BOY! DID WE HAVE A TOY CONTEST!
Winners: page 38

TIPS GALORE FOR SMALL-SCALE PROJECTS

WOOD UPDATE
WHAT'S HAPPENING TO THE WORLD'S WOODS?

JOINTER BASICS AND BUYMANSHIP

IRRESISTIBLE!
Waddling duck
Woven basket
Candle holder
Tabletop frame

BUILD THIS FABULOUS WOODY
You'll love it!
Our New Cordless Drills Are Turning Some Heads.

Two Great Reasons To Turn To Freud.

The variable two speed, reversible 9.6 volt drill with 6 position clutch and brake – AND – the two speed, reversible 7.2 volt drill with belt clip. Lightweight, extremely comfortable and engineered for the job at hand. Whether your needs are around the home, shop or on a remote site, these drills deliver the performance you need and expect from Freud tools.

Both drills have a 3/8 inch chuck for maximum versatility. The fast charge battery can be ready to go with an hour or less charging time. The reversing switch is conveniently located above the trigger for quick access. The over-load breaker protects the motor from damage and can be easily reset when tripped. The chuck key is conveniently stored in a locked position on top of each drill.

<table>
<thead>
<tr>
<th>Model #</th>
<th>9638VRC</th>
<th>7238RC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>9.6</td>
<td>7.2</td>
</tr>
<tr>
<td>Reversible</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Chuck Size</td>
<td>3/8&quot;</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>Torque Settings</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Speed</td>
<td>2 (Variable)</td>
<td>2</td>
</tr>
<tr>
<td>Speed Range</td>
<td>0-400 RPM and 0-1100 RPM</td>
<td>250 RPM or 600 RPM</td>
</tr>
</tbody>
</table>

Each drill comes in a blow mold carrying case with a 1 Hour Fast Charge Battery and Charger.

With all of these built-in features, Freud gives you what you need and expect from a cordless drill. Put one of these professional cordless drills in your hand today. The 9.6 (9638VRC) list price: $189.90 and the 7.2 (7238RC) list price: $129.90. Call us for the name of your local distributor.

freud

Precisely what you need.

High Point, NC • (919) 434-3171
FREE 24 pg. Color Catalog

List $1315
$915

In less than a minute
The Total Shop
Multipurpose machine
can be converted into
- Disc Sander
- 34" Lathe
- Overhead Pin Router
- 16½" Drill Press
- 10" Table Saw

The Total Shop multi
purpose machine is strong,
precise and versatile, not
to mention priced so
that owning your own
woodworking shop is a
real possibility and not a
problem.

18" Band Saw
- ½ hp
- 18" x 18" table size
- ¾"-1½" blade size
- 400 lbs.
$674.00
(ships freight collect)

16"
$510.00
(ships freight collect)

Call Toll Free 1-800-845-9356 or in S.C. 288-4174

Industrial Dust Collector
- 2 hp, 110v
- Two 4" inlets
- 1185 CFM
- 125 lbs.
$499.00
Value $339.00
(ships freight collect)

Dust Collector
- 1 hp, 110v
- 4" inlet
- Commercial quality
- Compact size
Reg. $209.00
(Ship. & Hdg. 130.95)

1" Belt Sander
- ½ hp
- 16 lbs.
- Table tilts 0° - 45°
- Die-cast aluminum
$59.95
UPS shipping

6" Long Bed Jointer
- ¾ hp, 110v
- Fence tilts 45°
- Both ways.
- Fully adjustable
- 190 lbs.
Reg. $499.00
Value $299.00
(ships freight collect)

Wood Shaper
- ½" Spindle
- 1 hp
- Cast iron construction
- Precision fence
- 160 lbs.
- Ball bearings
Reg. $499.00
Value $259.00
(ships freight collect)

12" Thickness Planer
- Depth of cut ½"
- Feed rate 26 fpm
- 69 lbs.
- Safety Switch
- All ball bearing
$359.00
(Ship. & Hdg. 120.95)
15" and 20" Planers
also available.

6" Belt & 9" Discs Sander
- ½ hp
- 6" x 48" belt
- Cast iron construction
- 152 lbs.
- 9" Sanding Disc Included
- Ball Bearings
$199.00
(ships freight collect)

1 Hour Video Brochure

□ YES! Please send me your free 24 page catalog.
□ YES! Please send me your 1 hour video brochure
(Enclose $10.00 refundable deposit - specify VHS or Beta)

Total Shop
Dept. #3
P.O. Box 25429, Greenville, SC 29616

Name
Address
City
State/Zip
Phone

- Total Shop
- 1-800-845-9356
- 288-4174
- Industrial Dust Collector
- 2 hp, 110v
- Two 4" inlets
- 1185 CFM
- 125 lbs.
- Value $339.00
- (ships freight collect)
- Dust Collector
- 1 hp, 110v
- 4" inlet
- Commercial quality
- Compact size
- Reg. $209.00
- (Ship. & Hdg. 130.95)
- 1" Belt Sander
- ½ hp
- 16 lbs.
- Table tilts 0° - 45°
- Die-cast aluminum
- $59.95
- UPS shipping
- 6" Long Bed Jointer
- ¾ hp, 110v
- Fence tilts 45°
- Both ways.
- Fully adjustable
- 190 lbs.
- Reg. $499.00
- Value $299.00
- (ships freight collect)
- Wood Shaper
- ½" Spindle
- 1 hp
- Cast iron construction
- Precision fence
- 160 lbs.
- Ball bearings
- Reg. $499.00
- Value $259.00
- (ships freight collect)
- 12" Thickness Planer
- Depth of cut ½"
- Feed rate 26 fpm
- 69 lbs.
- Safety Switch
- All ball bearing
- $359.00
- (Ship. & Hdg. 120.95)
- 15" and 20" Planers
- also available.
- 6" Belt & 9" Disc Sander
- ½ hp
- 6" x 48" belt
- Cast iron construction
- 152 lbs.
- 9" Sanding Disc Included
- Ball Bearings
- $199.00
- (ships freight collect)

- Total Shop
- 1-800-845-9356
- 288-4174
- Industrial Dust Collector
- 2 hp, 110v
- Two 4" inlets
- 1185 CFM
- 125 lbs.
- Value $339.00
- (ships freight collect)
- Dust Collector
- 1 hp, 110v
- 4" inlet
- Commercial quality
- Compact size
- Reg. $209.00
- (Ship. & Hdg. 130.95)
- 1" Belt Sander
- ½ hp
- 16 lbs.
- Table tilts 0° - 45°
- Die-cast aluminum
- $59.95
- UPS shipping
- 6" Long Bed Jointer
- ¾ hp, 110v
- Fence tilts 45°
- Both ways.
- Fully adjustable
- 190 lbs.
- Reg. $499.00
- Value $299.00
- (ships freight collect)
- Wood Shaper
- ½" Spindle
- 1 hp
- Cast iron construction
- Precision fence
- 160 lbs.
- Ball bearings
- Reg. $499.00
- Value $259.00
- (ships freight collect)
- 12" Thickness Planer
- Depth of cut ½"
- Feed rate 26 fpm
- 69 lbs.
- Safety Switch
- All ball bearing
- $359.00
- (Ship. & Hdg. 120.95)
- 15" and 20" Planers
- also available.
- 6" Belt & 9" Disc Sander
- ½ hp
- 6" x 48" belt
- Cast iron construction
- 152 lbs.
- 9" Sanding Disc Included
- Ball Bearings
- $199.00
- (ships freight collect)
Introducing SmartLevel™: The First Level That Makes You Look Like a Pro.

Does it seem like your projects always come out looking almost—but not quite—professional? There’s a reason. Pros know that nothing is perfectly straight. Walls are never exactly plumb. Ceilings aren’t truly level. It’s due to the settling of foundations and common wear and tear.

But ordinary levels can’t measure these differing angles and slopes. So pros learn how to estimate them. The result is work that looks truly professional. Cabinets that really fit. Blinds that hang straight.

Pros take years to acquire this skill. But now it can be yours in a matter of seconds. With SmartLevel from Wedge Innovations.

180 times more powerful than the bubble.

Bubble levels only measure level and plumb. SmartLevel measures 180 times more angles. And it’s three times more accurate than the bubble, capable of measuring precisely to 1/10th of a degree.

Actually, most levels are even more inaccurate due to rough usage. Professionals know this. That’s why many replace their levels 2 to 3 times a year.

But with SmartLevel, a push of a button automatically recalibrates its internal sensor to rebalance the system. That’s why SmartLevel never needs replacing.

The professional results you’ve always wanted are now quick and easy.

You’ll achieve professional results on the toughest projects. On walls that are no longer plumb. Floors that are no longer level.

Plumbing that needs a 5% slope for drainage. Roofs that are set at different pitches. In fact, everywhere you look in your house, you’ll see new uses for SmartLevel.

SmartLevel’s LCD display gives you four modes of measuring to eliminate tedious conversions: in degrees for most projects, percent slope for plumbing or masonry, inches per foot of run for roofs and stairways, and a simulated bubble for simple level and plumb measurements.

And SmartLevel lets you adjust sensitivity to match your project. So you can use it for everything from rough framing, to critical jobs like leveling your stereo turntable.

Brainchild of a team of Silicon Valley engineers.

SmartLevel was created in California’s Silicon Valley by a top electronic engineer (and former carpenter). Through two years of development, he and his hand-picked team created a solid-state instrument strong enough to withstand the rugged professional construction environment.

The SmartLevel module has a large, clear LCD that can read from up to ten feet away. You can use it alone as a torpedo-style level. Or snap it into any of the glove-sized handholds on the sleek SmartLevel rail. SmartLevel offers rails in 2, 4 and 6-foot lengths for more accurate readings. Rails are fashioned from polished aircraft-grade aluminum and solid nautical teak—the strongest and most durable wood available. A single 9-volt battery (not included) provides power for up to 2 years.

Proof we’re on the level.

Call for a risk-free 30-day trial.

SmartLevel is available exclusively from its manufacturer—Wedge Innovations. Use it in your shop, around your house, or on a yard project. After a full 30 days, if you’re not satisfied, simply return it for a prompt refund—no questions asked. Wedge also provides a full one-year warranty. Call our toll-free line now to order:

1-800-SMARTLEVEL

We accept Visa or Mastercard. Or send a check. Act now, and take advantage of our special introductory price while supplies last.

Remember, you won’t find a level anywhere that’s this accurate and versatile. For straighter, cleaner, more professional results on all your projects, order your SmartLevel now.

Order Now By Phone or Mail

CALL 1-800-SMARTLEVEL
(1-800-762-7853)

7:30 AM – 5:00 PM (PST) Monday – Friday
Please mention number 992

The sensor module is interchangeable between all rails.

<table>
<thead>
<tr>
<th>Description</th>
<th>Item #</th>
<th>Quantity</th>
<th>Special Introductory Price</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>SmartLevel System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensor module w/2 plumb rail</td>
<td>SMTR2</td>
<td>1</td>
<td>$114.95</td>
<td>$114.95</td>
</tr>
<tr>
<td>Sensor module w/6 plumb rail</td>
<td>SMTR6</td>
<td>1</td>
<td>$129.95</td>
<td>$129.95</td>
</tr>
<tr>
<td>Sensor module w/3 plumb rail</td>
<td>SMTR3</td>
<td>1</td>
<td>$184.95</td>
<td>$184.95</td>
</tr>
<tr>
<td>Additional Components</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7' plumb rail only</td>
<td>TPL7</td>
<td>1</td>
<td>$79.95</td>
<td>$79.95</td>
</tr>
<tr>
<td>6' plumb rail only</td>
<td>TPL6</td>
<td>1</td>
<td>$84.95</td>
<td>$84.95</td>
</tr>
<tr>
<td>4' plumb rail only</td>
<td>TP4</td>
<td>1</td>
<td>$56.00</td>
<td>$56.00</td>
</tr>
<tr>
<td>3' plumb rail only</td>
<td>TPL3</td>
<td>1</td>
<td>$45.00</td>
<td>$45.00</td>
</tr>
</tbody>
</table>

CA Residents: Add 6.5% sales tax
Shipping: add $6.00 per rail ordered

Card No.

Expiration Date

Please print clearly

Both Wedge Innovations • 532 Mercury Drive • Sunnyvale, California 94086

Wedge Innovations • 532 Mercury Drive • Sunnyvale, California 94086
Better Homes and Gardens®

WOOD

THE #1 MAGAZINE FOR HOME WOODWORKERS

This issue's cover wood grain: slippery elm

OCTOBER 1989

ISSUE NO. 31

WOOD PROFILE

MESQUITE: PRIME FOR STEAK, BETTER FOR STOCK 37

Not all mesquite goes up in smoke inside the barbecue grill. Craftsmen have discovered that this Southwest tree makes excellent furniture, too.

DESIGN A-TOY

BOY! DID WE HAVE A TOY CONTEST! 38

We tip our hats to all the generous readers who entered WOOD® magazine's first design competition. See the complete list of winners on pages 40-41.

DUCK WADDLES OFF WITH A GRAND PRIZE 42

Here's the irresistible duck that stole the hearts of our Design-A-Toy™ judges. We think you'll want to build this pull toy for holiday giving.

WHAT'S HAPPENING TO THE WORLD'S WOOD? 46

Mankind and Mother Nature have combined to slice up our planet's forests, causing alarm around the world. After capsulizing the situation, features editor Pete Stephano asks forestry experts to look to the future.

SHOP-TESTED TECHNIQUES WORKING SMALL 50

Jim Boelting, our project builder, has gone absolutely buggy over detailing tiny masterpieces in his spare time. Now, Jim shares techniques he's developed for working in a small world.

CRAFTSMAN CLOSE-UP FOWL LANGUAGE 56

Butch Richenbach, who grew up in Stuttgart, Arkansas—site of the World Championship Duck Calling Contest—has carted home his share of awards. Today, top-flight competitors rely on Butch's duck calls.

HOMEMADE TOOL RIGHT-ON RIP FENCE 60

If you don't have the money in your budget for a commercially made replacement rip fence, we want to show you how to make your own fence to upgrade your tablesaw's accuracy.

CALL TODAY!

HTC PRODUCTS, INC.
126 E. HUDSON S-8
ROYAL OAK, MI 48067
(313) 399-6185

1-800-624-2027 ext. 108
DEVELOP YOUR SHOP SKILLS
HOW TO SAFELY FEED STOCK THROUGH A JOINTER
Whether you're a novice woodworker or you've jointed boards for decades, you'll find it worth your time to review these jointer procedures.

TOOL BUYMANSHP
JOINTERS: MACHINES THAT GIVE YOU THE EDGE QUICKLY AND ACCURATELY
Shopping for a new jointer? Today, you'll find (as we did) that 6" models dominate the market. Before you buy, read about the models we tested and how they vary in quality, features, and price.

FIFTH-ANNIVERSARY SPECIAL
THE CLASSIC WOODY
For this occasion, our design editor created a model reminiscent of a 1930 Ford Woody. Photograph your Woody car and we'll mail you a free brass license plate.

HANDWOVEN WHATNOT BASKET
When Marlen Kemnet, our how-to editor, spotted this basket at a Minneapolis craft fair, he couldn't wait to build one in our shop. Amazingly, you find that you can cut all the woven pieces in your shop from solid stock.

PINT-SIZED PICTURE FRAMES
After you build our handy jig, you can make a batch of these tabletop frames for those school pictures kids bring home each year. Talk about a great gift idea! This is it!

TURNING PATTERN
TULIP TIME AT YOUR LATHE
With the help of a belt sander and files, discover how Mark Burhans, a talented Ohio woodturner, puts flare in his candle holders.

SHORT-SUBJECT FEATURES
Editor's Angle ............ 6 Products That Perform .... 29
Talking Back ............. 8 Wood Action Groups ...... 93
Tips from Your Shop (And Ours) ... 14 Tool Industry Insider .... 94
Old Hand Ways .......... 25 Ask WOOD ............... 98
Finishing Touches ....... 112

ALL NEW WOOD PARTS CATALOG $1.00
(Free With Order)

Woodworks
4500 Anderson Blvd.,
Fort Worth, Texas 76117
(817) 281-4447

WOOD MAGAZINE OCTOBER 1989
Ever since it dawned on the staff and me a few months back that WOOD® magazine would turn five years old with this issue, we've been plotting our strategy for a blockbuster issue to mark the occasion. And now that the moment has finally arrived, we hope you enjoy the final product.

As promised, we're showcasing the winning entries in our Design-A-Toy™ competition along with instructions on how to build one of the grand-prize winners. And, be sure to take a look at Pete Stephens's fact-filled piece titled "What's Happening to the World's Wood." This timely article not only summarizes the situation as it exists around the world today, but also offers a glimpse into the future of one of man's most important renewable resources.

I'd also like to call your attention to a couple of dandy projects—both designed by our own Jim Downing—that we think you're really going to like. The first, a homemade version of the commercially available replacement rip fences, will add unbelievable accuracy to your tablesaw—for under $50. And the second, a model car reminiscent of the 1930 Ford Woody (pictured on the cover), should tickle the fancy of lots of readers.

We've also included several other great project designs, as well as our regular menu of articles covering techniques, product buymanship, and feature articles for your reading pleasure.

Oh, I almost forgot! If you're interested in seeing and learning a little more about the crew that brings you WOOD® magazine every two months, take a look at page 112. The gang's all there.

Enjoy!

Larry Clayton
The Speed Varies So The Results Won’t.

The new 3.25 H.P. Bosch electronic variable speed plunge router lets you make perfect plunge cuts time after time, no matter what the material or bit size. That’s because it puts you in total control of speed, cutting depth, and the router itself, due to an excellent ergonomic design.

The Advantages Of Variable Speed.
Select any speed, from 12,000 to 18,000 RPM, to match your material and bit size—and get far better cutting results.

1611EVS electronics give you two more big advantages, too. “Soft start” when you press the trigger—no jarring “torque twist” means better control. And by monitoring RPM and feeding power as needed, it keeps you from bogging down, even in the toughest cuts.

Master Of Ergonomics.
From the first moment you get your hands on the variable speed model 1611EVS or the single speed model 1611, you’ll know what separates it from other plunge routers. The handle grips feel like they were molded especially to fit your hands. The trigger switch, built into the right handle, and the plunge lock mechanism by your left thumb, let you reach these controls without taking your hands off the router.

Then press the trigger and take the plunge. Feel the housing glide down, and the ample power at your command as the bit slices effortlessly into your workpiece. Release the spring-loaded plunge lever and the housing locks firmly into position. And you can use the multiple-step depth-step to make progressively deeper cuts with precision.

Both models accept the full array of 1/4", 5/32" or 1/8" shank bits. And with their built-in, spring-loaded shaft lock, changing bits is fast and simple.

The Bosch models 1611EVS and 1611 are available in cooler running, higher horsepower 220V models, too. Ask about them and the complete line of fine Bosch power tools for woodworkers, at your nearest Bosch power tool distributor. He’s listed in the Yellow Pages under “Tools—Electric.”
TALKING BACK

We welcome comments, criticisms, suggestions, and even an occasional compliment. Send your correspondence to: Letters Editor, Better Homes and Gardens® WOOD® Magazine, 1716 Locust St., Des Moines, IA 50336.

U.S., CANADIAN DOOR OPENS WIDER

Our growing Canadian readership occasionally asks questions about purchasing woodworking tools and supplies in the U.S. Until this year, Canada collected a 9 to 10 percent tariff on U.S.-made goods crossing the border. U.S. Customs, on the other hand, collected a 4 to 5 percent tariff on Canadian-made goods headed south. The recently enacted Canada-U.S. Free Trade Agreement will phase out tariffs, including most woodworking-equipment duties, by Jan. 1, 1993; the first 20 percent reduction occurred Jan. 1 of this year. The agreement affects only goods made in Canada and the U.S.; a set of German-made chisels, for example, would still be subject to tariffs.

This new trade agreement should be good news for woodworkers on both sides of the border. But, Canadians should keep in mind that the fluctuating exchange rate could add about 18 percent to their purchase. And, they may be subject to federal and provincial taxes on their U.S. purchases.

WOOD magazine readers Sherry Sanne of Winnipeg and D. L. Mhyre of Lethbridge, Alberta, asked if Canadians can take advantage of free pattern offers in the magazine. You bet! If Canadians—or any foreign residents—include an international reply coupon with your self-addressed envelope, WOOD magazine will send you any free pattern that strikes your fancy.

Many firms advertising in WOOD magazine do ship to Canada and foreign countries. They must declare the contents and value of the order on a customs declaration form affixed to the outside of the shipping box. “We get thousands of orders each year from Canada,” says Glenn Docherty at Albert Constantine & Son. “But before we ship, we let them know what the additional postage will be. Canadians then pay duty at their post office. United Parcel Service also will collect duties on orders they deliver in Canada.”

“We charge $4 extra for each Canadian order,” says David Draves of Woodcraft, “to cover the additional postage and paperwork. Recently, we’ve noticed an increase in catalog interest from Canada—perhaps because of attention to the new trade agreement.”

47-YEAR-OLD MYSTERY SOLVED

A feature article in the February issue of WOOD magazine—“‘Tjadi, A Truckful of Horrors’”—caught

Continued on page 10
Learn Norm Abram’s Woodworking Secrets

Get the hardcover edition of THE NEW YANKEE WORKSHOP at a special discount price, and create traditional American furnishings for your home with the expert help of Norm Abram!

You’ll get detailed plans for a traditional drop-leaf table . . . workbench . . . blanket chest . . . bedside table . . . bathroom vanity . . . trestle table . . . bookshelf . . . chest of drawers . . . hutch . . . writing desk . . . and more.

Learn how to create beautiful, traditional pieces easily, using modern tools, materials and techniques!

Follow along with the companion volume to the 12-part PBS-TV series.

THE NEW YANKEE WORKSHOP is being featured on PBS-TV across the country.

With this book you can follow along as Norm Abram builds each handsome project. You’ll have a hardcover reference to use over and over—a guide to Norm Abram’s remarkable skills and techniques.

Learn Norm Abram’s tips for using a lathe, router, table saw, drill press, band saw and other equipment; benefit from his advice on joint-making, finishing, measuring and more!

Improve your fine-woodworking skills with the guidance of master woodworker Norm Abram. Send for your copy of THE NEW YANKEE WORKSHOP today!

TRY IT FREE FOR 21 DAYS!

YES! Please send me my free Corner Cupboard Plans and a copy of Norm Abram’s THE NEW YANKEE WORKSHOP to examine free for 21 days. If I decide to keep the book, I’ll pay for it in three easy monthly installments of $8.32 each plus postage and handling. (There is no interest or finance charge.) If I do not want the book, I’ll return it with the invoice within 21 days and owe nothing. The plans are mine to keep regardless.

☐ SAVE CASH by sending $24.95 now and we’ll pay postage and handling. Same return privileges as above.

Name

Address

City

State

Zip

NY, PA, CA, and IL residents please add state sales tax.)
Clip and mail to: RODALE BOOKS, Emmaus, PA 18049
The most versatile chuck available.

30 applications including screw chucks, 3 jaw chucks, spigot collets etc.
Basic chuck offers 7 different uses with free 14 page instructional handbook.

Combination chuck available from:
Shopsmith, 3931 Image Drive, Dayton, OH 45414.
Woodcraft Supply Corp., 41 Atlantic Ave., PO Box 4000, Woburn, Mass 01808.
Rus Zimmermann, House of Woodturning RPO1, Box 542, Putney, VT 05346.
Also available from Craft Supplies LTD., The Mill, Millers Dale, Buxton, Derbyshire, England SK17 8SN.

WOODWORKER’S PLANS & PARTS

HEIRLOOM ROCKER
Build our classic rocking horse and create a family heirloom which will delight the children in your family for generations to come.

Size: 35" x 56"

Order Plan 400
Only $10.25

DOOR HARP PLANS AND PARTS

Same Day Service

Goose

Duck

Plans include stencil design

New design No fret bar

Harps Plans $4.00 each or buy all four $12.50

Hardware Kit (no plywood)
One harp 3.50
Four harps 12.50

Tuning Pins 3.50 or FREE if Harp order totals 35.00

Tuning Pin Wrench 11/8" x 1 1/8" 1.00 ea.
10 for 8.00
10 for 9.00
30 for 24.00

Shipping $2.50, NY Res. add tax. Catalog $1.00 FREE with order.
We accept VISA & MASTERCARD, Phone (516) 462-6228

Armor Products Box 445-L East Northport, NY 11731

Talking Back

Continued from page 8

my attention. This may be the wood that I've wondered about and inquired about since 1942. Where did I see this tree? On Guadalcanal in the Solomon Islands with the First Marine Division. The trees I saw were of great height and diameter. I never saw one in open ground, but always in dark, heavy swamps. The article said the things I believe to be buttresses started outward from the tree from a height of about 30 feet. This 3" or 4" wall would twist and wind away from the tree. I don't know how many of these walls there were on each tree, but I do know that you could walk around the trunk of the tree and be completely concealed.

—Maj. Harry Campbell, Springhill, Fla.

Major, we inadvertently solved your 47-year-old mystery that originated on Guadalcanal. The tree you remember, and the supports called buttresses, was no doubt paldao (Dracomontelum dao), or one of its close family members. The tree's great natural range includes the Philippines and New Guinea, as well as most of the Southwest Pacific. Besides its common name of paldao, the wood trades under the names sengkuan, New Guinea walnut, lamio, dao, damon, dore, loup, and New Guineawood, according to the U.S. Forest Service's Forest Products Laboratory in Madison, Wisconsin. Paldao grows to about 120', and often has a straight trunk of 80' above the buttresses. Woodworkers prize the walnut-like wood, as our story told you, for paneling and furniture.

OF MILLIMETERS, MILS, AND INCHES

How thick was that Mylar? In February, you said the DuPont double-matte Mylar was 3 mm thick. Now in the June issue, you say its .003 mm. I believe you really mean 3 M, which stands for mils. Circular mils is a term used by the electrical and plastics industries, and normally shortened to just mils. A sheet of 3 mil plastic equals .003 of an inch in thickness. Many people get their m's and mm's confused, as a result of our metric conversion.

—E.W. Bingham, Portland, Ore.

Bing, you were the first of a half dozen sharp-eyed readers to straighten us out on mils. Thomas Nelson Jr. of DuPont confirmed the facts as you state. Case closed—we hope.

THE CASTERS ARE EXTRA

Powermatic product manager Robert Alsup informs us that retractable casters listed as standard equipment on the new model 65 Artisan 10" tablesaw are a $32 optional accessory. The saw, mentioned in the June 1989 "Tool Industry Insider," lists for $650.
GLAD YOU THOUGHT OF THAT

I have a suggestion on how to improve the trestle table featured in your April 1989 issue. Fasteners like the one shown at right allow for the different wood movement of the tabletop and the table supports.

