

► TRIM YOUR PANEL TO FINAL SIZE

With the panel glued up and flattened, it's time to trim it to final size. Rip the edges straight and parallel, then trim the ends to final length (*right*). You'll end up with a perfect panel to highlight your next project build. 🌲



A tracksaw or a circular saw riding on a guide easily trims panels too large to cut on the tablesaw. Rip the edges straight and parallel first to use as reference edges as you square up the ends.

STICKLEY-STYLE POSTCARD DESK

Create a practical, compact workspace oozing with Arts & Crafts style.

WRITER: VINCE ANCONA

DESIGNER/BUILDER: KEVIN BOYLE

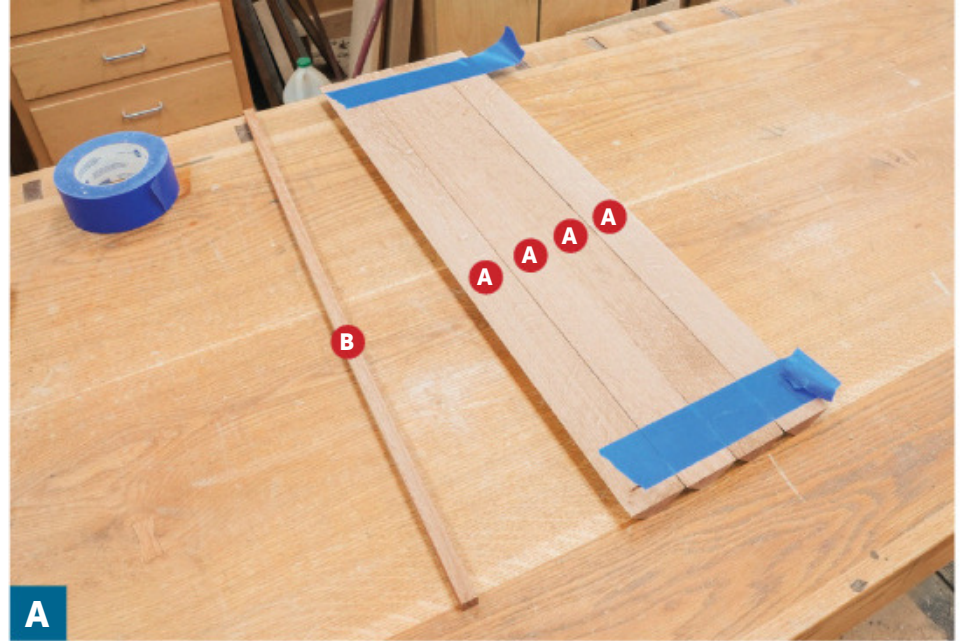


OVERALL DIMENSIONS
42½"W x 26"D x 40½"H

PHOTOGRAPHER: JACOB FOX; ILLUSTRATORS: ROXANNE LEMOINE, LORNA JOHNSON

This desk takes its inspiration from similar forms designed by Arts & Crafts furnituremaker Gustav Stickley. It was promoted as a desk for writing postcards or letters. Postcards may have gone the way of telegrams and faxes, but a small desk like this one still offers a lot of functionality in today's digital world. Tucked into a living room, bedroom, or den, it provides a place to sit with a laptop, pay bills, or sort mail.

Two main assemblies make up this project: the base and the hutch. Because these are separate components, you can choose to build just the base if that better suits your needs.



A Strips of painter's tape hinge the beveled leg sides (A) together, allowing you to roll them up into a square in order to measure for the leg core (B).

YOUR BEST FACE FORWARD

These trick legs hide their secret in plain sight: quartersawn grain on all four faces, a feat you won't find in nature. And you can do it using $\frac{3}{4}$ "-thick lumber, saving you the hassle of having to source extra-thick stock.

1 Cut four $2\frac{1}{2} \times 28$ " blanks for each leg to create a total of 16 leg sides (A). Bevel-rip one edge, then bevel-rip all the pieces to final width of 2" [Materials List, Drawing 1].

2 Use painter's tape to dry-assemble one of the legs [Photo A]. Cut the leg cores (B) to size and test their fit.

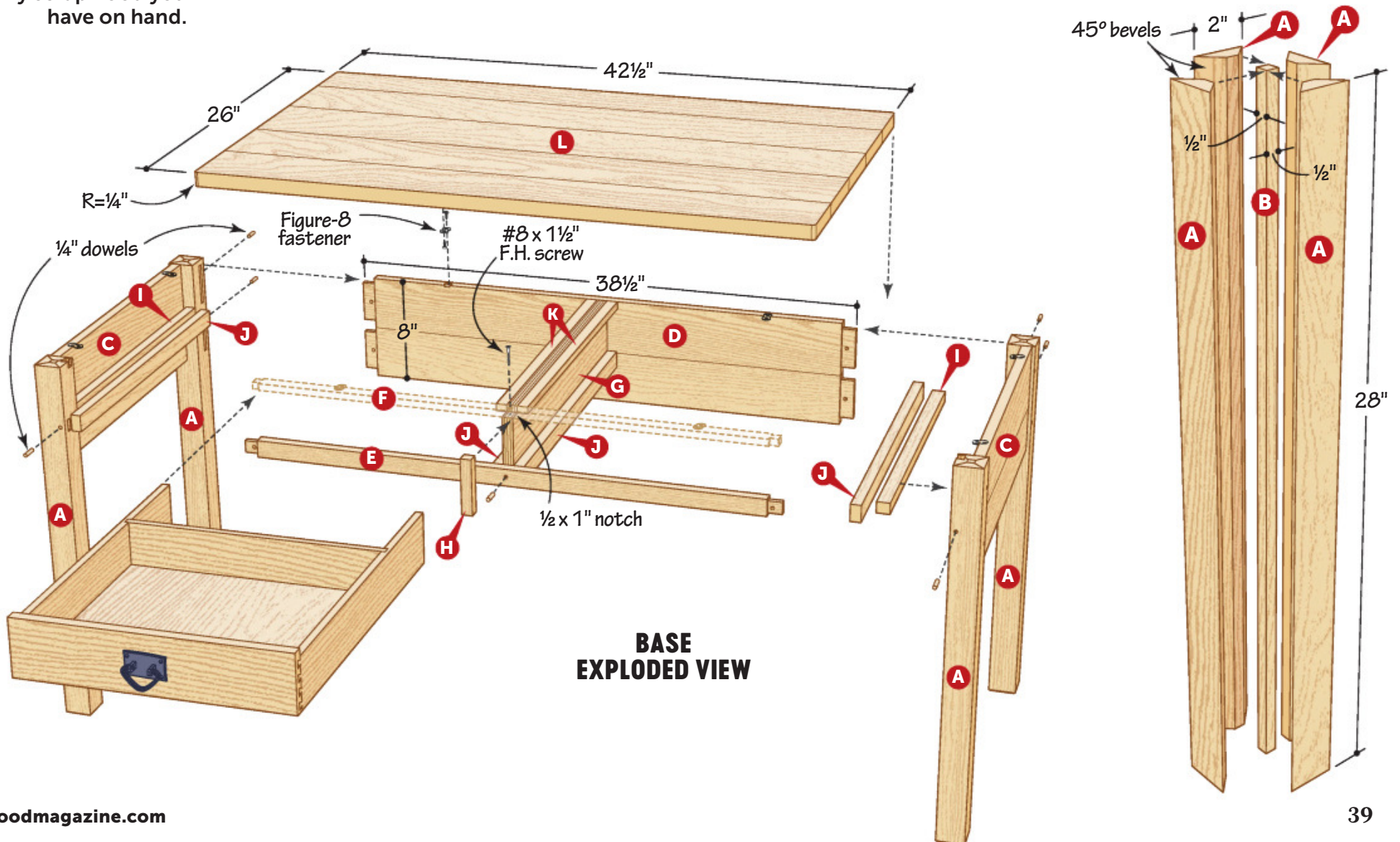
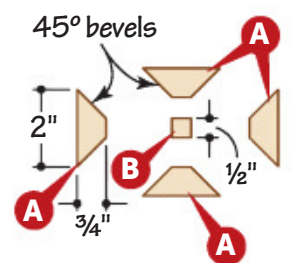
3 Apply painter's tape to the other three leg assemblies, then add glue to the miter joints and the inside faces. Clamp the leg sides around the cores, wrapping each leg tightly with more painter's tape or wide rubber bands.

4 After the glue has dried, remove the tape and scrape off any glue squeeze-out. Label the location of each leg, then lay out and cut the mortises with a hollow-chisel mortising machine [Drawing 2].

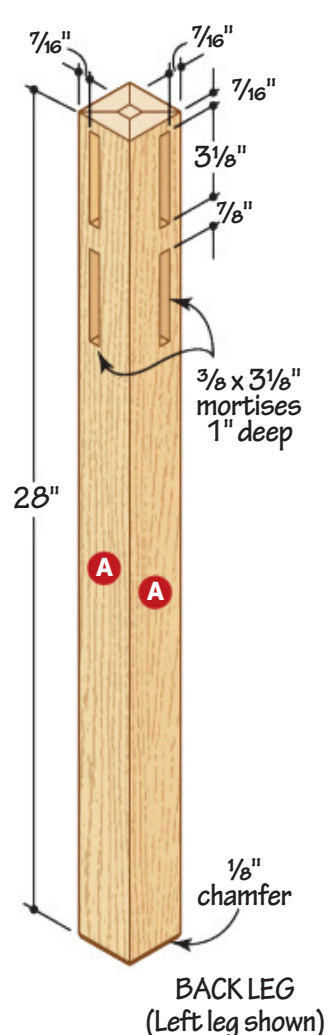
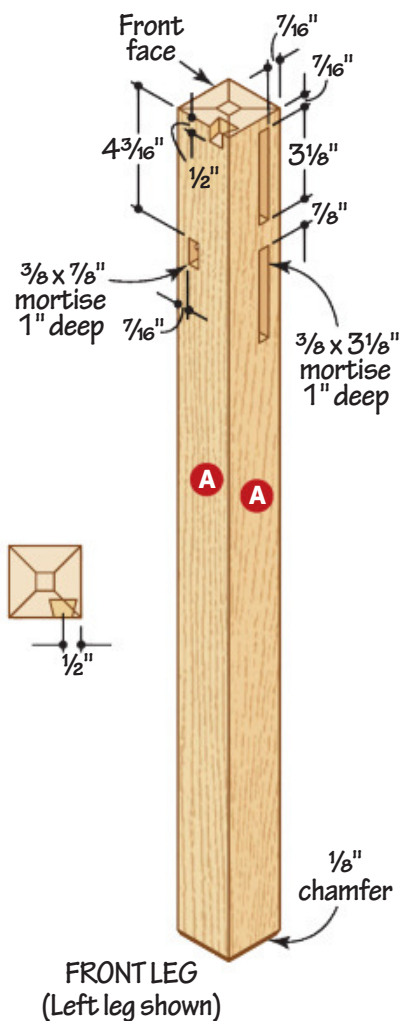
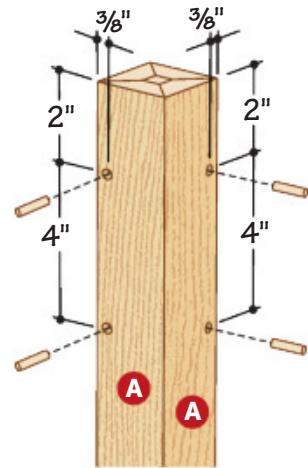
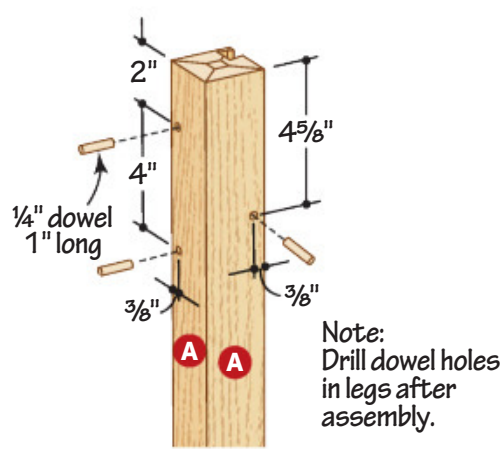
5 Rout a $\frac{1}{8}$ " chamfer on the bottom ends of the legs.

Note: Because the leg cores (B) won't be seen, make them out of any scrapwood you have on hand.

1 LEG



2 LEG ASSEMBLIES



BUILD THE BASE

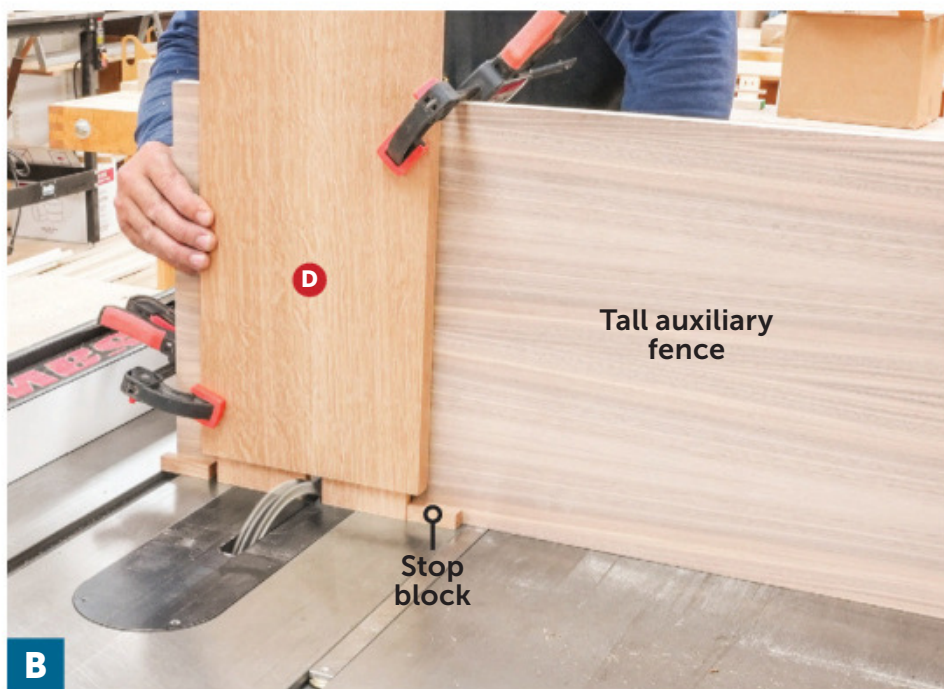
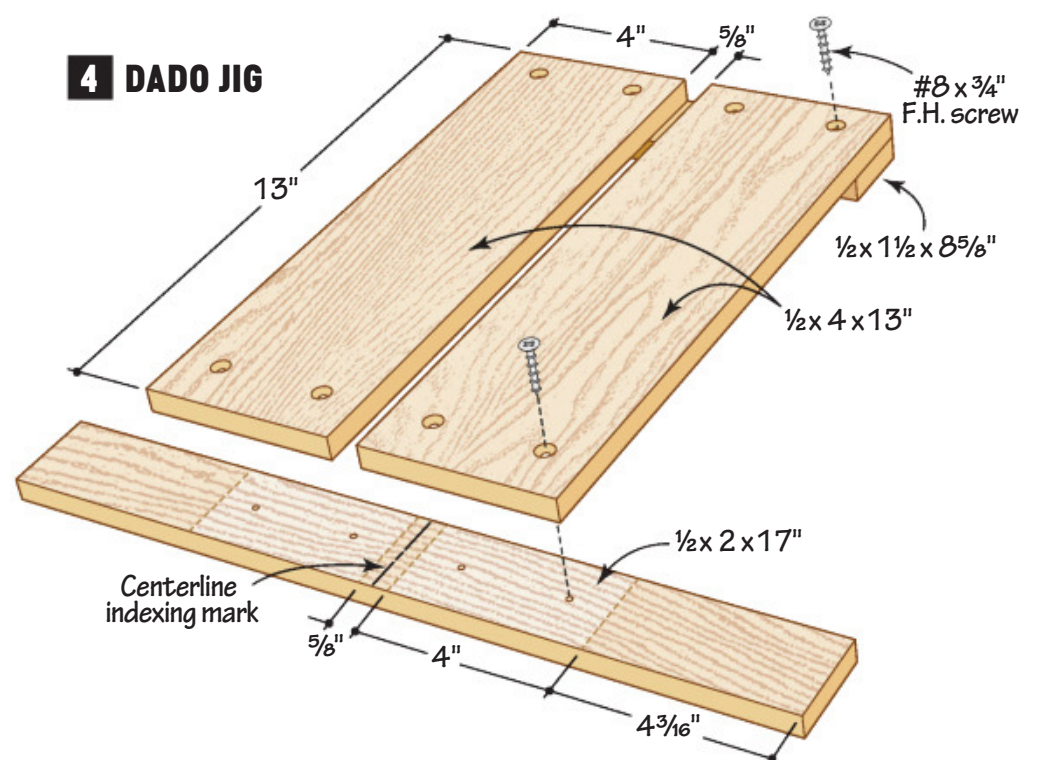
Join the legs with wide aprons on three sides, as well as narrow rails in the front that create openings for a pair of drawers.

1 Edge-glue panels for the side and back aprons (C, D) and cut them to size [Materials List, Base Exploded View]. Cut the lower front rail (E) to size.

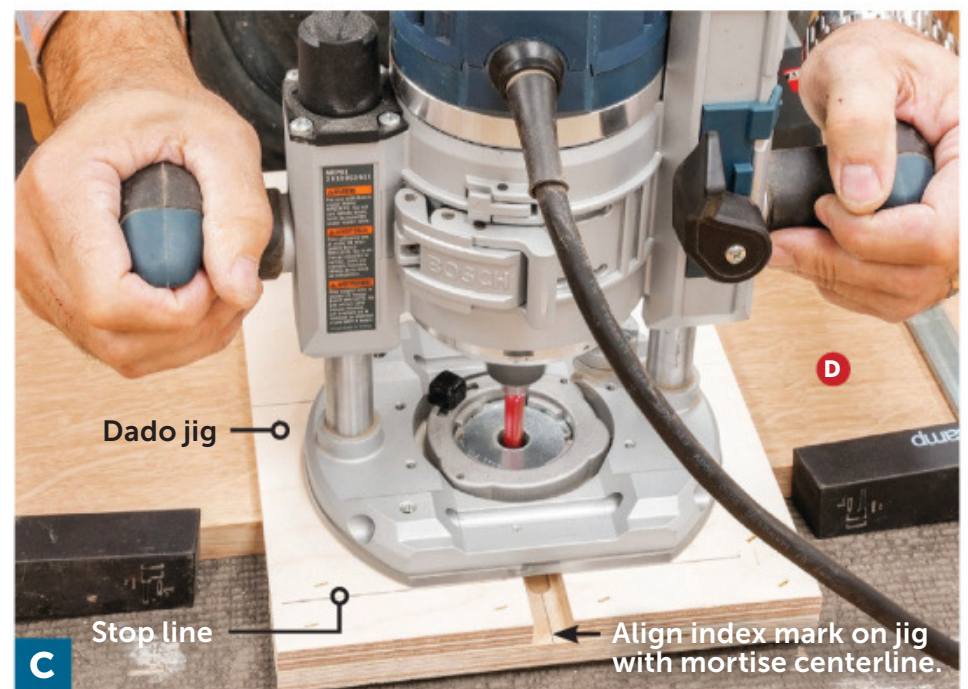
2 Form tenons on the ends of these pieces (C-E) [Drawing 3]. To make the double tenons on the aprons, remove the waste between the tenons at the tablesaw [Photo B].

3 Build the mortise and stopped-dado jig [Drawing 4]. Lay out the centerline and ends of the mortise on the inside face of the back apron (D) [Drawing 3]. Using the jig, rout the mortise [Photo C] then square the ends with a chisel.

4 DADO JIG



A tall auxiliary miter gauge fence supports the aprons (C, D) as you notch out the waste between the tenons, while a pair of stop blocks defines the shoulders of the notch.



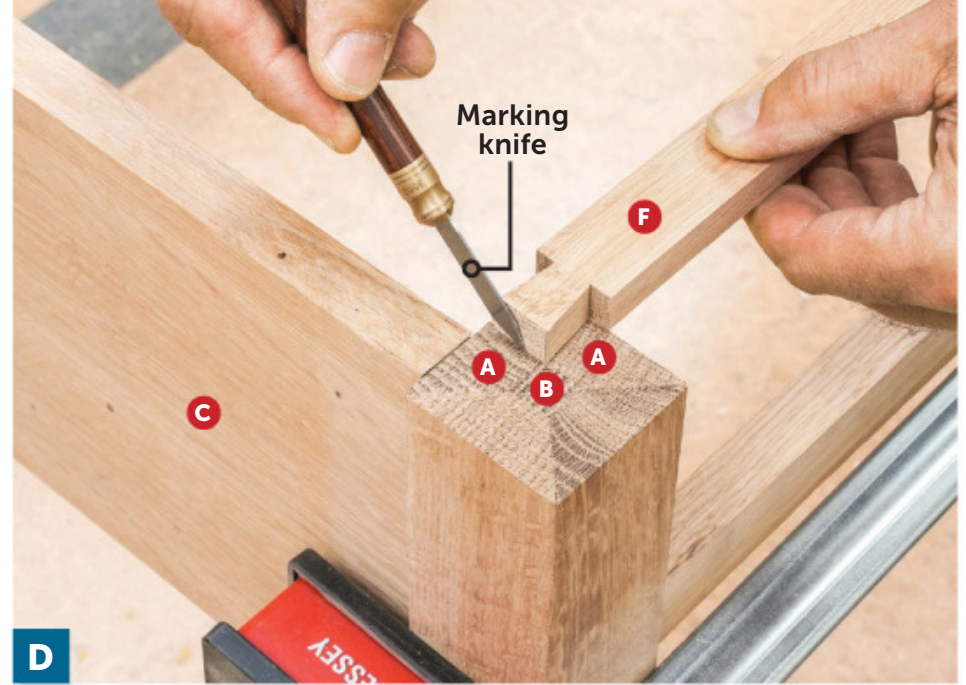
Rout the shallow mortise in the back apron (D) using a shop-made jig, a 5/8" guide bushing, and a 3/8" straight bit. Draw index lines on the jig to indicate where to start and stop the cut.

4 Glue and clamp the end assemblies (A-C). After the glue dries, glue and clamp the back apron and lower front rail (D, E) between the end assemblies.

5 Cut the upper front rail (F) to size. Cut a dovetail on each end [Drawing 3] and use these to lay out the sockets on the tops of the front legs [Photo D].

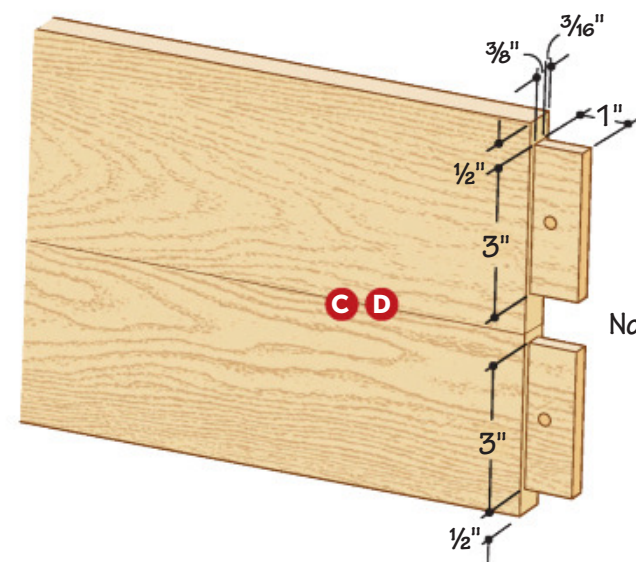
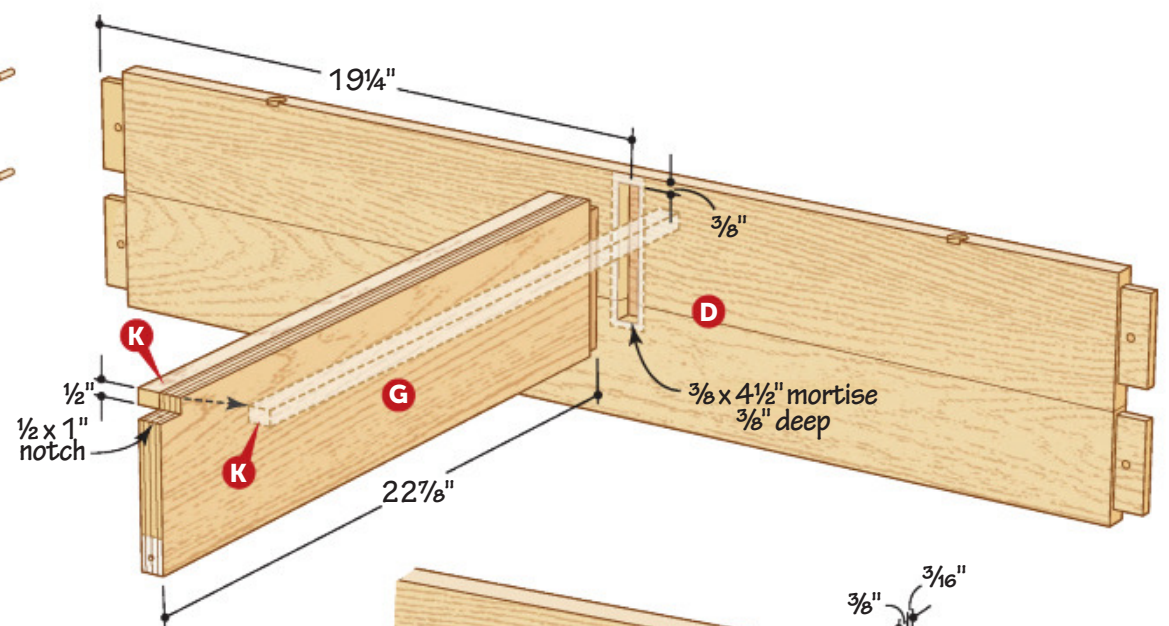
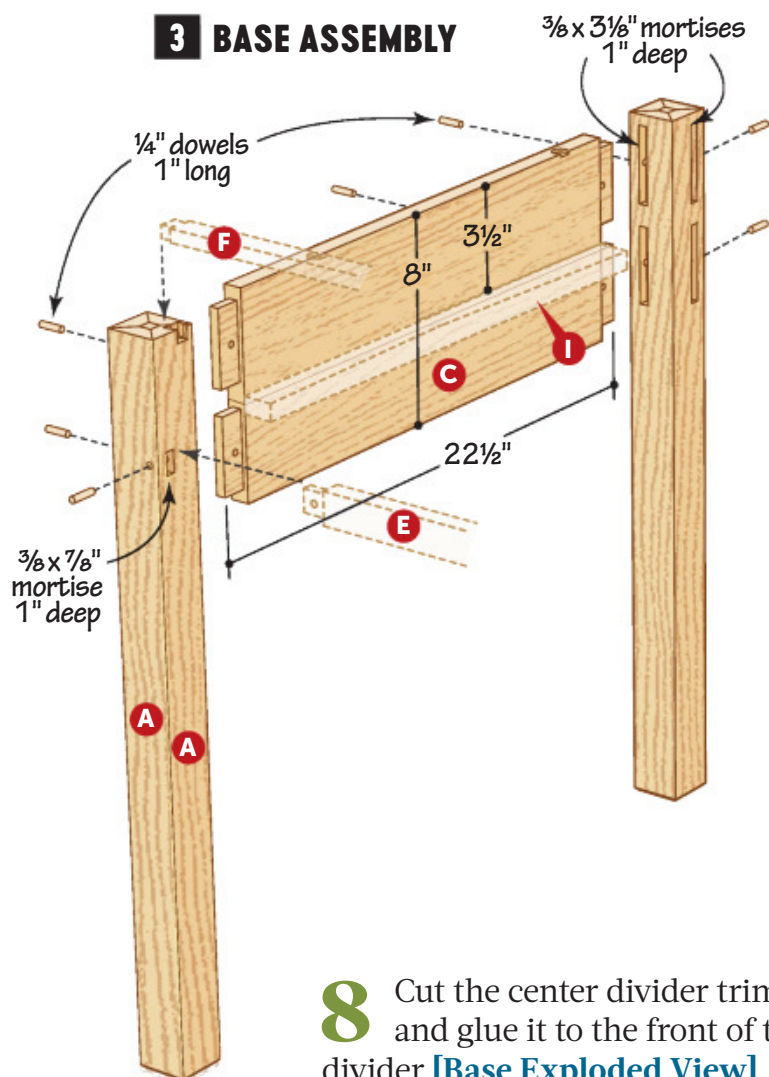
6 Drill out the centers of the dovetail sockets and chop away the remainder of the waste with a chisel and mallet.

7 From $\frac{3}{4}$ " plywood, cut the center divider (G) to size. Notch the front and cut a tenon on the back end. Glue the divider and upper front rail into place, then countersink and screw the upper front rail into the notch in the center divider.

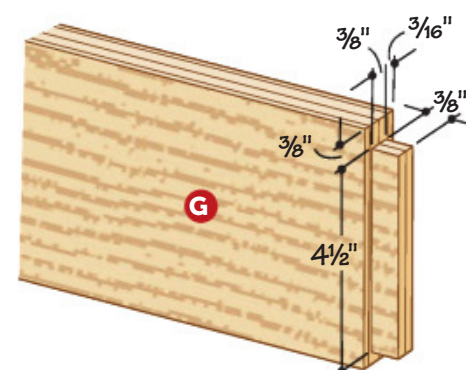
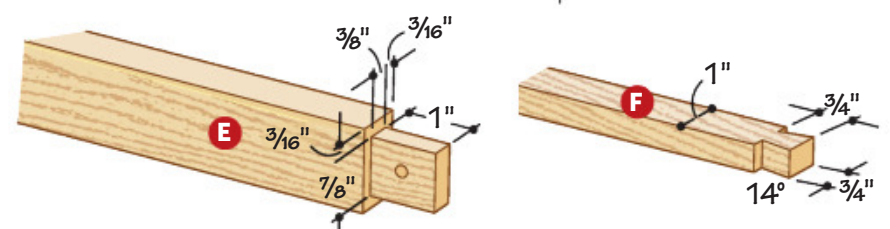


D With the backs of the rail (F) and leg (A/B) flush, transfer the dovetail profile to the top of the front legs. Drill out the bulk of the socket waste with a $\frac{1}{2}$ " Forstner bit and clean up the edges with a chisel.

3 BASE ASSEMBLY



Note: Drill dowel holes in tenons after assembly.



8 Cut the center divider trim (H) to size and glue it to the front of the center divider [Base Exploded View].

9 Cut the drawer guides (I), runners (J), and kickers (K) to size [Materials List]. Glue the guides to the inside faces of the side aprons. Glue the runners in place flush with the top edge of the lower front rail. Glue a kicker to each side of the divider, flush with the top edge.

10 Lay out and drill $\frac{1}{4}$ " holes in the legs and lower front rail (E). Glue overlength dowels into the holes, trimming them flush after the glue dries.

11 Drill shallow recesses in the top edges of the aprons for figure-8 fasteners. Edge-glue a blank for the top (L), cut it to size, and radius the corners. Finish-sand the top and the base assembly.

TIP!

Cut the drawer fronts from one 36"-long blank to create continuous grain across both drawers.



Learn how to make half-blind dovetails.
woodmagazine.com/
halfblind

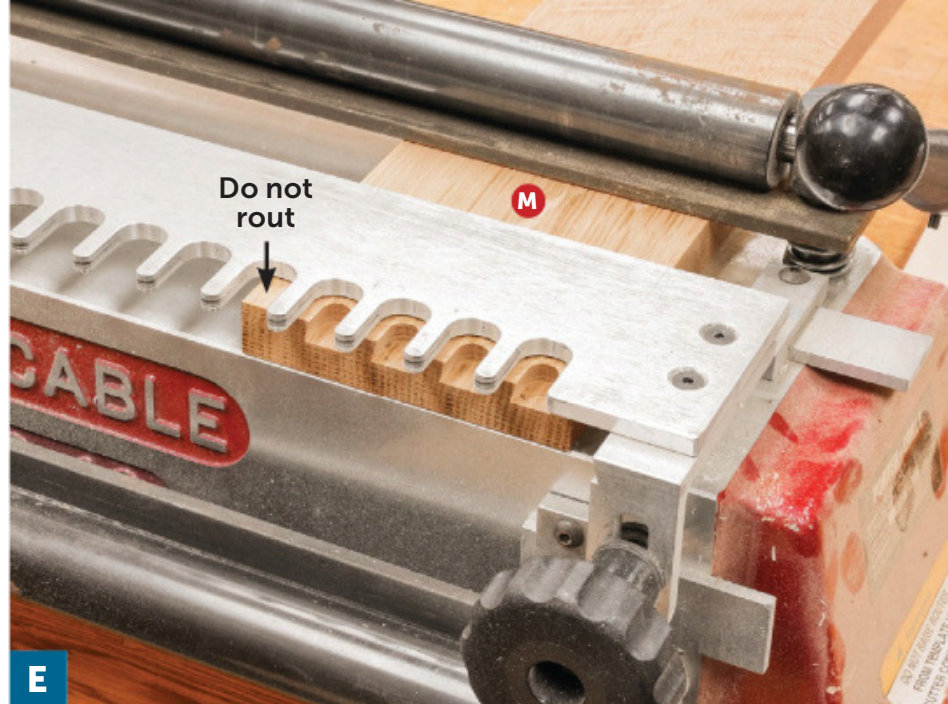
DRAWERS

Half-blind dovetails join the drawer sides to the fronts. A dovetail jig and careful layout make this task easier.

1 Cut the drawer fronts (M) and sides (N) to size [Drawing 5]. From scrapwood, cut a blank the same thickness and width as one of the drawer fronts to use as a sacrificial backer when routing the dovetails.

2 Mark the drawer fronts and sides and place one of the sides and the backer in your jig to rout the tails. Switch to the opposite end of the jig to rout the tails on the second drawer side, turning the backer around for fresh support. Cut the ends off the backer and repeat the process for the sides of the second drawer.

3 To rout the sockets, place a drawer front in the jig and cut only the first four sockets [Photo E]. Repeat this for the other end, again working on the opposite end of the dovetail jig.

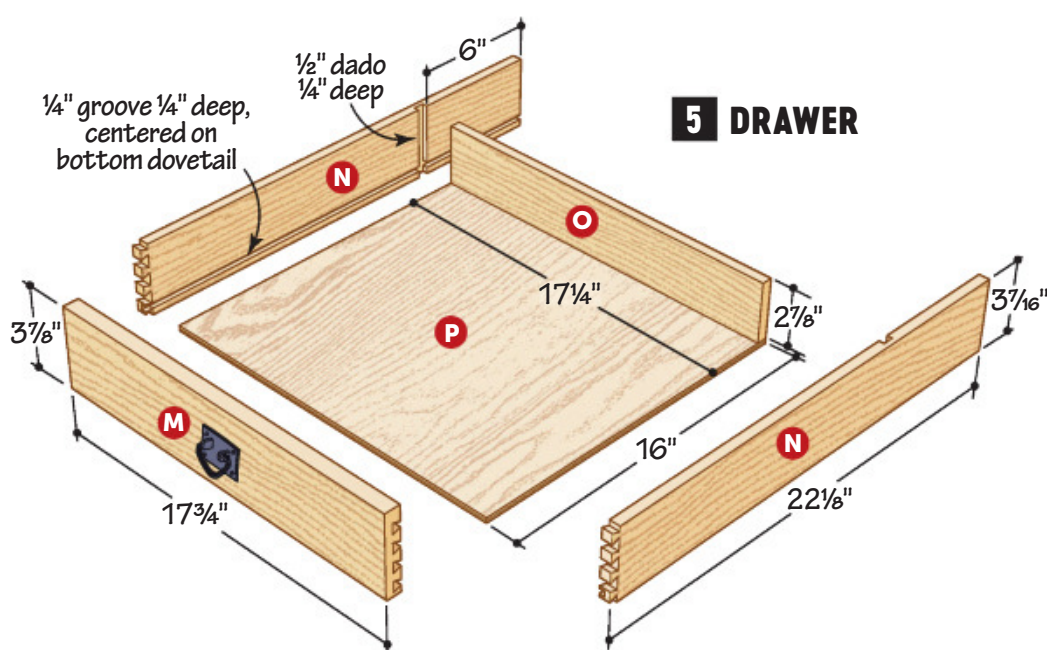


Because the drawer fronts are wider than the sides, rout only the bottom four sockets at both ends of the drawer fronts.

4 Cut a dado on the inside faces of the drawer sides for the back of the drawer.

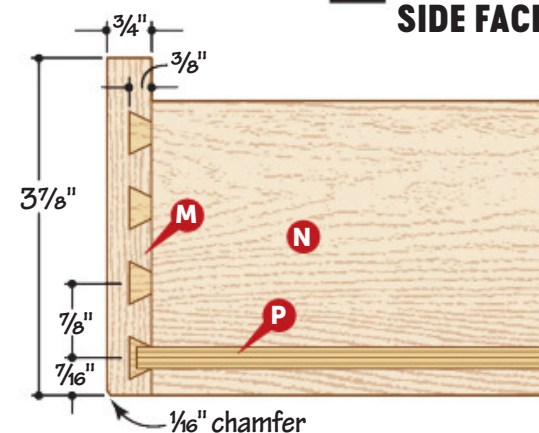
5 Cut a groove on the inside faces of the drawer front and sides for the drawer bottom, centering the groove on the bottom dovetail [Drawing 5a]. Size the groove to match the thickness of the plywood.

6 Cut the drawer backs (O) and bottoms (P) to size. Glue and clamp the drawers, checking for square. After the glue dries, finish-sand the drawers and chamfer the bottom edge of the drawer front.

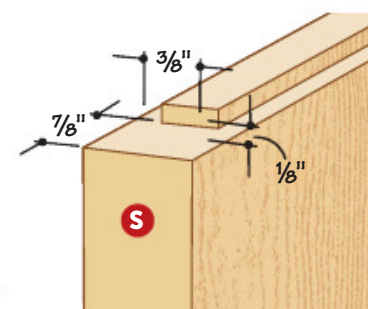
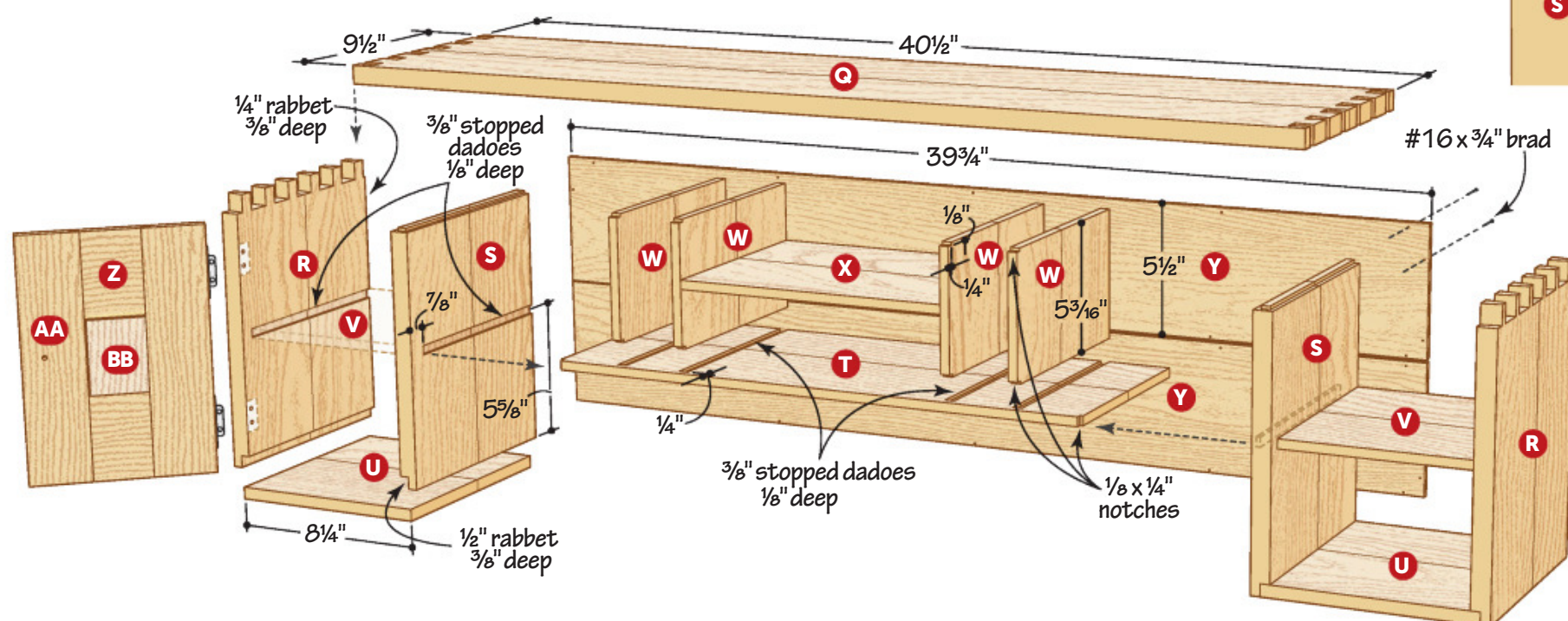


5 DRAWER

5a DRAWER SIDE FACE

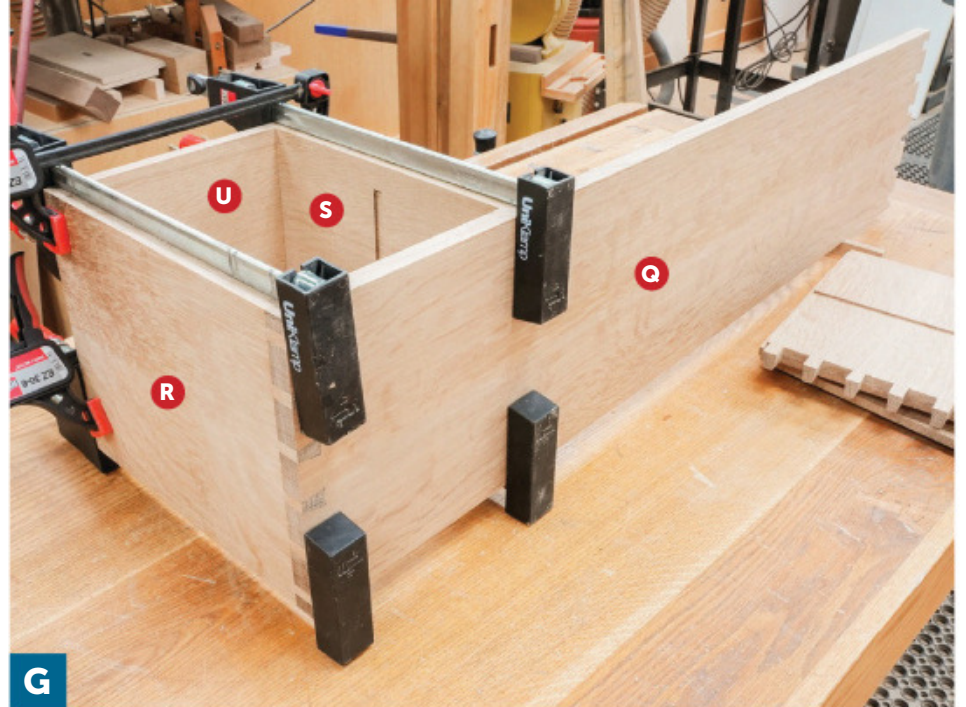


HUTCH EXPLODED VIEW





A pencil line drawn on top of the jig lets you know where to stop your router when routing the stopped dados on the underside of the hutch top (Q).



Assemble one end of the hutch at a time, checking for square as you apply the clamps. Later, you'll slide the dividers into the hutch from the back.

STICKLEY & HUTCH

A dovetailed hutch houses an assortment of shelves and dividers.



See more on hand-cutting dovetails.
woodmagazine.com/hutchetails

1 Edge-glue panels for the hutch parts (Q-X), then cut the hutch top (Q) and sides (R) to size [Materials List, Hutch Exploded View].

2 Lay out and hand-cut the dovetails [Drawing 6].

3 Cut a rabbet on the back edge of the sides and a stopped rabbet on the back edge of the top.

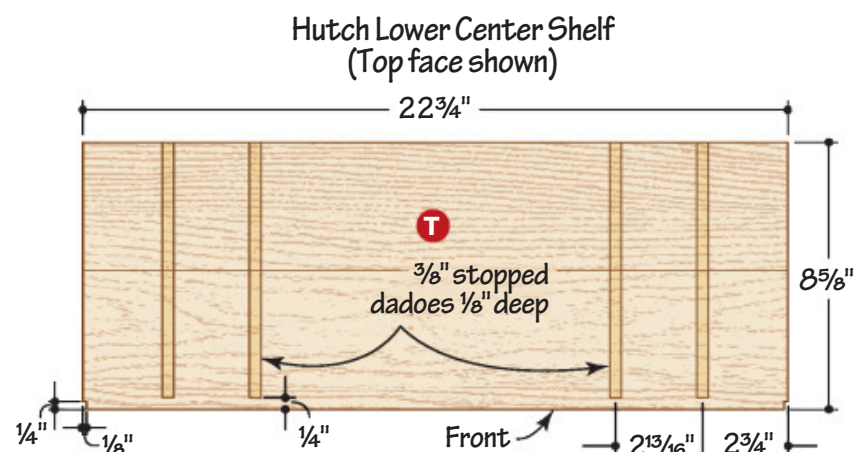
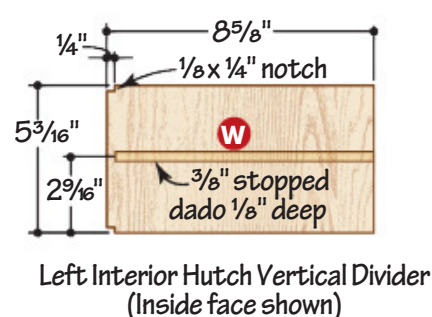
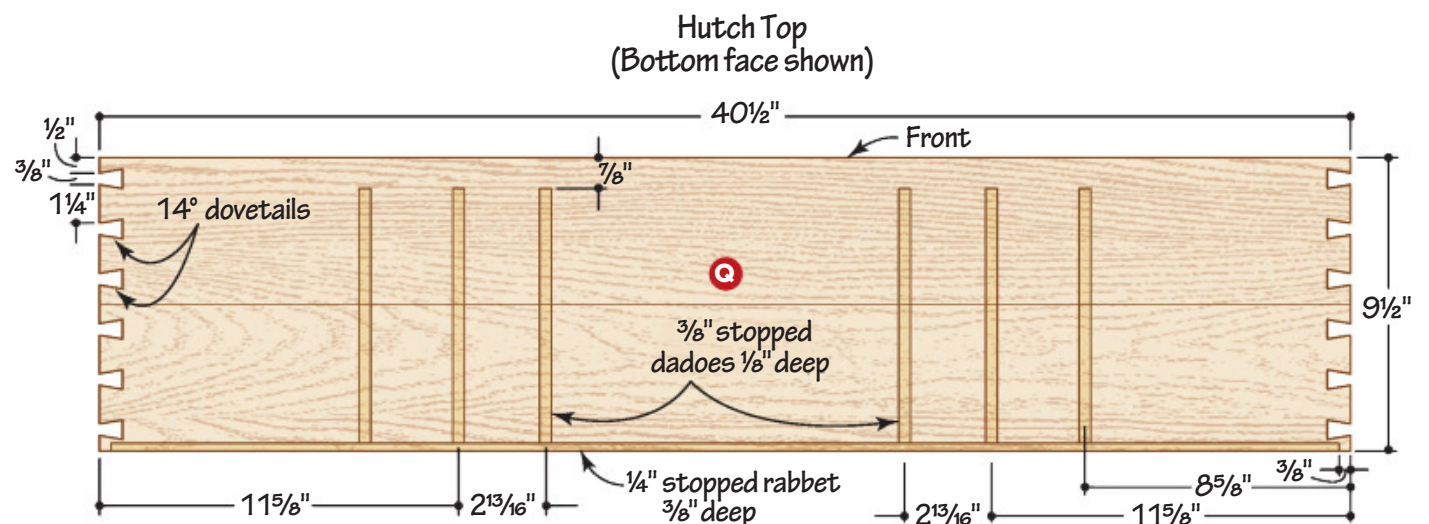
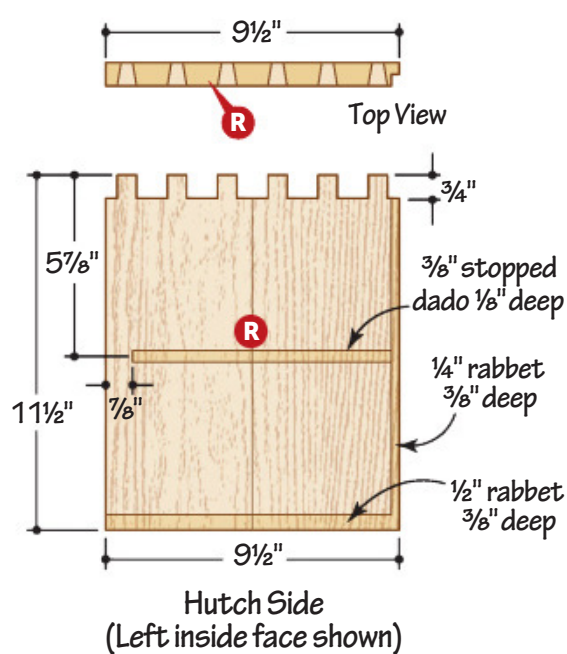
4 Lay out the locations of the stopped dados on the underside of the top. Using the dado jig you made earlier, rout the stopped dados [Photo F].

5 Cut the inner sides (S) and lower center shelf (T) to size. Rout the stopped dados in both faces of the inner sides and one face of the lower center shelf, noting the difference in the setbacks. Square the ends of the dados.

6 Form the tenon on the top end of each inner side (S) and cut a rabbet on the lower end of the hutch sides (R) and inner sides [Drawing 6, Hutch Exploded View].

7 Cut the hutch bottoms (U) to size. Finish-sand the inside faces of the top, sides, inner sides, and bottoms (Q-S, U). Glue and clamp the hutch top, sides, and bottom (Q/R/S/U) [Photo G].