—David G. Schwenker, Portsmouth, Va.

You have a good idea, David. One bracket at each end of the table allows the natural expansion and contraction of wood to continue. Inquire at your local hardware store for a 3/4" Stanley tabletop fastener (part number 1910).

SCRAPING AWAY FOR A BETTER TOOL

I am delighted with the scraper presented in the April 1989 issue, and wasted no time in getting one made. In the process, I made a few changes that I believe made a good tool even better.

First, I rabbeted a shoulder in the blade-mounting surface. This stops positions the blade and prevents it from slipping when applying pressure.

Since I didn't happen to have a solid-brass strike plate, I substituted a brass-coated steel plate. The result pleases me, since the steel plate is stiffer, doesn't spring away when releasing the blade, and doesn't distort when tightening the clamp nut. Please note that I changed the bend angle to apply clamping pressure where it's most effective.

Instead of a 1/2" round-over on the top, I intentionally cut it flat to provide a surface perpendicular to the desired rake angle on the edge of the blade. By resting the scraper on this surface, I can quickly produce a straight cutting edge on a disc sander.

—Tom Rose, Los Angeles

Once again, Tom, you have insightful comments. Since publishing the project, Jim Downing, our design editor, has discovered that solid carbide blades for hand-held power planers work even better than the backsaw blades we originally suggested. Jim snapped off about 1" from blades he picked up at a local Black & Decker store.

Continued on page 12
**SANDPAPER**

*FREE: All items in this ad shipped within 72 hours or freight is free*

BELTS:
- Grits assorted unless otherwise specified
- Material: Aluminum Oxide Resin over Resin Cloth

<table>
<thead>
<tr>
<th>Size</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1x30</td>
<td>$0.69 ea</td>
</tr>
<tr>
<td>1x42</td>
<td>$0.69</td>
</tr>
<tr>
<td>1x44</td>
<td>3x23¼</td>
</tr>
<tr>
<td>2½x16</td>
<td>3x27</td>
</tr>
<tr>
<td>3x18</td>
<td>0.74</td>
</tr>
</tbody>
</table>

**SHEETS (9x11)**
- Both cabinet & finishing paper available in Garnet or Aluminum Oxide

<table>
<thead>
<tr>
<th>Paper Type</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABINET PAPER</td>
<td>50/pk</td>
<td>$16/pk</td>
</tr>
<tr>
<td>FINISHING PAPER</td>
<td>100/pk</td>
<td>$30/pk</td>
</tr>
<tr>
<td>40D</td>
<td>80-A</td>
<td>$9/pk</td>
</tr>
<tr>
<td>50D</td>
<td>100 thru 280A</td>
<td>$10/pk</td>
</tr>
<tr>
<td>80D</td>
<td>14/pk</td>
<td>25/pk</td>
</tr>
<tr>
<td>80D</td>
<td>13/pk</td>
<td>23/pk</td>
</tr>
<tr>
<td>NO LOAD PAPER</td>
<td>100 thru 150C</td>
<td>12/pk</td>
</tr>
<tr>
<td>50/pk</td>
<td>100/pk</td>
<td></td>
</tr>
<tr>
<td>220 thru 600A</td>
<td>$13/pk</td>
<td></td>
</tr>
</tbody>
</table>

**JUMBO CLEANING STICK**
- Coarser GRITS available on request
- Size: 2x2x12
- $8.80

**ABRASIVE ROLLS FOR ABRASIVE PLANERS**
- Material: Aluminum Oxide Resin over Resin Cloth

<table>
<thead>
<tr>
<th>Size</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>4x25 yds</td>
<td>GRIT 100 &amp; Finer</td>
</tr>
<tr>
<td>4x50 yds</td>
<td>GRIT 100 &amp; Finer</td>
</tr>
<tr>
<td>80</td>
<td>34.65</td>
</tr>
<tr>
<td>60</td>
<td>37.51</td>
</tr>
<tr>
<td>50</td>
<td>40.19</td>
</tr>
<tr>
<td>40</td>
<td>42.86</td>
</tr>
<tr>
<td>36</td>
<td>46.26</td>
</tr>
<tr>
<td>24</td>
<td>52.87</td>
</tr>
</tbody>
</table>

**TALKING BACK**

Continued from page 11

**STRAPPING DOWN THOSE FILE-CABINET DRAWERS**

I built the two-drawer file cabinet in the February 1988 issue and found the instructions and illustrations easy to follow. However, I'd like to point out a hazard connected with all filing cabinets and particularly with this one. When the top file drawer is loaded and fully extended, the file may tip forward. (Most commercial cabinets have a device that allows only one drawer to open at a time.) Since the individual components are not tied together, this could be even more dangerous if three or four drawers are stacked. I solved the problem by bolting the sections together with metal angle brackets.

—Bob Vanderbeyden, Green Bay, WIs.

Bob, you're right—we should have foreseen this as a potential problem. Here's another solution: We recommend ⅛x3" brass mending plates (Stanley part number 353350) to secure the pieces as shown in the illustration above.

**BIGGER CHESTNUT TREES**

Your Wood Profile article on page 37 of the June 1989 issue indicates that chestnut trees "measured 5–6' around the trunk." As you no doubt know, 5–6' was the diameter.

—Ty Baldwin, Richmond, Ky.

Ty, you certainly know an American chestnut tree when you see one. Of course, we meant a 5–6' diameter, not circumference as stated. After all, these trees were BIG, and plenty of them grew in Kentucky.

**BOWLED OVER, POLychROMATICALY**

I was impressed by your fine article on stack-laminated bowls in the April 1989 issue. Your readers may want to know that the correct name for this kind of turning is polychromatic assembly. Two books have been published on this subject. I recommend Polychromatic Assembly for Woodturning, by Emmett and Cyril Brown (Linden Publishing Co., 1982). The book includes plans for a beautiful bowl with a 12-point star. I've searched unsuccessfully for years for another book on the subject, The Art of Polychromatic and Decorative Turning, written by George and Berthod Audsley in 1916.

—Robert Walter, Baltimore
Give Your Imagination Permission, 
And Start Your Own Family Traditions!

Whether You Do Scroll Sawing As A Hobby, For Making Money, Or As A Craftsman, 
The Hawk Is The Tool For You!

The Hawk can make you feel good about your woodworking... 
and make others envy your skill!

There isn't any other kind of woodworking that looks more complex and professional than scroll sawing. And that's what scares most beginner woodworkers. But the pros know the tool's the secret. With the right saw, some instruction and practice, a few patterns and lots of imagination, anyone can turn out beautiful scroll-work.

The Hawk is the "right" scroll saw for you. It will open up new woodworking frontiers for you even if you've never done scroll sawing before! That's why we designed it for beginners. Yet we wanted it to last for years and handle the work as the user's skills grew. So, we built it for the fine woodworkers to get maximum use from, too.

Make Money or Just Scroll For 
The Fun Of It.

You'd be surprised how easy it is to make money with scroll woodworking. Hundreds of folks start doing it the minute they set The Hawk up in their workshops. Many use this to pay for their machines, supplement incomes and even start full time businesses.

Experienced craftsmen find they can do intricate scrollwork for their fine woodworking projects in half the time it takes on a bandsaw or jigsaw.

We Designed Our Precision Scroll Saws 
For Beginners and Built Them 
For Fine Woodworkers.

- Make simple crafts like toys and puzzles to give as presents
- Paper towel holders, wall sconces, name cutouts and hundreds of others you can sell for profit
- Fancy scallops and precision scrollwork for clocks, heirlooms, intricate inlays and dovetails.

How creative do you have to be to scroll saw? If you can draw a line, you can follow it with a Hawk...and, like that, you're scroll sawing, with the kind of results you've always dreamed of. Trace any kind of pattern onto your wood and follow the lines. It's that simple.

MAKE THESE PROJECTS 
AND MORE!

CALL US TOLL FREE TO FIND OUT ALL 
THE FACTS ABOUT SCROLLING TODAY!

800-535-8665

☐ YES! Put me on your mailing list 
to receive my Free Fact Kit.

Name
Address
City
State Zip
Phone

Mail To: RBl Industries, P.O. Box 369, 1801 Vine St. 
Harrisonville, MO 64080
EARN CASH, PRIZES FOR YOUR TOP SHOP TIP

Do you have a great shop tip (or two) you'd like to share with other WOOD® magazine readers? For each published submission, you get:
- $25 from WOOD magazine;
- A matching $25 gift certificate from one of our mail-order advertisers—this time from Leichtung Workshops, Inc.; and
- A chance to be selected as the Top Shop Tip winner for the issue. This issue's winner will receive a Makita model 3601B D-handle router as shown at right.

We try not to use shop tips that have run in other magazines, so please send your tip to only one magazine. We cannot return shop tips. Mail your tips, address, and daytime phone number to:

SHOP TIPS
Better Homes and Gardens®
WOOD Magazine
1716 Locust St.
Des Moines, IA 50336

BRACKET SUPPORTS LONG STOCK AT WORKBENCH
Many workbenches—home-made and commercial models alike—don't incorporate features to support long pieces protruding from the vise. As a result, it's necessary to scrounge around for an acceptable temporary support or go look for someone to serve as a willing assistant. There has to be an easier way!

TIP: Here's an inexpensive solution: modify and install a readily available shelf bracket on your workbench. First, screw a 1½-2' length of vertical shelf standard to one leg of your workbench as shown above. Then, grab a metal shelf bracket and for the protection of your workpieces face it with a grooved piece of wood, glued in place with epoxy. You may wish to make several brackets of different sizes and configurations to handle special situations. Adjust the bracket up and down for various stock widths. This setup gives you a sturdy and economical support system.
—Tom E. Moore, Madison, Va.

ROLL ALONG EASILY WITH TEMPLATE ENLARGEMENTS

Enlarging templates by small increments—like ⅛ or ⅛—can be a real pain, especially when you're trying to increase the dimensions of a curved or irregularly shaped object. Sometimes, you need to draw template offset lines that match a router guide bushing. Here's a solution utilizing parts on hand.

TIP: Use a flat metal washer as a spacer between the edge of the template and the point of your pencil as illustrated at right. Washers come in many different sizes, giving you a wide choice in enlarging capabilities. Maintain even pressure on the pencil as you draw.
—From the WOOD magazine shop

WOODWORKER'S CLAMPS GLUE EDGES, TOO

You can't top edge clamps for edge-gluing projects, but like all quality tools, a fistful of them represents a tidy investment. Without denting your wallet, wouldn't it be nice if clamps you already own would work for this task?

TIP: Call your woodworker's clamps into action for those occa-sional edge-gluing jobs by using them in combination with home-made wooden wedges. After fitting together the glued workpieces, tighten the clamps in place as shown at left and tap wedges in place for the desired lateral pressure. Suitably sized C-clamps work quite well in this arrangement, too.
—From the WOOD magazine shop

Continued on page 16
Best Quality
Now Improved!

POWER FEEDER
1HP, 8 Speed,
Forward & Reverse
Safety features and more!

Two Year Warranty!

30 Days FREE TRIAL!

CHIU TING

CT-280F........$1200.00
1/4 HP
SK-321FD........$390.00

WIDE BELT SANDER
A-2548....$6150.00
24" working width
A-3760....$8995.00
36" working width

3 precision balanced contact drum. Rugged heavy duty metal construction. Full power motors drive sanding and auto infeed smoothly. Computer control adjust table.

STROKE BELT SANDER
SK-1500BS........$1295.00
60"x21-1/4" sliding table
6" sanding belt width 2 HP
SK-2100BS........$1599.00
60"x21-1/4" sliding table
6" sanding belt width 3 HP

OFFERING A COMPLETE LINE OF FINE QUALITY TOOLS INCLUDING...
□ JOINTERS
□ LATHEs
□ MORTISERS
□ PLANERS
□ SANDERS
□ SAWS
□ and more!

Featuring:

SPINDLE SHAPER
SK-30SPA..$799.00
1" and 3/4" Spindle 3 HP
24"x30" table R/F Switch

SLIDING TABLE
SK-35ST.....$199.00

DRUM SANDER
Double drums. Dust chute. 1/4 HP feeding
15" 3 HP - SK-15DS........$1795.00
20" 3 HP - SK-20DS........$1975.00
25" 5 HP - SK-25DS........$2355.00

TRUE VALUE & TRUE QUALITY

LOBO POWER TOOLS
9034 Bermudez Street, Box 456
Pico Rivera CA. 90660
(213)949-3747

In Canada:
Unit 3, 2375 Alpha Ave, Burnaby, B.C
Canada V5C 5L2 (604) 299-0911
All F.O.B. Pico Rivera, CA

Write or call now
FREE BROCHURE
Or $3 Catalog ($5 refunded with order)
One year free parts warranty
We specialize in customer satisfaction
BRANDING IRON

Your Satisfaction Guaranteed
- Convenient torch heating
- Solid Brass—lasts years
- Special wording available
- Electric Models Start at $24.95
- 2nd line—
  20 letters/spaces max.
- 1/2" letters
- Distinctive Border
- Add $2.50 shipping
- O/B res. add 5% sales tax

$25.00

Order by mail from:
BrandMark
462 Carthage Dr., Dept. WS
Beeinver Creek, OH 45313
(513) 426-6843
TO ORDER CALL TOLL FREE
1-800-323-2570
(ORDERS ONLY)
8:00-5:00 EASTERN TIME

GRANDMA'S
HALL CLOCK

Our Hall Clock is designed so beginning woodworkers are able to build it. Finish it in either stain or antiqued country paint. Order Plan Number 8839 WEEKEND WORKSHOP for $7.00 ppd. To use VISA or MasterCard, call 516-352-5198.

HAMMERMARK ASSOCIATES
P.O. Box A889
Floral Park, NY 11001-0201
Price guaranteed through 3/90.

OWN YOUR OWN SAWMILL

Four Models To Choose From
SAVE MONEY—
CUT YOUR OWN LUMBER
- Remote hydraulic log handling
- Capacities up to 32" in dia.
- 33" long
- Portable—precise—rugged
- Efficient—more lumber per log

CALL FOR FREE CATALOG
1-800-553-0219

WOOD-MIZER
World’s Largest Manufacturer Of Portable Sawmills

WOODWORKER’S CATALOG

There are over 4,000 money-saving reasons why woodworkers rely on Constantine.

4,000 woodwork items to help you Build-Restore-Repair-Renovate! Over 200 different woods... 130 species... 500 guns... cabinet hardware... 99 How-To Ebooks... 118 carving tools and effects... 76 Inlay designs... and lots more for One-Stop, Right-Price Shopping without leaving home!

116 Page Catalog—Only $1.00

CONSTANTINE Est. 1812
20545 Eastchester Road, Bronx, New York 10461

A DRILL BIT FINDS DEAD CENTER OF A DOWEL

Locating the center of a wooden dowel can be a bit-of-miss disposition if you try to do it with a straightedge and a pencil. Typically, the smaller the dowel, the greater the chance for missing the middle.

TIP: Hit the center by using a Forstner bit of the same diameter as the dowel to bore a hole through a block of scrapwood. Then, insert the dowel into the hole on one side of the block and the bit on the other side. Press in slightly as you twist the bit a few times to mark the center of the dowel.

—From the WOOD magazine shop
Your workshop can PAY OFF

...BIG!

SAVE ... convert low cost rough lumber for use in your home projects

OR

EARN EXTRA INCOME by supplying custom Planed Lumber, trim, and molding to lumberyards ... contractors ... cabinetmakers ... home hobbyists and others ...

FOUR BIG ADVANTAGES ...

You can plane, mold, saw & sand
All with Automatic Power Feed!

From the Day It Arrives ... the Planer will make and save you money. With shortages and inflation driving lumber prices sky-high, this versatile power feed tool quickly pays for itself by easily converting low cost rough lumber into high value finished stock. In just one pass turn out your own quarter round, door and window stop, casing, tongue-and-groove ... all popular patterns. Other operators are making cases for grandfather clocks, furniture, picture frames, bee hives, bed slats, surveying stakes ... all kinds of millwork.

Built For Pros ... Priced For Home Craftsman ... it is engineered and built to industrial standards, but factory-direct selling keeps the price low. Handles tough oak and walnut as easily as pine, and so simple to operate even beginners with no experience can use it.

Start Your Own Business ... with just this one low cost power feed machine in a corner of your garage or basement, you're set up to supply lumberyards, cabinetmakers, carpenters, remodelers, contractors and hobbyists in your area with custom-planed lumber, trim, molding ... All of their millwork requirements. You can supply picture frame moldings to art shops, hardware and department stores, or sell direct to framing shops. All standard patterns are available from stock, or we'll custom grind a knife to your own special design or sample.

FOLEY-BELSAW CO.
6301 EQUITABLE RD., DEPT. 9474
KANSAS CITY, MO. 64120
Established in 1916

FREE BOOKLET!
Get FREE BOOK with facts and full details ... RUSH COUPON TODAY!

SAVE!!! FACTORY PRICES DIRECT TO YOU!

FREE MAIL COUPON . . .
30-DAY FREE TRIAL OFFER!!!
ACT NOW!
Coupon Brings Full Details!

[Blank space for coupon]

Name
Address
City
State
Zip

[Blank space for coupon]
TIPS FROM YOUR SHOP
(AND OURS)

Continued from page 16

HIDE EDGES IN PLYWOOD AND OTHER MATERIALS
Panels constructed of hardwod-faced plywood have pretty faces, but the laminated edges simply are not presentable on cabinetry or other projects. Veneering is a possible solution—providing you have the materials and tools to do the job.

TIP: To disguise the plywood layers, cut beveled strips from the material with your tablesaw or radial-arm saw set at 45° as shown in drawing A. Make a second cut perpendicular to the first one as shown and discard the resulting scrap. Finally, glue the first strip in place as shown in drawing B. This procedure also extends the face-grain pattern onto the edge. Use this technique to disguise freshly sawed edges on weathered barn boards used for picture frames.

—Howard Plehove, West Allis, Wis.

GIVE TOUGH STRIPPING PROBLEMS THE BRUSH-OFF
When refinishing furniture, working the stripper into tight corners and finely detailed work can prove hard work. Brass brushes help, but cost money, too.

TIP: Scrub away the loosened finish from intricate carvings, deep grain, and other hard-to-get areas with an old paintbrush. First, cut off the bristles to a length of 1" to make them stiff enough to work nicely. For best results, generously dab on the stripper without overbrushing it during application.

—Mark Ceola, Fayetteville, Ark.
Continued on page 21

FINALLY A SCROLL SAW THAT DOESN'T CUT CORNERS.

The new Dremel two-speed Scroll Saw gives you all the features of the most expensive saws, except one. The price.

How'd we do it? Using the same Dremel engineering that's been bringing you intelligently-crafted, affordable power tools for over 50 years. So if you're looking for a quality scroll saw that'll make your most intricate work a breeze, ask about the new 16" Scroll Saw from Dremel. And cut those expensive saws down to size.

DREMEL®

© 1989 Dremel
Here's another “buy 1 tool get our 212 page tool free” offer.

Just a few of the unique woodworking tools of the 3,500 others available from our most versatile tool, the 1990 Garrett Wade Catalog.

The 212 page Catalog, regularly $4.00, is Free with any order from this ad. Or if you would just like the Catalog, send us $4.00 with your name and address. It's the one woodworking source book you shouldn't be without.

A / Our 202GF Gap Filling Glue Has Remarkable Properties
It has a very high solids content so that small gaps in our joinery are actually filled — with strength. And the "squeeze-out" beads right up and chips off when dry. No soaking in to ruin finishes. Dries to a light tan. Water clean-up.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>62J01.01</td>
<td>1 pt. 202GF</td>
<td>$6.50</td>
</tr>
<tr>
<td>62J01.03</td>
<td>1 qt. 202GF</td>
<td>$11.50</td>
</tr>
</tbody>
</table>

B / Saw Setting Gauge Can Be Read From Any Position
Most saw setting gauges have at least one or two main weaknesses. They either rest partially on the insert plate which is usually not the same height as the main table, or they are so thin that it is difficult to ensure that teeth are being gauged at the top of the arc. This Gauge is made from machined Aluminum a full ¾” thick and 9” long. With ¼” graduations on one end and ¾” on the other, it will indicate any height from ¾” to 2”. Most useful for Table Saws but also handy for Router depth setting. The markings are vertical on one face and horizontal on the other, so you can read them easily and accurately.

71K26.02 Saw Setting Gauge $16.95

C / Deluxe Cabinet Scraper
With an extra-heavy main iron casting and Solid Brass thumb screws, this is clearly the best of the cabinet scrapers available. The Sole is a full ¼” thick, very flat, and polished. It has good heft and feels very satisfying to use. One of our most highly recommended tools.

19K06.05 Deluxe Cabinet Scraper $26.50

D / Super-Hard, Pre-Sharped Scraper Keep Their Edge Longer
Most scraper blades are sheared from steel hardened to Rc 38-42. This makes them fairly easy to file, stone and burnish. The hook, however, wears quickly in hard use. These are sheared from spring steel hardened to a Rc 48-51. Both edges are surface ground to a sharp square 90°.

The prepared edge saves you filing andstoning initially and the extra hardness lets you use the scrapers longer between burnishings. Supplied with edge guards, which you should always replace after use. Comes in a set of 4: .015”, .025”, .035” and .042” thick.

51K07.04 Set 4 Super-Hard $15.95
19K03.01 Triangular Burnisher $9.10

E / The “Blind Nailer” Used To Be A Staple In Every Tool Box
This unique tool functions like a positioning jig. Simply slip the Special Chisel in and tighten. Then place the flat Sole on the wood. You will be able to operate it in a one-handed fashion, using no mallet, as the chisel, which has a “finger-nail” shaped cutting edge, is mushroom shaped to fit comfortably in your palm.

The chisel edge, controlled by the Blind Nailer, will lift a perfect small chip. Hammer your nail in and then glue the chip back in place. Result: No nail head hole. You can work very quickly.

44K01.03 Nailer Plus Chisel $14.95

F / VIX Bits Save Hours When Drilling Screw Holes For Hardware
Includes hinges, door butts, window pulls and latches, door latch bolts, strike plates and many others. The hardened Retractable Guide (includes depth stop) recesses as you drill, ensuring that the hole is accurately centered — every time. Fits any drill. 2 sizes: 3/8” for #5 and #6 screws, ¾” for #8, #9 and #10 screws.

66K07.03 Both Sizes $13.95

Garrett Wade Co., Inc.
161 Avenue of the Americas
New York, NY 10013 Dept. 635
Call Toll Free 800-221-2942
(NY 212-807-1757 No Collect Calls Please)

Please send me these Garrett Wade tools and include a FREE 1990 Catalog with my order. (Prices good until August 31, 1990)

Name:
Address:
City:
State:
Zip:

❏ Check or Money Order
❏ Visa
❏ MasterCard
❏ American Express

Expiration Date:

Stock # Qty. Description Price Total

GW 1 1990 Catalog (free with order) $4 00

New York Residents add applicable Sales Tax
Shipping & Handling: $2.50 for order total up to $10
$4.10 for $10.01 to $20
$4.95 for $20.01 to $50
$6.25 for over $50

Sub Total
Sales Tax
Shipping
Grand Total

(Prices good until August 31, 1990)
CONTROL THE SPEED OF YOUR ROUTER - ROUT AT THE SPEED THAT GIVES THE BEST RESULTS WITH THE WOOD AND BIT YOU ARE USING!

FEATURES:
- Speed Adjustable from Full Speed to 0 RPM
- Full Horsepower and Torque at All Speeds
- Go Back and Forth from Any Pre-Set Speed to Full Speed at the Flip of a Switch
- Works with All Routers 3 HP or Less
- 120V 15 Amp
- Gives Your Router a Feature Only Available on Routers Costing Hundreds of Dollars!
- Less Tear Out
- Feed at Comfortable Rate
- Better, Safer Results with Large Diameter Bits
- Less Wear on Bits
- Less Noise and Softer Starts at Lower Speeds
- EASY TO USE - Simply plug in Speed Control and plug your router into the Speed Control - turn dial for best results. (Speed Control has a clip that can be worn on your belt or hung on wall or left loose.)
- Reduces speed electronically without reducing torque; electronic feed-back maintains speed by increasing voltage to motor as load increases.