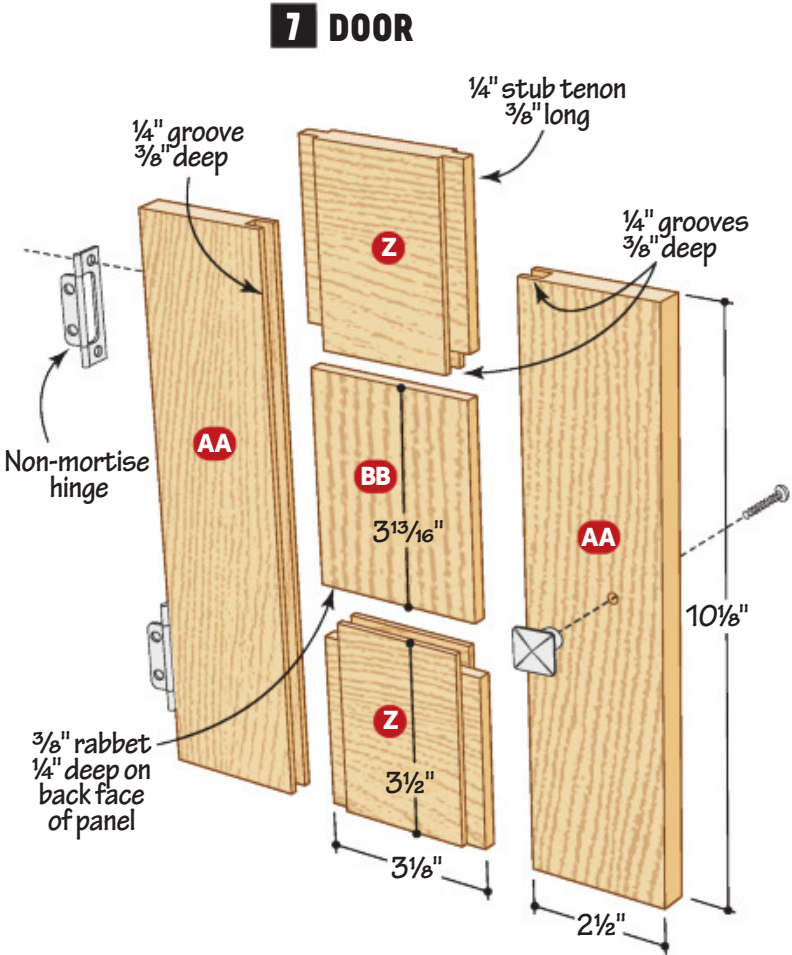
6 HUTCH PARTS



TIP! The dividers and shelves of the hutch go together without glue, allowing you to assemble the parts after finishing.

- 8 Cut the side shelves (V) to size, and the vertical dividers (W) and upper center shelf (X) to width and about 1/4" overlength.
- 9 Notch the front edge of the lower center shelf (T) and slide it and the side shelves (V) into place. Measure between the shelf (T) and top (Q) to determine the final length of the vertical dividers (W); then cut them to length and cut the notches.

- 10 Rout the stopped dados on two of the vertical dividers (W).
- 11 Slide the dividers into the assembly and measure between them to determine the length of the upper center shelf (X). Cut this shelf to final length and cut the notches.
- 12 Cut the two backs (Y) to size. Finish-sand the backs and set them aside.



DOORS AND FINAL FINISH

- 1 Cut the door rails (Z) and stiles (AA) to size [Drawing 7, Materials List]. Cut a groove on the inside edge of the door rails and stiles and form tenons on the ends of the rails.
- 2 From 1/2" stock, cut the door panels (BB) to size. Rabbet the back face of each panel to allow them to float in the door frames.
- 3 Finish-sand the panels, then apply dye followed by stain. (We used Lockwood #144 aniline dye followed by Varathane Gunstock stain.) When the stain is dry, glue and clamp the doors.
- 4 Complete any finish-sanding and ease any sharp edges on the hutch and desk. Remove the shelves and dividers from the hutch and apply the dye and stain to all the parts, then apply a topcoat. (We sprayed two coats of Sherwin-Williams satin lacquer.)
- 5 With the finish dry, reassemble the hutch and attach the backs with brads. Add figure-8 fasteners to the desk aprons and attach the top, centered on the base. Install the pulls and knobs and mount the doors to the hutch with non-mortise hinges.

TIP! Staining the door panels (Z) before assembly prevents raw wood from showing if they shrink.

MATERIALS LIST

PART	FINISHED SIZE			Matl.	Qty.
	T	W	L		
A* LEG SIDES	3/4"	2"	28"	QWO	16
B LEG CORES	1/2"	1/2"	28"	QWO	4
C SIDE APRONS	3/4"	8"	22 1/2"	QWO	2
D BACK APRON	3/4"	8"	38 1/2"	QWO	1
E LOWER FRONT RAIL	3/4"	1 1/4"	38 1/2"	QWO	1
F UPPER FRONT RAIL	1/2"	1"	38"	QWO	1
G CENTER DIVIDER	3/4"	5 1/4"	22 7/8"	OP	1
H CENTER DIVIDER TRIM	3/4"	3/4"	4"	QWO	1
I DRAWER GUIDES	3/4"	1"	20 1/2"	M	2
J DRAWER RUNNERS	3/4"	1 1/4"	22 1/2"	QWO	4
K DRAWER KICKERS	1/2"	3/4"	21 1/2"	M	2
L TOP	1"	26"	42 1/2"	QWO	1
M DRAWER FRONTS	3/4"	3 7/8"	17 3/4"	QWO	2
N DRAWER SIDES	1/2"	3 7/16"	22 1/8"	M	4
O DRAWER BACKS	1/2"	2 7/8"	17 1/4"	M	2
P DRAWER BOTTOMS	1/4"	17 1/4"	16"	OP	2
Q HUTCH TOP	3/4"	9 1/2"	40 1/2"	QWO	1
R HUTCH SIDES	3/4"	9 1/2"	11 1/2"	QWO	2
S HUTCH INNER SIDES	3/4"	9 1/4"	10 7/8"	QWO	2

PART	FINISHED SIZE			Matl.	Qty.
	T	W	L		
T LOWER CENTER SHELF	3/8"	8 5/8"	22 3/4"	QWO	1
U HUTCH BOTTOMS	1/2"	8 1/4"	9 1/4"	QWO	2
V SIDE SHELVES	3/8"	8 3/8"	7 3/4"	QWO	2
W* VERTICAL DIVIDERS	3/8"	8 5/8"	5 3/16"	QWO	4
X* UPPER CENTER SHELF	3/8"	8 5/8"	11 1/2"	QWO	1
Y HUTCH BACKS	1/4"	5 1/2"	39 3/4"	OP	2
Z DOOR RAILS	3/4"	3 1/2"	3 1/8"	QWO	4
AA DOOR STILES	3/4"	2 1/2"	10 1/8"	QWO	4
BB DOOR PANELS	1/2"	3 1/16"	3 13/16"	QWO	2

*Parts initially cut oversize. See the instructions.

MATERIALS KEY: QWO—quartersawn white oak, OP—oak plywood, M—maple.

SUPPLIES: 1/4" oak dowel, #8x1 1/2" flathead screws, #8x3/4" flathead screws, #16x3/4" brads, figure-8 tabletop fasteners.

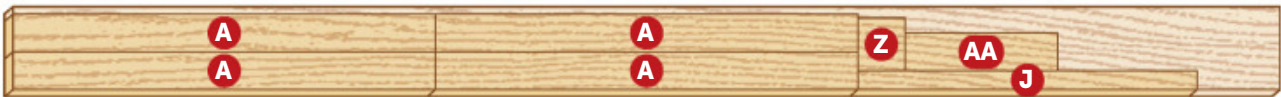
BLADE AND BITS: Dado blade, 3/8" straight router bit, 5/8" guide bushing, 14°x1/2" dovetail bit, 1/2" Forstner bit.

SOURCES: Non-mortise hinges, no. SHC-1100B-10B (4), \$19 each, knobs, TK-M1507 (2), \$22 each, cabinetparts.com, 561-295-8476; drawer pulls, no. C350C4 (2), \$26 each, craftsmenhardware.com, 660-376-2481

PROJECT COST: It cost us about \$900 to build this project. Your cost will vary by region and source.

CUTTING DIAGRAM

This project requires 13 board feet of 5/4 quartersawn white oak, 33 board feet of 4/4 quartersawn white oak, 3 square feet of 1/2" quartersawn white oak, 6 square feet of 3/8" quartersawn white oak, 1 board foot of 4/4 maple, and 5 square feet of 1/2" maple based on example boards shown.



3/4 x 5 1/2 x 84" Quartersawn white oak (4 needed)



3/4 x 5 1/2 x 84" Quartersawn white oak



3/4 x 3 1/2 x 84" Quartersawn white oak



3/4 x 5 1/2 x 84" Quartersawn white oak



3/4 x 5 1/2 x 84" Quartersawn white oak



3/4 x 5 1/2 x 60" Quartersawn white oak



1 x 5 1/2 x 96" Quartersawn white oak (2 needed)



1 x 5 1/2 x 48" Quartersawn white oak



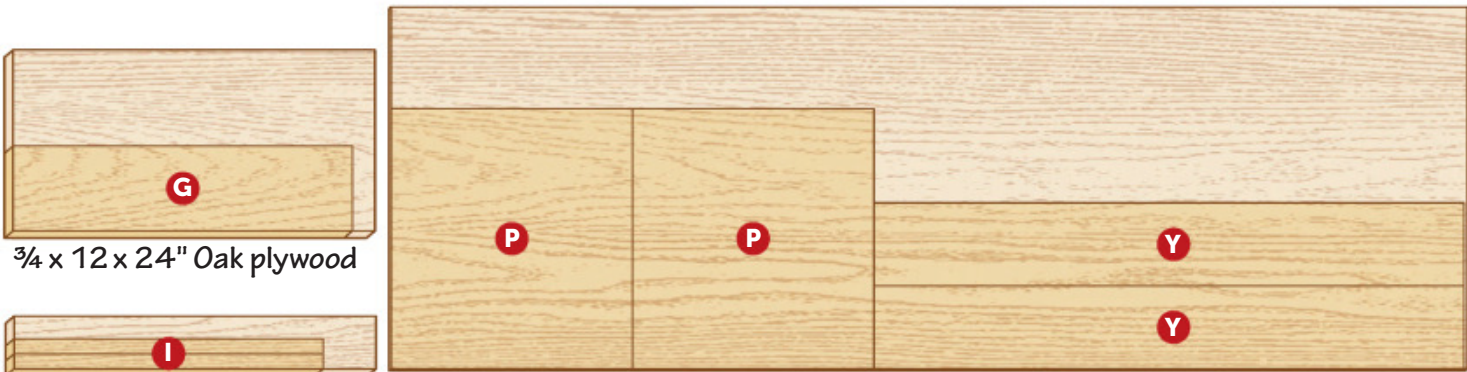
1/2 x 5 1/2 x 72" Quartersawn white oak



3/8 x 3 1/2 x 84" Quartersawn white oak



3/8 x 5 1/2 x 84" Quartersawn white oak



3/4 x 12 x 24" Oak plywood



3/4 x 3 1/2 x 24" Maple

1/4 x 24 x 72" Oak plywood



1/2 x 3 1/2 x 96" Maple



1/2 x 3 1/2 x 60" Maple

MITERSAW STATION

Turn your miter saw into a jobsite workhorse with this custom-fit miter saw station. Large wings and onboard extensions provide added support for long workpieces.

WRITER: KERRY GIBSON
DESIGNER/BUILDER: KEVIN BOYLE
BUILDER: BRIAN BERGSTROM

OVERALL DIMENSIONS
124"W (extensions closed),
185" (extensions open) x 20"D x 10³/₄"H

PHOTOGRAPHER: JASON DONNELLY; ILLUSTRATORS: ROXANNE LEMOINE, LORNA JOHNSON



Note: Unless otherwise noted, all screws are driven into countersunk pilot holes.

The miter saw excels at breaking down long boards. To perform its best, though, a miter saw needs workpiece support on each side along with a good fence. This station offers both and works great in the shop or on a pair of sawhorses at a jobsite, such as when building the *Lawn & Garden Lean-To*, page 28.

Built from plywood and poplar, it's easy to customize to fit your saw and features large wings with fences and retractable extensions that offer more than 4' capacity on the left and 9' on the right. You can easily size the wings and extensions for the capacity you need.

CUSTOM-FIT YOUR SAW

Before you start building, you need an accurate measurement of your miter saw's platform height. Set the saw on a flat work surface, place a straightedge across the platform and measure from the straightedge to the work surface.

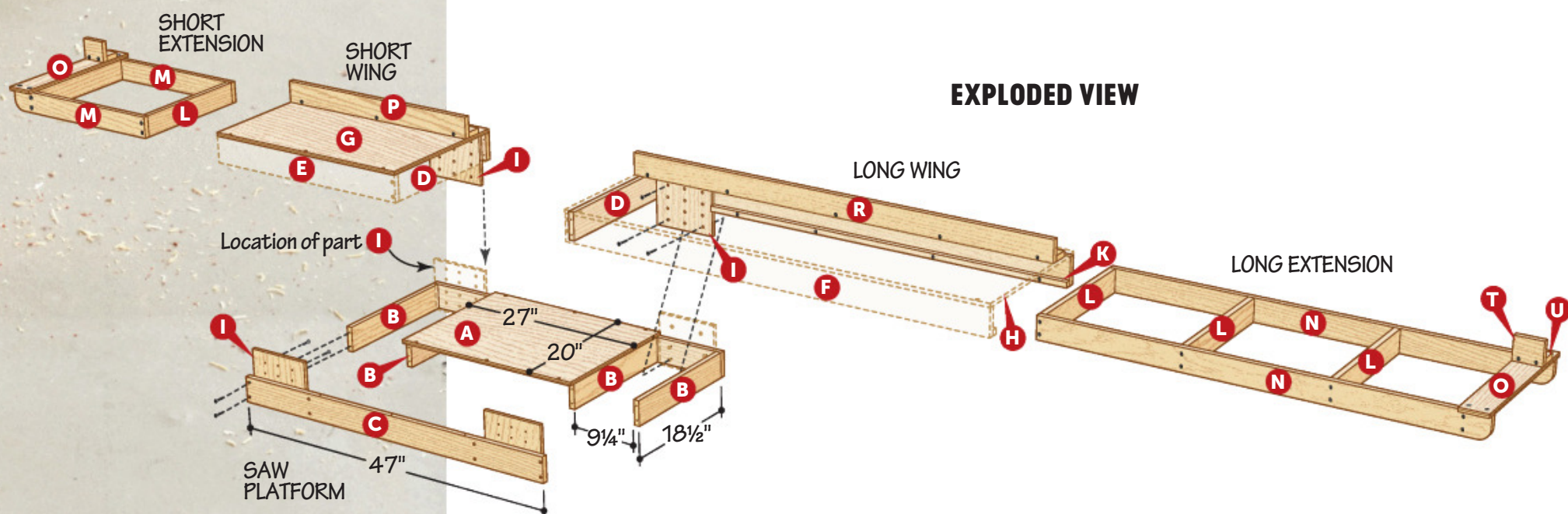
1 Cut the platform top (A) to size from $\frac{1}{2}$ " plywood [Exploded View]. We made our platform top 27" long by 20" deep, which should accommodate most saws. If you need to enlarge the platform to fit a larger saw, lengthen the platform, rails, and sides accordingly.

2 From $\frac{3}{4}$ " stock, cut the platform cross rails (B) and platform sides (C) to size [Exploded View, Materials List]. Form a frame by gluing and screwing two cross rails between the sides and flush with the ends of the sides. Glue and screw the other two cross rails between the sides $9\frac{1}{4}$ " from the cross rail at each end. Then glue and screw the platform top (A) in place, centered on the frame (B/C).



3 Rip the wing cross rails (D), as well as the short and long wing sides (E, F) to a width that equals the height of your saw platform ($3\frac{3}{4}$ " in our case). Then crosscut them to length [Drawings 1 and 2]. From $\frac{1}{2}$ " plywood, cut the short and long wing tops (G, H) and the mending plates (I) to size. From $\frac{3}{4}$ " stock, cut the short and long wing support rails (J, K) to size.

4 Glue and screw a wing cross rail (D) between the short wing supports (E), making sure the rail is square and flush with the support ends. Glue and screw the short wing top (G) to the support assembly (D/E), then glue and screw the wing support rails (J) in place. Repeat these steps to assemble the long wing.

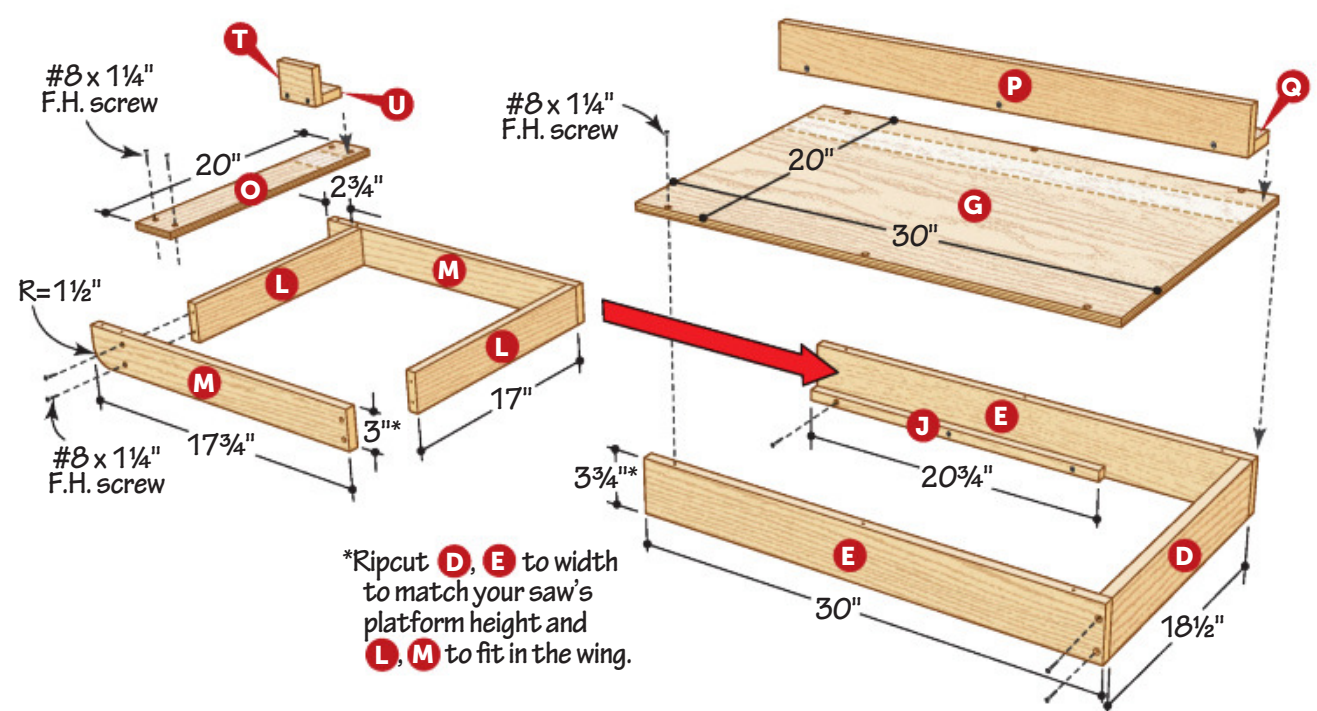


ADD THE EXTENSIONS

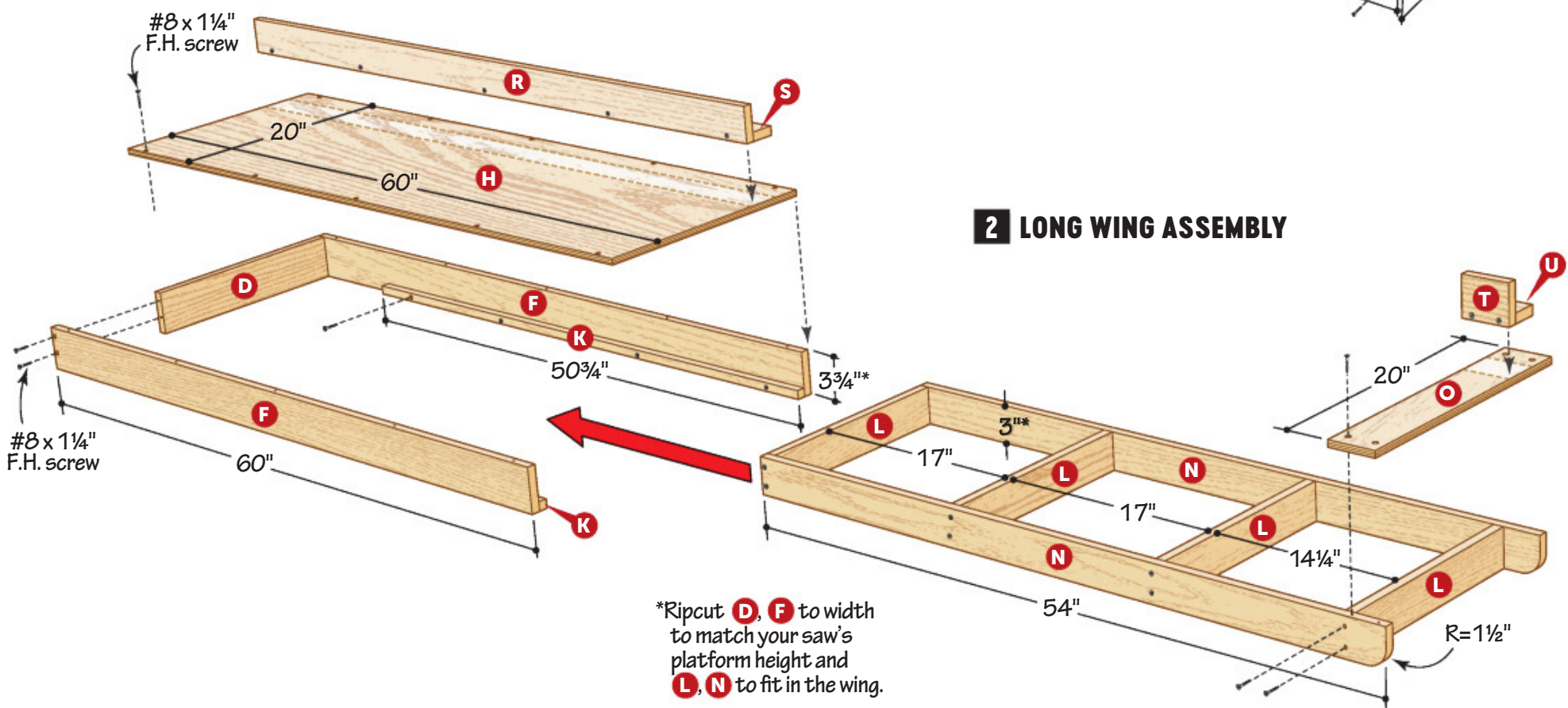
Retractable extensions really boost the cutting capacity of the miter saw station. Size them for a snug, but smooth, fit.

- 1
- Measure between the wing tops (G, H) and the wing support rails (J, K), which was 3" in our case, to determine the width of the extension cross rails (L) and the short and long extension sides (M, N). From 3/4" stock, cut the cross rails and extension sides to size and round one corner of each side [Drawings 1 and 2].
- 2
- Glue and screw the cross rails (L) between the extension sides (M, N). Cut the extension supports (O) to size and screw them to the sides so the support is flush with the rounded ends of the sides.

1 SHORT WING ASSEMBLY



2 LONG WING ASSEMBLY



MATERIALS LIST

PART		FINISHED SIZE			Matl.	Qty.
		T	W	L		
A	SAW PLATFORM TOP	1/2"	20"	27"	Ply	1
B	SAW PLATFORM RAILS	3/4"	3 1/2"	18 1/2"	P	4
C	SAW PLATFORM SIDES	3/4"	3 1/2"	47"	P	2
D	WING CROSS RAILS	3/4"	*3 3/4"	18 1/2"	P	2
E	SHORT WING SIDES	3/4"	*3 3/4"	30"	P	2
F	LONG WING SIDES	3/4"	*3 3/4"	60"	P	2
G	SHORT WING TOP	1/2"	20"	30"	Ply	1
H	LONG WING TOP	1/2"	20"	60"	Ply	1
I	MENDING PLATES	1/2"	7 1/4"	8 1/2"	Ply	4
J	SHORT WING SUPPORT RAILS	3/4"	3/4"	20 3/4"	P	2
K	LONG WING SUPPORT RAILS	3/4"	3/4"	50 3/4"	P	2
L	EXTENSION CROSS RAILS	3/4"	*3"	17"	P	6
M	SHORT EXTENSION SIDES	3/4"	*3"	17 3/4"	P	2

PART		FINISHED SIZE			Matl.	Qty.
		T	W	L		
N	LONG EXTENSION SIDES	3/4"	*3"	54"	P	2
O	EXTENSION SUPPORTS	1/2"	3 1/2"	20"	Ply	2
P	SHORT WING FENCE FACE	3/4"	3"	30"	P	1
Q	SHORT WING FENCE BASE	3/4"	2"	30"	P	1
R	LONG WING FENCE FACE	3/4"	3"	60"	P	1
S	LONG WING FENCE BASE	3/4"	2"	60"	P	1
T	EXTENSION FENCE FACE	3/4"	3"	3 1/2"	P	2
U	EXTENSION FENCE BASE	3/4"	2"	3 1/2"	P	2

*Width of parts is dependent on miter saw platform height.