CARBIDE TIPPED ROUTER BITS PROFESSIONAL PRODUCTION QUALITY GUARANTEED

WHEN ORDERING ANY THREE OR MORE DEDUCT $1.00 EACH. ALL PRICES ARE POSTAGE PAID

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>BEST CUT BEST PRICE</th>
<th>DESCRIPTION</th>
<th>ANGLE/DEPTH/RADIUS</th>
<th>LARGE DIA.</th>
<th>CUTTING LENGTH</th>
<th>SHANK SIZE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1430</td>
<td>11/32&quot; Classical</td>
<td>11/32&quot;</td>
<td>1/4&quot;</td>
<td>1&quot;</td>
<td>$25.00</td>
<td>1/4&quot;</td>
<td>$25.00</td>
</tr>
<tr>
<td>1491</td>
<td>11/32&quot; Classical</td>
<td>11/32&quot;</td>
<td>1/4&quot;</td>
<td>1&quot;</td>
<td>$25.00</td>
<td>1/4&quot;</td>
<td>$25.00</td>
</tr>
<tr>
<td>1592</td>
<td>11/32&quot; Classical</td>
<td>11/32&quot;</td>
<td>1/4&quot;</td>
<td>1&quot;</td>
<td>$25.00</td>
<td>1/4&quot;</td>
<td>$25.00</td>
</tr>
<tr>
<td>H32</td>
<td>1/4&quot; Roman Ogee</td>
<td>1/4&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$17.00</td>
<td>1/4&quot; R</td>
<td>$17.00</td>
</tr>
<tr>
<td>H33</td>
<td>1/4&quot; Roman Ogee</td>
<td>1/4&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$17.00</td>
<td>1/4&quot; R</td>
<td>$17.00</td>
</tr>
<tr>
<td>H51</td>
<td>1/4&quot; Roman Ogee</td>
<td>1/4&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$21.00</td>
<td>1/4&quot; R</td>
<td>$21.00</td>
</tr>
<tr>
<td>H430</td>
<td>1/4&quot; Cove</td>
<td>1/4&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$12.00</td>
<td>1/4&quot; R</td>
<td>$12.00</td>
</tr>
<tr>
<td>H431</td>
<td>1/4&quot; Cove</td>
<td>1/4&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$13.00</td>
<td>1/4&quot; R</td>
<td>$13.00</td>
</tr>
<tr>
<td>H432</td>
<td>1/4&quot; Cove</td>
<td>1/4&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$14.00</td>
<td>1/4&quot; R</td>
<td>$14.00</td>
</tr>
<tr>
<td>H433</td>
<td>1/4&quot; Cove</td>
<td>1/4&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$15.00</td>
<td>1/4&quot; R</td>
<td>$15.00</td>
</tr>
<tr>
<td>H434</td>
<td>1/4&quot; Cove</td>
<td>1/4&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$28.00</td>
<td>1/4&quot; R</td>
<td>$28.00</td>
</tr>
<tr>
<td>H530</td>
<td>1/2&quot; Round Over</td>
<td>1/2&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$11.00</td>
<td>1/4&quot; R</td>
<td>$11.00</td>
</tr>
<tr>
<td>H531</td>
<td>1/2&quot; Round Over</td>
<td>1/2&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$11.00</td>
<td>1/4&quot; R</td>
<td>$11.00</td>
</tr>
<tr>
<td>H532</td>
<td>1/2&quot; Round Over</td>
<td>1/2&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$12.00</td>
<td>1/4&quot; R</td>
<td>$12.00</td>
</tr>
<tr>
<td>H534</td>
<td>1/2&quot; Round Over</td>
<td>1/2&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$15.00</td>
<td>1/4&quot; R</td>
<td>$15.00</td>
</tr>
<tr>
<td>H550</td>
<td>1/2&quot; Round Over</td>
<td>1/2&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$17.00</td>
<td>1/4&quot; R</td>
<td>$17.00</td>
</tr>
<tr>
<td>H551</td>
<td>1/2&quot; Round Over</td>
<td>1/2&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$21.00</td>
<td>1/4&quot; R</td>
<td>$21.00</td>
</tr>
<tr>
<td>H567</td>
<td>1&quot; Round Over</td>
<td>1&quot; R</td>
<td>1/4&quot;</td>
<td>1/4&quot; R</td>
<td>$33.00</td>
<td>1/4&quot; R</td>
<td>$33.00</td>
</tr>
<tr>
<td>H370</td>
<td>5/32&quot; Rebating</td>
<td>1/16&quot; Deep</td>
<td>1/16&quot; Deep</td>
<td>1/16&quot;</td>
<td>$14.00</td>
<td>1/16&quot;</td>
<td>$14.00</td>
</tr>
<tr>
<td>H371</td>
<td>5/32&quot; Rebating</td>
<td>1/16&quot; Deep</td>
<td>1/16&quot; Deep</td>
<td>1/16&quot;</td>
<td>$14.00</td>
<td>1/16&quot;</td>
<td>$14.00</td>
</tr>
<tr>
<td>H456</td>
<td>5/32&quot; Slot Cutter</td>
<td>1/16&quot; Deep</td>
<td>1/16&quot; Deep</td>
<td>1/16&quot;</td>
<td>$14.00</td>
<td>1/16&quot;</td>
<td>$14.00</td>
</tr>
<tr>
<td>H468</td>
<td>5/32&quot; Slot Cutter</td>
<td>1/16&quot; Deep</td>
<td>1/16&quot; Deep</td>
<td>1/16&quot;</td>
<td>$14.00</td>
<td>1/16&quot;</td>
<td>$14.00</td>
</tr>
<tr>
<td>H403</td>
<td>1/8&quot; Dovetail</td>
<td>9 degree</td>
<td>3/8&quot;</td>
<td>3/8&quot;</td>
<td>$7.50</td>
<td>3/8&quot;</td>
<td>$7.50</td>
</tr>
<tr>
<td>H405</td>
<td>1/8&quot; Dovetail</td>
<td>14 degree</td>
<td>3/8&quot;</td>
<td>3/8&quot;</td>
<td>$8.50</td>
<td>3/8&quot;</td>
<td>$8.50</td>
</tr>
<tr>
<td>H406</td>
<td>1/8&quot; Dovetail</td>
<td>18 degree</td>
<td>3/8&quot;</td>
<td>3/8&quot;</td>
<td>$10.50</td>
<td>3/8&quot;</td>
<td>$10.50</td>
</tr>
<tr>
<td>H409</td>
<td>1/8&quot; Dovetail</td>
<td>18 degree</td>
<td>3/8&quot;</td>
<td>3/8&quot;</td>
<td>$10.50</td>
<td>3/8&quot;</td>
<td>$10.50</td>
</tr>
<tr>
<td>H422</td>
<td>1/8&quot; Dovetail</td>
<td>8 degree</td>
<td>1/8&quot;</td>
<td>1/8&quot;</td>
<td>$12.00</td>
<td>1/8&quot;</td>
<td>$12.00</td>
</tr>
<tr>
<td>H424</td>
<td>1/8&quot; Dovetail</td>
<td>8 degree</td>
<td>Leight</td>
<td>1/8&quot;</td>
<td>$12.00</td>
<td>1/8&quot;</td>
<td>$12.00</td>
</tr>
<tr>
<td>H428</td>
<td>11/32&quot; Dovetail</td>
<td>8 degree</td>
<td>1/8&quot;</td>
<td>1/8&quot;</td>
<td>$17.50</td>
<td>1/8&quot;</td>
<td>$17.50</td>
</tr>
</tbody>
</table>

New 24-page catalogue now available, featuring hundreds of bits.

MAKE BEAUTIFUL RAISED PANEL DOORS . . . WITH YOUR 1/4" ROUTER!

Professional production quality bit makes it quick and easy to produce matching rails and stiles — the panel raising bit with ball bearing guide makes the raised panel perfect every time.

Regular value Over $150.00
SALE PRICE $69.95 FOR COMPLETE SET
ORDER ITEM # 554 for 1/4" Shank Set (Includes all bits shown)

RAISED PANEL BIT
SPLITTED WITH BALL BEARING
1/4" Shank
CARBIDE TIPPED
2" Large Diameter
CARBIDE TIPPED 1/4" Shank supplied with Ball Bearing
1/4" Shank
RAISED PANEL RAIL and STILE BIT
For matching rails and stiles in raised panel doors, etc. Works with stock from 1 1/8" to 7/8" thick

To order by Master Charge or Visa Call Toll Free, 7 Day - 24 Hour Order Service
1-800-533-9298 or send check to: MLCS Ltd., P.O. Box 4053DF, Rydal, PA 19046

SET ALSO AVAILABLE IN 1/2" SHANK - $79.95 - Item #682
TIP: To check the trueness of your miter gauge, set it for a square cut and crosscut a short length of 6"-wide board, holding it snugly against the miter gauge as shown in drawing 1. We exaggerated an out-of-square cut for clarity.

Now, flip the board end for end and make a similar cut. If the gauge is set correctly, both edges of the board will be the same length ("A" and "B" shown in drawing 2 would be equal). A difference of 1/8" between "A" and "B" on a 6" wide board indicates the angle is 0.3 degrees out of square. The wider the board you use, the more accurate the measurement becomes. Correct misalignment by resetting the gauge, adjusting the pointer, and making new crosscuts to check the adjustment.

—F.V. Chmielowiec, Boulder, Colo.
TIPS FROM YOUR SHOP (AND OURS)

Continued from page 21

A GADGET FOR SANDING CONCAVE SURFACES
Sanding wooden moldings on furniture and other concave surfaces with hand-held sandpaper often results in skinned fingers and a bit-and-miss smoothing job.

TIP: Gather up an old door hinge, a short length of the appropriate-diameter dowel, a piece of sandpaper for the desired grit, and a couple of round-head machine screws with wing nuts. Cut the dowel to the correct length and the sandpaper to the appropriate dimensions and assemble as shown below: Cutting additional dowel pieces of varying diameters gives your handy little sander extra flexibility.

—Fred A. Race, Euclid, Ohio

MORE SUPER TIPS FROM TOP WOODWORKERS
You'll find more shop tips in this issue of WOOD magazine:

• How do you bandsaw the head of a bird or animal to a rough form prior to rounding and smoothing? Try our procedure on page 45.

• You can try your hand at several methods to make usable stock from scrap. See the article on working small beginning on page 50.

• We've found a way to darken grooves in wood turnings for contrasting accents. See page 58.

• If you would like to fashion your own turning tools, see page 58 for a source of good steel.

• See the basket project on page 78 for a way to safely cut thin strips on the side of a tablesaw blade opposite the fence. ♦
Experience the joys of woodworking the Shopsmith way!

Imagine the gleam in your daughter’s eyes the first time she sees the rocking horse you made just for her. Or imagine how much pleasure your family would get from a beautiful backyard deck, a more efficient kitchen or custom-built shelves and bookcases.

That’s what the joy of woodworking is all about! It’s a hobby of the imagination as well as the hands. Starting with nothing more than an idea, you can create projects that express your individuality. You solve problems, learn new skills and save money in the process. And it’s fun!

*Shopsmith® helps you get the most out of your woodworking.*

Whether you’re a beginner or a seasoned craftsman, Shopsmith can help you experience those joys with the MARK V home shop system. It gives you a table saw, drill press, horizontal boring machine, disc sander and lathe—all in a single, affordable unit that requires no more storage space than a bicycle.

In fact, with the MARK V at your fingertips you can turn any spare corner of your basement or garage into a really complete home shop. And because Shopsmith is the original multi-purpose woodworking system, we offer you the most complete line of accessories in the industry and all the support you need to be a success.

**Discover the Shopsmith difference!**

As a MARK V owner, you receive complete operating instructions—plus you can learn more about woodworking through our classes, seminars, educational video tapes and catalogs as well as our special magazine for MARK V owners, “Hands On”.

You can also call us Toll-Free for the answers to all your woodworking questions. And you’ll have the confidence of dealing directly with Shopsmith, either by mail, Toll-Free phone or at one of our growing network of Shopsmith Stores.

---

**Ask for a FREE Information Kit!**

To find out more about woodworking with the Shopsmith MARK V, call Toll-Free or mail the coupon below. We’ll rush you a FREE Information Kit in your choice of Full Color Brochure or VHS Videocassette and Color Brochure. There’s no obligation, so act NOW!

**Yes! I’d like to know more about the “joys of woodworking” with the Shopsmith MARK V. Please send me:**

- [ ] FREE Color Brochure on the Shopsmith MARK V. or
- [ ] FREE VHS Videocassette and Color Brochure. (3783)

Name ____________________________
Address __________________________
City ____________________________ State ______ Zip ______

- [ ] I currently own Shopsmith Power Equipment.

Send to: Shopsmith, Inc., 3931 Image Drive, Dayton, OH 45414-2591

© 1988, Shopsmith, Inc.
Shopsmith® is a registered trademark of Shopsmith, Inc.
<table>
<thead>
<tr>
<th>FOR THE ROUTER!</th>
<th>FOR THE SHAPER!</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Double-Fluted</strong></td>
<td><strong>Roundover</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>D</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY-4</td>
<td>1/4</td>
<td>$5</td>
</tr>
<tr>
<td>SY-4</td>
<td>5/16</td>
<td>$6</td>
</tr>
<tr>
<td>SY-4</td>
<td>3/8</td>
<td>$9</td>
</tr>
<tr>
<td>SY-12</td>
<td>1/2</td>
<td>$8</td>
</tr>
<tr>
<td>SY-16</td>
<td>5/8</td>
<td>$10</td>
</tr>
<tr>
<td>SY-19</td>
<td>3/4</td>
<td>$10</td>
</tr>
<tr>
<td>SY-25</td>
<td>1</td>
<td>$12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>A</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>S502Y</td>
<td>1/16R</td>
<td>$11</td>
</tr>
<tr>
<td>S530Y</td>
<td>1/8R</td>
<td>$11</td>
</tr>
<tr>
<td>S530Y</td>
<td>3/16R</td>
<td>$11</td>
</tr>
<tr>
<td>S530Y</td>
<td>1/4R</td>
<td>$12</td>
</tr>
<tr>
<td>S510Y</td>
<td>5/16R</td>
<td>$13</td>
</tr>
<tr>
<td>S512Y</td>
<td>3/8R</td>
<td>$15</td>
</tr>
<tr>
<td>S518Y</td>
<td>1/2R</td>
<td>$16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>A</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>S564Y</td>
<td>1/2</td>
<td>$9</td>
</tr>
<tr>
<td>S526Y</td>
<td>1/2</td>
<td>$9</td>
</tr>
<tr>
<td>S526/2</td>
<td>1/2</td>
<td>$10</td>
</tr>
</tbody>
</table>

| **Core Box** | **Flute** |

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>A</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>S406</td>
<td>1/4</td>
<td>$10</td>
</tr>
<tr>
<td>S413</td>
<td>3/8</td>
<td>$9</td>
</tr>
<tr>
<td>S416</td>
<td>1/2</td>
<td>$12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>A</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>S502Y</td>
<td>1/16R</td>
<td>$11</td>
</tr>
<tr>
<td>S530Y</td>
<td>1/8R</td>
<td>$11</td>
</tr>
<tr>
<td>S530Y</td>
<td>3/16R</td>
<td>$11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>A</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>S564Y</td>
<td>1/2</td>
<td>$9</td>
</tr>
<tr>
<td>S526Y</td>
<td>1/2</td>
<td>$9</td>
</tr>
<tr>
<td>S526/2</td>
<td>1/2</td>
<td>$10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>A</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>S564Y</td>
<td>1/2</td>
<td>$9</td>
</tr>
<tr>
<td>S526Y</td>
<td>1/2</td>
<td>$9</td>
</tr>
<tr>
<td>S526/2</td>
<td>1/2</td>
<td>$10</td>
</tr>
</tbody>
</table>

| **Bead** |

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>A</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY-1212-1</td>
<td>1/4</td>
<td>$24.95</td>
</tr>
<tr>
<td>SY-1212-2</td>
<td>3/8</td>
<td>$26.95</td>
</tr>
<tr>
<td>SY-1212-3</td>
<td>1/2</td>
<td>$28.95</td>
</tr>
</tbody>
</table>

| **Corner Round** |

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>A</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY-1223-1</td>
<td>1/4</td>
<td>$24.95</td>
</tr>
<tr>
<td>SY-1223-3</td>
<td>1/2</td>
<td>$28.95</td>
</tr>
</tbody>
</table>

| **Lagecar Tipped Shaper Cutter Panel Raiser** |

<table>
<thead>
<tr>
<th>3 WING, 5 PROFILES, 3MM THICK CARBIDE</th>
<th>4.5/8&quot; O.D. with 3/4&quot; BORE (1/2&quot; BUSHING)</th>
<th>1/2&quot; O.D. with 1/4&quot; BORE (1 BUSHING)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$69.95</strong></td>
<td><strong>3 Blade</strong></td>
<td><strong>5 Blade</strong></td>
</tr>
</tbody>
</table>

| **Cove Bits** |

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>A</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY702Y</td>
<td>1/8</td>
<td>$12</td>
</tr>
<tr>
<td>SY704Y</td>
<td>1/8</td>
<td>$12</td>
</tr>
<tr>
<td>SY706Y</td>
<td>3/16</td>
<td>$12</td>
</tr>
<tr>
<td>SY708Y</td>
<td>3/16</td>
<td>$12</td>
</tr>
<tr>
<td>SY708Y</td>
<td>1/2</td>
<td>$12</td>
</tr>
<tr>
<td>SY712Y</td>
<td>1/2</td>
<td>$12</td>
</tr>
<tr>
<td>SY712Y</td>
<td>3/8</td>
<td>$15</td>
</tr>
<tr>
<td>SY712Y</td>
<td>5/16</td>
<td>$14</td>
</tr>
</tbody>
</table>

| **Slot Cutter - 4 Flutes** |

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>A</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY702Y</td>
<td>1/8</td>
<td>$20</td>
</tr>
<tr>
<td>SY704Y</td>
<td>1/8</td>
<td>$20</td>
</tr>
<tr>
<td>SY706Y</td>
<td>3/16</td>
<td>$22</td>
</tr>
<tr>
<td>SY708Y</td>
<td>3/16</td>
<td>$22</td>
</tr>
</tbody>
</table>

| **Roman Ogee** |

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>A</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>S507Y</td>
<td>1/4</td>
<td>$18</td>
</tr>
<tr>
<td>S507Y</td>
<td>1/4</td>
<td>$16</td>
</tr>
<tr>
<td>S507Y</td>
<td>1/4</td>
<td>$16</td>
</tr>
</tbody>
</table>

| **THE ROUTER HANDBOOK** |

<table>
<thead>
<tr>
<th>13 Great Cabinet Sets including these popular Profiles:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SY 1260</strong></td>
</tr>
</tbody>
</table>

| **NEW Concept In Router Bit** |

**Cabinet Door Construction!**

<table>
<thead>
<tr>
<th>1(1/4&quot; Bore with 1&quot;Bushing)</th>
<th>ONLY $249.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY 1260</td>
<td>SY 1283</td>
</tr>
</tbody>
</table>

| **CALL TOLL FREE: 1-800-235-0272** |

**7 am - 5 pm Pacific Time/Monday-Friday**
On The Anniversary Of Three Centuries Of Woodworking Writing

"Began Jan. 1, 1677. And intended to be Monthly continued."

Joseph Moxon

And so began the revelation of the woodworker's secrets that, in part, became Englishman Joseph Moxon's Mechanick Exercises or The Doctrine of Handy-Works. The volume not only was the first real how-to book, it was also the first book published in installments. It was the predecessor to today's how-to magazines.

All who enjoy reading, and writing, about woodworking owe Joseph Moxon. His influence lies like DNA at the heart of all how-to writing. Publishers have adapted his 300-page book for centuries, but, like Shakespeare and home cooking, nothing beats the original. Moxon is the wood-writer's insightful an-cestor, and his long out-of-print work rates acquaintance.

FROM TOOL BUYNASHIPS TO SHOP TIPS

Keeping the horse ahead of the cart, Moxon began his book with a discourse on blacksmithing, figuring that woodworkers depended on the smith for their tools. He then began the woodworking section by examining the tools, telling how to "use them with more ease and delight, and make both quicker and nearer Work with them."

The woodworker of Moxon's day could purchase a variety of sophisticated hand and foot-powered tools. But, as ever, the buyer had to be careful. Many of the handsaws of his time were made from hammer-hardened iron rather than of fine steel. The hammering and grinding of the iron produced saws of uneven quality, and Moxon—in true buymanship fashion—told his readers how to avoid getting stuck with a bad one. This was three centuries ago, but watch anyone shopping for saws at the hardware store today, and sooner or later, you will see them perform Moxon's final test. They will flex the saw in their hands, as have millions before them, knowing that "if it bend into a regular bow all the way, and be stiff, the Blade is good."

No woodworking book or magazine would be complete without its share of shop tips. When he gets around to hammers, editor Moxon

Continued on page 26

Like Having a Lumberyard Right In Your Shop!

NOW! Plane, Mold and Sand with Infinitely Variable Power-Feed!
(Choose from 12", 18" and 25" Models)

Just a twist of the dial gives you from 70 to over 1000 cuts per inch . . . you can sail through even the toughest oak at higher speeds, or slow down to surface stock that is virtually impossible on any other machine. Slower speeds turn out glass smooth molding . . . no sanding needed!

FREE 30-DAY TRIAL

Now choose from three powerful models! Woodmaster introduces the first 18" and 25" Planer/Molders . . . with all the features that have made the 12" model the most versatile Planer/Molder on the market! Send for Free Facts today!

Woodmaster's Quick-Change Molding Head lets you create custom moldings from any stock. Choose from over 250 standard trim and picture frame patterns . . . or design your own!

Power-fed sanding speeds production and improves the quality of your work. No more waves or cross grain scratches. Separate Sanding head installs in just minutes.

WOODMASTER TOOLS, INC., DEPT PW33 · 2908 Oak Street KANSAS CITY, MO 64108 · Or Phone 1-800-539-4200 Ext. PW33

□ YES! Please rush me your FREE Information Kit plus details on your 30-DAY FREE TRIAL GUARANTEE!

NAME ________________
ADDRESS ________________
CITY ________________ STATE ________________ ZIP ________________
digresses from shop tip to shop trick: “A little trick that is sometimes used among some (that would be thought cunning Carpenters) is to privately touch the Head of the Nail with a little Ear-wax, and then lay a Wager with a stranger to the Trick that he shall not drive that Nail up to the Head with so many blows. The stranger thinks that he shall assuredly win, but does assuredly lose; for the Hammer no sooner touches the Head of the Nail, but instead of entering the Wood it flies away, notwithstanding his utmost care in striking it down-right.”

Most of Mechanick Exercises, though, bestows solid instruction on basic technique. Moxon told his readers how to accurately dimension stock and cut a mortise-and-tenon joint. The pioneer editor and publisher covered basic woodworking, beginning with building a lathe and ending with a finish of beeswax pressed against the spinning work. Then, setting “a gloss on it with a very dry Wollen rag, lightly smear’d with Sallad Oyl.”

KNOWING YOUR CRAFT, AND YOUR READERS
Moxon knew what still makes home craftsmen tick. He wrote shamelessly about building things that have no purpose except to “make others that know not the way how it is done Admire their skill.” One such feat was turning a free-moving ivory cube within an ivory sphere. He mentioned that the reader must make the cube large and the hole in the sphere small “to make this Thing more Admireable to the ignorant Spectator.”

Projects aside, the first how-to writer knew the limits of book-learning. “This Craft of the Hand must be acquired with some continued Use and Practice, which will better inform your Judgement what Errors you may be subject to commit, than many words.”

Moxon’s words continue, however, to this day and beyond. On this, the occasion of the fifth anniversary of WOOD magazine, we’d like to tip our hats to Joseph Moxon. After all, he knew 300 years ago what we’re attempting to do: To show you, our woodworking reader, “How pleasant and healthy this their Diversion is.”

For information on the availability of a reprint of Joseph Moxon’s book, write: The Early American Industries Assoc., c/o John S. Keabian, 2 Winding Lane, Scarsdale, NY 10583.

By Roy Underhill
Master housewright at Colonial Williamsburg and host of the popular PBS series The Woodwright’s Shop, Underhill is also an author and lecturer.

Illustration: Jim Stevenson
New Feet-Inch Calculator Solves Woodworking and Home Building Problems—In Seconds!

Amazing Pocket Handyman™ Lets You Work Like a Pro for Only $39.95!

Now you can solve all your woodworking and do-it-yourself problems right in feet, inches and fractions—with the new Pocket Handyman feet-inch calculator.

This new amazing calculator will save you hours upon hours of time on any project dealing with dimensions. And best of all, it puts an end to costly errors caused by inaccurate conversions using charts, tables or regular calculators.

**Adds, Subtracts, Multiplies and Divides in Feet, Inches and ANY Fraction**

You never need to convert to 10ths or 100ths because the Pocket Handyman works with all dimensions just like you do.

Plus, it lets you work with any fraction—\(\frac{1}{16}, \frac{1}{8}, \frac{1}{16}, \frac{3}{8}, \frac{3}{16}, \frac{31}{32}, \text{even down to \(\frac{1}{64}\)}, or no fraction at all.

You enter a feet-inch-fraction number just as you’d say it—7 [Feet], 6 [Inches], \(\frac{11}{16}\), 2. What’s more, you can mix all fractions \(\frac{1}{8} + \frac{3}{32} = \frac{13}{32}\) and all formats (Feet + Inches + Yards + Meters) in your problems.

In addition, you can easily figure square and cubic measurements instantly. Simply multiply your dimensions together and the Pocket Handyman does the rest.

**Converts Between All Dimension Formats**

You can also convert any displayed measurement directly to or from any of the following formats: Feet-Inch Fraction, Decimal Feet (10ths, 100ths), Inches, Yards and Meters.

It also converts square and cubic.

Plus the Pocket Handyman actually displays the format of your answer right on the large LCD read-out—"Square Feet," "Cubic Yards," etc.

**Comes Complete**

The Pocket Handyman also works as a standard math calculator with Memory (which also handles dimensions) and battery-saving Auto Shut-Off.

And the Pocket Handyman is com-

---

Use the new Pocket Handyman™ to solve all these problems:

- **Dimension Checks**
- **Furniture Making**
- **Roofing Projects**
- **Cement & Concrete (Volume)**
- **Cabinets & Woodworking**
- **Estimating All Materials**
- **Spacing Problems**
- **Carpeting (Sq. Yards)**
- **Stairs & Decks**
- **Wall Paper/Paint (Area)**
- **Brickwork**
- **Foundations**
- **Tile Flooring**
- **Skylight Installation**
- **Windows & Other Glass**
- **And much, much more**

To order your Pocket Handyman at the discounted price of just $39.95, or for $74.95, complete and return the coupon below to: Calculated Industries, 22720 Savi Ranch Pkwy., Yorba Linda, CA 92686. Or Call Toll-Free 24 hours every day:

1-800-854-8075

And if for any reason you're not completely satisfied with your new Pocket Handyman, simply send it back within 30 days for a full refund. So you can't go wrong! Start saving time and put an end to costly errors, order your Pocket Handyman feet-inch calculator now!

---

**Clip & Mail Today!**

**Calculated Industries, Inc.**
22720 Savi Ranch Parkway
Yorba Linda, CA 92686

| Rush the following order With my FREE Leather Case: |
|---|---|---|---|
| Qty. | Pocket Handyman | $39.95 | $3.95 each calc. |
| 2 Pkts. Handyman | $74.95 | $5.45 each pair |
| Black Leather Case | Case for $10.00, initials $1.50 ea. |
| Gold Initials | BOTH FREE with calculator purchase |

*Add $1.50 shipping, for ea. additional unit ordered.*

**In CA add 6% tax.**

**TOTAL $**

**Name**

**Address**

**City/State/Zip**

[ ] Check [ ] VISA [ ] MasterCard [ ] Am/Exp

**Account #**

**Sign Here**

[ ]

© Calculated Industries 1989. All rights reserved.
Announcing the winners of the 1989 WOOD® Magazine Design-a-Toy™ Competition.

Sometimes, even the people who don’t win are left feeling very good. That’s the way we look at the results of the 1989 Design-a-Toy™ competition. You’re all winners.

Every WOOD® magazine reader who submitted a toy should know that some kid somewhere is happier for your having cared. And, for your having applied your terrific skill in woodworking to create that much-loved toy.

At WOOD magazine, we’re grateful to all the generous people who joined together to make Design-a-Toy™ a great success: The Toys for Tots program of the U.S. Marine Corps Reserve, the many manufacturers who provided prizes, our judges, Homer Formby; Major Bruce Butler of the U.S. Marine Corps Reserve; Jim Downing, Design Editor, WOOD; Roy Underhill of The Woodwright's Shop on PBS-TV; and Phil Vanderploeg, President, Toys and Joys.

It’s been great.

DESIGN-A-TOY PARTICIPATING SPONSORS
Total Shop • Black & Decker • Foley Belsaw Company • Delta International Machinery Advanced Machinery Imports, Ltd. • Hitachi Power Tools USA, Ltd. • Makita USA, Inc. • Garrett Wade Company, Inc. • Thompson & Formby, Inc. • Grolier Book Clubs, Inc. • Woodmaster Inc., Inc. • Freud, Inc. • Graffix Imports, Inc. • Skil Corporation • Bosch Power Tools Corporation • DML, Inc. • Dremel • Minwax Company, Inc. • Shopsmith, Inc. • Porter-Cable Corporation • Ryobi America Corporation • AEG Power Tool Corporation • Fisher Hill Products
RIPPING GOOD NEWS
From the cutting edge of technology comes Freud's new thin-kerf blades for crosscutting and ripping. Computer-designed, laser-manufactured, Teflon-coated, carbide-tipped, 25 percent thinner than normal blades; these wood-gobblers have it all. Crosscuts leave end grain so smooth it has a sheen, and the rip blade requires less energy than full-bodied carbide-tipped blades, so it's less likely to bind and burn on thick stock. I easily ripped through 2"-oak, leaving only a light scoring. Also, you won't suffer the high-pitch noise so common with crosscut blades. The body thinness limits stock thickness to about 2"—beyond that the blade will wobble some. The rip blade is 25 percent thinner than normal; crosscut, 28 percent thinner.

—Tested by C.J. Gatzke, WOOD's magazine's art director

Freud thin-kerf crosscut and ripping blades, available in 8", 9", and 10" sizes from hardware stores and mail-order outlets nationwide at suggested retail prices of $51.90-$59.90 for the three sizes of ripping blades. Crosscut blades range from $62.90 to $73.90.

WORLD PARTS FROM MIDWEST DOWEL WORKS

Compare Our Low Prices!

<table>
<thead>
<tr>
<th>Qty</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/32&quot; x 3/16&quot; Standard Dowels</td>
<td>$21/100</td>
</tr>
<tr>
<td>3/32&quot; x 3/16&quot; Oak Dowels</td>
<td>$15/100</td>
</tr>
<tr>
<td>3/32&quot; Maple Buttons</td>
<td>$2.15/100</td>
</tr>
<tr>
<td>1/8&quot; Maple Buttons</td>
<td>$2.15/100</td>
</tr>
<tr>
<td>1-1/2&quot; Maple Spindles</td>
<td>$9.10/100</td>
</tr>
<tr>
<td>2-1/8&quot; Maple Spindles</td>
<td>$18.10/100</td>
</tr>
</tbody>
</table>

ORDER NOW

<table>
<thead>
<tr>
<th>MC/Visa</th>
<th>Check Enclosed</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3.00</td>
<td>$3.00</td>
</tr>
</tbody>
</table>

Midwest Dowel Works
4631 Hutchison Road
Cincinnati, Ohio 45248
(513) 574-8488

Call Toll Free: 800-447-7770 - VISA/MC/AMEX
Dollar Trading Corp. (Est. 1923); P.O. Box 8430; Grand Rapids, MI 49501
Wht. W/No Sales Tax to M., CT, NJ, NY, PA. NO HASSLE, 5-DAY MONEY BACK GUARANTEE
Make Your Router More Versatile!
Table Mount Your Router like Rick and Bob Rosendahl, The Router Experts.

Table Mount System includes:
1 - Half Fold Bench/bit storage tray (HF060)
1 - 11×11 Router Base Plate (BP010 or BP192)*
1 - Safety Pin (SGP010) 1 - Table Fence (FP016)
1 - Brass Insert (ISO26) 1 - Brass Ring Nut (GN02)
FREE BONUS Storage Bench Plan (P021)
* Our standard BP010 will be sent unless you state the make and model of your Router.

RETAIL PRICE $230.00 U.S.

Special $199.95 U.S.
ADD $10.00 for U.P.S. Shipping WHILE QUANTITIES LAST!!

To order by Mastercard or Visa call toll free 1-800-665-0252
or mail to:
Oak Park Enterprises Ltd., P.O. Box 13, Stn. A, Winnipeg, Manitoba, Can. R3K 1Z9
A HANDY JIG FOR FAST, ACCURATE KNIFE-SETTING

Accurately replacing jointer knives can be a real chore, but this jig helped me get the job done with precision in 10 minutes. Using permanent Alnico magnets, the jig holds the knife in alignment with the outfeed table for resetting. It will even work on nonferrous metal tables on jointers up to 10" wide, except for the Inca jointer/planer.

—Tested by Marlen Kemmet, WOOD magazine's how-to editor

Magnetic jointer knife-setting jig, item no. 20J04.01, $54.90 ppd., from Garrett Wade, Dept. WD, 161 Avenue of the Americas, New York, NY 10013. Call 800-221-2942.

POWER LIFTING

I've had my share of sore backs from lifting sheet goods, so I jumped at the chance of testing a product that might help with this chore. With the Panel Toter you can easily handle 4 x 8' sheet goods. This tool lets two arms do the work of four by giving you added leverage and balance. I found the Panel Toter durable, and its handle was comfortable to use—two big pluses if you move around a lot of sheet goods.

—Tested by Steve Oswalt

Panel Toter (cat. no. 72975), $14.99 ppd. from Leichtung Workshops, 4944 Commerce Parkway, Cleveland, OH 44128.

INSTANT GRIP WITHOUT GLUE

Mr. Grip, a thin, corrugated metal fastener, provides a simple solution to the age-old problem of loose joints and screws. Just slip one of these inexpensive 1/4" or 3/4" strips into a screw hole or over a loose tenon and apply pressure. I found that the fastener's rough surface supplied an amazingly firm bond.

—Tested by Steve Oswalt

Mr. Grip, available in 4 x 1/4" strips for furniture repair or 2 x 3/4" pieces for stripped screw holes. $5.99 ppd. for each kit from Leichtung Workshops, 4944 Commerce Parkway, Cleveland, OH 44128. Call 800-321-6840 to place orders. Ohio residents call 261-831-2555.

Fun To Make!

DOOR HARPS

Easy to make! Our Door Harps make great gifts that will provide years of enjoyment. Your choice of two pattern booklets—Musical Zoo or Traditional. Each pattern booklet includes 15 full-size patterns with easy, detailed instructions.

"Musical Zoo" Door Harps T720 $6.98
These friendly faces will be right at home in your house! Designs include a Reindeer, Moose, Cat, 2 Cows, 2 Bears, Duck, Fish, Dinosaur, Puppy, Bunny, Pig, Tiger, & a Rooster!

Traditional Door Harps T718 $6.98
These Traditional Patterns include the Tulip, Pear, Colonial, Corkboard, Heart, Bulb, Leaf, Hexagon, Harp, Frying Pan, Oak Leaf, Egg, Star, Note & Bell.

Timbers Woodworking - (916) 581-4141

ORDER FORM

Patterns & Supplies

T720 Musical Zoo Patterns $6.98
T718 Traditional Patterns $6.98
QTY

Note: Each door harp needs 4 Clapper Balls, 8 Tuning Pins and 3' Tuning Wire.

QTY 3/4" Clapper Balls Single .15 ea./100 pkg $9.90

QTY Nickel Steel Tuning Pins Single .35 ea./100 pkg $25.00

QTY Tinmed Steel Tuning Wire 3' .50 /30' .30

QTY "T" Handle Tuning Pin Wrench $9.95

Amount for patterns/supplies

If you live in Calif., 6% Sales Tax

Shipping/Handling Charge $2.50

Total Enclosed

Ship to:

Name______________
Address______________
City_________________
State__________________Zip

Woodworker pattern catalog included FREE with order. $1 alone.

Timbers Woodworking
A76 Lake Forest Road
Carnelian Bay CA 95711

Visa or Mastercard Orders
Phone 24 hours:
916-581-4141

Continued on page 32
NO COUPON NEEDED
Buy America's #1 selling wood glue and get 25% more, free.

Light wood, dark wood, all wood, it's the right glue for super-strength performance. It grabs fast, sets fast and dries to a heat- and water-resistant bond that's perfect for finishing. And right now, it's a great deal. Quantities are limited.

"EARLY BIRD SPECIAL" GIVE YOUR LOVED ONE A LIFETIME OF PLEASURE
Warren Tool Co. Inc. Offers:
Basic Woodcarving Kit
#KB3-W ONLY $19.95 PPD.
Carving Instructions Included

Kit incl: Custom Made American Walnut Handle with interchangeable solid brass jaw, six styles of blades, Plastic Box included, bit (not shown). Blades honed razor sharp for carvers immediate carving pleasure. Carvings NOT included in this special offer. Made in U.S.A.

Complete catalog $1.00, (FREE with order)
Send Check or money order to:
WARREN TOOL CO. INC.
RT. 1 Box 14-A Dept. W Rhinebeck, NY 12572
TEL (914) 876-7817

#KB3-W $19.95 ppd. U.S. ONLY* COD UPS Also Available *Canada and Foreign customers add additional $1.75

PRODUCTS THAT PERFORM
Continued from page 31
A COLORFUL STAIN FOR COUNTRY PROJECTS
Many country projects call for pastel colors, and with Plantation Woodstains, you can add that color accent without resorting to paint. Although developed for industrial uses, Plantation Woodstains have broken into retail markets. Part of their appeal lies in the six colors available—kristy blue, peach, green, dark blue, red, and mauve. Plantation also offers four natural wood shades—walnut, rosewood, dark pine, and honey pine.

The stain applies easily, dries in 5 to 15 minutes, and requires no wiping. It gives off a powerful odor, so be sure to apply it in a well-ventilated area. The lightly toned kristy blue stain I tried performed best on open-grain woods such as pine and oak. It didn’t do as well highlighting texture in harder, nonfigured woods.

—Steve Oswalt

Plantation Woodstains, available in many crafts stores at a $4.59 suggested price for a 4-oz. can. For a list of dealers in your area, write Plantation Woodstains, P.O. Box 1028, Albertville, AL 35950.
MEISEL HARDWARE SPECIALTIES
CHRISTMAS & HALLOWEEN PROJECT PLANS

LIGHT-UP NOSE YARD STAKES PLANS

YARD STAKE PLANS
Large 22" x 34" blueprints are very clear and easy to follow. All drawings are FULL SIZE.

#W420 Santa Plan $3.99/EA.
#W421 Rudolph Plan $3.99/EA.
#W422 Snowman Plan $3.99/EA.
#W423 Pumpkin Plan $3.99/EA.

HARDWARE PARTS KITS
These kits contain the lighting kit, bulb, eyes, screws and pre-cut wood bender only. (Wood, plan and paint are not included.)

#8766 Light-Up Santa Hdw. Kit $5.50/EA.
#8767 Light-Up Reulph Hdw. Kit $5.50/EA.
#8768 Light-Up Snowman Hdw. Kit $5.50/EA.
#8769 Light-Up Pumpkin Hdw. Kit $5.50/EA.

PLYWOOD YARD ORNAMENTS PLANS

Designed to be easy to cut from 1/2" exterior plywood and easy to paint. Our FULL SIZE blueprints are available in a small, medium or large size. Large and medium ornaments mount with 2" x 2" stakes. Small ornaments use kit below.

#W444 Santa Rear View Plan 20" $3.99/EA.
#W445 Santa Rear View Plan 30" $3.99/EA.
#W446 Santa Rear View Plan 40" $3.99/EA.
#W451 Santa Wedged Plan 24" $3.99/EA.
#W452 Santa Wedged Plan 36" $3.99/EA.
#W453 Santa Wedged Plan 48" $3.99/EA.
#W457 Jack-O-Lantern Plan 27" $3.99/EA.
#W458 Jack-O-Lantern Plan 40" $3.99/EA.
#W459 Jack-O-Lantern Plan 54" $3.99/EA.
#W461 Ghost & Grave Plan 20" $3.99/EA.
#W463 Ghost & Grave Plan 30" $3.99/EA.
#W465 Ghost & Grave Plan 40" $3.99/EA.

MOUNTING ROD KIT (for small yard ornaments)
#8675 Mounting Red Kit 1-9 $4.29/KIT
10-19 $3.99/KIT

DOOR HARP PLANS & KITS
WHAT'S A DOOR HARP?
Mounted on the inside of your door, a door harp will welcome your guests with a beautiful musical tune each time the door is opened. You'll find it easy to build these door harps in your shop using only standard 3/4" stock and our special Hardware Parts Kits.

FULL SIZE PLANS

DOOR HARP PLANS

#W426 Santa Plan $3.99/EA.
#W427 Rudy Plan $3.99/EA.
#W428 Angel Plan $3.99/EA.
#W431 Jack-O-Lantern Plan $3.99/EA.
#W430 Skull Plan $3.99/EA.
#W432 Frankenstein Plan $3.99/EA.

HARDWARE PARTS KITS
These kits contain the hardware to get you started—special high resonance plywood, tuning pins, clapper balls, music wire and plastic eyes. You need to supply some 3/4" stock, and the plan is not included with kit, order separately above.

#8780 Santa Hdw. Kit $6.95/EA.
#8781 Rudy Hdw. Kit $7.50/EA.
#8782 Angel Hdw. Kit $7.95/EA.
#8754 Jack-O-Lantern Hdw. Kit $7.25/EA.
#8784 Skull Hdw. Kit $7.50/EA.
#8786 Frankenstein Hdw. Kit $7.95/EA.

MUSICAL CHARACTERS

Push the button and the music box plays a tune. Order FULL SIZE plans and Hardware Parts Kit below.

MUSICAL CHARACTERS PLANS

#W287 Musical Rudy Plan $2.75/EA.
#W438 Musical Santa Plan $2.75/EA.
#W438 Musical Mouse Plan $2.75/EA.
#W441 Musical Skull Plan $2.75/EA.

HARDWARE PARTS KIT
Wood not included with kit.
#7906 Music Rudy Hdw. Kit $4.78/EA.
#8840 Music Santa Hdw. Kit $4.78/EA.
#8841 Music Mouse Hdw. Kit $4.78/EA.
#8843 Music Skull Hdw. Kit $4.78/EA.

TISSUE BOX HOLDER PLANS

These cute animals hold a standard square tissue box. Easy to make from 1/2" plywood. Available in Bossy the Cow or Rudolph the Reindeer.

#W443 Tissue Box Bossy Plan $3.99/EA.
#W444 Tissue Box Rudy Plan $3.99/EA.

TISSUE BOX HARDWARE KITS
Includes the eyes, nose and balls only. (Wood, paint and project plan are not included.)

#8621 Small Bossy Hdw. Kit 10 or more $1.25/EA.
#8645 Tissue Box Rudy Hdw. Kit 10 or more $1.25/EA.

ORDERS ONLY
CALL TOLL FREE 1-800-441-9870

2 Catalogs available:
MHS Christmas Catalog.....$1.00
Regular MHS Catalog........$1.00
or Both Catalogs sent FREE WITH ORDER

MEISEL HARDWARE SPECIALTIES P.O. BOX 70W X 10 MOUND, MN 55364

HOW TO ORDER: State quantity, part number, item, price, and total of order. Send check, money order, or Visa or M.C. number and Exp. date. Shipping: $25.00 to $49.99 add $4.95, $50.00 to $74.99 add $5.95, $75.00 to $99.99 add $6.95, over $100.00 add $7.95. Minimum order of $25.00.

Print Name
Address
City State Zip
Phone #
MAIL $2.00 TODAY TO

MAIL $2.00 TODAY TO
At these special prices you can complete your workshop. When you buy a JET machine from your local distributor you get a quality machine at a reasonable price, a full one-year warranty, parts availability, and local technical assistance by your distributor!

The 10" table saw features a 27" x 40" table, 10" blade capacity, and a 1 1/2 HP motor. The 14" bandsaw has a full 1 HP motor with three speeds for wood or non-ferrous metal cutting, and a 45° tilting 14" square table. The shaper has an 18" long table and 1/2" spindle capacity. The 6" jointer has a long 28" fence and 42 1/2" table and a three-knife cutter. The powerful 15" planer has a 3 HP, 1 Ph motor which allows a maximum 1/8" full width cut. The portable dust collector may attach to a variety of machines and has a 2.12 C.F. capacity collector bag and a very quiet 55 D.B. noise level.

For full details, see your local JET Distributor today.

Prices are effective while supplies last.

| JTS-10 Table Saw | $ 482.00 |
| JBS-14MW Bandsaw | $ 419.00 |
| JWS-18 Shaper     | $ 417.00 |
| JJ-6 Jointer      | $ 405.00 |
| JWP-15H Planer    | $1,150.00 |
| DC-610 Dust Collector | $ 310.00 |
New Safety Dado
Improved Design. Effective Control.

The Freud Difference

**Advanced CAD System.** The Computer-Aided Design System simulates actual cutting conditions in three dimensions and records the blade's performance. This allows Freud engineers to electronically vary the material being cut and the blade's physical characteristics, developing saw blades that provide optimum cutting performance.

**Laser Technology.** A computer-controlled, 500-watt laser is used in the production of Freud cutting tools. The concentrated beam of light creates a perfectly round blade, produces shoulders identical in shape and size, and precisely centers the arbor hole. In addition, expansion slots are strategically placed to allow for heat dissipation during brazing and blade body expansion during actual use.

**Superior Carbide.** The chemicals used to produce and bond materials like composition boards, melamine, MDF and plastic laminates will attack carbide and cause it to corrode. Freud's engineers developed a special mixture of titanium, cobalt and tungsten carbide to significantly reduce this corrosive problem. Titanium is used to protect the cobalt and tungsten carbide from chemical corrosion, ensuring a longer lasting carbide edge.

The right degree of hardness is another important property of carbide life. This difficult problem is solved by using carbon and tungsten powders with a grain size of 0.8 microns. Freud carbide is 33% more dense than the standard 1.2 micron size found in the carbide of other manufacturers.

**Freud Dado Head Puts You in Control.**

The secret is the shoulder. It is in front of every tooth and it limits the tooth's bite. Since each tooth removes a very small chip (2mm), you are in control. There is almost no climbing. Almost no chance of kickback. This is the key to a safer dadoing experience.

Freud's improved dado head does not compromise results either! It cuts a smooth square bottom. The tear-out is virtually non-existent, even when dadoing problem materials. Get control of your work, put Freud's new dado head on your saw!

<table>
<thead>
<tr>
<th>Stock Number</th>
<th>Diameter</th>
<th>Teeth</th>
<th>Max. Groove</th>
<th>Inside Chippers</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD 308</td>
<td>6 inches</td>
<td>24</td>
<td>13/16&quot;</td>
<td>(4) 1/8&quot; &amp; (1) 1/16&quot;</td>
</tr>
<tr>
<td>SD 308</td>
<td>8 inches</td>
<td>24</td>
<td>13/16&quot;</td>
<td>(4) 1/8&quot; &amp; (1) 1/16&quot;</td>
</tr>
<tr>
<td>SD 310</td>
<td>10 inches</td>
<td>36</td>
<td>13/16&quot;</td>
<td>(4) 1/8&quot; &amp; (1) 1/16&quot;</td>
</tr>
<tr>
<td>SD 312</td>
<td>12 inches</td>
<td>36</td>
<td>13/16&quot;</td>
<td>(4) 1/8&quot; &amp; (1) 1/16&quot;</td>
</tr>
</tbody>
</table>

Call for the name of your local distributor.

Freud
218 Feld Ave. High Point, NC 27264
(919) 434-3171
Four decades following the fall of the Alamo, the people of San Antonio paved the streets leading to this Texas shrine with mesquite slabs. Today, street maintenance crews occasionally uncover remnants of the wood, still sound.

In the eyes of southwestern Indians, mesquite was shade and sustenance. They ate the tree's bean pods, turned its sap into gum, dye, and medicine, and sewed with its thorns. The Indians relied on the wood for fuel and arrows. Learning from the native Americans, pioneer hands worked mesquite into construction timbers, railroad ties, fence posts, wagon wheels, and sturdy tables and chairs.

Because most craftsmen only equate mesquite with the barbecue grill, a group called Los Amigos del Mesquite (Friends of Mesquite) promotes the wood as furniture-class stock. Due to their efforts, mesquite's reputation as quality cabinet wood seems to be spreading.

**Wood identification**

It's estimated that the three varieties of mesquite (Prosopis glandulosa, juliflora, and pubescens) cover some 75 million acres of Texas alone. These hardy trees also extend into Arizona, Oklahoma, and Mexico.

In desert areas, mesquite develops more as a shrub than a tree. More favorable conditions allow it to grow to about 50' tall with a single, though somewhat crooked, trunk up to 3" in diameter.

Mesquite, with its chocolate-colored, furrowed bark isn't difficult to identify. Its wide, spreading canopy of frequently twisted branches sports long, thin leaves composed of evenly spaced leaflets. Bean pods up to 8" long follow the tree's bright, yellowish-white spring flowers. And, the short, sharp thorns amidst the leaves painfully pierce passing flesh.

Mesquite wood has fine, tightly interlocked grain. A narrow band of tan sapwood borders the deep brown heartwood.

**Working properties**

Mesquite remains quite stable during seasoning. Since the shrinkage occurs evenly, the wood sustains few drying defects. That's why carvers and turners work the wood green—it dries without checking.

Mesquite requires power tools because it's heavier than both oak and maple, but much harder. And, since it's rather brittle and contains a high percentage of silica, the wood demands sharp cutting edges.

Due to the wood's brittleness and silica content, you must join it with both adhesives and screws. And, adhesives work best when you wipe the surfaces with lacquer thinner.

Mesquite sands silky smooth with little effort. Like a true cabinet wood, it accepts oils and topcoats equally well.

**Uses in woodworking**

Craftsmen draw upon mesquite for furniture, carvings, and turnings. In the home, it serves as attractive, hard-wearing flooring and decorative items such as fireplace mantels. It also makes premium gunstocks and knife handles.

**Cost and availability**

Although mesquite has not attained commercial importance, many small enterprises throughout the Southwest sell the wood. You'll find it most frequently as turning squares and blocks, and as lumber in 1x8 and 2x8 sizes up to 5' long.

Prices range from $1.50 per board foot for non-select wood to $10 or more for premium stock. Veneer isn't available.

For a list of mesquite suppliers and information concerning Los Amigos del Mesquite, write: Ken E. Rogers, P.O. Box 310, Lufkin, TX 75901.

Photographs: Bob Calmer
Illustration: Steve Schindler
What an incredible outpouring of generosity! We wish all of you could have feasted your eyes on the row upon row of wooden toys lovingly made by WOOD® magazine readers for our first Design-A-Toy competition.

The 425 generous souls who built a toy for a needy child have every reason to be proud. And, some of you have an extra reason to cheer: The judges selected 41 contest winners. Later, we drew seven more names from the hat to receive prizes in our nonwinners drawing.
A TOY CONTEST!

Earlier this year, our prestigious panelists came to Des Moines to judge the competition. Pictured from left are: Jim Downing, WOOD magazine's design editor; Major Bruce Butler, U.S. Marine Corps Reserve, Phil Vander Ploeg, president of Toys and Joys; Homer Formby, one of America's most respected finishing experts; and Roy Underhill, master housewright at Colonial Williamsburg.

The toy collection even took seasoned woodworkers

Continued
on our panel by surprise. “When I first looked in that room,” Homer said, “I didn’t expect to see as many toys or that quality of toys. It tells me a lot about the craftsmanship going on out there. Look at all those wooden toys and you can see people are getting tired of the plastic world we live in.”

“It was like sneaking into Santa’s workshop,” Roy said when he peeked in our toy room for the first time. “Everyone’s been surrounded by toys in a huge toy store. But this was different. There was so much individuality and creativity in these toys. You just don’t see a lot of homemade stuff in one room. All you had to add was the kids.”

The Marine Corps Reserve will supply that missing ingredient—kids. Reserve units around the country now have a mountain of toys to distribute this Christmas through their successful Toys For Tots program. We’re certain that your generosity and creativity will light the faces of 425 needy kids.

So, we applaud all of you who participated in the contest: woodworkers, sponsors, judges, and, of course, the Marines. In upcoming issues of WOOD magazine and Weekend Woodworking Projects, we’ll share some of the top designs.

And, if you’re wondering about another contest, the answer is yes! Look for next year’s contest rules in our December issue.

PROFESSIONAL:

MOVABLE PARTS

Grand Prize ($1,500 in AMI/Hegner merchandise): Neil Seely, Rochester, N.Y., waddle duck.
First Prize ($250 in Garrett Wade merchandise): Richard Grunwald, North Java, N.Y., fork lift.
Special Citations ($100 in Woodmaster merchandise): Kurt Jobke, Pewaukee, Wis., pickup truck; Steven A. Bruni, Fort Madison, Iowa, biplane; Mike Jagielo, Almond, Wis., apple with pop-up worms; Peter P. Belski, Jr., Pittsburgh, tank; Richard Milam, Mcair, La., caterpillar.

HOME HOBBYIST:

MOVABLE PARTS

Grand Prize ($1,500 in Foley Belsaw merchandise): Robert W. Sanders, St. Marys, Ga., 1926 Mack truck.
First Prize ($250 in Makita merchandise): Harold E. Geiselman, Canton, Ohio, bumpy road pickup truck.
Special Citations ($100 in Popular Science Book Club merchandise): Bill Kaiser, Huntingburg, Ind., wooden tools; Mike Gradeless, Columbia City, Ind., Traverse City, Mich., quilt puzzle; Jerry R. Syfert, Laurel, Md., three-layer puzzle; James N. Moen, East Grand Forks, Minn., teddy bear bank; Clyde R. Moore, Coeur d’Alene, Idaho, baby rattle; Stuart L. Woldman, Shaker Heights, Ohio, bank.

No MOVABLE PARTS

Grand Prize ($1,500 in Freud merchandise): Michael Watters, Saginaw, Mich., tugboat.
First Prize ($250 in Bosch merchandise): Mike George, Slidell, La., cow puzzle.
Special Citations ($100 in Minwax merchandise): Roger D. Coddington.

Michael Watters of Saginaw, Michigan, hadn’t built a toy before this contest, except to occasionally help neighborhood Cub Scouts with Pinewood Derby entries. He’s a signmaker by trade.

Neil Seely of Rochester, N.Y., a retired Eastman Kodak camera designer, started designing his waddle duck as a project for an adult education computer design class. He estimates spending 50 hours developing the prototype. Neil shares the design for this pull toy on pages 42-45.

Alvin Curtis of Oshkosh, Wis., a retired college band director, made his first rocking whale for his grandson. He’s already working on next year’s contest.
dune buggy; Rene Knetsch, Oklahoma City, moving van; Brian W. Anderson, Waseca, Minn., crane; Larry Groninger, Reeds ville, Pa., cat-and-mouse pull toy.