MATERIALS KEY: P—poplar, Ply—Baltic birch plywood.

SUPPLIES: 1 1/4" flathead screws.

PROJECT COST: It cost us about \$210 to build this project. Your cost will vary by region and source.

FENCES AND FINAL STEPS

1 From $\frac{3}{4}$ " stock, cut a face and base for the short wing fence (P, Q), the long wing fence (R, S), and the extension fences (T, U) to size [Materials List]. Glue and screw the fence faces to the fence bases, checking the assemblies for square [Drawings 1 and 2].

TIP!

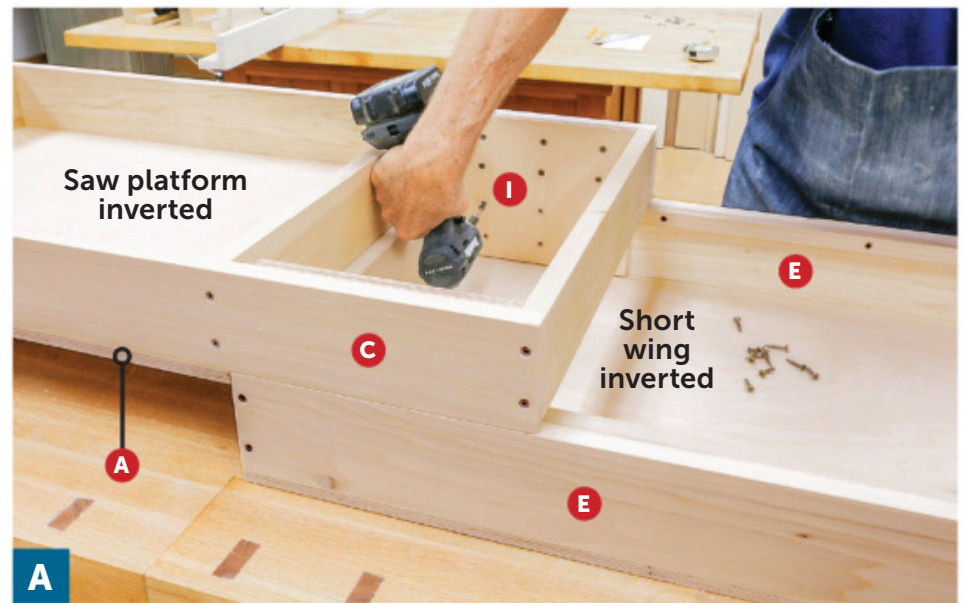
Lay out the hole pattern on one mending plate, tape the four plates together, and drill 12 shank holes in all the plates at once.

2 Drill 12 countersunk holes in the mending plates (I) [Exploded View]. Place the short and long wing assemblies upside down on your workbench with the inverted saw platform spanning them. Use the mending plates to attach the wing assemblies to the saw platform [Photo A].

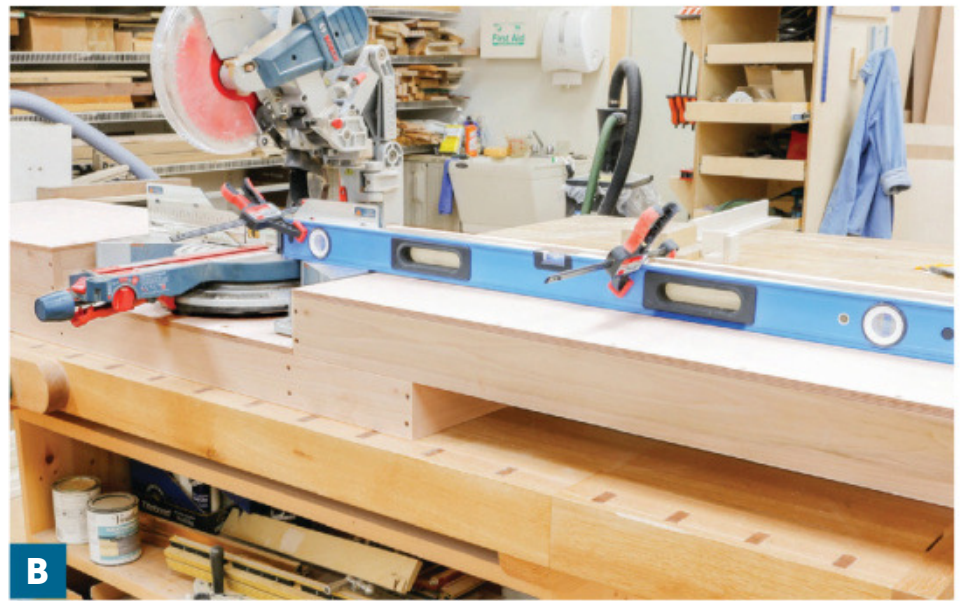
3 Finish-sand all the station parts and apply the finish of your choice. We used a wipe-on oil finish.

4 When the finish dries, center the mitersaw on the saw platform, mark and drill mounting holes, then bolt the saw in place. Attach the long fence to the long wing top [Photo B]. Then repeat the process for the short wing fence.

5 Slide the extensions into place and align the extension fences (T/U) with the wing fences, and fasten them to the extension supports (O) with screws. For repeated cuts, clamp a stopblock to the extension fence, position the extension, and lock it to the wing side with another clamp (opening photo). Now go start on your next project by cutting the stock on your new mitersaw station! 🌲



Set the saw platform on top of the wings. Butt the closed end of the wing assemblies against the saw platform top (A). Apply glue and drive screws to attach the mending plates (I) to both assemblies.



Clamp a long straightedge—such as a 4' level—to the mitersaw's fence. Align the long fence with the straightedge, then drive screws through the fence base to attach the fence to the wing top.

CUTTING DIAGRAM

This project requires 27 board feet of 4/4 poplar.



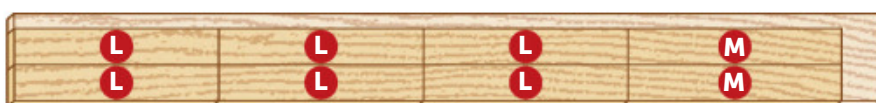
$\frac{3}{4}$ x $3\frac{1}{2}$ x 96" Poplar



$\frac{3}{4}$ x $3\frac{1}{2}$ x 96" Poplar



$\frac{3}{4}$ x $5\frac{1}{2}$ x 96" Poplar (2 needed)



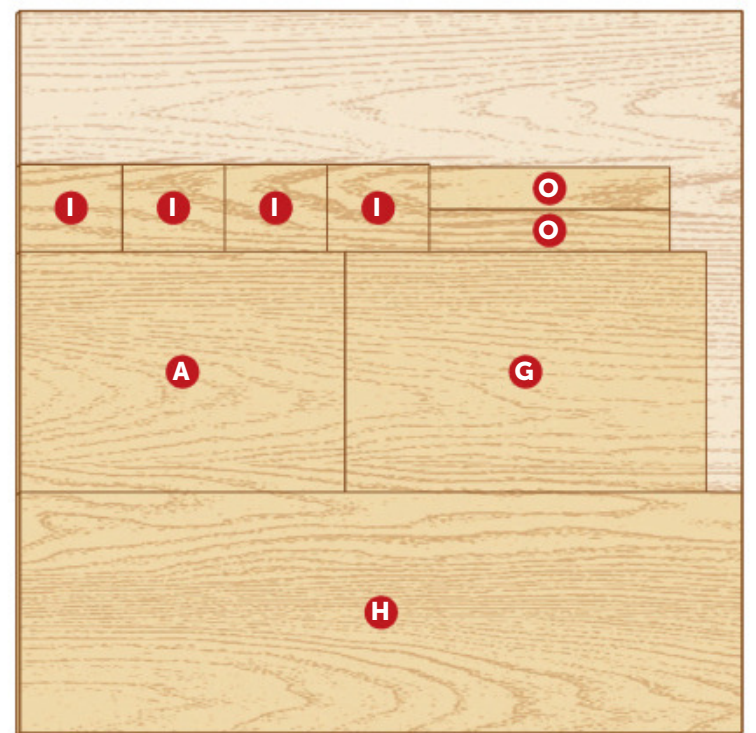
$\frac{3}{4}$ x $7\frac{1}{4}$ x 72" Poplar



$\frac{3}{4}$ x $7\frac{1}{4}$ x 96" Poplar



$\frac{3}{4}$ x $5\frac{1}{2}$ x 96" Poplar



$\frac{1}{2}$ x 60 x 60" Baltic birch plywood



TIMBER LINE

EXPRESS

CONTAINER CAR & CONTAINERS

It's full steam ahead
and time to get
haulin' on the **WOOD®**
Timber Line Express.

WRITER: ZACH BROWN

DESIGNER/BUILDER: JOHN OLSON



PHOTOGRAPHER: KELSEY HANSEN; ILLUSTRATORS: ROXANNE LEMOINE, LORNA JOHNSON

Ready to carry some serious cargo, the Timber Line Express Container Car is next up in our toy train series. This design, known as a well car, features a dropped-down section between the wheel trucks that allows for a double-stack of containers on each car.

Builders of the previous cars in the toy train series will notice some familiar steps, especially in making the wheel truck assemblies, which are identical to the wheel trucks on the log car (issue 293, December 2023/January 2024). Also like the other rolling stock in the fleet, we've assembled a kit [Sources] that includes the wheels, pegs, wheel spacers, dowel, and screw eye.



Build the Timber Line Express fleet.
woodstore.net/train

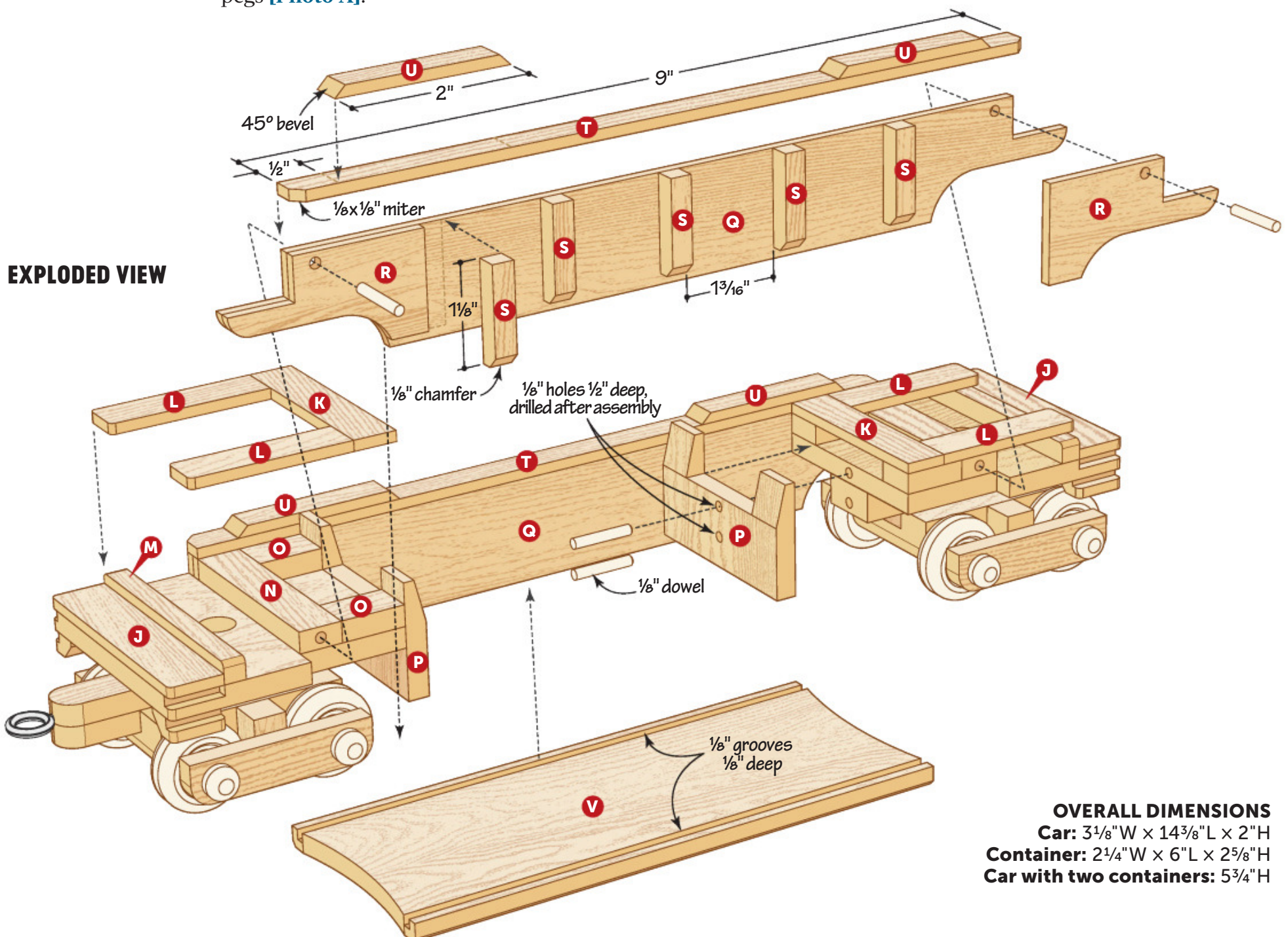
TRUCK ASSEMBLIES

Front and rear trucks keep the container car on track [Exploded View].

1 Cut the truck frames and spring groups (A, B) to size [Materials List, Drawing 1]. Form the centered groove on the top of each frame, then drill for axle pegs [Photo A].



To ensure straight holes for the axle pegs, clamp the truck frames (A) to a backer block on your drill-press table, then drill $\frac{1}{2}$ "-deep holes using a $\frac{7}{32}$ " brad-point bit.



OVERALL DIMENSIONS
Car: $3\frac{1}{8}$ "W $\times$ $14\frac{3}{8}$ "L $\times$ 2"H
Container: $2\frac{1}{4}$ "W $\times$ 6"L $\times$ $2\frac{5}{8}$ "H
Car with two containers: $5\frac{3}{4}$ "H



Keep your fingers safely distant from the blade by building this small-parts tablesaw sled. woodstore.net/smallparts

2 Round over the lower ends of the frames [Drawing 1, Photo B], then glue the springs (B) to the frames, centered front-to-back [Drawing 2].

3 Cut the side frames, tongues, and tongue extension (C–E) to size. Drill the holes in the side frames (C) and round over the lower corners [Drawing 1].

4 Round over both corners on the back end of the tongue extension (E) [Drawing 2], leaving the front end square for now. Then glue and clamp the tongue extension to the top of a tongue (D), flush at the front end.

5 Once the glue dries, drill the hole in the front end of the tongue assembly for the screw eye [Drawing 2, Photo C]. Round over the drilled end, then glue the tongue assembly into the groove on the front truck frame (A), flush at the back end. Drill the $\frac{7}{32}$ " hole in the remaining tongue (D), round over the back corners, and glue it into the groove on the rear truck frame, flush at the front end.

6 Cut a 6"-long workpiece to thickness and width for the hitch shroud (F) [Materials List]. Form a centered groove on one face to fit the rear truck tongue (D) [Drawings 1 and 2], then cut the $\frac{3}{8}$ " dado $\frac{3}{4}$ " from one end. Drill the hole on the top face [Photo D] and round over the corners on the same end. Crosscut the hitch shroud to length just beyond the edge of the dado, to form a $\frac{3}{8}$ " rabbet. Round over the front corners and glue the hitch shroud to the rear truck tongue [Drawing 2].

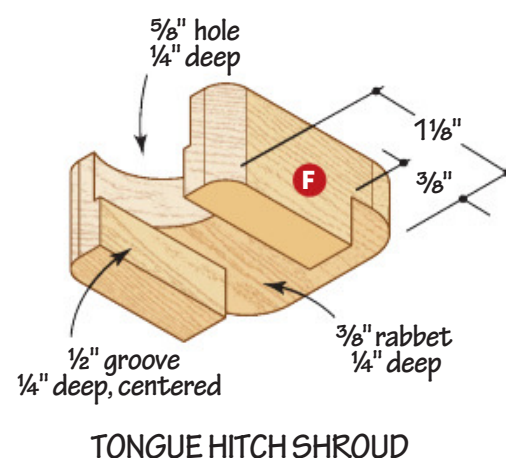
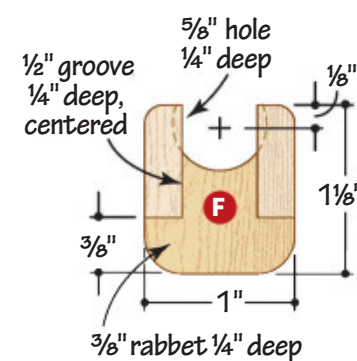
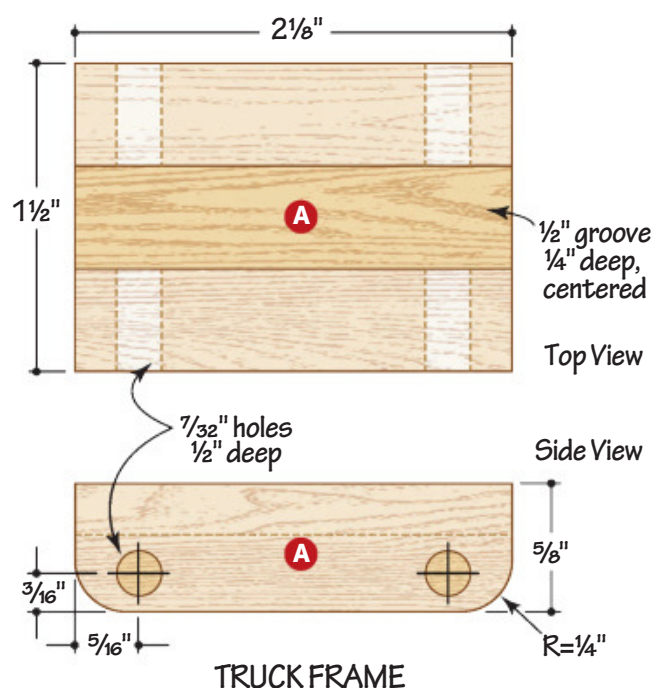


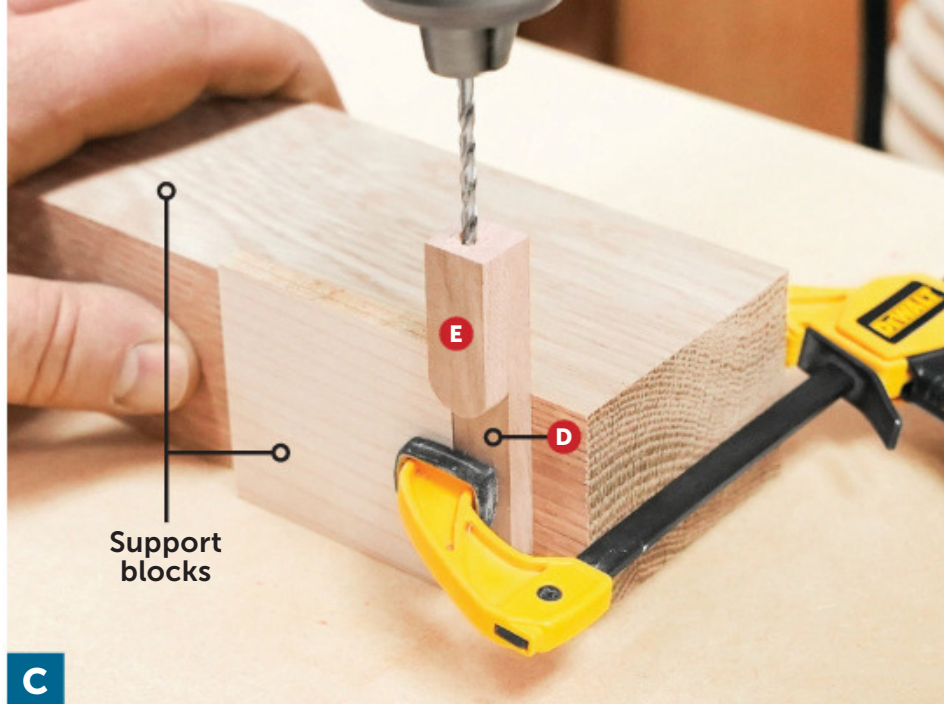
B Install a $\frac{1}{4}$ " round-over bit in the router table. Clamp the truck frames to a backer block to keep your fingers away from the bit and prevent tear-out as you rout across the grain.

7 Begin the wheel assembly by gluing an axle peg into each hole in the truck side frames (C) [Drawing 2] using a few drops of cyanoacrylate glue on the underside of the peg heads. Slip the wheels and spacers onto the axle pegs [Photo E], then use wood glue to glue the ends of the pegs into the holes in the truck frames (A), and the side frames to the springs (B).

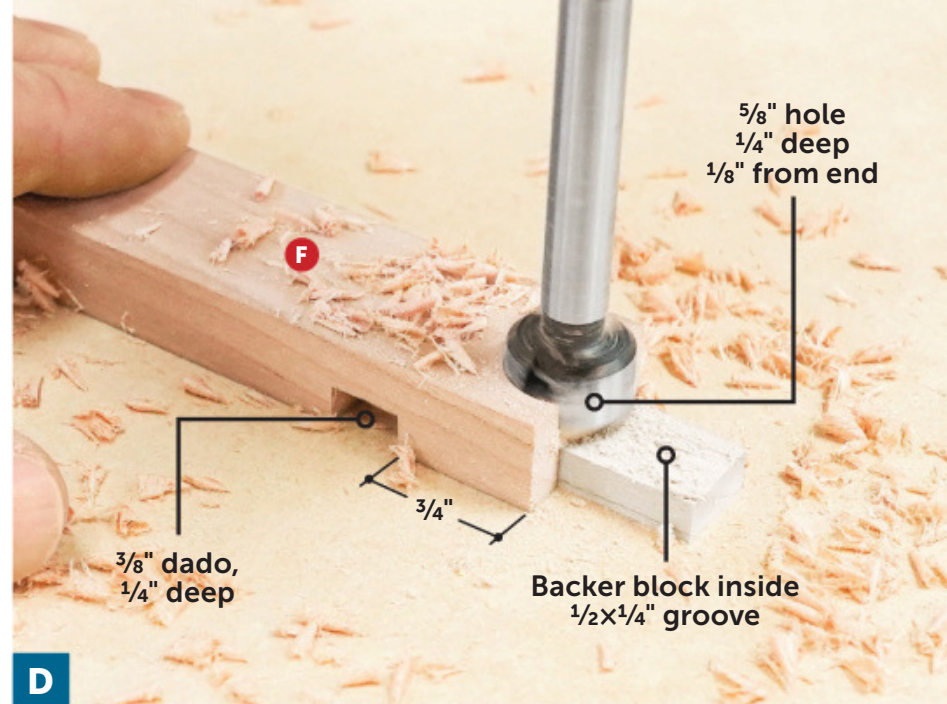


1 TRUCK PARTS

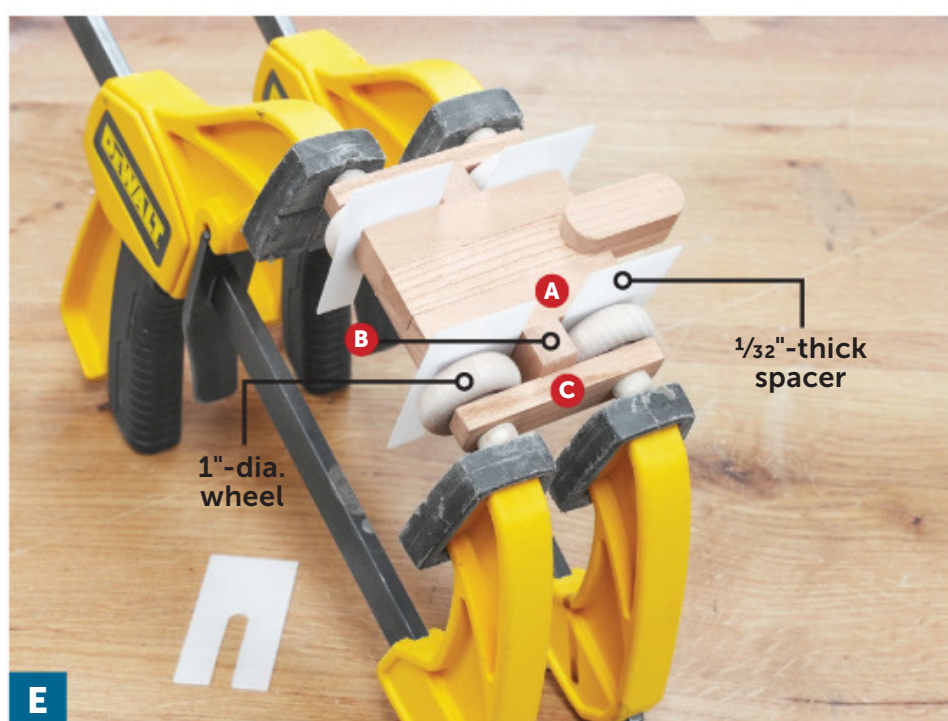




Use a pair of support blocks to hold the tongue assembly in a vertical position as you drill the $\frac{9}{64}$ " hole at the drill press. A sharp brad-point bit makes a clean hole in the end grain.

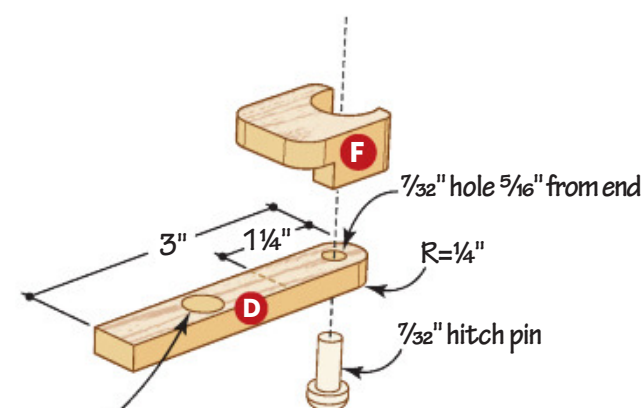


Install a $\frac{5}{8}$ " Forstner bit in the drill press and drill a $\frac{1}{4}$ "-deep hole, centered $\frac{1}{8}$ " from the end of the workpiece. The backer block prevents tear-out as the bit passes into the groove.

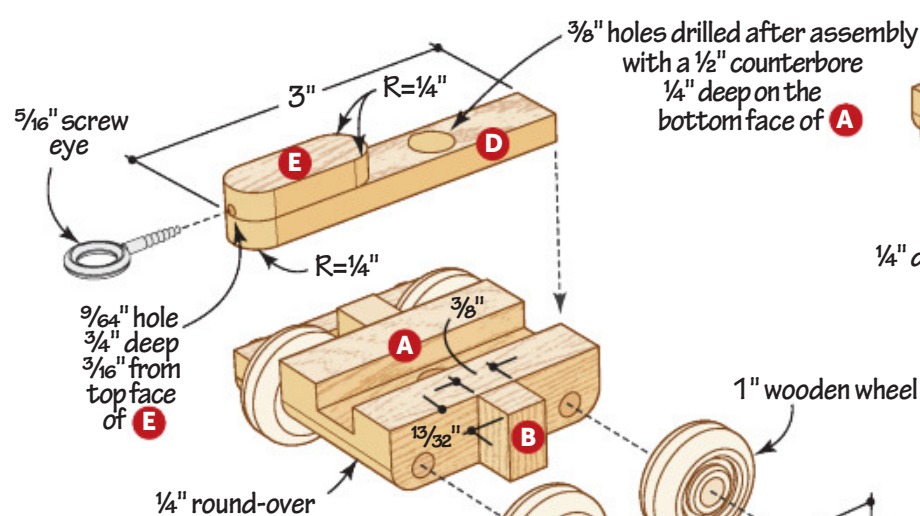


Slot the $\frac{1}{32}$ "-thick spacers from the project kit around the axle pegs and between the wheels and the truck frame (A) before clamping the wheel assemblies into place. Once the glue dries, remove the spacers.

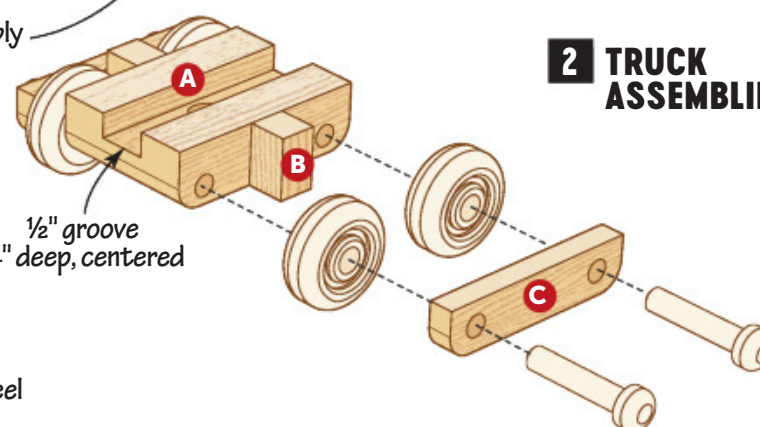
8 To form a recess for the truck connector pin, drill a $\frac{1}{2}$ " counterbore $\frac{1}{4}$ " deep, centered on the bottom face of each truck frame (A) [Drawing 2]. Then drill $\frac{3}{8}$ " holes through the truck assemblies, centered in the counterbores. Add the screw eye to the front truck and glue the hitch pin into the hole in the rear truck tongue, trimming it flush to the top of the hitch shroud (F).



2 TRUCK ASSEMBLIES



FRONT TRUCK ASSEMBLY



REAR TRUCK ASSEMBLY

PLATFORMS AND CAR

1 Cut the frame rails and platforms (G, H) to size [Drawing 3]. Round over the corners on one end of each frame rail. Bandsaw the notches in the platform. Form the stopped rabbets using a $\frac{1}{8}$ " spiral bit in your router table and chisel the ends square.

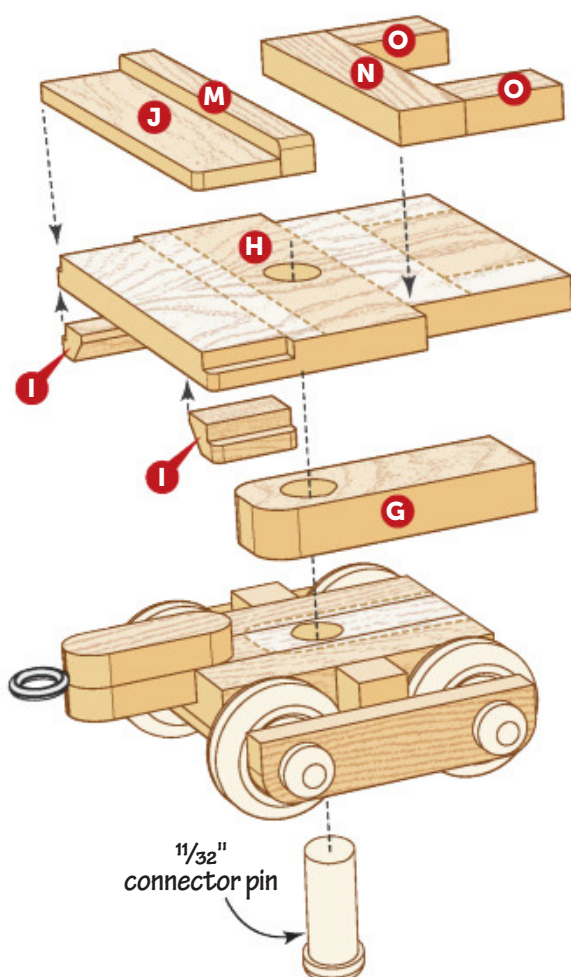
2 Glue a frame rail (G) to the underside of each platform (H) [Drawing 3], flush to the notched end and centered side-to-side. Once the glue dries, drill the $\frac{11}{32}$ " hole through each assembly.

3 Cut a 6"-long workpiece to thickness and width for the steps (I) [Materials List]. Rabbet one edge, then chamfer the opposite edge [Drawing 3]. Cut the steps to length and glue them to the bottom of each platform (H) [Drawing 4], flush to the edges and end.

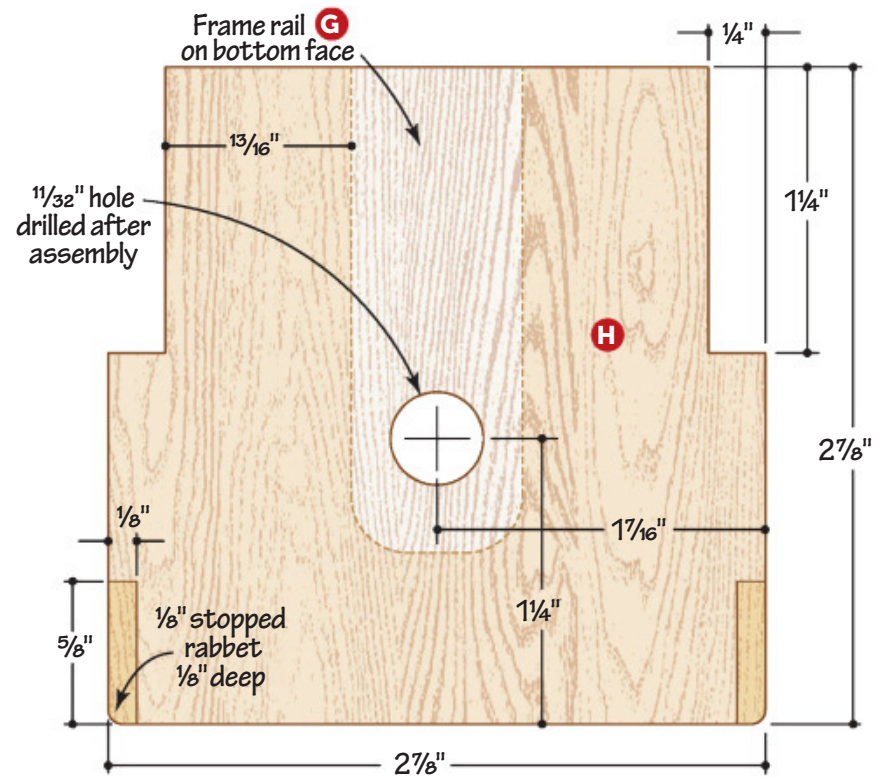
4 Cut the catwalks (J-L) to size [Exploded View, Materials List]. Set aside the inner (K) and side (L) catwalks for now and glue the outer catwalks (J) to the top of each platform (H) [Drawing 4], flush to the rabbeted end. Once the glue dries, sand $\frac{1}{16}$ " round-overs on the outside corners of each platform/step/catwalk (H/I/J) assembly and the remaining inside corner of each step.

5 Cut the risers (M) and supports (N, O) to size. Glue a riser to each platform and round over the upper corners of each riser [Drawing 4]. Apply glue to the holes in the platform assemblies and attach each one to a truck assembly using an $\frac{11}{32}$ " connector pin [Drawing 4]. Once the glue dries, trim the connector pins flush to the tops of the platforms (H), then glue the supports (N, O) to the platforms.

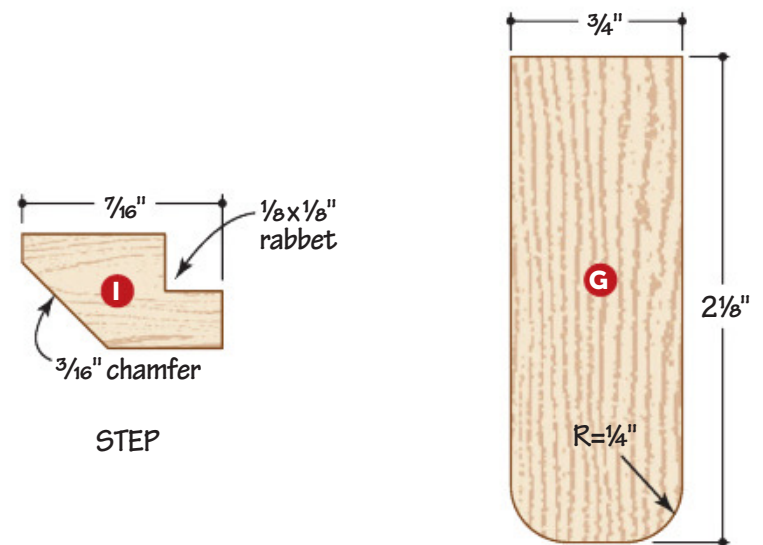
Note: To allow the pins to rotate freely within the trucks, don't apply glue to the holes in the truck assemblies when adding the connector pins.



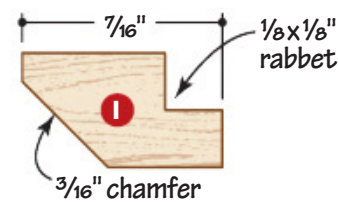
3 PLATFORM PARTS



PLATFORM (Top View)

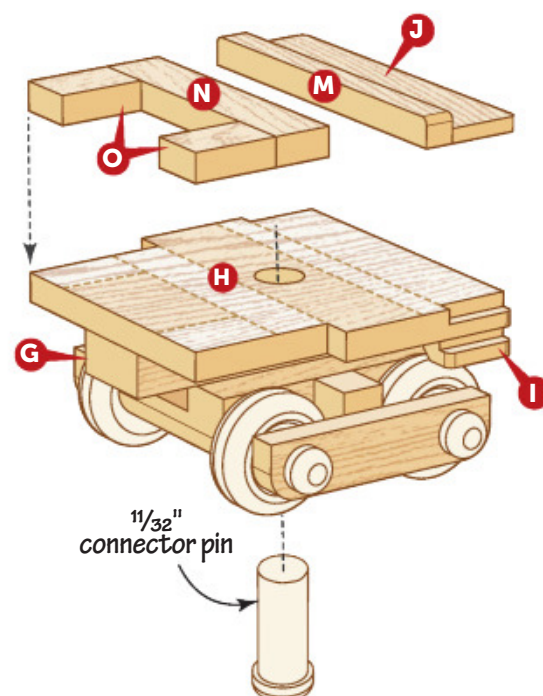


FRAME RAIL



STEP

4 UNDERCARRIAGE



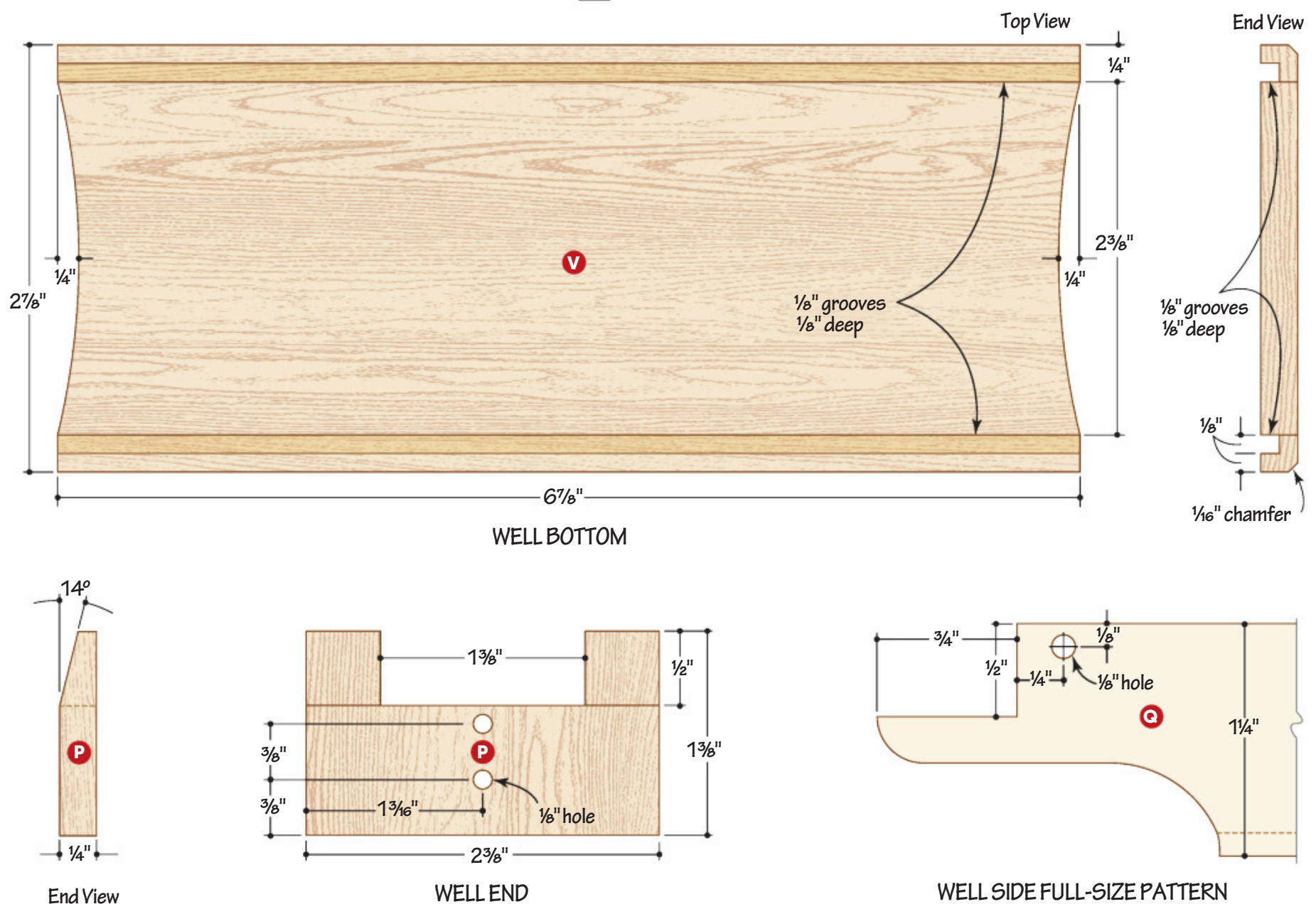
6 Now it's time to work on the well that connects the platforms. Cut a 6"-long workpiece to thickness and width for the well ends (P) [Materials List, Drawing 5]. Bevel then notch both ends of the workpiece, then crosscut the parts to length. Glue and clamp the well ends to the inside-facing ends of the platform assemblies so the notch sits flush to the top of the platform (H) [Exploded View]. Once the glue dries, drill the holes and glue in the dowels to reinforce the connection.

7 From 1/8"-thick stock, cut the well sides (Q) and well plates (R) to size. Glue a pair of well plates to each well side, flush to the upper edge and ends. Once the glue dries, copy, cut out, and apply the full-size pattern to the inside faces of the ends of the side assemblies [Drawing 5], then bandsaw them to shape.

8 Prepare a 1/4"x1/4"x16"-long workpiece to make the well side ribs (S) [Exploded View]. Cut or sand a 1/8" chamfer on one end, then crosscut a rib to length. Repeat to make 10 total ribs. Glue five well side ribs to each well side (Q), evenly spaced and flush to the top edge.

9 Cut the well side rails (T) and side caps (U) to size [Exploded View], beveling the ends of the side caps. Form the miters on the outside corners of the side rails and glue two side caps to each side rail. Glue and clamp the rail assemblies (T, U) to the well side/rib assemblies (Q, R, S), flush to the inside face of the sides (Q).

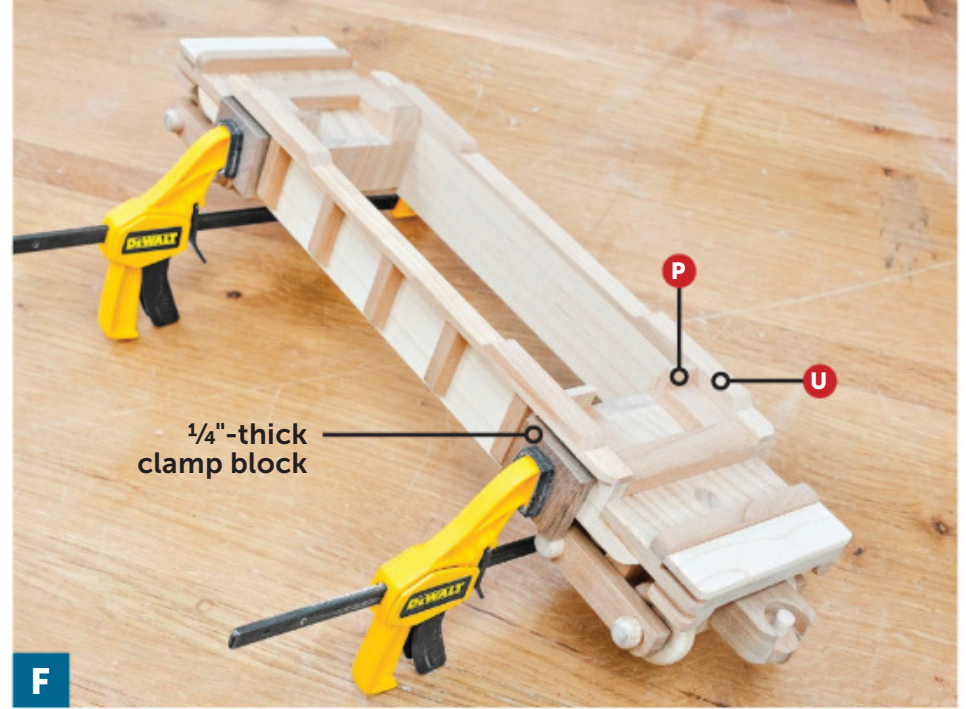
5 WELL PARTS



10 Glue and clamp the truck/platform assemblies between the well side assemblies [Exploded View, Photo F].

11 Cut the well bottom (V) to size [Drawing 5]. Form the grooves to fit the well sides (Q), then lay out and cut the curve on each end. Check the fit of the bottom on the well, making sure the trucks pivot without hitting the bottom. Chamfer the lower edges, then glue the bottom to the well, aligning the grooves over the sides.

12 Retrieve the inner (K) and side (L) catwalks that you cut in Step 4. Glue the inner catwalk in place so it sits against the well end (P) on top of the short supports (O). Sand a slight round-over on the outer corners of the side catwalks before gluing them to the tops of the platform assemblies, flush to the inner catwalks.



F Align the tops of the side caps (U) with the tops of the well ends (P). We used 1/4"-thick clamp blocks to give clearance for the clamps around the truck axles.

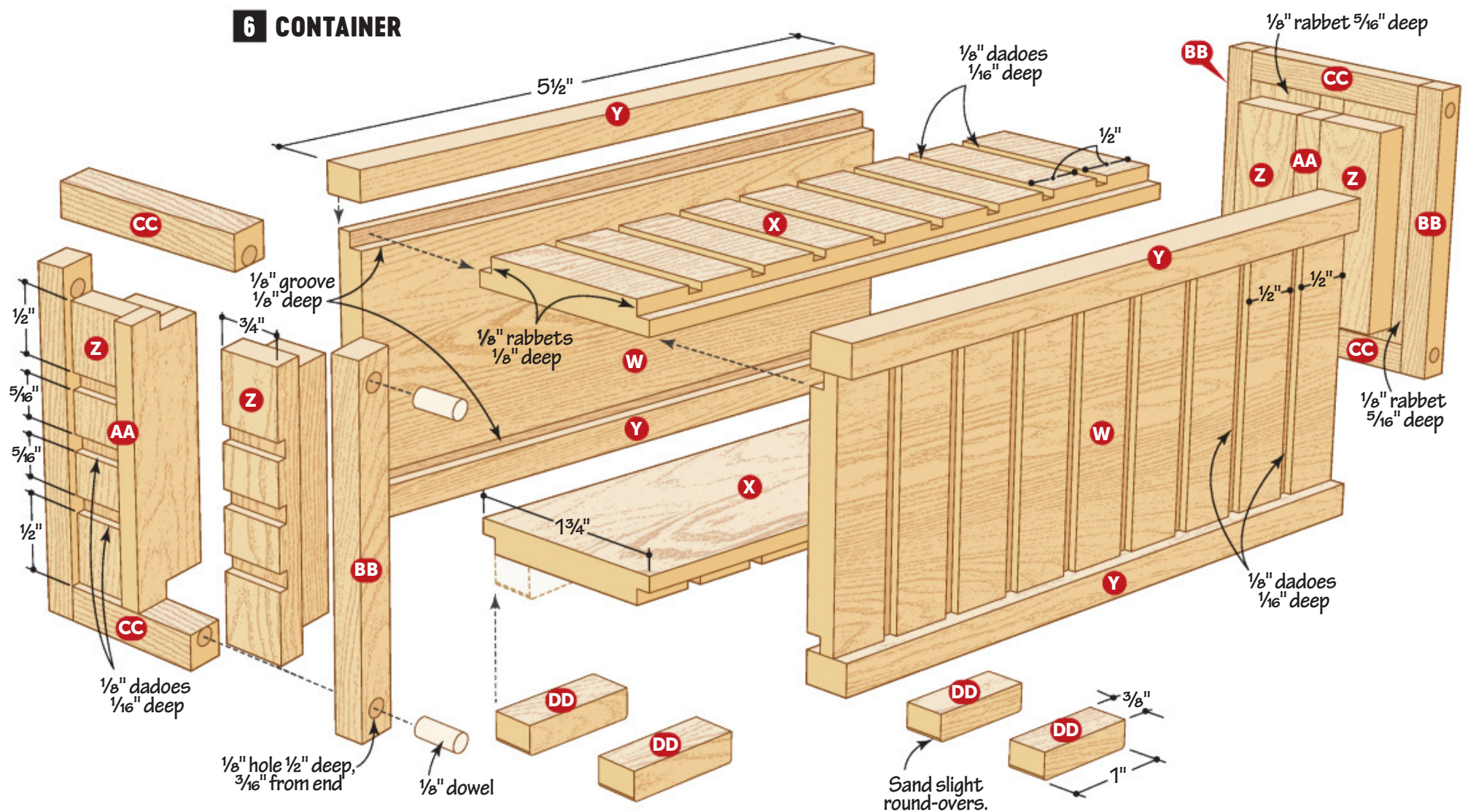
CONTAINERS

Note: To add a bit of contrast to our second container, we made parts W, X, and Z from a scrap of spalted maple we found in the shop.