HOME HOBBYIST:
NO MOVABLE PARTS
Grand Prize ($1,500 in Delta merchandise): Alvin J. Curtis, Oshkosh, Wis., rocking whale.
First Prize ($250 in merchandise from Skil): David Cartwright, Arlington Heights, III., stack toy.
Special Citations ($100 in Dremel merchandise): Ronald Busdiecker, Euclid, Ohio, kaleidoscope; Sam Roberts, Roseburg, Ore., gum-ball machine; Merle Halter, North Platte, Neb., fishing game; Donald Planagan, Shell Knob, Mo., highway bridge; Robert E. Sweet, Toledo, Ohio, doll playpen.

SCHOOL AGE: MOVABLE PARTS
Grand Prize ($1,500 in Total Shop merchandise): Ed Park and Walter Green, Newark, Ohio, truck and sailboat.
First Prize ($250 in Hitachi merchandise): Dustin Ehrman, Middle Amana, Iowa, 4-wheeler.
Special Citations ($100 in Formby's merchandise): Bob Pilz, White Bear Lake, Minn., garbage truck; Flay Terres, Gastonia, N.C., train engine; Warren J. Karch, Buckeye, Ill., space shuttle; Steve Smith and Brian Beaver, Newark, Ohio, helicopter; Steve Lukes, Middle Amana, Iowa, wagon.

SCHOOL AGE:
NO MOVABLE PARTS
Grand Prize ($1,500 in Black & Decker merchandise): George Powers, Chad Cooperrider, and Jim Watson, Newark, Ohio, telephone.
First Prize ($250 in Grizzly merchandise): Shon Lowery, Corby Franks, and Joe Browett, Newark, Ohio, puzzle.
Special Citations ($100 in DML merchandise): John Duncan Jr., Des Moines, Iowa, bank; Greg Klett, Menominee, Mich., snowmobile; Matt Mohler, Keenan McKee, and Todd Journey, Newark, Ohio, country buildings; Peter Barrette, Des Moines, puzzle.

Bob Sanders of St. Mary's, Ga., spoiled the side dump truck he built a week before the contest deadline. He quickly changed bed designs and then rushed his 1926 Mack truck to Des Moines. Bob works as an electrical engineer for General Dynamics.

Walter Green and Ed Park spent six weeks building the tractor, semitrailer, and sailboat in their industrial arts class at Licking Valley High School in Newark, Ohio. Their teacher, Barry Healey, gave both boys an "A" on the project—and so did our panel of judges.

Jim Watson, Chad Cooperrider, and George Powers, also Licking Valley students, were—according to Jim—"pretty surprised and happy we won."

Photographs: Jim Kascoutas
READ ALL ABOUT IT!

DUCK WADDLES OFF

After 30 years at Eastman Kodak, Neil Seely took early retirement from his job in the camera design department. Eager to expand his design knowledge, Neil took in a CAD (computer-aided design) course at a community college. For his final class project, Neil redesigned a wooden toy duck he had built years earlier as a gift for a neighbor's child. His new-and-improved duck had such an irresistible waddle and swinging head that it walked off with a grand prize in a professional division in our Design-A-Toy contest.

---

**Note:** You'll need 2 3/8"-diameter stock 6 1/2" long for the duck wheels (we used cherry). You can shape a 3" turning square, laminate thinner stock to size and turn it round, or see the Buying Guide at the end of this article for our source of either a 3" turning square or stock already turned to 2 3/8". If you turn your own stock, mount a turning square between centers, and turn it to a 2 3/8" outside diameter. Check the diameter as you go with an outside calipers.

**PRO-DUCK-TION BEGINS WITH THE WHEEL JIG**

1. From 3/4"-thick particleboard or plywood, cut seven pieces 3 1/2" wide by 11" long.
2. Measure and mark a centerpoint on the top face of each piece (see the Jig Lamination Drawing, right).
3. Using a circle cutter chucked in your drill press and a speed of about 250 rpm, test-cut a 2 3/8" hole in scrap stock. Check that the 2 3/8"-diameter turned stock fits snugly.
inside the hole in the scrap stock. If the turned stock fits loosely, you will have problems later drilling an accurate axle hole. Adjust the circle cutter if necessary. Center the circle cutter pilot bit directly over the marked centerpoint. Slowly lower the cutter into the stock to cut a 2½" hole in four of the jig pieces. Cut or bore a 1½"-diameter hole in the other three pieces.

4 Carefully align the holes where shown on the Jig Lamination Drawing, and glue and clamp together the pieces with the 2½" holes. (We inserted the 2½" turned stock to align the four holes. Once aligned, we clamped together the pieces, removed the turned stock, and wiped off all glue squeeze-out with a damp cloth.) Now, glue and clamp together the three pieces with the 1½" holes, making sure to align the holes. Finally, glue and clamp together the two laminations, with the ends and edges flush.

5 Now, follow the four-step drawing below left to mark and cut the jig lamination to shape.

ANGLE-CUT THE WHEELS WITH THE JIG

1 If you've turned your own cherry stock for the 2¾" wheels, crosscut about ½" off each end to remove the spur-center and tailstock marks.

Insert the turned cherry stock into the hole in the jig, and trim each 2¾"-diameter duck wheel to length.
LOCATING THE AXLE AND TACK CENTERPOINTS

STEP 1. Mark centerline across wheel.
STEP 2. Measure 1 3/4" from right edge of wheel and mark a second reference line across wheel to locate axle centerpoint.
STEP 3. Measure 1" from left edge of wheel and mark a third reference line to locate thumbtack centerpoint.

2 Stick the 2 3/8" stock all the way into the 2 3/8" hole in the jig. To ensure your wheels will end up the right length, the turned stock must bottom out in the 2 3/8" hole in the jig. Position the jig between the tablesaw blade and fence where shown in the photo at the bottom of the previous page.

3 Start the saw and cut the turned stock flush with the face of the jig as shown in the above-mentioned photo to form one wheel (A).

4 With the wheel still in the jig, carefully locate and mark centerpoints for the 1/2" axle hole and the thumbtack on the cut end of the wheel where shown on the drawing above.

5 Chuck a 1/2" brad-point bit into your drill press and bore 3/4" deep into the turned stock as shown in the photo at right. (We had our drill press running at 250 rpm.) To prevent the wheel from turning in the jig, feed the bit slowly into the turned stock and back out several times to remove the waste stock. Push a dowel through the 1 1/2" hole in the jig to pop out the wheel.

6 Repeat steps 1, 2, 3, 4, and 5 above to form the second cherry wheel (A).

7 Sand a slight round-over along the outside edge of each wheel where shown on the Exploded-View Drawing.

NOW, MOVE ON TO THE DUCK'S BODY
1 From 3/4" cherry, cut three pieces 4 x 7" for the duck body.
2 With carbon paper or by adhering a photocopy of the full-sized Side-View Body Pattern on the opposite page, transfer the outline, notch, and head-dowel centerline of the body center (B) to one of the 4 x 7" pieces of cherry. Cut the outline and notch to shape.
3 Transfer the outline for the body side (C) to one of the remaining pieces. Bandsaw and sand it to shape, and use it as a template to mark the outline onto the other body side. Then, cut the outlined piece to shape.
4 Drill a 3/16" hole through the body center (B) for the head dowel (we used a dowel jig to help align the bit). Now, drill a 3/16" hole through the front of the body center for the pull rope where shown on the Body Pattern Drawing.
5 Rout a 3/4" round-over on both body sides (C) where shown on the Exploded-View Drawing. With the bottom and back edges flush, glue and clamp together the three body pieces.
6 Mark a 10" bevel line on the front and back ends of the body lamination where shown on the drawing above. Now, connect the ends of the bevel lines by drawing a line along each side of the lamination. Clamp the duck body upside down in a woodworker's vise and hand-plane or belt-sand the edges to the marked lines.
7 Mark the centerpoint location, and bore a 3/16" axle hole through the body where shown on the Body Pattern Drawing at top.
8 Sand the duck body smooth.

NEXT, CUT AND SHAPE THE DUCK’S HEAD
1 To form the head (D), cut a block to 1 3/4 x 1 1/2 x 4". If you don’t have stock this size, laminate 3/4"-thick stock and trim it to size, noting the lamination line shown on the Side View of the Head Pattern.
2 Transfer the full-sized top and side head patterns to the cherry block. Mark the 3/4" dowel hole centerpoint, and drill the hole where marked. Bandsaw the head side view to shape. Tape together the pieces and cut the top-view pattern to shape as shown below.

Continued on page 88
WHAT’S HAPPENING TO THE WORLD’S WOOD?

Fueled by reports of millions upon millions of tropical and temperate forest acres threatened, then lost each year, it seems as if everyone—from schoolchildren to politicians, and a fair number of woodworkers—wants answers to what the future holds for the world’s timber. In this four-page section, Pete Stephano, WOOD® magazine’s features editor, capsulizes the situation around the world today and presents the outlook as related to him by some of the most informed people in the field.

CONCERN NO. 1: CAN WE SAVE THE TROPICAL FORESTS?

From the Congo to the Amazon to Java, 27 million acres of tropical forest are consumed each year—a rate of about one square mile every 12 minutes—for lumber, agriculture, grazing, roads, mining, and other purposes.

What’s happening—and why
* The earth’s tropical forests—once twice the size of the U.S.—have been cut in half. Remaining tropical forests in South America’s Amazon, Southeast Asia, and the African Congo region, number about 3 billion acres. At present, the Congo forests remain relatively untouched.
* Commercial timber harvesting in the tropical forests accounts for 11 million acres per year—two-thirds of that in Southeast Asia.
* Conversion to agricultural land and pasture destroys the most forest. “Generally, the tropics are not a major source of commercial wood,” notes Roger Sedjo, of Resources for the Future.

The most intensively logged tropical forests are in the South Pacific, from Malaysia and Indonesia to the Philippines.

In the tropics, especially the Amazon, people clear forests by cutting down growth, then burning it. Known as slash-and-burn, this practice parallels clear-cutting, a sometimes acceptable technique of forest management. The forest has the ability to rejuvenate, given time to reestablish itself. However, in less-developed countries where food has priority, trees aren’t permitted to regrow on cleared land.

Burning tropical forests creates close to 20 percent of the world’s carbon dioxide released into the atmosphere, contributing to the “greenhouse effect.” Total U.S. emissions from burning fossil fuels adds about 25 percent.

To the nations in the tropics, timber easily converts to needed financial capital. Historically, there’s plenty of precedent for such action. “England cut her forests, built a navy, and as a result, dominated the seas for 150 years. The Chinese traded forests for agriculture. Countries have always overexploited their timber resource to achieve national goals,” says Dr. Ben Jayne, author and professor of forestry and environmental resources at Pennsylvania State University. “It is very difficult to tell a country such as Brazil not to do that.”

The outlook
Lacking international guidance and regulation, there’s little to restrain the lesser developed countries from cashing in their tropical forests for timber and agricultural land to pay off international debt and raise their standard of living. However, the horizon has some bright spots:

* Brazil rethinks forest destruction. Pressure from the World Bank and Inter-American Development Bank brakes the freewheeling destruction of Brazil’s Amazon forests by urging land-use studies. In the U.S., legislation requires American investors to encourage nations to swap debt for forest conservation.
Forests, such as this one in Madagascar, fall to roads, agriculture, and logging. Even clear-cut forests will rejuvenate all by themselves. This was taken on Washington's Olympic Peninsula.

---

**CONCERN NO. 2**

**HOW MUCH TIMBER DO WE HAVE LEFT?**

Since settled agriculture began about 10,000 years ago, forests and woodlands have dwindled by nearly 5 billion acres, a third of the original total, reports the Worldwatch Institute.

**What's happening—and why**

- The American Forest Council estimates that U.S. forests today number 737 million acres, about 70 percent of what were encountered by the first New World settlers. In 1920, forests covered only 615 million acres.
- Today, forest cover remains fairly stable in most industrial countries. In fact, it's even increasing.
- France, once 80 percent trees, had only 14 percent by the late 1800s. Today, about 25 percent of France has trees. The United Kingdom's forests have expanded 86,000 acres a year since the '60s. China has a goal of greening one fifth of its land by the year 2000.

In the U.S., reforestation reaches new heights. During 1987, tree plantings amounted to 2.3 billion seedlings on 3 million acres. That's about 10 new trees for every American, cites the USDA Forest Service.

- Rivalled only by South America in acres of forest, the Soviet Union has 2.3 billion acres, spread primarily across Siberia.

**The outlook**

On this front, things look promising, for several reasons. First, forests increase in land area when nations undergo transition from a farming society to an industrial one. With the economic diversity, more land becomes available to revert to forest. Too, as young nations mature, management policies emerge to protect the forest resource. Modern agricultural methods also require less land. And, forests have a natural resiliency. Without a constant effort to

Continued
Japan, China, and other countries bought $10 billion in forest products from the U.S. in 1987. Exported saw logs, veneer logs, and logs for other purposes amount to over 3 billion cubic feet annually.

What’s happening—and why
- U.S. forest industries cut 17 billion cubic feet of wood in 1987. From that, 751 million cubic feet of forest products were exported.
- On an annual basis, U.S. forests grow 22 billion cubic feet of new timber, and we remove 17 billion.
- Tropical hardwood supplies, particularly in the Amazon basin and Southeast Asia, are being drawn down. “The drawdown of tropical hardwoods is beginning to create a shortage of quality hardwoods for furniture manufacture,” notes Penn State’s Ben Jayne. “Those who use that source for material—the Japanese and Taiwanese, for instance—have to seek other sources, such as the Appalachian hardwoods.”
- Recent USDA Forest Service statistics indicate that the U.S. wood inventory appears solid, at least in the overview. “We have an accumulation of wood in most parts of the nation,” Jayne explains. “But, it’s mostly softwood. In the hardwoods, there’s probably a lower quality available now than there was in the past. Nevertheless, there is a larger number of small hardwood trees growing rapidly.”

The Hardwood Manufacturers Association says the import of wood furniture rises every year. Crazy as it sounds, firms profit by shipping American logs and lumber to foreign countries manufacturing products with cheap labor, then shipping the goods back to the U.S. This raises U.S. wood prices.

The outlook
Expect new sources of wood. New Zealand, Chile, and South Africa have extensive plantations of pine nearing the age for harvest.

Despite new wood sources, you can expect temporary shortages in the long-term. It may become difficult to get particular hardwood species, and board sizes will be smaller. Woodworkers will have to use more veneers and rely on boards made up for width. Substituting stock will also become commonplace as present low-value, under-appreciated wood replaces supplies of now-favored species. To alleviate long-term problems, hardwoods must now be managed as productively as softwoods, cautions international expert Jayne.
Last year’s Yellowstone fire burned, scorched, or somehow affected about one-third of the national park’s 2.2 million acres. Other fires in U.S. forests during 1988 brought the total to 6 million acres, notching the year as one of the greatest for fire in recent times. And, insect infestations and blight continue attacking our forests every year.

What’s happening—and why
- Compared to the past, 1988 wasn’t a record year for fire. In the 1930s, a 40-million-acre loss to wildfire was common.
- Natural fires, caused by lightning, often are permitted to burn themselves out in the publicly owned forests. Most such fires remain relatively small. Few fires happen on privately owned, industrial forestland, where there’s little fuel buildup from dying trees. Increased forest use by campers, hikers, naturalists, hunters, and fishermen contribute accidental fires.
- Annual forest statistics do not provide a separate category for timber loss due to disease and insects. In 1986, mortality, defined as sound wood in trees that died from natural causes, including fire, was about 4.5 million cubic feet. This amount equals one-half of 1 percent of the total growing stock in the nation. Many of those trees, though, aren’t lost. In infestations, as well as fires, it’s common to salvage sawable timber. Tragic blights, such as the one that bowled the American chestnut over, prove rare.
- Acid rain, the combining of sulfuric oxide with precipitation, impacts U.S., Canadian, and European forests, but how and how much has yet to be determined.

The outlook
The ability to control fire has been a major factor in the expansion of our commercial forest land. Yet, in some cases, fire enables desirable new trees to sprout.
Reintroduction of natural controls, the recognition of insect threats, and technological advances in forestry genetics should reduce future damage from infestation.

For sources of more information, as well as organizations to join, please turn to page 93.

Written by Peter J. Stephano
Photographs: Madagascar, Frans Lanting; clear-cut, ©1989 T.W. Ransom/Biological Photo Service; fire, ©1989 J.N.A. Lott/Biological Photo Service; rain, ©1989 B.J. O’Donnell/Biological Photo Service
Illustrations: Jim Stevenson
Compiled with aid from the American Forestry Association; American Forest Foundation; Environmental Defense Fund; John Heissenbuttel, American Forest Council; Dr. Ben Jayne, Pennsylvania State University; Rain Forest Action Network; Roger Sedjo, Resources for the Future; Profs. Buck Sanford and Dan Binkley, Colorado State University; The Smithsonian Institution; Timber Holdings, Ltd., Milwaukee, Wis.; USDA Forest Service; and the Worldwatch Institute.
In woodworking, bigger is not always better. In fact, you’ll find that working tiny pieces of wood into projects smaller than your fist can be just as gratifying as building cabinet-size projects. And, put away your wallet because woodworking in this Lilliputian land doesn’t cost a plug nickel to try. You need only look to your scrapwood pile for a lumberyard of materials.

When WOOD magazine’s project builder Jim Boelling began experimenting with small pieces of wood a couple years ago, little did he know that he was embarking on something that would soon consume him. “After 20 years of checking for straight and square, it was a refreshing and creative change of pace to work on small, free-form objects,” says Jim.

Nowadays, Jim constantly comes up with miniature creations like those shown on these pages. What’s his secret? “The key to working small is maintaining control of the workpiece while keeping your hands a safe distance from the cutting or shaping action.”

In the course of working small, Jim goes through the same processes that you would with any project. But, he does them in some ways you may never have thought of.

We’ll also look at a couple of tips that WOOD magazine reader Bill Wright shared with us on how to shape small objects with flexible sanding discs. Thanks, Bill!

**SAWING**

Slice your scrap into usable thin stock with your tablesaw and this handy technique. First, use cloth-type, double-faced tape to attach the scrap stock to a carrier board at least 6” high and a couple of inches longer than the scrap piece as shown at right. Ensure a good bond by squeezing the two pieces together in a bench vise.

Now, stick a 6” piece of duct tape to the other side of the scrap and double it over to form a handle. Then, adjust your tablesaw’s fence so that the saw cuts a piece of wood of the desired thickness from the carrier-board side of the scrap. Remove ½” or thinner stock from the carpet tape by saturating the tape withlacquer thinner.

Here’s an efficient way of cutting identical pieces that’s about the neatest thing since sliced bread. You’ll find this technique especially handy for making jewelry such as earrings or necklace pieces.

First, cut the desired shape with your scrollsaw. With that done, attach the stock to a jobber stick (¾” dowel) with cyanoacrylate (instant) glue (see page 55 for a buying source). Epoxy or hotmelt adhesive also works, but we like the convenience of the instant glue. Next, press the stock against a carrier board covered with double-faced tape and slice off a succession of blanks as shown at right. If the pieces resist being pryed off, apply lacquer thinner to the tape to dissolve the adhesive.
Jim Boelling works small in a big way. You can apply his tactics for handling tiny stock to your own projects.

You can avoid nasty sanding burns on your fingertips by sanding small pieces as shown at left with a carrier board, double-faced tape, and two scrap blocks of the same thickness as your workpiece. By placing the project piece between the scrap blocks, you'll also eliminate the chance of rolling the workpiece and rounding its edges. Be sure to attach the workpiece so that you sand the grain in the same direction as the sanding belt.

Continued
ROUTING

Play it safe by keeping your hands clear of whirling router bits. We've found a couple of ways to do this. Which one you use depends on the size of the piece you're working. If the workpiece is large enough to attach a 1"-diameter jobber stick to it, use this method. If not, the method at far right may work for you.

First, attach the jobber stick (dowel stock, hand railing or closet pole works well) to the workpiece with carpet tape, epoxy or hotmelt adhesive. Then, build a "zero-clearance" auxiliary surface for your router table. To do this, start by boring a hole into a piece of tempered hardboard that's just large enough for the router bit to stick through. This auxiliary surface fully supports the workpiece around the router bit.

To prevent the bit from grabbing your project, hold the workpiece tightly against the fence before you ease it into the cutting edges. As shown at right we're routing a cove along the edge of a miniature shelf.

If the bit's pilot sits so high on the shank that it doesn't contact the workpiece, you'll have to cut an auxiliary form for the pilot to ride on. The form should be the same shape as the workpiece and high enough to contact the pilot as shown at right. Attach the form to the workpiece with carpet tape.

SHAPING

To shape small parts free-hand, we've sold on flexible sanding discs. (See the Buying Guide on page 55 for our source.) First, attach the workpiece to a jobber stick with instant glue. Then, sand it to shape as shown below left with 60-grit sandpaper and smooth it through a succession of 100-, 150-, 220-, and 320-grits. Remember to keep the workpiece moving, and use a light touch so you don't remove too much stock from one area. When you're satisfied with the results, cut off the jobber stick. (We used the bandsaw procedure shown below to control the workpiece throughout the cut.)

You could mount the sanding disc in a drill press, but we found it more comfortable to chuck it into a portable drill. As shown at right, you can make a simple clamp from a 2X4 to hold the drill horizontally in a bench vise.

If your budget allows it, you may want to buy a separate disc for each grit to save you the trouble of constantly changing grits. In our shop, we have a storage rack like the one shown on the opposite page to hold the discs and the buff-
When the stock's too small for a jobber stick, make a carrier board of the same thickness as the stock and outline the shape of the workpiece onto it. Then, saw the carrier board to the correct shape and double-face tape it to the stock you're working. As you would do with a jobber stick, hold the workpiece or carrier board against the fence before routing. We're putting a round-over on the bracket shown at left, for the shelf top routed in the tip on the opposite page.

How do you clean up the back side of your shaped piece? That's simple. First, stick the workpiece to a 2-3" piece of duct tape as shown right. Then, form a handle with the rest of the tape and sand off the glue and stub end of the dowel with a 60-grit sandpaper disc.

With micro-sanding discs, you can even sand in tight areas as shown at right. You also can purchase micro-sanding drums. See the Buying Guide on page 55 for the address of Micro-Mark.
DETAILING

Power carvers make detailing a snap, but when you work on small objects such as the seahorse shown below, you’ll appreciate a means of supporting the workpiece. Otherwise, you could power carve your creation into smithereens. Or, worse yet, you could carve your fingers if you hold the workpiece in your hand. Here’s a cheap solution: Clamp an abrasive-cleaning stick into your bench vise and use it as a work support. The stick has a soft, non-mar, nonslip surface that gives you control over your project.

GLUING

A little dab will do it when you glue together small parts, but how do you control minuscule amounts of adhesive? Paper clips and toothpicks, that’s how. As shown at right we first placed a few drops of instant glue on a cardboard work surface, then used a paper clip to transfer the adhesive to the bracket for the shelf we made earlier. You can work a dime-sized puddle of instant glue for about 5 to 10 minutes before it sets up.
FINISHING

For a super-glossy finish, we suggest gunstock rubbing compounds in conjunction with a buffing wheel. First, you'll have to build up four to five hard coats of finish on the workpiece because this process will remove a coat or two. Then, brush some of the gritty compound onto the workpiece and gently buff it as shown at left. We're holding this heart by a necklace ring that we mounted to it, but you also could hold the object with double-faced tape.

We start the process by using Brownell's Triple "F" compound (see the Buying Guide below), then switch to Five "F" for the final polishing. Be careful not to overdo it or you'll remove all the finish. Your buffing wheels will retain some of the compound, so be careful to mark the wheels and keep them separate. Finally, rub in two coats of paste wax to enrich the lustery finish even more.

When it comes time to finish your project, try one of the two techniques shown at left. If your project has a hole in it, such as the eyehole in our whale, simply run a paperclip or other wire through it and suspend the piece from above. For projects such as the shelf, attach a thin dowel to an unexposed surface with hotmelt adhesive. Then, secure the dowel in a vise until the finish dries. (We prefer spray finishes for ease of application and even coverage.) Saw off the dowel and sand the glue mark.

BUYING GUIDE

- 6" flexible spindle sanding and polishing kit. Available from Sears stores nationwide. We paid $10.49 for ours.

Written by Bill Krier with Jim Boelting
Photographs: Hopkins Associates
Illustrations: Jim Stevenson; Mike Henry
World champion caller Johnny Mahfouz calls ducks within range of his pit blind in an Arkansas rice field. His technique, combined with a Butch Richenbach call, makes it a matter of fact.
Duck calls from a champion of champions

Arkansas' Quapaw Indians had no use for a duck call. According to local lore, they hollowed out huge gourds, stuck their heads in them, and then, immersed chin-deep in water, waded out to a resting flock. To bag a duck, a brave just grabbed its feet and pulled it under!

Today's duck hunter, although outfitted with a finely tuned duck call, the best of equipment, and a carefully trained retriever, often has difficulty luring birds within shotgun range. Butch Richenbach, call maker and former world duck-calling champion, has some advice.

CALLING OUT TO WINGS OVER THE PRAIRIE
Butch doesn't mind helping his friends and others become expert at what he now knows almost instinctively. After all, that's how he learned the vocabulary.

His tutor and friend was a homegrown legend: Chick Major, Stuttgart's dean of duck hunters, caller extraordinaire, and producer of the Dixie Mallard Call, a revered instrument known to fill hunters' daily bag limits. "I used to practically live over there," Butch recalls fondly of the Major home. "Chick was like a daddy to me, and taught me all I know about duck calls."

Butch learned well. In 1972, he called his way to the top at Stuttgart's 37th annual World Championship Duck Calling Contest, the Super Bowl of such events. Three years later, he outcalled a gathering of former champions and became a champion of champions. Since then, he's coached a string of winners. Butch ticks off the records: "I've taught the current world champion, eight junior world champions, five intermediate world champions, ten women's world champions, and two or three Arkansas state champions. They won a bunch," he says proudly, and adds, "Last year, my students won 14 out of 17 places at the world championships."

As a duck-call maker, Butch also has reached the top. His calls consistently beat out all others as the favored call of world champions.

Why? "That's easy," says current champ, former student of Butch's, and Stuttgart duck-hunting guide, 30-year-old Johnny Mahfouz. "It's the craftsmanship Butch puts into every call. He's not going to produce one that doesn't sound like he wants it to sound. If he can't get the call like he wants it, he'll bust it with a hammer. If a call don't satisfy him, won't nobody get it."

THE SWEET SOUND OF WOOD
"I never intended duck-call makin' to be what it is," explains Butch about his business. "I was just doin' it for somethin' to do. Now, and I'm just guessin', I make close to 4,000 wooden calls a year."

Butch crafts calls of cedar, cherry, cocobolo, ebony, maple, Osage orange, several rosewoods, teak, and walnut. He also fashions acrylic, an ivory look-alike called Micarta, a plasticized-and-laminated

In Arkansas, they call it the Grand Prairie. The water-covered rice fields, acre upon acre of soybeans, and flooded stands of nut-producing pin oaks extend west 60 miles from the Mississippi River. Ducks on their way south consider the area an all-you-can-eat buffet. Hunters call it paradise.

Harry M. "Butch" Richenbach, left, grew up there. Like most of the boys in Stuttgart—the hub of Grand Prairie agriculture as well as hunting—he valued his shotgun and duck call as much as his bike and ball glove. To him, duck talk became a second language. In fact, Butch became so fluent that he eventually turned his skill into a highly specialized business.

Now, Butch, 42, makes duck calls for avid hunters wanting the best available. And, his handmade Rich-n-Tone brand calls help champion callers quack their way into the world-record books.

Continued
FOwl LANGUAGE

1. With a turning tool made from a used commercial planer blade, Butch shapes a call barrel. To make his calls, Butch relies on three Rockwell lathes.

2. After scoring the barrel with a parting tool, the turner darkens the decorative lines by scoraching them with a fine wire held tightly to the wood.

3. To allow air to flow against the reed, Butch drills a hole in the throat of the endpiece with a portable electric drill and a 3/4" brad-point bit.

wood named Dymondwood (similar product to Pakkawood, often used for knife handles), and Corian, a kitchen-countertop material, into duck calls.

He does out-of-the-ordinary special orders, too. "Like real ivory. I can make a call anyway they want it made. After all, they wear my call with a little pride. They don't jam it in their pocket."

Rich-n-Tone duck calls retail at $30 each in native woods, $40 in imported as well as laminated wood, and $100 each in the synthetic materials. "The higher cost is partly the materials, but acrylic calls, for instance, take a long time because I have to shine 'em back up to take out the scratches," explains Butch.

A stickler for correct sound, Butch prefers some woods over others for his calls. "A few woods can lose their tone, you know, dependin' upon how much you use the call. It could take 10 years, could be five. It's hard to say. Probably due to density. It seems, usually, that the harder the wood the better the tone. I like cocobolo, because like teak, it tends to be oily," he continues. "That makes it resist collectin' moisture from your mouth, which deadens the tone."

Yet, despite his theories and calculated choices, wood still pulls strange tricks on the call maker. "You know, you can make two calls from the same block of wood—wood that was side by side—and one will go like heck and the other won't," Butch says, pushing a finger under his cap to scratch in wonderment. "You never have any say over it."

DUCKS DON'T NOTE SHAPE

Lots of people assume that a duck call's shape has much to do with its sound. Well, forget that notion. "Shape? Naw, it's just like a lot of things—depends on who's making it," Butch practically guffaws. "I come up with that design of mine by thinkin' about a Coke bottle. I put that lip on, and made it shorter than most, about 5" long."

In the duck-call trade, where former champions and top guides all produce calls and vie for part of a specialized market, hunters scrutinize new calls. "When I first made it, everybody laughed at me 'cause it was smaller," Butch remembers. "But I told them 'What makes you think a duck call has to be big?' A duck don't fly by and say 'He's blowing a big duck call, I'll go in there!' Calls used to be at least an inch longer than mine."

Hunters should appreciate his call's size reduction. As Butch says, "Take going hunting. You got a 12-pound gun, a pair of waders, a huntin' coat, two boxes of shells—all you need is a two-pound call hangin' around your neck."

MOONLIGHTING THE CALLER'S CALL

By day, Butch runs the Stuttgart Youth Center Inc., a job he loves nearly as much as duck calling. By night, though, you'll find him in his 24x48" metal building behind Mac's Sport Shop, turning out calls. "A call doesn't have to be smooth, you could whistle one out," advises Butch as he sets up to turn at the first of three lathes. His calls, however, don't look rough at all. In fact, they're not only finely finished but of such uniform dimension one to another that it's hard to believe they're handcrafted.
4. Butch’s work-worn hands perform the delicate work of tuning a call. For proper sound, the cork, shaved to fit, must hold the Mylar reed exactly right.

“I do make ‘em one at a time, though,” he advises. “But I make maybe 10 or 12 mouthpieces, or barrels [see drawing, right, illustrating parts of a duck call], then I go make 10 or 12 ends.”

And, Butch, with the sharp eye of a marksman, never relies on measuring devices or templates. “I got something to measure with, but I don’t use it. As far as the shape, I don’t need a pattern. I just look at it. And, they’ll all be exactly alike.”

To make a barrel, Butch starts with a piece of 1½”-square stock about 3” long. He chuckts it on the lathe, then rounds it, trimming one end down to accept a brass ferrule. Then, he removes the barrel from the lathe, presses on the ferrule, and pins it in place. At the next lathe, see photo 1, opposite page, he completes the shaping, sands the wood, cuts in the trim, and seals it with orange shellac, which, Butch says, helps the finish adhere.

To darken the trim lines, Butch burnishes the cuts with a piece of fine wire, holding it in the grooves until the spinning wood smokes, as shown in photo 2, opposite. At the drill press, he bores out the center with a ¼” bit.

The shorter endpiece begins as 1½”-square stock. At his third lathe, Butch quickly turns it to shape, sands, and wipes it with shellac.

Then, he clamps the endpiece in a jig, and at his bandsaw, cuts away the section where he installs the reed and block. Next, he positions the wood in a vise and drills it with a ¼” bit for the air passage, as shown in photo 3, opposite.

With his stepped-up, production-like technique, Butch can craft a wooden call in less than 10 minutes. Even tuning, the most important step of all, takes little time in the expert’s hands.

TO TALK LIKE A DUCK

Tuning a call to the perfect pitch begins with a minutely thin Mylar 1000A (about .01”) reed placed in the notch of the endpiece. To hold the reed in place, Butch wedges in a tiny cork stopper. With a bench knife, he trims the cork and the edges of the reed, as in photo 4, above. Now, the critical moment—“After that it’ll blow—or it’s supposed to,” he laughs.

Actually, tuning a duck call isn’t difficult. It follows simple guidelines: The longer the reed, the deeper the sound and the harder the call is to blow. To make a louder, easier blowing call, just shorten the reed by a hair. But, shorten it too much and you’ll get a squeaky call. Yet, every call Butch makes must satisfy his ears first—the main reason for Butch’s reputation.

Butch’s duck calls won’t do the job all by themselves, though. “The call’s got a heck of a lot to do with it,” notes Johnny, “but you have to know the right way to put the calls in to get them out.”

So, what goes in? “Words, that’s all,” says Butch. “If you want to sound like a duck, you get to talk like a duck. If you think a duck says ‘quack,’ then you say ‘quack.’

“You gotta find the right word, cause the same word don’t fit everybody,” the master caller advises. “Like ‘hoot’ for instance. It ain’t ‘hoot’ when you blow in a duck call, it’s ‘oot.’ You have to drop the first letter off.”

To be a successful duck hunter, then, you combine the correct language with the right call. Ask Butch for the words. He’ll tell you. But he won’t insist you buy one of his calls. “I don’t tell anybody that my duck call is better than anyone else’s, because I don’t know for sure that it will call a duck better. I just leave that judgment up to other people. I’m prejudiced, anyway.”

Want to learn how to blow a duck call by listening to a pro? Butch has recorded a short instructional cassette tape packed with sounds you need to know. For a copy, send $12 ppd. to: Duck Tape, Rich-Tone Duck Calls, Dept. WD, 1010 North Grand, Stuttgart, AR 72160.

Written by Peter J. Stephano
Photographs: Bob Hawks
Illustration: Mike Henry
BUILD THIS TERRIFIC TABLESAW HELPER FOR UNDER $50

RIGHT-ON RIP FENCE

If you’re looking for an inexpensive way to upgrade your tablesaw, you’ve turned to the right pages. After using accurate aftermarket fences, we challenged our own Jim Downing to design a wooden replacement fence for the readers who like to build their own workshop tools and save a bundle of money in the process. Less than 12 hours later, Jim emerged from his workshop, proudly hugging his prototype.

We think Jim’s design will please you, too. For less than $50, you can have the smooth-sliding, easily adjustable fence that you’ve always dreamed of.

Note: We designed our replacement rip fence to fit a Sears 10" motorized tablesaw. Some dimensions may vary for different tablesaws.

ACCURACY BEGINS WITH THE FRONT RAIL
1 From ¾" birch, rip and crosscut three pieces 1¾" wide by 53" long for the replacement guide rail (A).
With the edges and ends flush, glue and clamp the pieces face to face.
2 Later, remove the clamps and scrape off the excess glue.
3 Remove the existing front rail from your tablesaw.
4 Using a hacksaw, cut a piece of 2×2" angle iron to 53" long.
5 With the left end of the angle iron flush with the left end of the tablesaw extension, clamp the angle iron to the saw table as shown in the photo below.
6 Apply masking tape to the angle iron directly above each bolt hole and slot. Using a square, transfer the tablesaw hole and slot locations onto the tape as shown in the photo below. Remove the angle iron.
7 Drill and countersink ¼" holes through the angle iron, centering each hole between the lines and ¾" from the top edge of the angle iron. See the Angle Iron Detail on the opposite page for reference.

▼ Clamp the angle iron to the saw table, and transfer the hole and slot locations from the saw table to the angle iron.
8 Clean the angle iron with paint thinner, sand it smooth, and spray it with rust-resistant black paint.

9 For your fence system to perform correctly when completed, position the top edge of the guide rail (A) ¾" below the top surface of the saw table. To achieve this with your guide rail, we cut a ¾" rabbet ¾" deep along one edge of the rail where shown on the Guide Rail Drawing and accompanying Angle Iron Detail. Your rabbet depth may vary to achieve the ¾" spacing.

10 Clamp the angle iron to the rabbeted recess where shown on the Angle Iron Detail. Now, drill seven additional ¼" holes through the angle iron where shown on the Guide Rail Drawing above. Switch bits and drill ½" pilot holes 1¼" deep into the guide rail.

11 Using ¾ x 1 ½" lag screws, fasten the angle iron to the guide rail.

12 With ¾ x 1" flathead machine screws, fasten the angle iron to the saw table, using two ½" washers as spacers (see the Angle Iron Detail). Check that the guide rail is parallel with the saw table.

### Bill of Materials

<table>
<thead>
<tr>
<th>Part</th>
<th>Finished Size</th>
<th>Material Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3⁄4 x 1 ½&quot;</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>3⁄4 x 2 ½&quot;</td>
<td>1</td>
</tr>
<tr>
<td>C</td>
<td>3⁄4 x 3 ½&quot;</td>
<td>1</td>
</tr>
<tr>
<td>D</td>
<td>3⁄4 x 4 ½&quot;</td>
<td>1</td>
</tr>
<tr>
<td>E</td>
<td>3⁄4 x 5 ½&quot;</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>3⁄4 x 6 ½&quot;</td>
<td>1</td>
</tr>
<tr>
<td>G</td>
<td>3⁄4 x 7 ½&quot;</td>
<td>1</td>
</tr>
</tbody>
</table>

**Material Key:**

- LB: LB-laminated birch
- P: Plywood
- B: Birch

**Supplies:**

- ¾ x 2 x 2" angle iron 63" long, masking tape, paint thinner, rust-resistant black spray paint, ¾ x 1" flathead machine screws (7), ¾ x 2" flatwashers (23), external tooth lock washers (14), ½" nuts (9), ¾ x 4 ½" hex-head lag screws (7), ¾ x 5 ½" hex-head machine screws (2), ¾ x 2" hex-head machine screw and lock nut, ¼" threaded inserts (2), ¾" dowel stock, ½" and 2½" drywall (case-hardened) screws (4 each), finish.
CUT AND LAMINATE THE FENCE PIECES
1 Cut three pieces of 3/4" plywood (we used birch plywood) to 2 1/2" x 32" for the fence parts (B).
2 With carbon paper or a photocopy, transfer the cutlines from the Mechanism Opening Drawing to the left end of one plywood strip.
3 Saw along both cutlines to cut the pieces (we used a bandsaw).
4 Position the support block on one of the remaining fence pieces where dimensioned on the Mechanism Opening Drawing. With the bottom edges flush, glue and clamp the support block to the outer fence part where shown on the drawing. Glue and clamp the remaining inner fence part to the same outer fence part where shown on the drawing. Remove any excess glue from the opening.
5 With the edges and ends flush, glue and clamp the remaining fence part to the assembly. Be careful not to get any glue in the cutout area. Later, sand a 1/4" round-over along the top front edge where shown on the Fence Drawing.
6 Drill a 1/4" hole through the fence assembly where dimensioned on the Fence Drawing. Now, bore a 3/4" hole 1/4" deep and centered over the 1/4" hole on both faces of the fence rail (we used a Forstner bit).

THE LOCKING MECHANISM HOLDS IT IN PLACE
1 Transfer the full-sized patterns and hole centerpoints of the locking lever (C), connecting block (D), and finger clamp (E) to 3/4" solid birch with carbon paper or by adhering a photocopy to the stock. Bandsaw the pieces to shape. Mark an X on the lever where shown.
2 Drill a 3/4" hole through the locking lever where marked. Slide the connecting block in place and bolt the lever in position. Locate the edge with the X next to the connecting block where shown on the Fence Drawing. To keep the lever moving freely, don't overtighten the nut on the machine screw. Slide the finger clamp in place.
CONSTRUCT THE FENCE-HEAD

1. Using the Head Block Drawing for reference, mark the outline, notch, and the eight centerpoints for the head block (F) on 3/4" plywood. Bandsaw the head block to shape and sand smooth.

2. For mounting the fence to the head block later, drill four 3/8" holes where shown on the Head Block Drawing. Now, drill four 7/64" holes through the head block at the remaining marked centerpoints.

3. Cut the alignment block (G) to size. Using the Alignment Block Drawing for reference, transfer the 5/8" hole centerpoints and kerf locations to the block. Drill the two 5/8" holes where marked. Now, position your bandsaw fence 2" from the blade. Start at one end and cut to the 1/4" hole. Stop the saw, and back the piece away from the blade. Switch ends, and cut to the other 1/8" hole as shown in the photo below left. Sand a slight round-over on the front edges of the block where shown on the drawing.

4. Position the alignment block on edge with the kerfed edge on your workbench. On the opposite edge, mark the 7/64" hole locations for the threaded inserts where shown on the Alignment Block Drawing. Drill 7/64" holes 2" deep, centered from edge to edge (stop drilling when you reach the bandsawed kerf).

ASSEMBLY

Smooth ripping cuts require that the fence be parallel with the saw blade. The fences that come with many saws are hard to adjust and keep aligned with the blade. Our homemade fence adjusts easily and locks down firmly.

Position the fence and align the blade with the center of the 5/8" holes. Bandsaw to the holes to form a pair of kerfs in the alignment block.
5 Cut two pieces of \( \frac{3}{8} \)" dowel 1 1/4" long and slide one into each \( \frac{7}{16} \)" hole in the alignment block. Wax the threads of two \( \frac{3}{8} \)" threaded inserts, and screw the inserts into the \( \frac{7}{16} \)" holes in the adjustment block. Thread a \( \frac{1}{4} \)" nut on each of the two \( \frac{3}{8} \times 1\frac{1}{2} \)" hex-head screws. Thread a screw into each insert.

6 Position and clamp the alignment block to the bottom side of the head block. (See the Head Block Drawing for location.) Using the previously drilled \( \frac{5}{64} \)" holes as guides, drill \( \frac{7}{64} \)" holes \( \frac{3}{4} \)" deep into the alignment block. Screw (no glue yet) the alignment block to the bottom side of the head block.

7 Position and clamp the fence head (F, G) to the bottom side of the locking end of the fence (B), carefully checking for square. Using the previously drilled \( \frac{5}{16} \)" holes in the head block as guides, drill \( \frac{3}{8} \)" holes \( \frac{3}{4} \)" deep into the bottom of the fence. Screw the assemblies together as shown on the photo at right.

8 Position the fence assembly on the guide rail and check that the locking mechanism secures the fence to the guide rail. If not, you may need to take the head assembly apart and shorten or lengthen the connecting block accordingly. Now, glue and screw the assembly back together, checking for square.

9 Cut a \( \frac{1}{2} \times 3 \times 2\frac{1}{4} \)" stop block to size, and glue and clamp it to the guide rail where shown on the Guide-Rail Drawing. The block keeps the fence from sliding off the end of the rail.

ADD THE FINISH AND ADJUST THE FENCE

1 Mask the angle iron, and apply polyurethane to the fence assembly and guide rail. Later, after the finish has dried, remove the tape.

2 Move the existing rear rail so the left end of the rail aligns with the saw blade where shown on the Guide-Rail Drawing.

3 Position the fence assembly on the saw table and guide rail. Cut a \( \frac{1}{2} \times 1 \times 2\frac{1}{4} \)" spacer. Glue the spacer to the bottom of the fence so the spacer rides on the rear rail. See the Fence Drawing for reference.

4 Elevate your tablesaw blade as high as it will go. Slide the fence next to the blade. Using the drawing below right for reference, adjust the hex-head screws to align the fence parallel with the blade. Push the lever down, check the fence alignment to the blade, pull the lever up, adjust the screws, and re-check the alignment. Snug the \( \frac{1}{4} \)" nut on each screw against the \( \frac{1}{4} \)" threaded insert.

5 Refer to the drawing at right to secure the fence to the guide rail. When cutting plywood and other large pieces, position the fence, lock it in place, and clamp the end opposite the lock mechanism to the existing rear rail. This prevents the fence from flexing out of square.

Produced by Marlen Kemmet
Project Design: James R. Downing
Photographs: Hopkins Associates
Jim Kascouzas
Illustrations: Kim Downing; Mike Henry
HOW TO SAFELY FEED STOCK THROUGH A JOINTER

In knowledgeable hands, a jointer can make quick work of planing the edges and surfaces of boards. Here’s how to get the job done correctly.

For a smooth cut, position the workpiece so its grain runs downhill from the outfeed table as shown above. If the grain runs every which way, position the board so the majority of the grain flows in the correct direction, take a shallow cut (about \( \frac{1}{2}'' \)), and be sure to feed the stock slowly.

When jointing edges, hold the surface of the board flat against the fence with your left hand and feed the board with your right hand. Keep your left hand behind the cutterhead as shown in drawing A. With the board halfway across the cutterhead, swing your left hand around the blade guard as shown in drawing B. Now, place lefthand pressure down onto the outfeed table and toward the fence.

To remove stock from surfaces, move your hands in the same motion as described in step 4. To control the workpiece, use the fingertips of your left hand rather than your palm to guide the stock as shown below. For stock that’s less than 4'' wide, use a push block to control the stock with your left hand. Be sure to clear any dust from the bottom of the block for a good grip.

Illustrations: Jim Stevenson

1. For most jointer operations, you’ll set the fence at 90°. To check this angle, place a try square on the outfeed table as shown above, then adjust the fence until daylight disappears between the square’s blade and the fence.

2. Next, make a 1''-long, \( \frac{1}{8}'' \)-deep test cut on a piece of scrap stock. Lay the cut edge of the scrap piece against the fence as shown above, and check the depth of cut with a rule. Set your depth-of-cut scale according to this test cut.
Although some woodworkers consider a jointer to be a luxury item, a slew of us would feel lost without this machine in our workshop. Why? No other tool matches a jointer’s ability to quickly cut a true, baby-skin-smooth edge at a precise angle.

Just as the tablesaw has replaced the handsaw for many woodworking tasks, so has the jointer sidelined the hand plane for many edge- and surface-preparation jobs. But, this versatile tool’s usefulness doesn't stop there. You can even use it to cut tapered legs, chamfers, rabbets, and tenons.

Today, most of the jointers produced for the home-workshop market have 6¾"-long knives, meaning that they will cut a 6¾"-wide swath. Although you could purchase a 4" or 8" model (see the box on page 68), we will concentrate on the price-competitive 6" market. In this range you will find plenty of models under $400, including the nine we tested in our WOOD® magazine shop.

STRAIGHT FACTS ABOUT HOW A JOINTER WORKS
To understand how a jointer works, think of it as a motorized hand plane turned upside down. In place of the plane’s sole, jointers have two tables: one for infeed of the workpiece, and one for outfeed as shown at right. Between the tables sits a rapidly rotating cutterhead containing two or three knives.

To pass a workpiece over the cutterhead, you normally set the infeed table from 1/32" to 1/8" below the top of the cutterhead, depending on how much stock you want to remove with each cut. The outfeed table sits flush with the top of the cutterhead. Combined, the infeed and outfeed tables make up the bed of the jointer. As you pass a workpiece across the bed, the knives remove the desired amount of material. During the cut, you hold the stock firmly against a fence that adjusts from 90° to 45°, producing a square or beveled edge.

Although some manufacturers tout depth of cut as an important asset, we feel it’s an oversold feature. Why? Unless you use your jointer for making rabbets—a procedure we feel is better suited to a tablesaw or router table—you’ll never need to remove more than 1/16" of stock in one pass.

ADJUSTMENTS: WE PREFER KNOBS AND CRANKS
Of the few controls on a jointer, you’ll adjust the infeed elevation control more than any other. For this frequent change, we preferred the smooth and accurate crank-type controls found on most of the machines. Many manufacturers place this crank directly underneath the infeed table, but Jet wisely positions both the infeed and outfeed controls on the front of its model JJ6, making them easier to reach.

Continued
MACHINES THAT GIVE YOU THE EDGE QUICKLY AND ACCURATELY

ANATOMY OF A JOINTER

- Fence adjusts across width of tables
- Cutting head guard
- Fence controls
- Tilts from 90° to 45°
- Infeed table
- Outfeed table
- Outfeed elevation control
- Infeed elevation control
- Adjust table height for depth of cut
- Cutterhead

Opposite left: Foley-Belsaw model 445, Grizzly G1182, and Total Shop 915.

Near left: Sears model 23220, Jet JJ6, and Delta 37-280.
JOINTERS

The knob controls on the Delta 37-280 and Sears 23220 work much like the cranks. Similar in purpose, but different in design, the lever-operated controls on the Grizzly G1182 allow you to quickly adjust the tables up and down. However, our tests showed these levers make fine-tuning for a precise depth of cut difficult, and actually prolong the adjustment time.

With the exception of the Sears 23220, Delta 37-280, and the Ryobi JP-155, all the machines we tested had adjustments for the elevation and leveling of the outfeed tables. However, since all of the tables were true and level on the models called in for our tests, a lack of outfeed table adjustments does not appear to be a liability. In fact, we’ve never had to adjust the outfeed table on a Delta 37-150 during two years of service in our shop.

The infeed table, on the other hand, will take a pounding over time from dropped boards that could force it out of level. With the exception of the Ryobi JP-155, all the machines have infeed-table leveling controls. Al Nielsen of Ryobi says his company doesn’t see a need for such adjustments because “our high-tech die-casting process enables us to maintain very tight tolerances and plenty of strength in the infeed table.” We agree with Nielsen’s assessment of the machine’s high-quality castings, but we still would advise you to avoid dropping any heavy boards on this machine’s infeed table.

Besides infeed-table adjustments, you’ll also find yourself frequently adjusting the fence in two ways: across the width of the cutterhead to wear the knives evenly, and tilted for bevel cuts. We prefer fence controls located at the center of the fence to those mounted at the end of the fence such as on the Sears 23220 shown at bottom and the Total Shop 915. We found that the center-mounted controls adjust faster and lock the fence more securely. Among the centered controls, we appreciated the simplicity of the positive 90° and 45° stops common to the Jet JJ6 and Foley-Belsaw 445 as shown below.

Two bolts serve as quickly adjustable 45° and 90° stops on the Foley-Belsaw model 445, above, and the Jet model JJ6: a simple and efficient system.

CAPACITY: HOW MUCH JOINTER DO YOU NEED?

Since you'll use a jointer mostly for edge work, you might think that a 4" machine such as the Sears model 236221 shown at right has all the capacity you need. But as the photo shows, the differences between 4" and larger jointers goes well beyond the length of their knives. Most importantly, the majority of 6" jointers have 40" or longer beds and 28" or longer fences that allow you to comfortably joint stock up to 6' long. With a bed length of only 21½" on the Sears model, you’d have a hard time jointing boards longer than 4'.

Here’s some good news if you joint stock over 6' long: You can now buy Taiwanese-made 8" jointers for under $1,000. For example, the Grizzly model G1018 shown at right sells for $665 plus shipping and has a 65½" bed.
CHANGING KNIVES: SHEAR DELIGHT ON SOME MODELS
Nothing will hurt the performance of your jointer more than dull knives. And, when it's time to re-sharpen them, you'll think highly of a machine that makes removal and resetting as simple as possible. Of the nine jointers we tested for this article, only two—the Ryobi JP-155 and Sears 23220—have blade-adjustment screws that allow you to set the knives at the height of the outfeed table by means of two screws alongside the knives as shown in photo A. With cuttersheads that don't have adjustment screws, such as those on the Grizzly G1182 shown in photo B, adjusting the blades requires you to use a screwdriver or other instrument. No matter what machine you purchase, the knife-setting jig on page 31 will prove a big help.

SAFETY FEATURES: AN ABSOLUTE MUST
All of the machines we tested—with the exception of the Total Shop 915—had guards covering the cutterhead on both sides of the fence as shown on the Delta 37-280 on the following page. The Total Shop model we tested had no guard over the end of the cutterhead behind the fence, exposing up to 4 inches of spinning knives with the fence pulled toward the operator (see photo below). Wayne Preston of Total Shop says his firm now includes a guard that attaches to the backside of the fence. If you already own a Total Shop jointer that lacks this safety feature, you can purchase a guard from the company for $10.95 plus a minimum $3 shipping charge. You'll have to drill and tap three holes into the fence in order to mount the hinged plate.

We applaud the safety-conscious attitude of manufacturers that include push blocks with these machines: Delta 37-280, Ryobi JP-155, and Sears 23220.

Continued
JOINTERS
MOTORS: SPEED AND POWER COUNT
We jointed a variety of woods with ease on all of the test machines, and happily, none of them lacks power. But, the Ryobi JP-155 produced a far-smoother finish than any of the other machines. Why? With jointers, the higher the number of cuts per minute (cpm) the smoother the surface of your workpiece should be. Thanks to its rapidly turning universal motor, this mighty tike of a jointer (it weighs only 27 pounds) produces up to 32,000 cpm. Of the induction-motor jointers, none produce more than 24,600 cpm.
To confirm our theory that more cuts equals a smoother surface, we surfaced a 5"-wide piece of highly quilted maple on all of the jointers we tested. All of the machines except the Ryobi produced considerable grain tear-out.
The trade-off? Universal motors don't last as long on average as induction motors and have brushes that need occasional replacement. For the home workshop, a universal motor-powered jointer shouldn't require excessive maintenance. However, universal motors are noisier.