1 From 1/4" stock, cut the container side panels, top/bottom panels, and corner rails (W, X, Y) to size. At the router table, form the dados across the outside face of the container panels [Drawing 6] using a 1/8" spiral bit. Then glue and clamp a pair of corner rails to the edges of each side panel, flush to the inside face.

2 Rout the grooves on the inside faces of the side panel assemblies (W/Y) [Drawing 6, Photo G]. Adjust the router-table fence to form the rabbets on the edges of the top and bottom panels (X) to fit the grooves in the sides. Glue and clamp the top and bottom panels between the side assemblies.

6 CONTAINER



- 3

Cut the door panels (Z) and door stiles (AA) to size. Form the dados across the face of the panels [Drawing 6], then glue a stile between two panels, flush to the inside face. Repeat to make four total door assemblies.
- 4

Raise the router bit height to 5/16" and rout the rabbets on the back of the door assemblies. Check the fit of the doors in the ends of the container assemblies.
- 5

Cut the door sides (BB) and top/bottoms (CC) to size. Glue and clamp a top and bottom to each door, then add the sides. To reinforce the corners, drill the holes through the sides, glue a dowel in each hole, and trim them flush. Glue and clamp the door assemblies to the ends of the containers.
- 6

Cut the skids (DD) to size and use a sanding block to round over the lower edges of each one. Glue the skids into the corners of the container bottoms.
- 7

Finish-sand the containers and container car to 180 grit, easing any sharp edges. Apply a finish. We sprayed



Install a 1/8" spiral bit in the router table and raise it to 1/8". Adjust the fence to rout the groove in the side panel (W) right along the glue line with the corner rail (Y).

- on three coats of matte lacquer, buffing between coats with 0000 steel wool.
- 8

Hitch up your container car to your train using the screw eye and stack on the containers. 🌲

MATERIALS LIST

PART		FINISHED SIZE			Matl.	Qty.
		T	W	L		
TRUCKS						
A	TRUCK FRAMES	5/8"	1½"	2⅛"	C	2
B	SPRING GROUPS	3/8"	13/32"	5/8"	C	4
C	SIDE FRAMES	1/4"	1/2"	2⅛"	C	4
D	TONGUES	1/4"	1/2"	3"	C	2
E	TONGUE EXTENSION	1/4"	1/2"	1¼"	C	1
F*	HITCH SHROUD	1/2"	1"	1⅛"	C	1
PLATFORMS AND CAR						
G	FRAME RAILS	3/8"	3/4"	2⅛"	C	2
H	PLATFORMS	1/4"	27/8"	27/8"	C	2
I*	STEPS	1/4"	7/16"	5/8"	C	4
J	OUTER CATWALKS	1/8"	5/8"	27/8"	M	2
K	INNER CATWALKS	1/8"	1/2"	23/8"	M	2
L	SIDE CATWALKS	1/8"	1/2"	17/8"	M	4
M	RISERS	1/4"	1/4"	27/8"	C	2
N	LONG SUPPORTS	1/4"	1/2"	23/8"	C	2
O	SHORT SUPPORTS	1/4"	1/2"	¾"	C	4
P*	WELL ENDS	1/4"	23/8"	13/8"	C	2
Q	WELL SIDES	1/8"	1¼"	10½"	M	2
R	WELL PLATES	1/8"	1⅛"	2¼"	M	4
S	WELL SIDE RIBS	1/4"	1/4"	1⅛"	C	10
T	WELL SIDE RAILS	1/8"	3/8"	9"	C	2
U	WELL SIDE CAPS	1/8"	3/8"	2"	C	4
V	WELL BOTTOM	1/4"	27/8"	67/8"	C	1

PART		FINISHED SIZE			Matl.	Qty.
		T	W	L		
CONTAINERS						
W	SIDE PANELS	1/4"	2"	5 1/2"	W	4
X	TOP/BOTTOM PANELS	1/4"	1 3/4"	5 1/2"	W	4
Y	CORNER RAILS	1/4"	3/8"	5 1/2"	W	8
Z	DOOR PANELS	1/2"	3/4"	2"	W	8
AA	DOOR STILES	1/4"	9/16"	2"	W	4
BB	DOOR SIDES	1/4"	1/4"	2 1/2"	W	8
CC	DOOR TOP/BOTTOMS	1/4"	1/4"	1 3/4"	W	8
DD	SKIDS	1/4"	3/8"	1"	W	8

*Parts initially cut oversize. See the instructions.

MATERIALS KEY: C—cherry, M—maple, W—walnut.

BITS: 1/8", 9/64", 7/32", 11/32", 3/8" brad-point drill bits, 1/2" and 5/8" Forstner bits, 1/4" round-over router bit, 1/8" spiral router bit.

SOURCES: Train Container Car Kit no. RS-01380E, \$10 each (\$40 5-pack), woodstore.net/containercar kit.

PROJECT COST: It cost us about \$30 to build this project. Your cost will vary by region and source.

CABINETMAKING COMPANIONS

Whether you're building a single cabinet or a roomful, these tools and accessories will amp up your efficiency and dial down your chances for error.

WRITER: VINCE ANCONA

Unlike handcrafting a piece of fine furniture, cabinetmaking tends to focus on getting the job done as quickly and efficiently as possible. Fortunately, tool manufacturers have developed all sorts of products to speed the process and ensure more accurate results. We've rounded up some of our favorites that will elevate your cabinet building results.



Milescraft EuroHingeJig #1342, milescraft.com



1

CONCEALED HINGE JIG

A hinge-boring jig allows you to accurately position and drill cup holes for concealed hinges using a hand drill. It registers against the edge of the door to position the bit at the prescribed offset from the door edge (most adjust to common hinge requirements). A stop collar on the bit controls the depth of the hole. Some have guides for mounting-screw holes, too. Once you've set the jig up, boring the holes goes quickly.

PHOTOGRAPHERS: JASON DONNELLY, SCOTT MORGAN

2



Milescraft Hardware Jig
#1340, milescraft.com

CABINET HARDWARE JIG

Once you've built a beautifully faced, perfectly fitted drawer, the last thing you want to do is mis-drill hardware-mounting holes. That's where an inexpensive cabinet hardware jig earns its keep. Most jigs feature an adjustable fence that registers against the edge of your drawer or door and have holes or bushings to accurately guide your drill bit. Once you've set the jig up for your desired spacing, it really speeds up the process of mounting hardware, particularly if you have a lot of drawers or doors to complete.

4



Rockler 3-Way
Face Clamp
#64604, rockler.com

THREE-WAY FACE CLAMP

Clamping a face frame or edging to a cabinet poses a unique challenge, especially if the cabinet has a back or is too deep to allow passing long bar clamps through the interior. A three-way face clamp grips both faces of a cabinet side or divider so that a third clamp screw can apply clamping pressure to the face frame. They also prove handy for securing edging and other tasks beyond cabinetmaking.

3



SELF-CENTERING BITS

Mounting traditional leaf hinges requires accurately drilling pilot holes for the screws. If the bit wanders at all, driving in the screw pulls the hinge out of alignment. Self-centering bits eliminate this problem. The bit rides inside a spring-loaded sheath. A chamfer on the end of the sheath centers the bit on the hole in the hinge. The sheath retracts as you drill, leaving perfectly placed holes.

S.E. Vick Self-Centering Bits
amazon.com

5



Kreg Pocket-Hole Jig
720PRO, kregtool.com

POCKET-HOLE JIG

When it comes to speeding up cabinet construction, it's hard to imagine anything more useful than pocket screws. Armed with a pocket-hole jig, glue, and a box of screws, you can build a shopful of cabinets in a weekend. Available in various sizes and configurations, we prefer a standard-size model capable of handling both panels and face-frame components.



Milescraft
TrackSawGuide
#1409, milescraft.com

6

CIRCULAR SAW CUTTING GUIDE

Tracksaws are a great option for cutting plywood sheets, but they represent a sizable investment. A circular saw paired with a cutting guide offers a less-costly option. Most guides feature an auxiliary baseplate for your circular saw that rides on an aluminum track equipped with an anti-chip strip for the blade to ride against. Paired with a quality blade designed for cutting sheet goods, the track guides the saw for straight, accurate cuts with minimal chipout.



7

CLAMPING SQUARES

Keeping everything square proves one of the most challenging parts of cabinet assembly. And out-of-square cabinets create a snowball of further problems. Clamping squares alleviate this issue by holding cabinet assemblies in place at 90° angles while you apply clamping pressure. We prefer clamping squares made of aluminum because they have less tendency to flex under pressure.

Stone Mountain
Clamping Squares
#1167, ptreeusa.com



Rockler Pro
Shelf Drilling Jig
#31571, rockler.com

8

SHELF-PIN DRILLING JIG

Wobbly shelves, usually caused by misaligned shelf-pin holes, annoy every time you use a cabinet. Avoid this problem from the get-go by drilling those holes with a shelf-pin jig. While styles vary, they all provide a template that produces consistent spacing between holes for solid shelf support. Jigs typically work with 1/4" or 5mm shelf pins (some handle both sizes). Better jigs are adjustable and allow drilling two rows of holes with a single setup.

PLYWOOD BLADE

Plywood and melamine allow you to knock out cabinet carcasses in record time. But these materials are notorious for chipping and splintering, particularly when crosscutting. A blade engineered specifically for cutting sheet goods solves this problem. Available in either thin or standard kerf, a plywood blade typically features a high tooth count with a steep top bevel angle for making clean, shearing cuts in sheet goods. It makes a huge difference in the quality of the finished cuts.



9

Freud Ultimate Plywood
& Melamine Blade
LU80R010, freudtools.com

10

UNFINISHED

PRE-FINISHED

(Check with your local lumber dealer for availability.)

PRE-FINISHED PLYWOOD

Trying to spray or brush a finish onto the large interior space of a cabinet can be problematic. One way to get around this is by using pre-finished plywood. You'll find sheets finished on one or both faces, typically featuring a UV-cured urethane finish that is more durable and longer-lasting than anything available to most home-shop woodworkers. You'll still have to finish any face frames or solid wood parts, but not having to apply finish to the main parts of the cabinet carcass drastically reduces the amount of time your cabinet project will spend in the finishing room.



DeWalt Plate Joiner Kit
DW682K, dewalt.com

11

BISCUIT JOINER

Like a pocket hole jig, a biscuit joiner is a serious timesaver when joining carcasses, face frames, doors, and even drawers. The biscuits help align the pieces for assembly, as well as provide lots of additional gluing surface for stronger joints. A biscuit joiner (also known as a plate joiner) cuts slots for those biscuits accurately and consistently thanks to integrated alignment features.

THIN-KERF DADO SET

Standard dado blades usually can't cut kerfs thinner than $\frac{1}{4}$ ". This creates problems when using $\frac{1}{4}$ " plywood (which is almost always thinner than stated) for drawer bottoms and door panels. You wind up with a loose fit and a panel that rattles. A thin-kerf dado blade features thinner outer blades to cut kerfs as narrow as $\frac{3}{16}$ ". With the use of shims, you can dial in a perfect fit for undersized plywood.



Forrest Thin-Kerf Dado Set
DK0824414, forrestblades.com

DRAWER-SLIDE JIG

Holding a drawer slide in place while marking and drilling the mounting holes usually requires a second set of hands—or a drawer-slide jig. Clamped to the side of a cabinet, the jig supports the drawer slide while you drill and drive mounting screws. Tabs on the jig register against the cabinet sides or face frame for automatic slide positioning. Sold in pairs, this jig is reversible to hold the drawers in place while mounting slides on them as well. Most drawer-slide jigs work with ball-bearing and nylon-glide drawer slides. Double-check capabilities if you plan to use undermount slides. 🌳

13



Kreg Drawer Slide Jig
KHI-SLIDE, kregtool.com

KICK BACK IN A COMFY COUCH

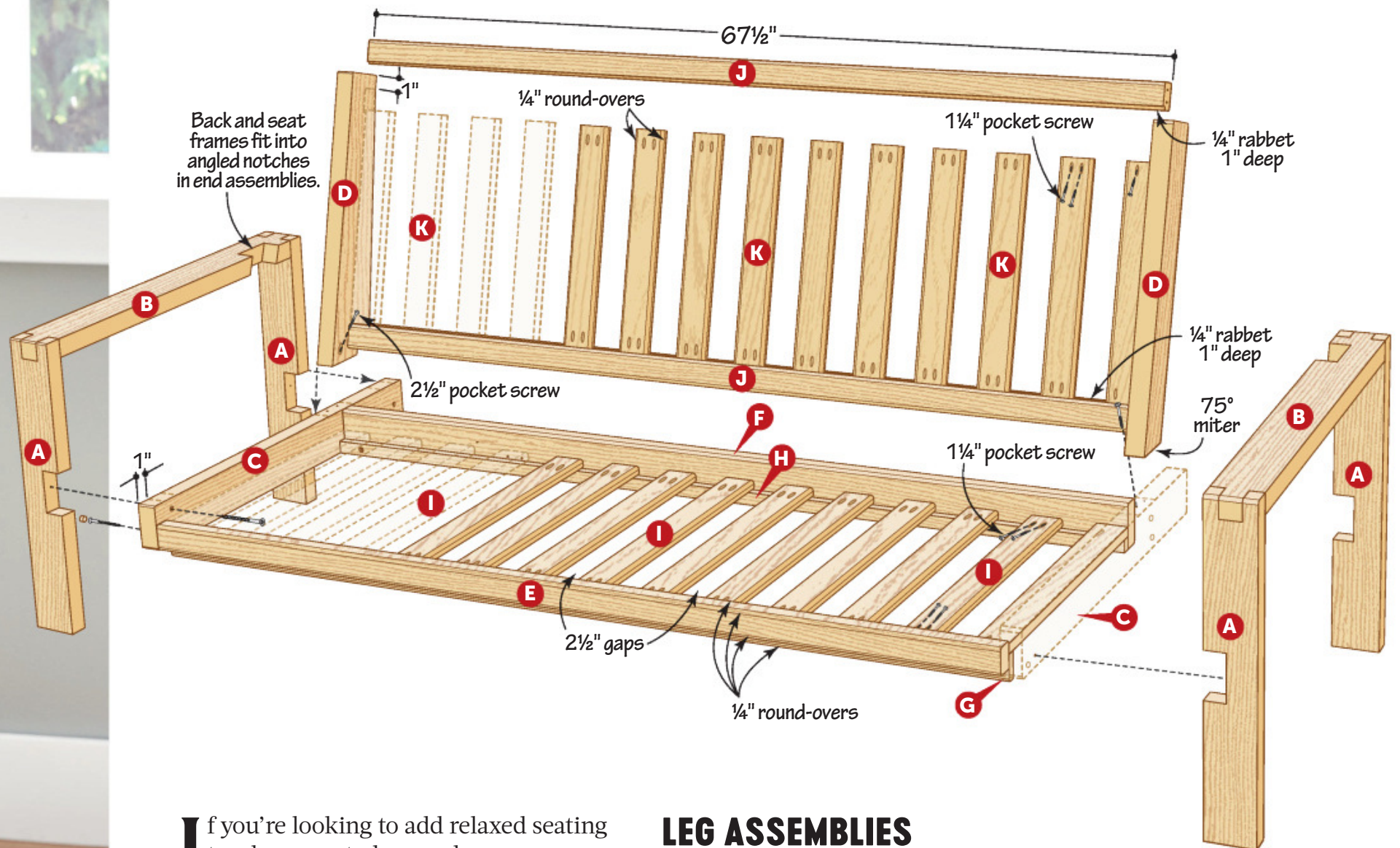
Skip the flat-packed factory furniture and build your own binge-worthy sofa.

WRITER: VINCE ANCONA
DESIGNER: JOHN OLSON
BUILDER: BRIAN BERGSTROM

OVERALL DIMENSIONS
74½"L x 34½"D x 35¼"H

PHOTOGRAPHER: JASON DONNELLY; **ILLUSTRATORS:** ROXANNE LEMOINE, LORNA JOHNSON

EXPLODED VIEW

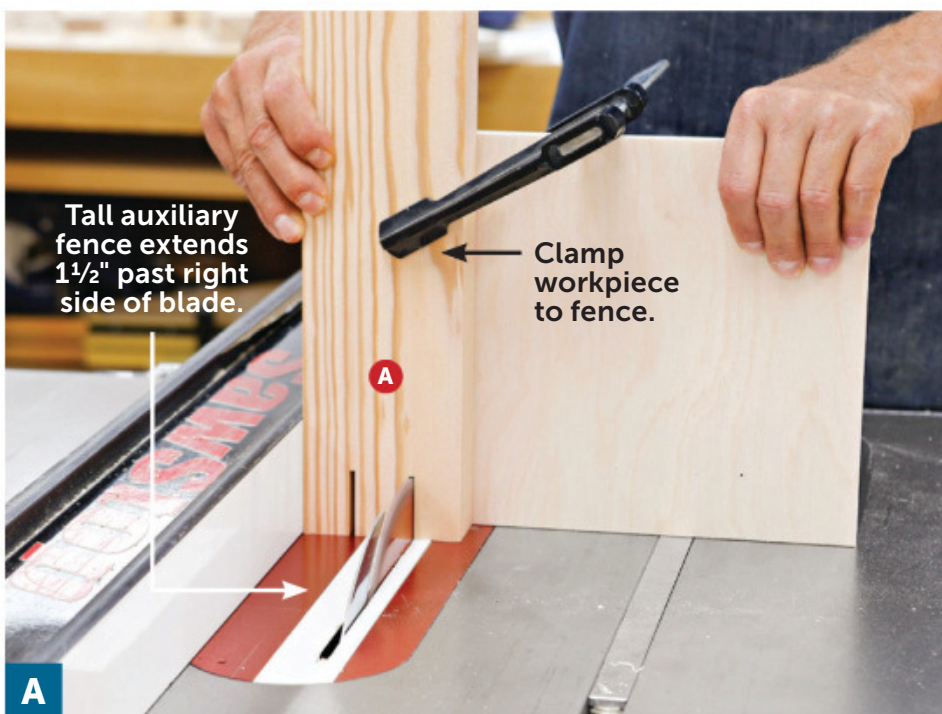


If you're looking to add relaxed seating to a basement, den, or dorm room, this easy-to-build couch may be just the ticket. Build it from Southern yellow pine, using basic joinery and pocket screws for fast construction. Add a couple of custom cushions (make your own or order them online, [Sources](#)) and you'll be lounging in no time.

LEG ASSEMBLIES

Bridle joints connect the legs and arms. Angled notches in these pieces receive the seat and back.

- 1 Cut the legs (A) and arms (B) to size [\[Materials List, Exploded View\]](#).
- 2 Cut a centered notch at one end of all four legs [\[Drawing 1, Photos A and B\]](#).



To cut the centered notches in the legs (A), mount a tall auxiliary fence to your miter gauge and position the rip fence to cut the first shoulder. Then flip the workpiece around to cut the second shoulder.

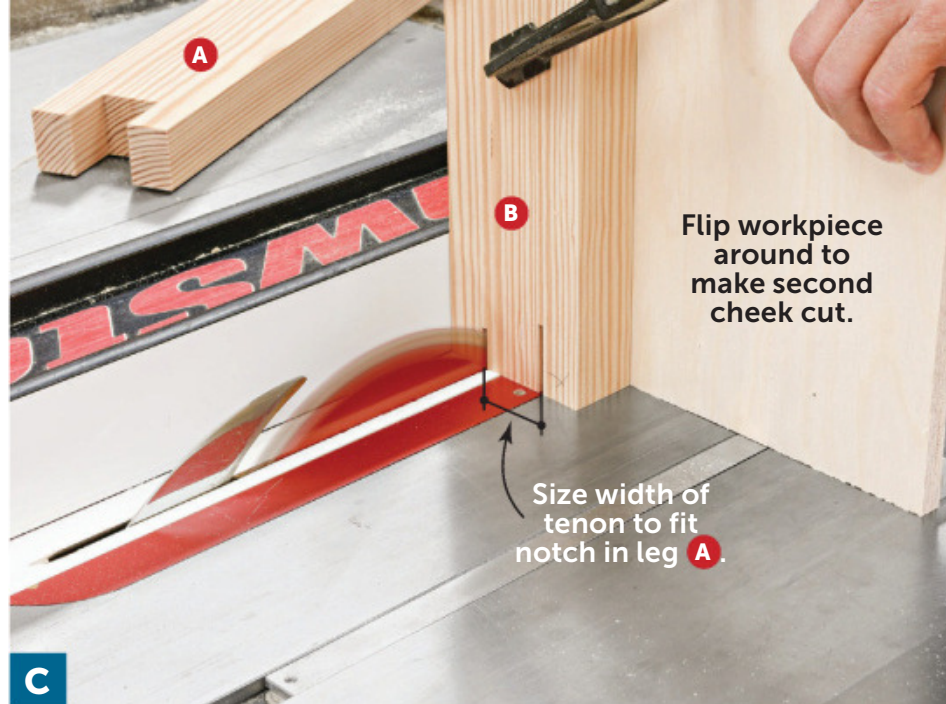


Moving the fence in 1/8 inch increments, flip and reclamp each leg in turn to make repeat cuts, nibbling out the waste between the shoulders of the notch. Then clean up the ends of the notches with a chisel.

TIP!

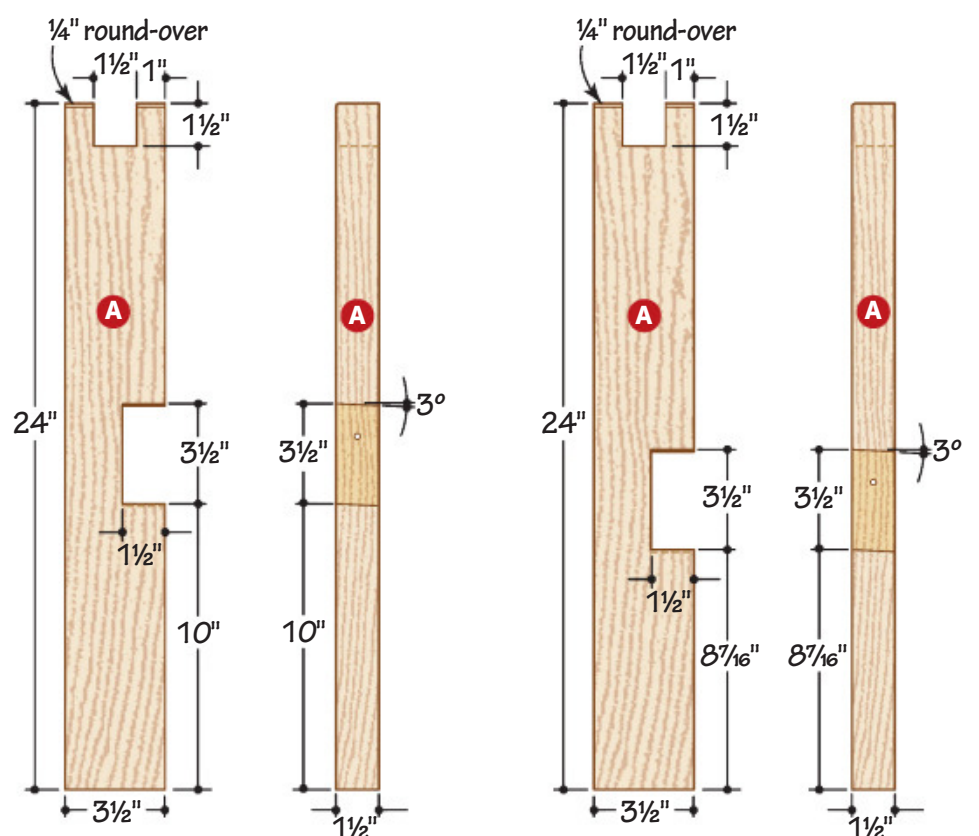
For perfectly sized tenons, place the leg (A) against the rip fence and set the fence so the blade's outer teeth are flush with the notch cheek.

- 3 Form matching tenons on the ends of the arms (B) [Drawing 1, Photos C and D].
- 4 Cut the seat ends (C) and back ends (D) to size [Materials List]. Miter-cut the lower end of the back ends at 75° and drill pocket holes at this end, making a mirrored pair [Exploded View].
- 5 Dry-assemble the leg and arm assemblies (A/B). Lay a seat end and back end across each assembly and scribe the locations for the angled notches in the legs and arms [Drawing 2, Photo E]. Cut the notches at the tablesaw [Photo F]. Glue the legs and arms (A, B), checking for square. Set them aside while you start on the seat and back.