OTHER POINTS TO CONSIDER
• Stands: With the exception of the Ryobi JP-155 shown below, and the 4" Sears jointer, each machine we tested came with a stand. All the stands were stable except for the Total Shop 915. Rubber pads on its base contributed to a 2-3" sway with just a slight push on the machine. Total Shop plans to introduce a new base at a future date. Among the other machines, we liked the Grizzly stands that have chip chutes to direct cutting debris away from the motor and motor pulley, and conveniently into a trash container.
• Construction materials: Nearly all the jointers on the market have plenty of cast iron in their construction, making for stable, but heavy machines as shown in the chart opposite. And remember, if you buy one of these machines through the mail you'll pay freight on every extra pound.
The Delta 37-280, shown at left, makes a slight departure from the cast-iron trend by using extruded aluminum, a light but stable material, in its fence. But once again, the Ryobi JP-155 separates itself from the crowd by setting cast-aluminum tables and a fence on a plastic base for lightness. Ryobi engineers thoughtfully covered the outfeed table with a smudge-free stainless-steel sheet for long wear.

△ Only one jointer—the Ryobi JP-155—has a variable-speed control; a plus as far as we're concerned.
◆ Delta 37-280
**6" JOINTERS: WHO HAS THE EDGE?**

<table>
<thead>
<tr>
<th>MANUFACTURER/IMPORTER</th>
<th>MODEL</th>
<th>TOOL LENGTH (in)</th>
<th>CUT SPEED (sfm)</th>
<th>MOTOR</th>
<th>VOLTAGE</th>
<th>ANGLE-HEIGHT ADJUSTMENTS</th>
<th>FENCE MATERIAL</th>
<th>TABLE MATERIAL</th>
<th>OUTFEED TABLE</th>
<th>LEVERING TYPE</th>
<th>STANDARD EQUIPMENT</th>
<th>JEWELER'S QUALITY</th>
<th>U.S. SERVICE CENTER</th>
<th>WEIGHT (lbs)</th>
<th>SUGGESTED PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT</td>
<td>4121</td>
<td>42</td>
<td>N/A</td>
<td>6</td>
<td>110 V</td>
<td>14/7 15/8 230</td>
<td>Y Cl Cl</td>
<td>4 Cl</td>
<td>Y Y Y</td>
<td>10 yrs</td>
<td>2 yrs</td>
<td>2 yrs</td>
<td>1 T</td>
<td>1 T</td>
<td>202</td>
</tr>
<tr>
<td>Delta</td>
<td>27-150</td>
<td>55 1/2</td>
<td>12,500</td>
<td>1/2</td>
<td>220 V</td>
<td>14 15/8 230</td>
<td>Y Cl Cl</td>
<td>5 Cl</td>
<td>Y Y L</td>
<td>2 yrs</td>
<td>152 yrs</td>
<td>2 yrs</td>
<td>1 T</td>
<td>1 T</td>
<td>202</td>
</tr>
<tr>
<td>Delta</td>
<td>27-260</td>
<td>55 1/2</td>
<td>9,000</td>
<td>1/2</td>
<td>220 V</td>
<td>14 15/8 230</td>
<td>N EA Cl</td>
<td>3 Cl</td>
<td>N Y N</td>
<td>2 yrs</td>
<td>143 yrs</td>
<td>2 yrs</td>
<td>1 T</td>
<td>1 T</td>
<td>202</td>
</tr>
<tr>
<td>Foley-Belsaw</td>
<td>445</td>
<td>45</td>
<td>14,400</td>
<td>1</td>
<td>110 V</td>
<td>12 6/11 230</td>
<td>N Cl Cl</td>
<td>4 Cl</td>
<td>Y Y Y</td>
<td>1 yr</td>
<td>90 days</td>
<td>1 yr</td>
<td>1 T</td>
<td>1 T</td>
<td>187</td>
</tr>
<tr>
<td>General</td>
<td>1183-1</td>
<td>42 1/2</td>
<td>12,000</td>
<td>1</td>
<td>110 V</td>
<td>12 6/11 230</td>
<td>N Cl Cl</td>
<td>4 Cl</td>
<td>Y Y Y</td>
<td>1 yr</td>
<td>2 yrs</td>
<td>6 yrs</td>
<td>1 T</td>
<td>1 T</td>
<td>225</td>
</tr>
<tr>
<td>Grizzly</td>
<td>G1182</td>
<td>47</td>
<td>15,000</td>
<td>1/2</td>
<td>110 V</td>
<td>13 6 1/11 230</td>
<td>N Cl Cl</td>
<td>4 Cl</td>
<td>Y Y Y</td>
<td>2 yrs</td>
<td>90 days</td>
<td>1 yr</td>
<td>2 T</td>
<td>1 T</td>
<td>202</td>
</tr>
<tr>
<td>Jet</td>
<td>J8</td>
<td>42 1/2</td>
<td>13,000</td>
<td>1</td>
<td>110 V</td>
<td>12 6/11 230</td>
<td>N Cl Cl</td>
<td>4 Cl</td>
<td>Y Y Y</td>
<td>1 yr</td>
<td>30 days</td>
<td>1 yr</td>
<td>2 T</td>
<td>1 T</td>
<td>194</td>
</tr>
<tr>
<td>Lobo</td>
<td>JT-0006</td>
<td>42 1/2</td>
<td>13,500</td>
<td>1/2</td>
<td>110 V</td>
<td>18 6/11 230</td>
<td>N Cl Cl</td>
<td>4 Cl</td>
<td>Y Y Y</td>
<td>1 yr</td>
<td>1 yr</td>
<td>1 yr</td>
<td>1 T</td>
<td>1 T</td>
<td>194</td>
</tr>
<tr>
<td>Powermatic</td>
<td>150004</td>
<td>48</td>
<td>15,000</td>
<td>1/2</td>
<td>110 V</td>
<td>14 15/8 230</td>
<td>Y Cl Cl</td>
<td>4 Cl</td>
<td>Y Y Y</td>
<td>1 yr</td>
<td>1 yr</td>
<td>1 yr</td>
<td>1 T</td>
<td>1 T</td>
<td>202</td>
</tr>
<tr>
<td>Ryobi</td>
<td>JP-155</td>
<td>28% 541/2''</td>
<td>16,000, 32,000*</td>
<td>1/2</td>
<td>110 V</td>
<td>U 10 5/10 20</td>
<td>Y CA</td>
<td>4 Cl</td>
<td>Y Y Y</td>
<td>1 yr</td>
<td>1 yr</td>
<td>1 yr</td>
<td>1 T</td>
<td>1 T</td>
<td>425</td>
</tr>
<tr>
<td>Sears</td>
<td>22220</td>
<td>36</td>
<td>12,000</td>
<td>1</td>
<td>110 V</td>
<td>8 12 130</td>
<td>G Cl Cl</td>
<td>3 Cl</td>
<td>N N N K</td>
<td>1 yr</td>
<td>1 yr</td>
<td>1 yr</td>
<td>1 T</td>
<td>1 T</td>
<td>173</td>
</tr>
<tr>
<td>Total Shop</td>
<td>915</td>
<td>45</td>
<td>24,600</td>
<td>1</td>
<td>110 V</td>
<td>8 1/8 110 230</td>
<td>N Cl Cl</td>
<td>4 Cl</td>
<td>Y Y Y</td>
<td>1 yr</td>
<td>1 yr</td>
<td>1 yr</td>
<td>1 T</td>
<td>1 T</td>
<td>179</td>
</tr>
</tbody>
</table>

**MANUFACTURERS LISTING:**
American Machine & Tool Co. (AMT)
215/948-0400
Delta International Machinery Corp.
Outside P.O.: 800-438-2486
P.O. residents: 800-438-2487

Foley-Belsaw
Outside Mo.: 800-468-4449
Mo. residents: 800-885-8789

General Mfg. Co. Ltd.
819/472-1161

Grizzly Imports
209/474-0901

Jet Equipment & Tools
Outside Wash: 800-426-6402
Wash. residents: 206/572-5000

Lobo Power Tools
818/550-1096

Powermatic
Outside Tnc.: 800-248-0144
Tnc. residents: 615/473-5551

Ryobi America Corp.
312/250-7999

Sears
Call or visit your local Sears store

Total Shop
Outside S.C.: 800-849-4856
S.C. residents: 803/866-4174

**OUR RECOMMENDATION**
With its JP-155 jointer, Ryobi has basically taken its 6\" model L-580A hand-held planer, turned it upside down, and added variable speed. The formula works. Although we initially wondered about the wisdom of such a departure from typical jointer construction, this machine's ability to produce a smooth finish on dense and highly figured woods changed our minds. And, the machine's smooth cut produced an extra benefit: increased safety. As Jim Downing, WOOD magazine's design editor puts it: 'I like the Ryobi's manners—it doesn't hammer the wood or want to throw the wood back at you.'

About the only things we can fault in this machine are the short height of its fence (25\%) and the length of its bed (only 28\%).

Ryobi markets bed extensions that increase the bed length to 54 1/2" but we weren't able to obtain a set to test for trueness. Because of its lightweight construction and universal motor, this unit wouldn't fare well in a heavy-use or user-abusive environment.

Written by Bill Krier
Technical consultant: Dennis Puckett
Illustrations: Jim Downing; Jim Stevenson
Photographs: Jim Kascoutas
FIFTH-ANNIVERSARY SPECIAL

THE CLASSIC WOODY

Help us celebrate WOOD® magazine's fifth anniversary in grand fashion by building our classic Woody. Once you’ve crafted this collector’s item—reminiscent of a 1930 Ford Woody—send us a photo of the completed model, and we’ll send you, free of charge, a ½ x 1” engraved brass license plate, like the one offered on page 76. We’ve numbered them sequentially, so get started right away and receive a low number.

Note: You’ll need thin stock for this project. You can either plane or resaw stock to the thickness stated in the Bill of Materials. Or, see the Buying Guide on page 77 for our source. You’ll find helpful suggestions in our “Working Small” article, starting on page 50, when working with the small car parts.

THE WHEELS START THE ASSEMBLY LINE ROLLING

Note: We found it best to build the wheels and add them to the chassis now for ease in positioning the fenders on the chassis in the next section. See the Buying Guide for our source of laser-cut spoked rims.

1 Cut a piece of ¼”-thick walnut to 2¼” wide by 15” long (enough material for six tires—an extra tire in case one breaks during machining). Now, cut a piece of ½” or ¾” scrap stock to the same length and width as the walnut.

2 Cover the bottom side of the walnut with double-faced tape, and stick the walnut to the scrap block with the edges and ends flush. Mark reference lines on the walnut for locating the wheel centerpoints where dimensioned on Step 1 of the drawing titled Cutting The Tires on the opposite page.

3 Mount a circle cutter in your drill press, and follow the two-step
Bill of Materials

<table>
<thead>
<tr>
<th>Part</th>
<th>Finished Size*</th>
<th>Matl.</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1/4&quot; 11/16&quot; diameter</td>
<td>W</td>
<td>5</td>
</tr>
<tr>
<td>B</td>
<td>1/4&quot; 2 1/2&quot; 7/8&quot;</td>
<td>W</td>
<td>1</td>
</tr>
<tr>
<td>C*</td>
<td>1 1/16&quot; 1 1/16&quot; 2&quot;</td>
<td>LC</td>
<td>1</td>
</tr>
<tr>
<td>D*</td>
<td>1 1/16&quot; 1 1/16&quot; 2&quot;</td>
<td>C</td>
<td>1</td>
</tr>
<tr>
<td>E</td>
<td>3/4&quot; 1 1/4&quot; 2 1/4&quot;</td>
<td>C</td>
<td>1</td>
</tr>
<tr>
<td>F*</td>
<td>3/4&quot; 1 1/4&quot; 8 1/2&quot;</td>
<td>W</td>
<td>2</td>
</tr>
<tr>
<td>G</td>
<td>3/4&quot; 1 1/4&quot; 1 1/4&quot;</td>
<td>M</td>
<td>1</td>
</tr>
<tr>
<td>H</td>
<td>3/4&quot; 2 1/4&quot; 6&quot;</td>
<td>C</td>
<td>1</td>
</tr>
<tr>
<td>I</td>
<td>3/4&quot; 1 1/4&quot; 2 1/4&quot;</td>
<td>C</td>
<td>2</td>
</tr>
<tr>
<td>J</td>
<td>3/4&quot; 1 1/4&quot; 6&quot;</td>
<td>C</td>
<td>2</td>
</tr>
<tr>
<td>K</td>
<td>3/4&quot; 3/4&quot; 2 1/4&quot;</td>
<td>W</td>
<td>1</td>
</tr>
<tr>
<td>L</td>
<td>3/4&quot; 1 1/4&quot; 2 1/4&quot;</td>
<td>W</td>
<td>1</td>
</tr>
<tr>
<td>M</td>
<td>3/4&quot; 3/4&quot; 2 1/4&quot;</td>
<td>M</td>
<td>12</td>
</tr>
<tr>
<td>N</td>
<td>3/4&quot; 1/2&quot; 1 1/4&quot;</td>
<td>M</td>
<td>2</td>
</tr>
<tr>
<td>O</td>
<td>3/4&quot; 1/2&quot; 2 1/4&quot;</td>
<td>M</td>
<td>2</td>
</tr>
<tr>
<td>P</td>
<td>3/4&quot; 3/4&quot; 6&quot;</td>
<td>M</td>
<td>2</td>
</tr>
<tr>
<td>Q</td>
<td>3/4&quot; 1/2&quot; 2 1/4&quot;</td>
<td>M</td>
<td>4</td>
</tr>
<tr>
<td>R</td>
<td>3/4&quot; 1/2&quot; 1 1/4&quot;</td>
<td>M</td>
<td>8</td>
</tr>
<tr>
<td>S</td>
<td>3/4&quot; 1/2&quot; 2 1/4&quot;</td>
<td>M</td>
<td>1</td>
</tr>
<tr>
<td>T</td>
<td>3/4&quot; 1/2&quot; 3&quot;</td>
<td>M</td>
<td>2</td>
</tr>
<tr>
<td>U</td>
<td>3/4&quot; 1/2&quot; 2 1/4&quot;</td>
<td>M</td>
<td>4</td>
</tr>
<tr>
<td>V</td>
<td>3/4&quot; 2 1/4&quot; 6 1/2&quot;</td>
<td>W</td>
<td>1</td>
</tr>
<tr>
<td>W</td>
<td>3/4&quot; 3/4&quot; 3/4&quot;</td>
<td>W</td>
<td>1</td>
</tr>
</tbody>
</table>

*Initially cut parts oversized. Trim them to finished size according to the how-to instructions.

Material Key: W-walnut, LC-laminated cherry, C-cherry, M-maple

Supplies: double-faced tape, 3/8" walnut dowel stock for axles, 1/4" birch dowel stock for light bar, 1/2" birch dowel stock for headlights, masking tape, finish.

Continued
THE CLASSIC WOODY

drawing to cut the walnut tires to shape. Note the position of the cutter in each step.
4 To avoid breaking the tires when removing them from the scrap block, splash a little lacquer thinner over each tire to weaken the tape adhesive. Then, carefully pry the tires from the tape. Hand-sand a slight round-over on the inside and outside edges of each tire.
5 To smooth the outside edges of the rims—they’re a little rough from the laser cutting—fasten them to a 6” length of ¼” all-thread rod. Chuck the assembly into your drill press as shown in the drawing below. Using a sanding block, lightly sand the outside edges smooth; be careful not to sand too much. Remove the rims from the rod.

6 To adhere the rims to the tires, position one of the tires on a flat surface. Place a ¼” washer inside the tire, and lay a rim on the washer. Apply a few drops of instant glue to adhere the tire to the rim as shown in the photo at top of the next column. (We used a pencil to center the rim inside the wheel when gluing.) Repeat for each wheel. (We found instant glue helpful to avoid problems adhering the small parts.) See the Buying Guide for our glue source of glue.
7 Cut the front and rear axles to 3¾” long from ¼” walnut dowel stock. Glue the axles to the rims, with the ends of the axles flush with the outside face of each rim.

CONSTRUCT THE CHASSIS
1 Cut a piece of ½”-thick walnut (we planed ¾” stock) to 2¼” x 7½” long for the chassis (B).

Dab instant glue onto the joint between the tire and the laser-cut insert.

2 Mark the location, and dado on the bottom of the chassis, using the dimensions on the Chassis Side-View Drawing for reference.
3 Using the Side View for reference, mark the cutline for the taper along one edge at the front of the chassis blank. Bandsaw the taper.
4 Now, referring to the Top View Drawing, mark the shape of the chassis on the top surface of the walnut and cut the chassis to shape. Sand the chassis smooth.
5 Turn the chassis upside down. Center the axle assemblies from side to side on the chassis, and glue them into the dadoes.

NEXT, THE HOOD ASSEMBLY
1 To form the engine side-panel lamination (C), cut two pieces of ¾” cherry stock to 1¼” X 4”. With the edges and ends flush, glue and clamp together the two pieces.
2 Cut the hood (D) to the size listed in the Bill of Materials plus 2” in length. Glue and clamp the hood to the engine side-panel lamination, with the edges and ends flush where shown on the drawing below. After the glue dries, trim both ends for a 2” finished length.
3 Cut the cowl (E) to size and glue it to the lamination where shown on the drawing below.
4 Mark the cutlines where shown on the drawing below, and bandsaw the sides of the assembly where marked. Sand smooth.
5 Rout or sand a ¼” round-over along the top edges of the hood assembly where shown on the drawing on page 77.
6 With the front of the hood assembly flush with the notch in the chassis, glue the hood assembly to the chassis. Center the assembly from side to side on the chassis.

MAKING THE SIDE PANELS, HOOD, AND COWL ASSEMBLY

HOOD (D)

COWL (E)

ENGINE SIDE PANEL (C)

WOOD MAGAZINE  OCTOBER 1989
ON DOWN THE LINE, FORM THE FENDERS

1. Cut two pieces of ¾" walnut to 13/4 x 8½" long for the fenders (F).

2. Transfer a full-sized side-view fender pattern to the outside face of each fender blank with carbon paper or by adhering a photocopy of the pattern to the stock. Transfer the right fender top view to one blank and the left fender top view to the other.

3. Bandsaw (we used a ¾" blade) along the cutlines on the outside face of each fender. Then, tape the pieces together and cut along the marked top-view cutlines to finish cutting the fender to shape as shown in the photo below.

4. Carefully sand round-overs on each fender where shown on the Fenders Drawing at right and in the opening photo. (We used the drill-and-disc-sanding technique shown on page 53 to sand the fenders; you also could hand-sand them to shape.)

5. Position and tape the fenders to the chassis. Taping the fenders in place frees your hands to apply the glue. When locating the fenders, keep an even gap between the rear wheel and fender, and hold the bottom of the front fender ¾" above the top of the tire. When properly taped in position, glue in place. Later, remove the tape.

We adhered a photocopy of the pattern to the fender blank with spray-on adhesive, and then cut the fender to shape.
THE CLASSIC WOODY

**BODY BY YOU**
1. From ¾” cherry, cut the floor (H), firewall and tailgate (I), and side panels (J) to size.
2. Glue the floor in place directly behind the cowl and centered from side to side on the chassis.
3. While checking for square, glue the firewall to the back of the hood assembly and to the top of the floor. Now, glue the side panels and tailgate in place.
4. Cut the seat pieces (L, K) to the sizes listed in the Bill of Materials. Sand a ¼” round-over on each where shown on the Hood and Body Assembly Drawing. Glue the pieces in place with the front edge of part K ½” from the firewall.

**FREE LICENSE PLATE**

To order, just send us a photograph of your Woody and a self-addressed, stamped, No. 10 business envelope to:

I Built a Woody
WOOD Magazine
Locust at 17th
Des Moines, IA 50316

**LET’S VISIT THE TRIM SHOP**
1. From ¾” maple stock, rip 3 strips ¾” x ¾” x 24” long. See our method of ripping thin strips on page 79 of the handwoven thin basket article.
2. Cut bottom trim pieces (M, N) to length plus ¾” from the 24”-long pieces. Sand one end of trim pieces M and N to conform to the fender. Glue trim pieces M and N in place.
3. Cut the maple window posts (O) to length. Mark centerlines on the outside face of the cherry side panels (J) where dimensioned on the Hood and Body Assembly Drawing at right. Glue the posts in position as shown in the photo on the opposite page. Sand the ends of four window posts to conform to the fender. Carefully align the top ends of the posts.
4. Cut the remaining trim pieces (P,Q,R,S,T,U) to the lengths listed in the Bill of Materials. Glue the remaining trim pieces in place.

**BRIGHT IDEAS FOR THE RADIATOR AND HEADLIGHTS**
1. Transfer the full-sized radiator pattern to a piece of ¼” maple. Cut the radiator (G) to shape. Hand-sand the radiator smooth.
2. Center the radiator against the front of the hood assembly and glue it in place.
3. Using a straightedge, mark a line the length of a piece of plywood. Mark four centerpoints 1” apart on the line where shown in the photo below left. Drive a 6d nail at each of the four centerpoints.
4. Cut three pieces of ½” dowel stock to 4” long for the headlight bar. Soak the three pieces of dowel in hot water for one hour. Remove the dowels from the water and weave them in position as shown in the photo. Let the dowels dry overnight in the form.
5. Remove the dowels from the form. Save the dowel that retains the most curve. Position that dowel on the full-sized Radiator and Headlight Drawing and mark the cutlines. Trim the headlight bar where marked. Check the fit of the bar between the front fenders and sand for a flush fit.
6. From ½” dowel stock, cut a piece 6” long. Chuck the dowel in your drill press. With the drill press running at about 500 rpm, hold a pencil against the spinning dowel and mark a line ¾” from the bottom end of the dowel. As shown in the photo above, shape a headlight at the end of the dowel with a sanding block. See the Radiator and Headlight Drawing above left for reference. Remove the dowel from the drill press and trim the headlight where marked. Repeat the process to form a second headlight.
7. Glue the headlight bar in place between the fenders and against the radiator. Glue the headlight bar to the bar where shown on the Radiator and Headlight Drawing.

Chuck a ¼” dowel into your drill press and sand the bottom end to form a headlight.

Soak ½” dowel stock in water, and then bend the dowels around the nails to shape the headlight bars.
5 Cut the roof (V) to size and belt-sand a taper on the front top edge where dimensioned on the Final Assembly Drawing. Sand a slight round-over on the top edges of the roof where shown on the drawing. Glue the roof in place.

Position and glue one window post on each side of the marked lines.

6 Hand-sand a slight round-over along the back edges of the body where shown on the Corner Detail.

7 Cut the license block (W) to size and glue it to the floor.

PAINT IT, LICENSE IT, AND HIT THE ROAD

Apply the finish. Send us a photo of your Woody for a free, brass license plate (see the offer on the opposite page for details). Glue the license plate to the license block.

BUYING GUIDE

- **Instant glue kit (cyanoacrylate)**. Hot Shot Special “T”, bonds in 50 seconds, 2-oz. bottle. Solvent, 2-oz. bottle separates objects mistakenly bonded. One bottle of each for $16.65 ppd. Garrett Wade, 161 Ave. of the Americas, New York, NY 10013 or call 800-221-2942.

- **Spoked inserts**. Six laser-cut baltic birch inserts, 1¾" diameter, $5.45 ppd. Custom Awards, 1427 NW. 81 St., Des Moines, IA 50311.

- **Hardwood**. Same-sized pieces and types of wood shown in the Cutting Diagram. $19.75 ppd. ($24.75 in Canada). EDLCO, P.O. Box 5373, Asheville, NC 28813, or call 704/255-8765 to order.

Produced by Maden Kemmet
Project Design: James R. Downing
Photographs: Hopkins Associates
Illustrations: Kim Downing; Bill Zau
Opening illustration by Jim Stevenson
My travels around the country to the nation's top crafts fairs bring me in contact with many beautiful woodworking projects. But on a recent trek to Minnesota, I did a double-take when I happened onto this hardwood basket from designer/woodworker Keith Raivo. It's easy to make, thanks to Keith's method of cutting the weavers with a tablesaw.

### Cutting Diagram

- **Lid front blank** measures 4 1/4 × 7 1/2".
- 3/4 × 5 1/2 × 24" Oak
- 3/4 × 1 1/4 × 20" Walnut
- 3/4 × 1 1/4 × 20" Oak

- 1/4 × 1 3/4 × 19 1/2" Walnut
- 3/4 × 3 1/2 × 19 1/2" Walnut
- 1/4 × 1 1/4 × 19 1/2" Oak
- 1/2 × 1 1/4 × 20 1/4" Oak

### Handwoven WHAT A TOP DESIGN

**NOTE:** You'll need thin stock for this project. You can either resaw or plane thicker stock to size.

### PREPARING THE STOCK:
1. For the base (A), uprights (B, C), bottom oak band (D), narrow walnut weavers (E), wide walnut weavers (F), center oak weaver (G), top oak bands (H, I), and lid pieces (J, K), rip and crosscut 3/4"-thick, straight-grained boards to the size shown on the Cutting Diagram. The pieces are cut large initially for safety when machining them later.
2. Plane the pieces to the thickness listed on the Cutting Diagram.

### START WITH THE BASE:
1. Using carbon paper or a photocopy and spray-on adhesive, transfer the full-sized Base Pattern and the 10 upright locations to the bottom side of the base blank (A).
2. Bandsaw the blank to shape and sand the cut edge smooth. Set the base aside for now.
NOT BASKET
FROM THE UPTOWN ARTS FAIR IN MINNEAPOLIS

RIP THE THIN STRIPS WITH EASE AND SAFETY

Note: We cut twice as many bands and weavers (D,E,F,G,H,I) as needed; it's easy to break the thin strips during construction.

1 Stick a piece of masking tape to the tablesaw top where shown on the Strip Rip-
ping Drawing. Position a straightedge against both sides of the saw blade and mark blade-reference lines on the masking tape. Now, mark a line parallel to the outside reference line \( \frac{1}{16''} \) away from the blade where shown on the draw-
ing. (To prevent the thin strips from falling into the saw, we cut a piece of hard-
board to the same shape and thickness as the tablesaw insert. With the hard-
board insert taped in place, we slowly raised the rotating blade through the hardboard to make a zero-clearance insert.)

2 Position the outside edge of the 20"-long walnut upright blank (B) along the \( \frac{1}{16''} \) reference line. Using a push stick, rip a strip from the edge of the walnut. Measure the width of the strip and re-mark the line if the strip doesn't measure \( \frac{1}{16''} \) (it took us a couple of tries).