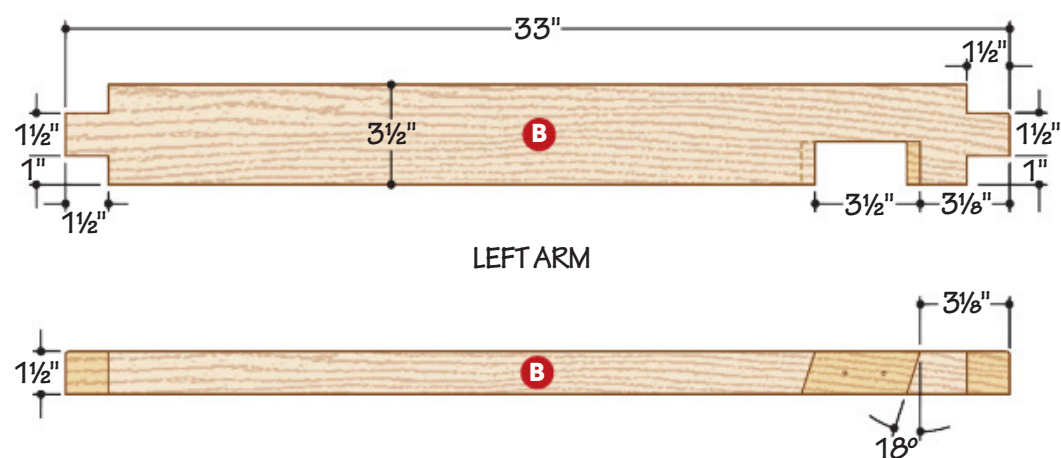


Just as you did with the notches, form the tenons on the ends of the arms (B) by standing the workpiece on end and making the two cheek cuts first.

1 PARTS VIEW



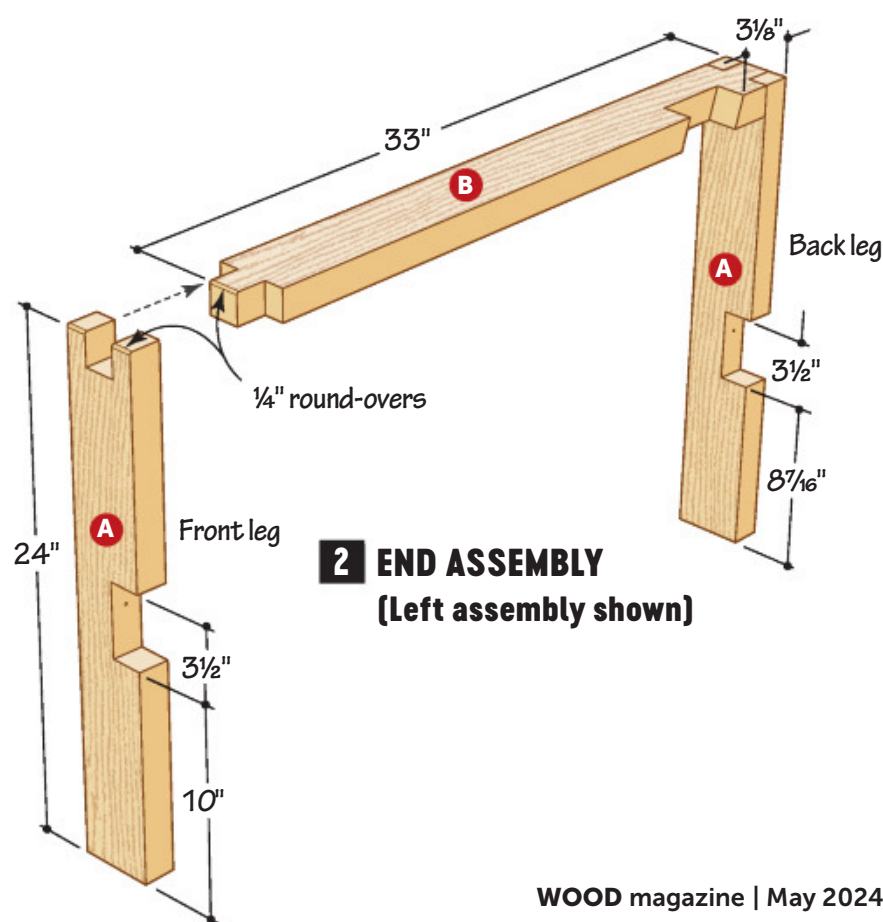
FRONT LEG (Left front shown) FRONT LEG (Left inside shown) BACK LEG (Left front shown) BACK LEG (Left inside shown)



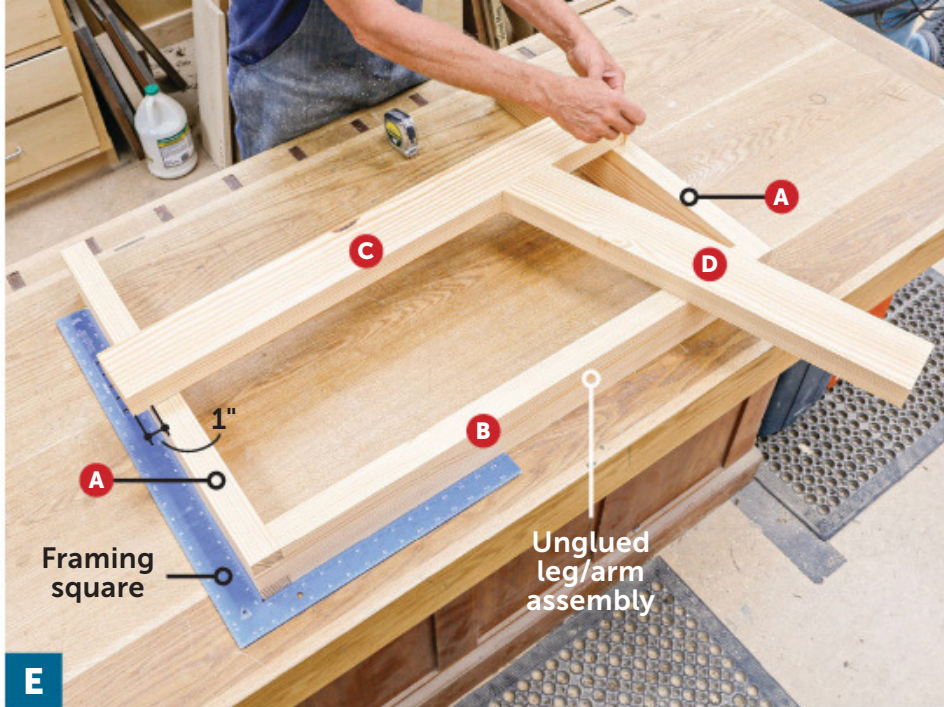
LEFT ARM



To remove the remainder of the waste, lay the workpiece on edge and make the shoulder cuts. Clamp a stop block to the rip fence ahead of the blade to control the length of the tenon.



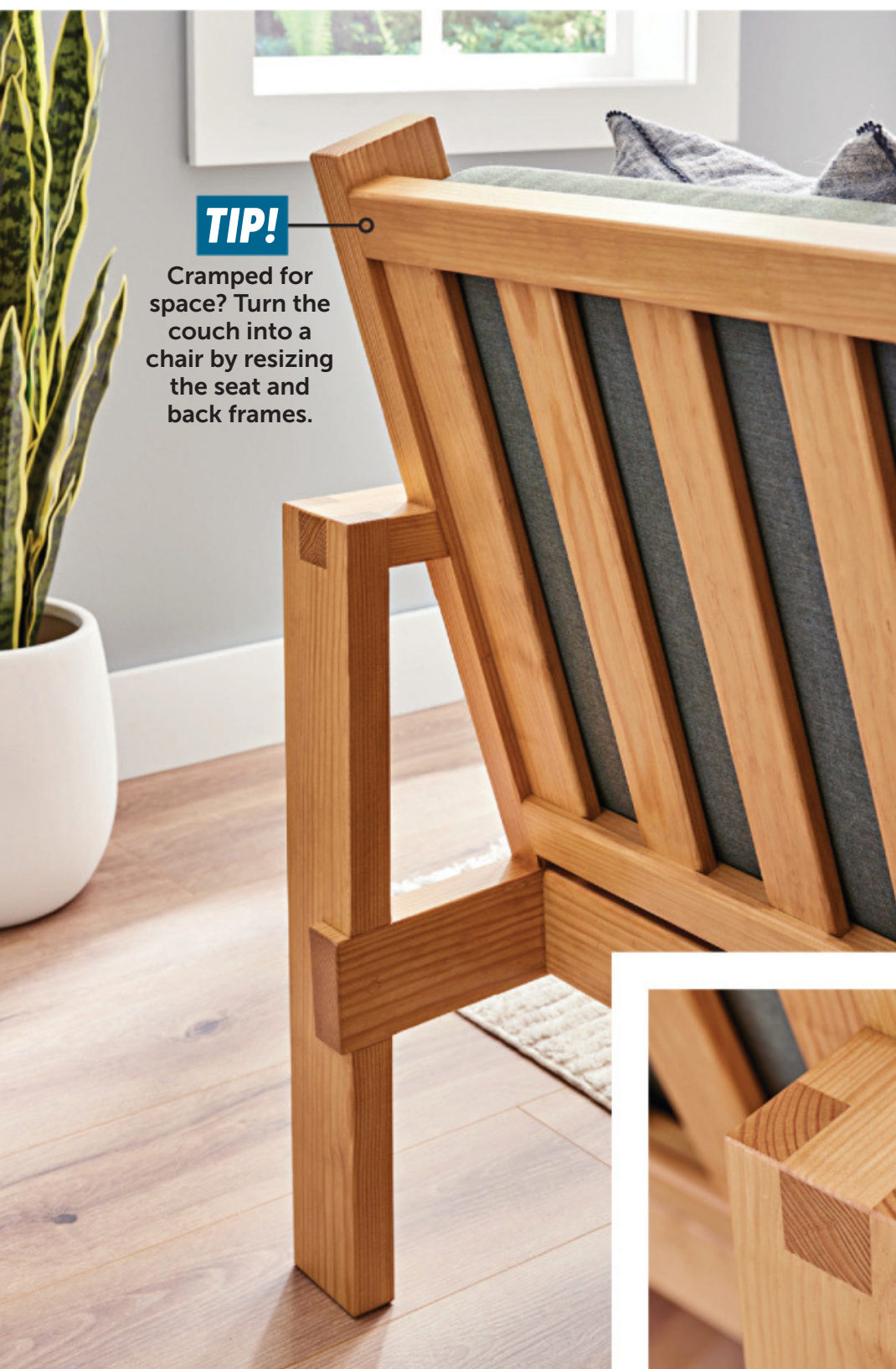
2 END ASSEMBLY (Left assembly shown)



Transfer the seat end (C) and back end (D) angles directly onto the legs and arms. Make sure to create a left and right set so you end up with a mirrored pair.



Angle your miter gauge to notch the legs and arms for the rails. (Reverse the miter gauge angle to create mirrored right and left pairs.) Angle the miter gauge 3° to notch the legs and 18° for the arms.



TIP!

Cramped for space? Turn the couch into a chair by resizing the seat and back frames.

SEAT & BACK

Slatted frames make up the seat and back. The bulk of the work here consists of simply cutting pieces to the correct size and drilling a bunch of pocket holes.

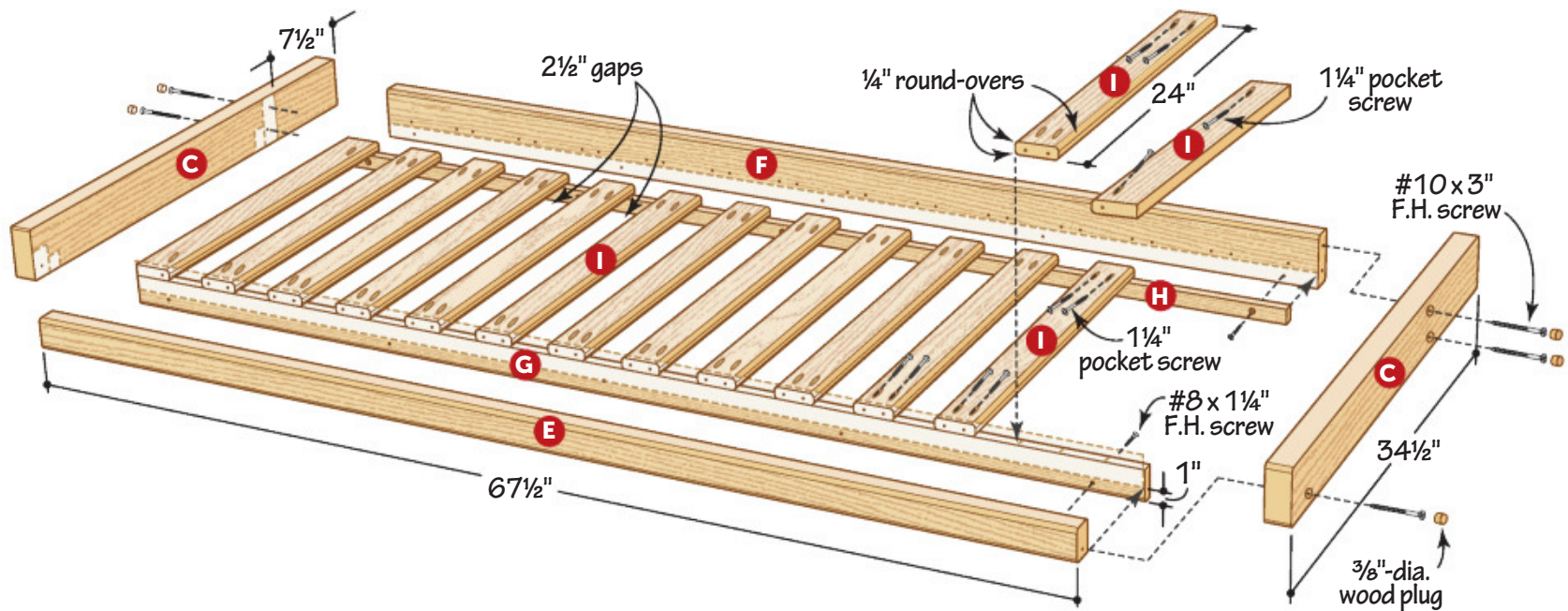
- 1 Cut the front and rear seat rails (E, F) and front and rear slat supports (G, H) to size [\[Drawing 3, Materials List\]](#).
- 2 Round over three edges of both seat rails (E, F), leaving each lower, inside edge square. Glue and screw the front slat support (G) to the inside face of the front seat rail with the support extending past the bottom edge of the rail by 1". Glue and screw the rear slat support (H) to the rear seat rail, flush with the bottom edge.
- 3 Cut the seat slats (I) to size. Round over all four edges on 12 of the slats, but only two edges on the outer two slats [\[Drawing 3\]](#). Drill two pocket holes in each end of the 12 slats, and a single pocket hole, offset toward the rounded edge, in each end of the two outer slats.

“
THE COMBINATION OF
INTERLOCKING JOINERY
AND POCKET SCREWS
GIVES THIS COUCH A
SURPRISING AMOUNT
OF STRENGTH.

—JOHN OLSON, DESIGN EDITOR

”

3 SEAT ASSEMBLY



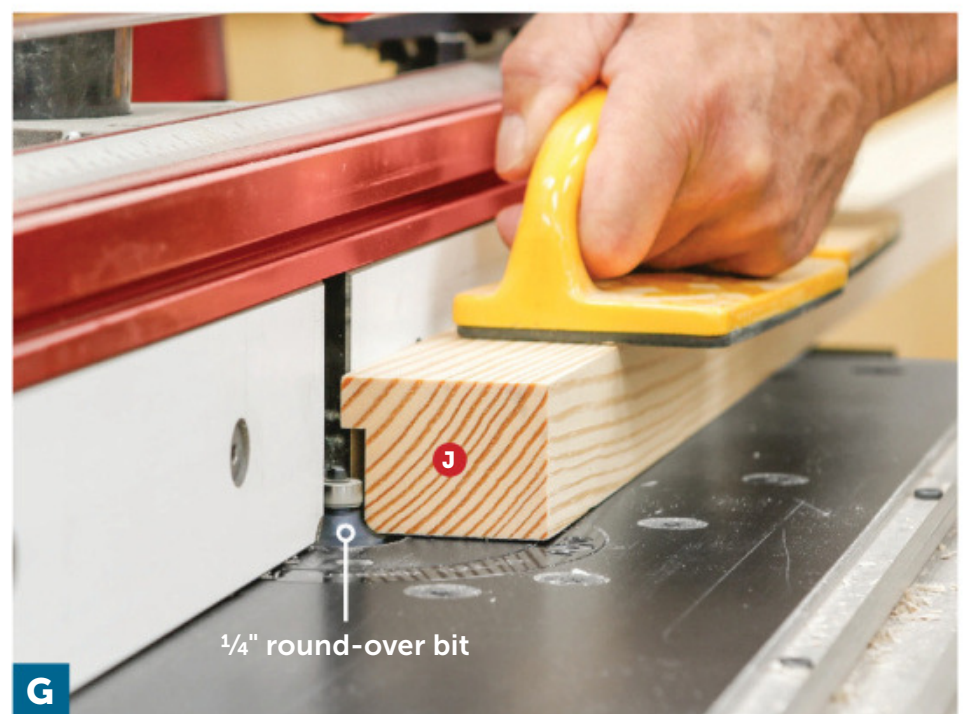
TIP!

Cut a pair of 2 1/2"-wide spacer blocks from scrap and use them to evenly space the slats.

4 While checking for square, glue and screw the two outer slats to the seat rails (E, F) flush with the ends. Dry-fit the remaining slats on the slat supports so they are evenly spaced, then glue and screw them in place.

5 Cut the back rails (J) to size [Exploded View]. Cut a rabbet along one edge of each rail, then round over all four outer edges [Photo G].

6 Cut the back slats (K) to size. Round over the edges and drill pocket holes just as you did with the seat slats. Place the back rails (J) on your bench with the rabbets facing up. Set the back slats in the rabbets, evenly spaced [Exploded View]. Glue and screw the slats to the rails, leaving the two outer slats out for now.

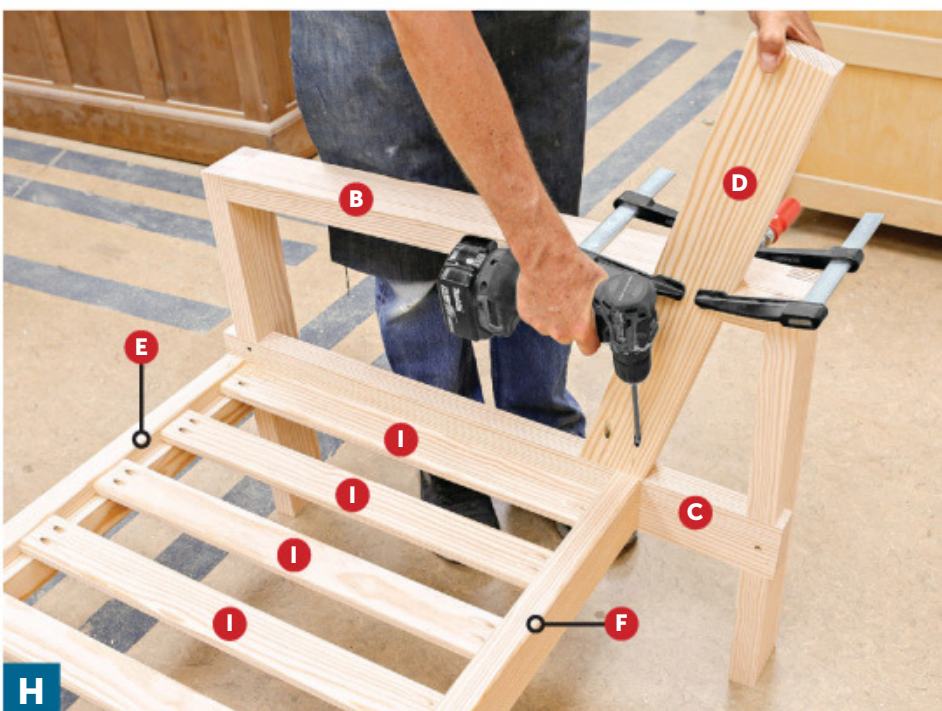


After cutting a rabbet in one edge of the back rails (J), round over the four outer edges of each rail.

SOME ASSEMBLY REQUIRED

1 Glue and clamp the seat ends (C) to the seat assembly (E-I) so the front seat rail (E) is flush with the front and bottom of the seat ends [Drawing 3]. Drill counterbored screw holes and drive screws through the seat ends (C) and into the ends of the seat rails (E, F). Glue wood plugs into the counterbores and trim and sand the plugs flush.

2 Retrieve the leg and arm assemblies (A/B) and glue and screw them to the seat assembly [Exploded View]. Glue and screw the back ends (D) to the assembly [Photo H].



Glue the back end (D) into the notch in the arm (B) and screw it to the seat end (C) using 2 1/2" pocket screws.

3 Glue and clamp the back assembly (J/K) between the back ends (D) with the back rails (J) flush with the back edge of the ends and the upper back rail 1" from the upper end of the ends [\[Exploded View\]](#). Drill counterbored holes and drive screws through the ends and into the ends of the back rails.

4 Glue and screw the remaining two back slats into place.

5 Plug any screw holes that won't be covered by the cushions.

6 Finish-sand the couch to 180 grit. Using a trim router and sanding block, round any sharp edges.

7 Apply a finish. We stained the couch with a coat of PureColor water-based stain (Bamboo) and then applied three coats of PureShield topcoat (matte) [\[Sources\]](#).

8 Order custom cushions [\[Sources\]](#) or send the seat and back measurements to a local upholsterer, as we did. We specified 3" foam. The seat is 25×67" and the back is 20×67". Then move the couch into a comfortable spot, grab a bowl of popcorn, and turn into a couch potato. 🌿

Note: We paid around \$500 (materials and labor) for the cushions for our couch. We found the cost to be comparable to ordering online.

MATERIALS LIST

PART		FINISHED SIZE			Matl.	Qty.
		T	W	L		
A	LEGS	1½"	3½"	24"	SYP	4
B	ARMS	1½"	3½"	33"	SYP	2
C	SEAT ENDS	1½"	3½"	34½"	SYP	2
D	BACK ENDS	1½"	3½"	24"	SYP	2
E	FRONT SEAT RAIL	1½"	2"	67½"	SYP	1
F	REAR SEAT RAIL	1½"	3½"	67½"	SYP	1
G	FRONT SLAT SUPPORT	¾"	2"	67½"	SYP	1
H	REAR SLAT SUPPORT	¾"	1"	67½"	SYP	1
I	SEAT SLATS	¾"	2½"	24"	SYP	14
J	BACK RAILS	1½"	2"	67½"	SYP	2
K	BACK SLATS	¾"	2½"	18"	SYP	14

MATERIALS KEY: SYP—Southern yellow pine.
SUPPLIES: #8×1¼" flathead screws, #10×3" flathead screws, 1¼" coarse-thread pocket screws, 2½" coarse-thread pocket screws.
BITS: ¼" and ⅛" round-over router bits, ⅜" plug cutter.
SOURCES: PureColor water-based stain (Bamboo), quart, \$28; PureShield Protect (matte), quart, \$34, amazon.com; cushions (2), customcushions.com.
PROJECT COST: It cost us about \$750 to build this project. Your cost will vary by region and source.

CUTTING DIAGRAM

This project requires 28 board feet of 8/4 Southern yellow pine and 16 board feet of 4/4 Southern yellow pine based on example boards shown.



1½ x 7¼ x 96" Southern yellow pine



1½ x 7¼ x 96" Southern yellow pine



1½ x 7¼ x 72" Southern yellow pine



¾ x 3½ x 72" Southern yellow pine



¾ x 5½ x 96" Southern yellow pine



¾ x 5½ x 96" Southern yellow pine (2 needed)



¾ x 5½ x 48" Southern yellow pine

Note: We milled 8/4 rough-sawn Southern yellow pine for the thicker project parts. If you choose to use construction lumber, consider ripping the parts out of selectively purchased 2×10 boards, keeping the rift- and quartersawn grain sections and avoiding the piths.

COMPACT BOOK RACK

Keep your favorite reading materials and reference books close at hand with this space-saving book rack.

WRITER: KERRY GIBSON

DESIGNER: JOHN OLSON

BUILDER: BRIAN BERGSTROM



OVERALL DIMENSIONS
12"W x 10½"D x 10⅛"H

This book rack compactly stores books anywhere that's handy for you, whether that's on a bedside table, a kitchen counter, or even in the shop for your favorite woodworking magazine. The contrasting oak and walnut construction goes together quickly with biscuits and butt joints.

BUILD THE CASE

1 From $\frac{3}{4}$ " red oak, cut the sides (A) and bottom (B) to size [Materials List]. Miter cut the top end of each side to 10° , then mark a 2" radius on the upper front corners. Cut each radius to shape and sand the edges smooth.

2 From $\frac{3}{4}$ " walnut, cut the slats (C) to size. Tilt your tablesaw blade to 10° and bevel-rip the top edge of one slat without reducing its overall width.

3 Mark the centerline on each end of each slat and the corresponding location of each slat on the sides (A), leaving $\frac{1}{4}$ " between the slats. Cut the slots for #10 biscuits in the ends of the slats and the sides. Then mark and cut biscuit slots in the bottom (B) and the sides.

4 To assemble the case, spread glue on one end of the bottom (B) as well as in the corresponding biscuit slots on one side (A). Then add the slats (C) to the assembly, aligning the beveled edge of the top slat flush with the upper edge of the side. Spread glue on the other slat ends and in the biscuit slots, then fit the other side in place and clamp the assembly together.

ADD THE FEET AND FINISH

1 From $\frac{3}{4}$ " walnut, cut the lower rail (D) and feet (E) to size. Bevel the bottom end of each foot to 10° , then form a $\frac{3}{4}$ " radius on the top end of each foot. The feet mirror each other, so make sure the rounded top ends are correctly oriented with the beveled bottoms.

2 Glue and clamp the lower rail to the bottom of the case assembly, set back $1\frac{1}{4}$ " from the front edge. Then glue and clamp the feet to the lower rail and sides.

3 Scrape off any glue squeeze-out, then finish-sand the assembly with 220-grit sandpaper. Slightly ease all sharp corners with a sanding block.

4 Apply the finish of your choice. We used three coats of Danish oil, buffing out the third coat to achieve a matte finish. Then place the rack where you want it, load up the books, and be ready to read when the mood hits you. 🌿

MATERIALS LIST

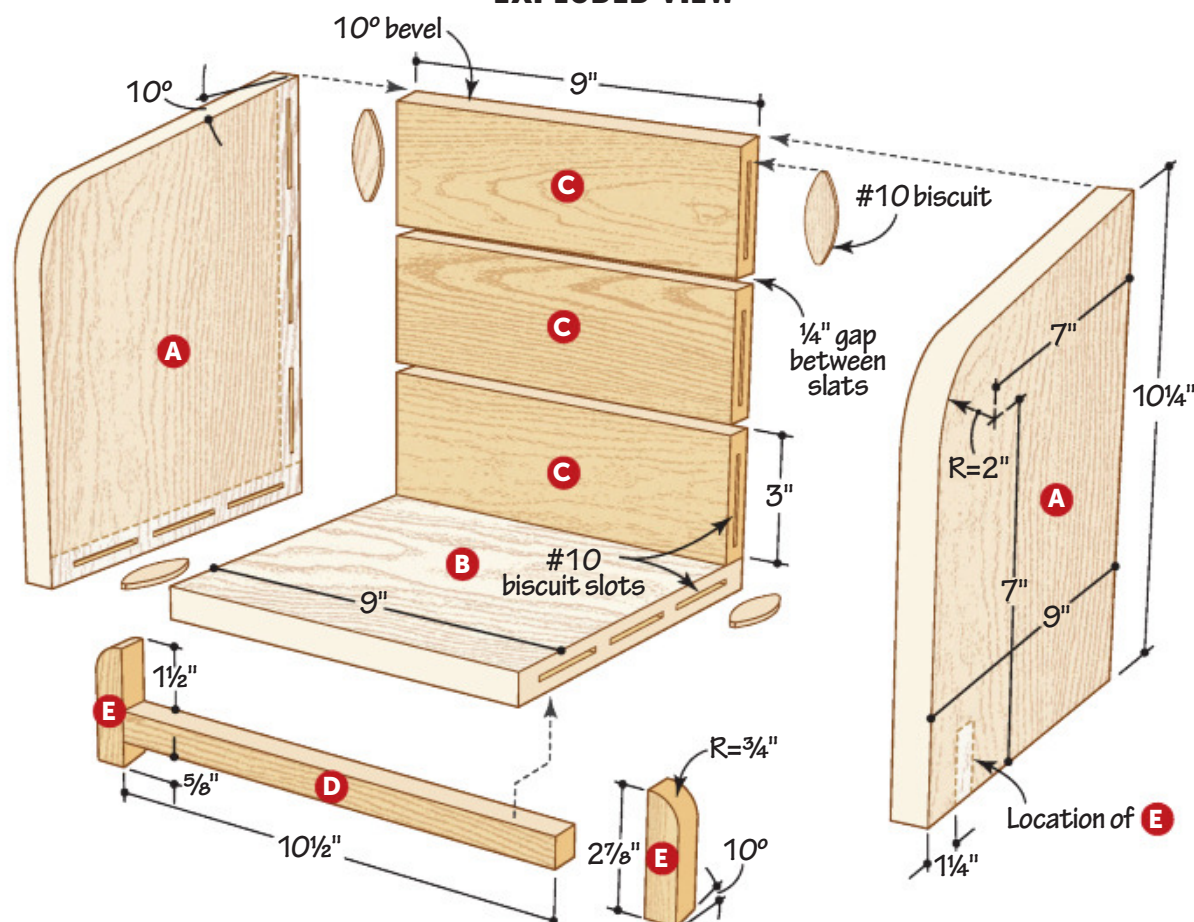
PART		FINISHED SIZE			Matl.	Qty.
		T	W	L		
A	CASE SIDES	$\frac{3}{4}$ "	9"	$10\frac{1}{4}$ "	RO	2
B	CASE BOTTOM	$\frac{3}{4}$ "	9"	9"	RO	1
C	SLATS	$\frac{3}{4}$ "	3"	9"	W	3
D	LOWER RAIL	$\frac{3}{4}$ "	$\frac{3}{4}$ "	$10\frac{1}{2}$ "	W	1
E	FEET	$\frac{3}{4}$ "	$\frac{3}{4}$ "	$2\frac{7}{8}$ "	W	2

MATERIALS KEY: RO—red oak, W—walnut.

SUPPLIES: #10 biscuits.

PROJECT COST: We built this project from scrap, but you could build one from new materials for about \$30.

EXPLODED VIEW



New to biscuit joinery? Learn the biscuit basics. woodmagazine.com/biscuitbasics

TRICK OUT YOUR TRACKSAW

Tracksaws excel at making straight cuts and reducing tear-out in sheet goods and solid wood. Here are a few accessories we recommend that add to that already-impressive bag of tricks.



Check out our
latest review of
16 tracksaws
[woodmagazine.com/
tracksaws](http://woodmagazine.com/tracksaws)

Lock in angles with ease

Clip one of these adjustable squaring heads onto your track to precisely position it against a reference edge. That simplifies laying out 90° cuts, and greatly increases accuracy when making long, angled cuts on sheet goods (*above*). It also makes it easy to crosscut and miter boards (*right*). We tried a head from Festool that worked with Festool and Kreg tracks, as well as a Woodpeckers head that fit our Festool, Makita, Milwaukee, and Triton tracks. The increased accuracy makes these heads an accessory we'll leave attached most of the time. Keep in mind that they reduce cutting-length capacity, but still allow crosscutting a full sheet at 90°.

Festool, festoolusa.com
Angle Stop FS-WA, no. 577040, \$189

Woodpeckers, woodpeck.com
Adjustable Track Square, no. ADTKSQ-NC, \$330



PHOTOGRAPHER: JASON DONNELLY

1920s Style for a 1920s Price

It was a warm summer afternoon and my wife and I were mingling with the best of them. The occasion was a 1920s-themed party, and everyone was dressed to the nines. Parked on the manse's circular driveway was a beautiful classic convertible. It was here that I got the idea for our new 1920s Retrograde Watch.

Never ones to miss an opportunity, we carefully steadied our glasses of bubbly and climbed into the car's long front seat. Among the many opulent features on display was a series of dashboard dials that accentuated the car's lavish aura. One of those dials inspired our 1920s Retrograde Watch, a genuinely unique timepiece that marries timeless style with modern technology.

With its remarkable retrograde hour and minute indicators, sunburst guilloché face and precision movement, this design is truly one of a kind. What does retrograde mean? Instead of displaying the hands rotating on an axis like most watches, the hands sweep in a semicircle, then return to their starting point and begin all over again.

Retrograde watches by the big brands can set you back thousands; one recent offering from a big French fashion house is selling for more than \$150,000! But because we've designed the 1920s Retrograde Watch in-house, we can offer it to you for just \$99!

This watch is so wildly popular with our customers that we're actually concerned about running out; we only have 937 729 left for this ad!

JOIN MORE THAN 1 MILLION SMART
PEOPLE WHO LOVE STAUER WATCHES

Watch Specifications:

- Precision movement
- Stainless steel case, caseback and crown
- Retrograde hour and minute indicators
- Water-resistant to 5 ATM
- Brown genuine leather band
- Fits wrists up to 8"

1920s Retrograde Watch

~~\$399~~ \$99* + S&P **Save \$300**

*Special price only for customers using the offer code.

1-800-333-2045

Your Insider Offer Code: RGW207-01



"An elegant and exciting timepiece that every collector will love."

— George Thomas, internationally renowned watch expert

"[A] unique and beautiful timepiece."

— Carlos C., Los Banos, CA

Stauer, 14101 Southcross Drive W., Ste 155, Dept. RGW207-01, Burnsville, MN 55337 www.stauer.com

Stauer® | AFFORD THE EXTRAORDINARY®

Expand track capability to other tools

It stands to reason that if a track guides a saw well, then it should guide other tools well, too. Companies like Tool Curve agree, offering adapters that fit onto guide tracks and accept jigsaws, full-size and trim routers, and even biscuit joiners, so you can expand your track's versatility beyond cutting. Adapters are designed for specific tool models, but all work on any Festool-style track with a channel along one edge.

Tool Curve, toolcurve.com
Biscuit Joiner Connector, \$30;
Ridgid Trim Router Adapter, \$30



Produce parallel cutlines without measuring

Parallel guides position your track's cutting edge parallel to an edge without having to measure and then manually align the track. They excel at enabling identical repeated cuts. Slide these onto your track, set the stops to your desired measurement, and then butt them against your reference edge. That's handy for cutting sheet goods, and even better for ripcuts in solid stock. We tried guides from Woodpeckers and Kreg that accomplish their missions with different approaches, though they all work with tracks from Festool, Kreg, Makita, Milwaukee, and Triton. Woodpeckers guides use add-on sections for cuts as wide as 52" and integrated narrow-stock guides—nylon-tipped steel rods that extend beneath the track—for cuts as narrow as 1/8". Kreg splits duties with ripping guides that handle cuts from 1/8" to 13", and another set of retractable tape-measure-style guides for cuts from 12" to 96".

Woodpeckers, woodpeck.com
Parallel Guide System, no. PGSI-NC-19, \$400

Kreg, kregtool.com
Rip Guides, no. ACS405, \$100; Parallel Guides, no. ACS415, \$100



Hold tight with track clamps

Guide tracks stay in place without clamps most of the time thanks to nonslip, anti-chip strips. But when additional holding security is required, ordinary woodworking clamps won't do; they get in the way of the saw. If your track didn't come with clamps, prepare yourself by picking up a pair that are compatible with your track, fitting into the underside channel where they hold tight while staying out of the way. (Makita track and clamps shown.)

Makita, makitatools.com
Guide rail clamp set, no. 191J52-3, \$45



Do it Right with DR® Power Equipment

DR® is the LEADER in Leaf Vacs

Perfect for
SPRING
CLEAN-UP!

★ USA

ENGINEERED AND BUILT

Assembled in the USA
using domestic and
foreign parts.

Tow-Behind

- #1 IN VACUUM POWER and capacity
- **NEW PRO MAX** model holds up to 450 gallons
- ALL MODELS NEWLY REDESIGNED with up to 20% more capacity

Walk-Behind

- **NEW PILOT XT** models fill paper leaf bags for curbside pickup
- COLLECTS AND MULCHES up to 50 lbs. of leaves
- INCLUDES ONBOARD CADDY for extra bags



Devour Brush Piles with a DR® Chipper Shredder



- CHIP & SHRED with power to spare
- BIGGER ENGINES beat the competition
- BUILT USA TOUGH for smooth operation



BURN SAFELY with the DR® BurnCage™



- PERFORATED STAINLESS STEEL maximizes airflow
- LIGHT, DURABLE, and folds flat for storage
- TRAPS EMBERS and burns more thoroughly
- AVAILABLE IN 3 SIZES

Great Gardens Start with DR® Rototillers

- BUST SOD and churn through even the most compacted ground
- PREPARE SEEDBEDS or till garden waste back into your soil
- FULL PRODUCT LINE includes walk-behinds, tow-behinds, and cultivators



◀ Scan to Shop
or
Request a Catalog

GoDRpower.com

Toll-Free at 800-529-0112

FREE SHIPPING
(orders over \$100)



PREP FOR PLANTING

\$20



15 Downloadable Garden Projects

woodstore.net/plantingprep

SQUARE DRIVE SCREWS



- High Quality Woodworking Fasteners
- Essential Shop Supplies
- Preferred by Craftsmen and Contractors

McFeely's.com

1-800-443-7937

American
FABRIC FILTER

**A NEW FILTER WILL MAKE
YOUR OLD DUST COLLECTOR
WORK LIKE NEW!**

CYCLONES, STAND-ALONES, BAGHOUSES & MORE



- + Optimum Performance
- + Low Maintenance
- + Custom Designs
- + Cleaner Air
- + Longer Life
- + Economical
- + Best Size & Fit
- + Proudly Made In USA

6 MIL POLYBAGS IN STOCK

CALL TODAY!
(800) 367-3591

www.americanfabricfilter.com

Measure your wood from start to a great finish.

AccuMASTER Precision Woodworking Tools



Digital Fraction Caliper

A display big enough for you to read in fractions you can work with. Also displays decimal inches or millimeters.

Duo Pro Pin & Pinless Moisture Meter

- Large, bright, easy-to-read display
- Precisely check wood moisture content below the surface with pins
- Safely test hard surfaces without damage using pinless mode
- Accuracy: +/- 3%

amazon
★★★★★

Model 7445



**CALCULATED
INDUSTRIES**

Go to calculated.com
for more information.

veneer-shade
 desk lamp

Veneer over acrylic marries the warm tones of wood to the soft glow of a lightbulb for an inviting lamp perfect for any room in your home.



breadboard ends done right

Whether you're capping end grain or ending cupping, avoid movement-induced catastrophe with our guide to breadboard ends.



classic cherry sideboard

Craft this gorgeous server as a standalone storage piece or as a companion to the corner cupboard in issue 287 (March 2023).



put a sock in it

We show you how to add dressy socks to the legs of a gorgeous, floating-top accent table.



Better Homes & Gardens® WOOD® magazine (ISSN-0743-894X); MAY 2024, Volume 41, no. 2, is published 7 times a year in March, May, July, Sept, Oct, Nov, Dec/Jan by Meredith Operations Corporation, 1716 Locust St., Des Moines, IA 50309. Periodicals postage paid at Des Moines, IA, and at additional mailing offices. Subscription prices: \$29.99 per year in the U.S.; \$44.99 (U.S. dollars) in Canada; \$49.99 (U.S. dollars) overseas. Your bank may provide updates to the card information we have on file. You may opt out of this service at any time. POSTMASTER: Send all UAA to CFS. (See DMM 507.1.5.2); NON-POSTAL AND MILITARY FACILITIES: Send address corrections to Better Homes & Gardens WOOD, PO Box 37508, Boone, IA 50037-0508. In Canada: mailed under Publications Mail Sales Product Agreement No. 40069223; Canadian BN 12348 2887 RT. If the Post Office alerts us that your magazine is undeliverable, we have no further obligation unless corrected delivery information is received within two years. ©Meredith Operations Corporation 2024. All rights reserved. Printed in the U.S.A.

Woodpeckers®

Precision Woodworking Squares

- One-piece central core.
- Stainless model includes scribing guides.
- Lip keeps the square flat on your work.
- Guaranteed perpendicular to $\pm .0085^\circ$ for life.
- Available in inch or metric.



Precision Woodworking Square

Includes a Woodpeckers wall-mountable wooden case

12"\$129.99

12" Stainless Steel....\$139.99

Other Sizes Available on Woodpeck.com

Precision T-Squares

- Scribing guides on 1/16" centers.
- Beveled edge reduces parallax.
- Tight tolerance laser-engraved scale.
- 600mm metric version available.



Precision T-Square

Includes a wall-mountable Rack-It™

TS-12 12"\$119.99

TS-24 24"\$139.99

TS-32 32"\$169.99

in-DEXABLE

Combination & Double Squares

- Push-button index locks head at any full-inch.
- Laser-cut scribing guides for precision parallel lines.
- Retractable support keeps head aligned to your stock.

in-DEXABLE Squares

Includes a wall-mountable Rack-It™

Double 6"\$129.99

Center Finder 6"\$139.99

Combination 12"\$169.99

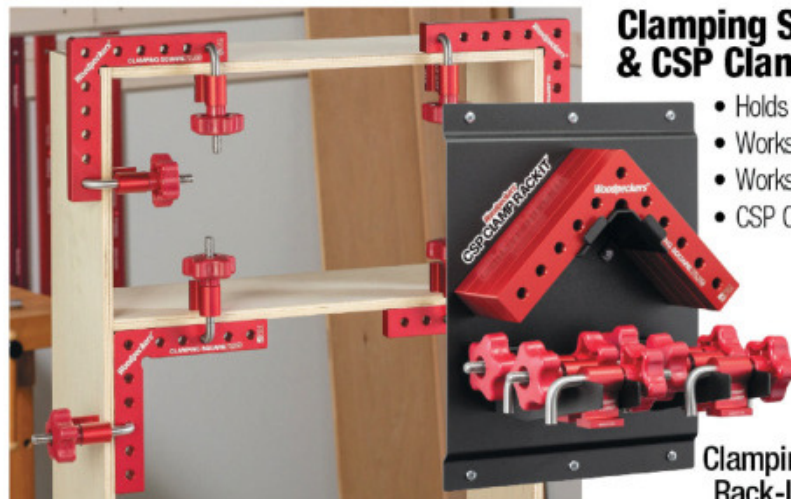
Protractor 18"\$239.99

Other Sizes Available on Woodpeck.com



Clamping Squares PLUS & CSP Clamps

- Holds stock at right angles.
- Works inside or outside.
- Works with any clamp.
- CSP Clamps speed the job.



Clamping Squares PLUS Rack-It™ Kit....\$269.99

CLAMPZILLA™

4-Way Panel Clamp

- Applies pressure both directions.
- Works with material from 5/8" to 4".
- Improved vertical pressure.
- Flatter panels faster.

ClampZILLA

18" Capacity....\$139.99

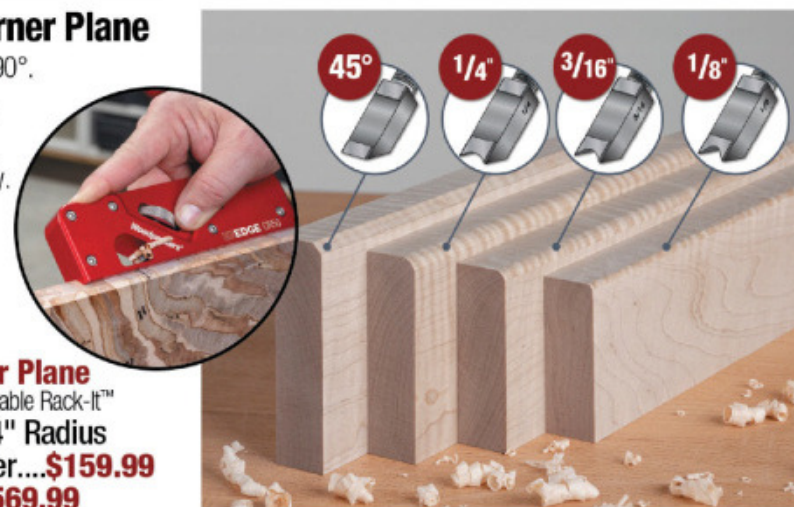
38" Capacity....\$169.99

50" Capacity....\$199.99



EZ Edge Corner Plane

- Sole is a perfect 90°.
- 3 radius profiles.
- 45° chamfer.
- Resharpens easily.



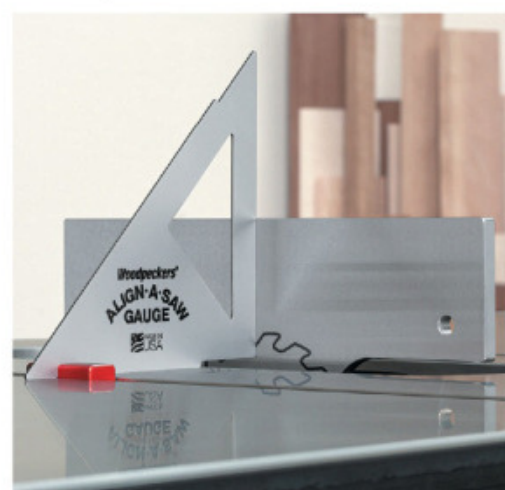
EZ Edge Corner Plane

Includes a wall-mountable Rack-It™

1/8", 3/16", 1/4" Radius

-or- 45° Chamfer....\$159.99

Deluxe Set....\$569.99



Align-A-Saw System

- Plate delivers a flatter, longer reference for aligning table to arbor.
- Precision ground to a flatness tolerance of .002".
- Gives you 12" to check miter groove alignment.
- Gauge measures 90° and 45° accurately.

Align-A-Saw System

Includes a Woodpeckers wall-mountable wooden case

Plate & Gauge Set....\$229.99

Also Available Individually on Woodpeck.com

SANDSTAND™ Tilting Sander Base

- Turn your palm sander into a stationary sander.
- Works with most palm sanders.
- Angle adjusts from flat to 45°.
- Clamps or bolts to any work surface.

SandStand Tilting

Sander Base....\$99.99

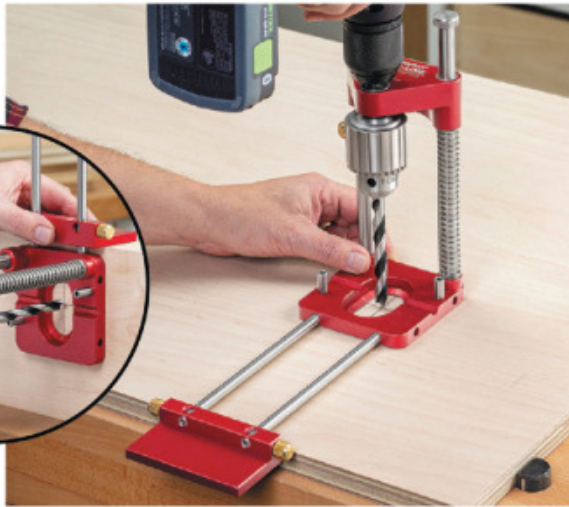


Sander not included.



AUTO-LINE™ DRILL GUIDE

- Perpendicular holes anywhere.
- Fence fits on all 4 sides.
- Works with most drills.
- Deluxe Kit includes extensions.



Drill not included.

Auto-Line Drill Guide
Drill Guide....\$299.99
Deluxe Kit....\$399.99

THIN RIP GUIDE®

- Safe, accurate jig for repeat cutting of thin strips.
- Works with 3/8" x 3/4" T-slot table grooves.
- Easily calibrated scales in both inch & metric.
- Ball bearing contact for smooth feeding.



Table Saw not included.

ThinRip Guide
Includes a wall-mountable Rack-It™
....\$169.99

Iron-Grip™ Small Parts Holder

- Rout small parts safely & accurately.
- Works with bearing guided bits or table-mounted fences.
- Quick-release jaw for fast change over.

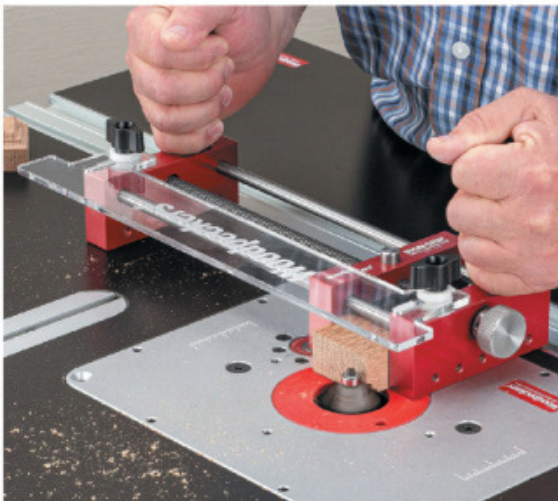


Table Saw not included.

Iron-Grip Small Parts Holder
....\$169.99
Extended Capacity
Fence....\$19.99

MULTI-ROUTER

The Joinery Machine

- Heavy-duty, true 3-axis linear control.
- Machined aluminum templates for flawless joinery.
- Built-in dust collection.



Multi-Router
The Joinery Machine
w/Dust Cabinet....\$2999.00
w/Mortise & Tenon
Package....\$4199.00
More Options Available
on Woodpeck.com



Spline Jig

- Works with both table saw and router table.
- Spline grooves or dovetail keyways.
- Cut splines in projects up to 36" long.
- Stops included for repeat positioning.



Spline Jig
....\$149.99



Hold-down clamps sold separately.

StealthStop™ Miter Gauge

- Fits all 3/8" x 3/4" miter gauge slots.
- Patented leaf springs ensure perfect fit.
- Rear fence extends from 21" to 29".
- Micro-adjustable flip stop.
- Positive stops for standard angles.
- Optional zero-clearance inserts.



Table Saw not included.

StealthStop
w/Fence & Stealth Stop
Miter Gauge....\$119.99

HexScale Rules

- Six rules in one!
- Inch & metric scales in 3 layouts.
- Right-to-left, left-to-right & centering.
- Stop simplifies repeat marking.
- 6", 12", 24" & 36" lengths.

HexScale Rule
Includes a wall-mountable Rack-It™
Set....\$159.99
Individual Sizes Available
on Woodpeck.com





FOR THE PRO IN YOU

Expect professional results. Choose Titebond wood glues.



Titebond wood glues are preferred by pros more than 7 to 1. Whatever your project, you can trust us to help you achieve the best results each and every time.

titebond.com | 1-800-347-4583

Titebond