3 Crosscut six uprights (B) to 3" long from the \( \frac{1}{16''} \times \frac{3}{4}'' \times 20'' \) strip.

4 Repeat the procedure to cut the oak uprights (C), the bottom oak band (D), and the top bands (H, I) to size. Trim the top inside band (I) to length (it's slightly shorter than the top outside band (H).

5 Remove the masking tape, mark a second line \( \frac{1}{2}'' \) from the outside blade-reference line, follow the procedure just described to cut \( \frac{1}{2}'' \)-thick weavers (E, F, G).

Continued

Bill of Materials

<table>
<thead>
<tr>
<th>Part</th>
<th>Finished Size</th>
<th>Mat. Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3/8'' 4 1/4'' 6''</td>
<td>O 1</td>
</tr>
<tr>
<td>B</td>
<td>3/8'' 3/8'' 3''</td>
<td>W 6</td>
</tr>
<tr>
<td>C</td>
<td>3/8'' 3/8'' 3''</td>
<td>O 4</td>
</tr>
<tr>
<td>D</td>
<td>1/8'' 1/8'' 20 1/4''</td>
<td>O 1</td>
</tr>
<tr>
<td>E</td>
<td>3/16'' 1/4'' 19 1/2''</td>
<td>W 4</td>
</tr>
<tr>
<td>F</td>
<td>3/16'' 3/16'' 19 1/2''</td>
<td>W 2</td>
</tr>
<tr>
<td>G</td>
<td>3/16'' 1/4'' 19 1/2''</td>
<td>O 1</td>
</tr>
<tr>
<td>H</td>
<td>3/16'' 1/2'' 18 1/4''</td>
<td>O 1</td>
</tr>
<tr>
<td>I</td>
<td>3/16'' 1/2'' 20 1/4''</td>
<td>O 1</td>
</tr>
<tr>
<td>J</td>
<td>3/8'' 1 1/2'' 6''</td>
<td>W 1</td>
</tr>
<tr>
<td>K</td>
<td>3/8'' 3/8'' 6 1/2''</td>
<td>O 1</td>
</tr>
<tr>
<td>L</td>
<td>3/8'' 3/8'' 1 1/4''</td>
<td>W 2</td>
</tr>
</tbody>
</table>

Material key: O-oak, W-walnut
Supplies: instant glue, double-faced tape, masking tape, 1/4 x 1/2 x 6' leather strip, finish.

FULL-SIZED BASE

Mark upright reference lines on bottom of base

Saw blade
Zero-clearance insert
Blade-reference lines
Masking tape
Fence
Stock

WOOD MAGAZINE OCTOBER 1989
WHATNOT BASKET

ATTACH THE UPRIGHTS AND START WEAVING
1 Using instant glue or epoxy, secure the oak and walnut uprights (B, C) to the oak base where previously marked. (See our source for instant glue in the Buying Guide on page 81.) After you have glued all the uprights in place, sand the bottom of the base to remove the upright-location pencil marks.
2 Belt-sand a taper on both ends of the bottom band (D) and the top bands (H, I). See the Bottom-Band Detail below for reference.
3 To make the strips (D,E,F,G,H,I) easier to bend, soak them overnight in water. (We had to weight ours down to keep them from floating to the surface of the cake pan.)
4 Drill pilot holes, and glue and nail the bottom oak band (D) to the basket base. (See the Buying Guide on the opposite page for our source of copper clench nails.)
5 As shown in photo A, weave the bottom walnut weave (E) through the uprights. (We wove the weave at the top of the uprights. Once we completed the loop, we slid the weaver down next to the base.) Repeat the process until all the top two bands (H, I) have been woven into place.
6 Loop the inside oak band (H) into position. Center the outside top band (I) over the front walnut upright (B). Clamp the band in place as shown in photo B. Drill a ¼" hole through the top bands and upright as shown in the photo.
7 Fit a nail through the hole. Snip the pointed end of the nail with wire cutters so only ¼" protrudes on the inside of the basket. Using a ball-peek hammer, rivet (flatten) the nails as shown in photo C. Repeat the drilling and nailing at each upright, overlapping the bands as shown on the Fastening Detail below. Let the box dry overnight.

TO TOP THINGS OFF, ADD THE LID
1 Tape the lid back blank (J) to the lid front blank (K) with the surfaces and ends flush. (We used double-faced tape.)
2 Turn the basket upside down, and place it on the taped-together lid pieces so the basket covers 1½" of the walnut lid back.
3 Tape the woven basket to the lid pieces as shown in photo D. With the lead of a sharp pencil in the hole of a ¼" washer, trace around the basket to lay out the shape of the lid as shown in the photo. Cut the lid to shape, and sand the cut edges smooth.
4 Chuck a ⅜" round-over bit in your table-mounted router. Rout a partial round-over on the top edge of the taped-together lid pieces where shown on the Hinge/Center-Over Detail. Sand smooth, and remove the tape holding the lid pieces together.

Weave the weaver into position at the top of the uprights. Then, slide the weaver against the base.

Drill a ¼" hole through the top outside band, center walnut upright, and top inside oak band.
FORMING THE HINGES AND ATTACHING THE LID

1. Using the full-sized Hinge Pattern below right, lay out two hinges, including the opening and the nail hole centerpoint, on ¾" walnut stock. Cut the hinges to size. Drill a blade start hole and use a scrollsaw or a coping saw to cut the opening in each hinge to shape.

2. Sand a slight round-over on all top edges of each hinge.

3. Mark the hinge slot locations on the lid back (J) where dimensioned on the Lid Back Drawing below. Drill start holes and cut the openings to shape. Sand a slight chamfer on the front and back edges of each opening for a better fit later of the hinge straps. (For reference, see the Hinge/Round-Over Detail accompanying the drawing titled Attaching the Lid.)

4. From ¾"-thick by ½"-wide leather, cut two strips 3" long each. Loop the leather through the hole in each hinge. (We bought our leather at Tandy—you also could get it at a shoe repair store.) With the ends flush, glue together the ends of the leather strips. (We used instant glue and left just enough free play for the hinge to rotate snugly in the leather loop.)

5. Wrap a leather strap around a hinge, slip a strap through each slot in the lid back. Drill a ¼" hole through each leather strap where shown on the Hinge/Round-Over Detail. Push a nail through each hole in the leather, and then bend it over as shown on the detail.

6. Hold the lid front (K) ¾" away from the lid back, and mark the hinge locations on the lid front. Glue and clamp the hinges to the lid front where marked. Later, remove the clamps, and drill a ¼" hole through each hinge and lid. Drive a copper clinch nail through each hole—these two nails are for appearance only.

FINAL ASSEMBLY AND PRESTO, IT’S DONE!

1. Carefully belt-sand the top of the uprights flush with the top oak bands. Then, hand-sand the entire basket with 220-grit sandpaper. (Soaking the wood causes lots of raised grain.)

2. Glue and clamp the lid back (J) to the basket with an even overhang around the back edge. Immediately wipe off excess glue with a clamp cloth.

3. Apply a clear finish. (We used an oil finish; an aerosol also would work well to help cover all those hard-to-get-at places.)

BUYING GUIDE


Project Design: Keith Raivo Designs, Brook Park, MN 55007. Photographs: Hopkins Assoc. Illustrations: Kim Downing; Bill Zaun
PINT-SIZED
A TERRIFIC WAY

Note: You'll need 7/16" and 3/16" stock for this project. You can either plane or resaw thicker lumber to this thickness. You might also want to read the "Working Small" article on page 50. It provides helpful suggestions for machining small-parts projects such as this.

START WITH THE
ROUTING JIG
Note: The jig allows you to mass-produce these frames easily.

Cut a piece of 1/2"- or 3/4"-thick stock (we used walnut) to 3 1/2" x 5 1/2". With carbon paper or by adhering a photocopy, transfer the full-sized oval pattern shown below left to the center of the stock.

Supplies: 18 x 1/2" brads, silicone sealant, double-faced tape, clear plastic (DuPont Mylar) page protector, finish.

BUYING GUIDE

FULL-SIZED
OVAl PATTERN

ROUTING JIG

3/4" hole

1/4 x 1/2 x 3 1/4"
end blocks

oval opening

3 1/2"

5 1/2"

1/4 x 1/2 x 5 1/4"
side blocks

plywood

3/4" x 18 brad

SECTION VIEW

SUPPORT

INSERT

13/16" x 2 1/2" photograph

Silicone

OVAl FRAME

INSERT

SUPPORT

OVAL FRAME

Sand a slight chamfer on back of insert

Double-faced tape

Clear plastic (mylar)
PICTURE FRAMES
TO SHOWCASE THOSE SPECIAL PHOTOS

2 Drill a blade-start hole, and carefully cut and sand the opening to shape. (We cut the oval with a scroll saw and sanded the opening smooth with a 1" drum sander.)
3 Construct the jig shown on the Routing Jig Drawing on the opposite page. Drill a 3/4" hole through a corner of the jig.

CUT AND ROUT
THE OVALS TO SHAPE
1 Cut a piece of 7/16" stock to 3 3/4 x 4 3/4" for each frame desired. (We planed a 3 3/4"-wide by 18"-long piece of 1/2" walnut to 7/16" thick. Then, we crosscut four 4 3/4"-long blanks from the length.) Check for a snug fit of the frame blank in the routing jig opening.

2 Fit a frame blank into the jig. Bore a 3/8" hole through its center.
3 Mount a 1/2" flush-trimming bit with a 1/8" pilot bearing to your table-mounted router. Position the jig and bit where shown on Step 1 on drawing below. See the Buying Guide for our source of bits.
4 Start the router and run the bearing along the inside edge of the jig to rout the oval interior.
5 Switch to a 3/8" pilot bearing on the router bit, lower the bit to the level shown on Step 2 of the drawing, and rout a 3/8"-deep rabbit along the bottom of the blank.
6 Stick a dowel through the 3/4" hole in the jig to push the blank free. Follow Step 3 on the drawing to finish routing the interior.

7 Set the pencil in a compass 3/4" from the point. As shown in the photo below, stick the compass point in the rabbet, and mark the oval exterior onto the blank. Cut the frame exterior to shape.

8 Using a 3/8" round-over bit and Step 4 on the 4-step drawing at left for reference, rout round-overs on the outside edges of the oval frame.

THE INSERTS COME NEXT
1 Lay the frame, rabbit side down, on a piece of 3/8"-thick stock. Hold a sharpened pencil at an angle, and trace the rabbeted opening's shape onto the 3/8" stock for the insert. Cut the insert to rough shape, cutting slightly outside the marked line. Sand to the marked line, and check the fit of the insert in the rabbeted opening in the oval frame. (We left about 1/32" gap between the frame and insert.)
2 Sand a chamfer along the back edge of the insert where shown on the Exploded-View Drawing.
3 Using the insert as a template, cut a piece of clear plastic (we used a Mylar page protector available at office-supply stores). Now, utilize the oval plastic insert as a template to cut the photo to shape.

Continued on page 90
TULIP TIME AT YOUR LATHE
CANDLE HOLDERS WITH A FLARE

Armed with a degree in woodworking and furniture design from Indiana University of Pennsylvania, Mark Burhans headed for the lathe to put his knowledge and skills to work. Six years later, this full-time turner/furniturermaker markets a line of turned candle holders and weed vases. Mark, who lives in Athens, Ohio, prefers the local Appalachian hardwoods, such as cherry and walnut, for his creations.

MOUNT THE STOCK AND TURN IT TO SHAPE
Mark starts by fastening a 3\times3\times4\frac{1}{2}'' block to his 3'' faceplate. "I use a 1'' spindle gouge ground to a 50'' angle for roughing the block to a cylinder," Mark says. "All that's required is a sharp edge, a light touch, and good eye protection." With a parting tool and a lathe speed of 1,230 rpm, Mark trues up the top (the end opposite the faceplate) of the holder. Then, he switches to a 1/2'' spindle gouge to turn the exterior to shape. A skew is used to form the V-cut for the base. (Make a full-sized template for help if necessary.)

Mark then moves the tailstock around to the end of the candle holder and calls on a parting tool to form the tapered opening. Smooth cuts leave the Ohio turner with little sanding before parting the holder from the waste stock.

FLARING THE TULIP TOP COMES NEXT
Mark supports the neck of the candle holder with a 3/8''-thick piece of stock, and cuts a kerf 3/8'' into the center of the holder where shown in the drawing at left. Moving to a 1\times42'' strip sander, he slips the belt into the kerf and sands at an angle to flare the opening. Although it would take a bit more elbow grease, you also could file the opening to shape.

"I smooth the the sanded edges and finish-shape the flared top with a coarse and then a fine half-round file," says Mark (see the photo below). "Next, I wipe on a coat of Danish oil and let it dry. Finally, I buff the candle holder with a muslin buffing wheel loaded with tripoli (a jeweler's polishing compound)."

Project Design: Mark Burhans,
95 Morris Ave., Athens, OH 45701
Photographs: Jim Kascouts; Brian Blauser
Illustrations: Kim Downing; Bill Zau

Mark employs half-round files to smooth the belt-sanded edges of each candle holder.

WOOD MAGAZINE OCTOBER 1989
New Low Price...

Super 15" Scroll Saw
On Sale... $119.95
Cut intricate wood patterns easily with this versatile machine. Many extras, including:
- Accessory package now worth $52.00
- New "E-Z Set" Blade change system

FEATURES:
- Parallel Rocker Arm Cutting System: Drives the blade up and down, avoids blade breakage, polishes as it cuts, eliminates sanding.
- "E-Z Set" Blade change system: Clamps any thickness blade (down to "000" size) easily into the "E-Z Set" pivoting blade holders mounted permanently on the saw arms. Simplifies reattaching blades especially when making internal cuts.

SPECIFICATIONS:
- Construction: Cast Iron
- Throat depth: 15" in
- Max depth of cut: 2" in
- Machine weight: 43 lbs
- Motor: Heavy duty totally enclosed fan cooled 110-120V, UL listed, ball bearing induction motor
- Blades: 5" standard & pin end
- Stroke length: 3/4" in
- Cut Speed: 1650/min
- Table tilt: 0° - 45° to left

Options: Dust Blower & Saw Stand

Free with Purchase of Saw
- 12 Blade Assortment: $3.50 value
- Extra Std. Blade Holder set: $8.50 value
- "E-Z Set" blade change system: $15.00 value
- Neptune 1-1/2" plastic Lettering Guide Set: $25.00 value

FREE ... $52.00 VALUE

Super 125 Planer
Portable with "Power Feed" - Shipped assembled
Retail value over $600.00
On Sale... $349.95

This machine will pay for itself time and again by planing your own lumber. At 65 lbs, you can carry this Planer to a job site or mount it permanently in your workshop like any stationary machine. You'll spend hundreds of dollars less for this 12-1/2" power feed Planer than for a traditional stationary model of a similar capacity - with comparable results.

SPECIFICATIONS:
- Knives: 2ea, 12-1/2" wide, HSS
- Motor: 16 Amp, 115V, 8000 RPM
- Auto Feed rate: 25.2 FPM
- Cutting speed: 16000 cuts/min
- Thickness of stock: 3/16" to 6" in
- Size: 15-1/2"H x 22"W x 21"D Bed
- Max Depth of cut: 1/8" in

DC-1 Dust Collector
On Sale... $189.95

Keep your shop clean and safe from sawdust with our large capacity, commercial style system. This collector has up to 10 times more air flow than a Shop Vac and runs much quieter.

SPECIFICATIONS:
- 1hp, 110/220V (pre wired 110V)
- 610 CFM air flow - 6990 FPM air speed
- 2 Bags 15"dia X 22" - 20 gallon bag
- 4" inlet - Casters on base
- Weight 75 lbs - Size: 26"x15"x57"H

Free with Purchase of DC-1
20 Feet Of Dust Hose
4" To 3" Reducers Adaptor - 4" To 2" Flex Adaptor Plans For 2 Stage Setup - Sources For Piping & Fittings
FREE ... $15.00 VALUE
Plans & Kits

Mail Order Kits and Plans offer a wide variety of projects and many one-of-a-kind items. Start your rewarding and satisfying projects now! To order catalogs, circle the appropriate number on the Order Form.

The Master's Workbench

Carousel Mare (13"x4"x12") - Mantel-sized woodworking treasures come in precut kits or plans. Also available:

- Carousel Collection
  - Armored Horse (13"x4"x12")
  - Rabbit (14"x4"x13")
  - Lion (14"x4"x8")

- Victorian Collection
  - Glider Pony (15"x5"x13")
  - Rocking Horse (18"x4"x10")
  - Pull-Along Horse (13"x5"x12")

Circle No 2 for $1.00 Catalog

Adams Wood Products, Inc.

Build your own Queen Anne furniture! Just assemble our complete kits. Dining table and chairs shown above in unstained solid cherry. Other pieces available:

- 42" Round Dinette Table with cabriole base
- Hall & Sofa Tables
- Oval & Rectangular Coffee Tables
- Commode
- Lamp End Table
Available in solid cherry, oak, mahogany & walnut. No minimum order.
Circle No 3 for $1.00 Catalog

Meisel Hardware

Plans for Holstein cow projects:
Planters, doorstops, mug racks, electronic music boxes, tissue box holders and plywood yard ornaments.
Order our Summer '89 catalog showing these and dozens of other project plans and specialty hardware kits for woodworkers.

Circle No 1 for $1.00 Catalog

Leichtung Workshops

Kits, Plans & More!
Full-Size Plans for:
- Roll-Top Desk
- Ultimate Rocking Horse
- Children's Rockers
- Toy Wagons
- Plus many more!

Complete Kits & Parts
- Classic Cars, Trains & Planes
- Wooden Wheels, Spindles...
- Clock Mechanisms
- "How-To" Books
...And The Tools To Put 'Em All Together!

Circle No 4 for Free Catalog
Quick 'N Easy Projects

Every issue of WEEKEND WOODWORKING PROJECTS™ Magazine is filled cover-to-cover with nothing but projects! You'll build a complete woodworking library with:
- 67 projects per issue (more than 36 a year!)
- Step-by-step instructions
- Shop-tested plans
- Plus you can finish these projects in a weekend!

6 issues (1 full year) only $17.97.

Circle No 5 for $17.97 Subscription

Countryside Woodworking

Freestanding Backyard Gyms!
Eight Master Kits:
- Galaxy
- Enterprise
- Enterprise IV (shown)
- Space Tower Columbia
- Explorer & Explorer IV
- Space Tower Discovery
- Voyager

Eleven Options: Above ground installation, playground tested hardware. Will last a lifetime. Kits contain 40-yr. warranted lumber. All hardware, accessories and instructions.

Circle No 6 for $1.00 Catalog

Emperor Clock Company

Known for its quality hardwoods and factory direct prices, Emperor Clock Company offers a broad selection of grandfather clocks, mantel clocks, wall clocks as well as furniture accent pieces, in do-it-yourself kit form or completely assembled and finished. Full color catalog.

Circle No 7 for $1.00 Catalog

The American Clockmaker

Special 30% off sale! Solid cherry desk clock kit - only $14.95 complete! Includes pre-cut wood parts, quartz movement, ivory dial, convex glass and antique brass handle. Stands 7½” high.

A Wonderful Gift!

Order #1714-081, only $14.95 (reg. $21.90) plus $3.50 shipping/handling (Wisc. res. add 5.5% sales tax).

Circle No 8 for $1.00 Catalog

Craftplans

Our Catalog Offers Over 75 Projects Including:
- Adirondack Furniture
- Entertainment Centers
- Bird Houses/Feeders
- Computer Furniture
- Whirligigs
- Scroll Saw Patterns
- Children's Playthings
- Plus Many More

Available in solid cherry, oak, mahogany & walnut. No minimum order.

Circle No 9 for $1.00 Catalog

Craftsman's Corner

We offer a full selection of outstanding furniture kits featuring top quality materials & outstanding workmanship.

Craftsman's Corner Classic Oak Kits offer rol-top desks, file cabinets, oak furniture and accessory kits for your entire home at affordable prices. With these kits, you can build beautiful solid oak pieces with hand tools. Satisfaction guaranteed.

Circle No 10 for Free Catalog
WADDLES THE DUCK

4 Apply the finish to the duck body, head, and wheels (we left ours unstained and applied two coats of satin polyurethane). Mask the wheel axle to prevent getting any finish on it.

5 Stick the ¼"-diameter, threaded neck dowel through the body. Holding a ¼" nut with a needle-nosed pliers, thread the nut back onto the tapered end of the dowel. To keep the nut from ever falling off and being accidentally swallowed, add a few drops of instant glue to the nut and dowel.

6 Using white glue to extend working time, glue the axle dowel into the hole in one of the wheels. Wipe off excess glue. After the glue dries, stick the axle through the axle hole in the body. Glue the other wheel onto the dowel and immediately (before the glue sets), rotate the second wheel on the dowel until it aligns with the first wheel. Roll the assembly on a flat surface, the duck will roll smoothly and waddle easily once the wheels are aligned. Adjust the wheel alignment if necessary. Remove glue between the wheels and duck body with a damp cloth.

7 Cut a 30" length of ¼" braided nylon. Tie a knot at one end and stick the other end through the rope hole in the duck body. Tie a second knot at the opposite end of the rope. Finally, give Waddles a pull and watch the kids—of all ages—come running.

ADD THE WHEELS AND HEAD TO THE BODY

1 From ½" dowel stock, cut the wheel axle to 4". For ease of insertion into the wheels, sand a slight chamfer on each end of the dowel.

2 Push a thumbtack into each wheel where marked. The tack prevents the wheels from rubbing against the sides of the duck body.

3 From ¼" dowel stock, cut the neck dowel to 2¼" long. Sand a slight taper on one end of the neck dowel. Hold a ¼" nut with a pliers. Slowly rotate the tapered end of the neck dowel into the nut to thread the bottom of the dowel. After you’ve threaded the end of the dowel, remove the nut; we’ll add it back after we’ve applied the finish. Glue the nontapered dowel end into the hole in the duck head.

Using the photo above for reference, sand the head and body to shape.
Compare this offer with any other book club for
Price • Quality • Benefits • Selection!
An absolutely no-risk guarantee.

Select 5 Books for only $3.95
(values to $13.30)
and get a FREE Gift!

HOW-TO BOOK CLUB
FREE
When you join!

15 Practical Woodworking Projects
From Percy Blandford
Fascinating projects from master
craftsman Percy Blandford include
toys, furniture, a go-cart, and more!

Membership Benefits • Big Savings. In addition to this introductory offer, you keep saving substantially with members' prices of up to 50% off the publishers' prices. • Bonus Books. Starting immediately, you will be eligible for our Bonus Book Plan, with savings of up to 80% off publishers' prices. • Club News Bulletins. 14 times per year you will receive the Book Club News, describing all the current selections—mains, alternates, extras—plus bonus offers and special salutes, with scores of titles to choose from. • Automatic Order. If you want the Main Selection, do nothing and it will be sent to you automatically. If you prefer another selection, or no book at all, simply indicate your choice on the reply form provided. As a member, you agree to purchase at least 3 books within the next 2 years and may resign at any time thereafter. • Ironclad No-Risk Guarantee. If not satisfied with your books, return them within 10 days without obligations! • Exceptional Quality. All books are quality publishers' editions especially selected by our Editorial Board.

If card is missing use this address to join: HOW-TO BOOK CLUB
Blue Ridge Summit, PA 17015-8000

(Publishers' Prices Shown) All books are hardcover unless number is followed by a "P" for paperback.
Try a Budke Blade and see how many jobs a really great combination blade can do.

One of SystiMatic’s original founders perfected the Budke Blade nearly twenty years ago. And we still think that this rugged blade does more jobs well than any other one carbide saw blade available anywhere. It rips, it crosscuts, it zips through solid wood, plywood or particleboard. And cuts 'em all with amazing ease and smoothness. Carefully mounted on a well-tuned machine, the Budke will give wonderful cuts and wonderful service. The tooth pattern combines four alternate top bevel teeth with one raker. The laser cut Budke Blade is available in 8, 9, 10, 12, 14 and 16 inch diameters. And you can get the ten incher with either 40 or 50 teeth. If you need an all-purpose blade, we heartily recommend the Budke Blade. (If you’ve never used a SystiMatic, it’s a great blade to get started with.) Excellent value too—ask your SystiMatic dealer for prices. We sell only through professional saw shops and industrial tool suppliers. To find the SystiMatic dealer nearest you, just call us toll free at 1-800-426-0000. Extension 80.

---

Satinwood Products

EASY-ONE-STEP TOUCH-UP KIT

FURNITURE
CABINETS
DOORS

- Permanent, invisible repairs
- Assorted colors for a perfect match
- Easy to use brush in each bottle

THE BEST WOOD TOUCH-UP EVER DEVELOPED OR YOUR MONEY BACK

Send $9.95 plus $2.00 shipping to:
Satinwood Products
9612 Kent Street
P.O. Box 1387
Elk Grove, CA 95759
CALIFORNIA RESIDENTS ADD SALES TAX

---

WOODWORKERS

Bosch
Orbital Action Jig Saw

1582VS

SALE
$129.95 ppd

FREE CATALOG SUBSCRIPTION WITH PURCHASE.

CATALOG ONLY.
2 year subscription (8 issues) $4.00.
Free $5.00 gift certificate with catalog order.

R. A. NESS & CO.
THE WOODWORKERS EMPORIUM
8888 N. MILWAUKEE AVE.
NILES, IL 60648
(312) 824-0565

---

PICTURE FRAMES

Continued from page 83

SHAPE THE FRAME SUPPORT
1 Transfer the front-view Support Pattern below to ¾" stock. Cut the support to shape. Sand bevels on the support ends where shown on the Side View. (As an option, delete the support, and epoxy a magnet to the frame back for displaying photos on the refrigerator.)
2 Locate and glue the support to the back side of the insert.
3 Sand smooth, and apply finish to the frame, insert, and support.

FULL-SIZED SUPPORT PATTERN

45° bevel
30° bevel

FINAL ASSEMBLY
1 Adhere the photo to the front of the insert with double-faced tape.
2 Slip the clear plastic into the back of the frame. Center the insert in the rabbeted opening and temporarily hold in place with masking tape. As shown in the photo below, apply silicone to hold the insert in place. Wipe off excess sealant. If you wish to change the picture later, use a hobby knife to slice through the pliable silicone.

Apply silicone sealant between the frame and insert, and wipe off excess.

Project Design: Jim Boelling
Photographs: Hopkins Associates
Illustrations: Kim Downing, Bill Zahn

---

Made in USA
SystiMatic Company
12530 139th Avenue Northeast
Kirkland, Washington 98034
(206) 823-8200 (800) 426-0000 USA
(800) 663-8001 Canada
(800) 426-0000 USA
(800) 663-8001 Canada
FAX (206) 821-0804

---

90 WOOD MAGAZINE OCTOBER 1989
EARN $18 AN HOUR!
Turn Your Spare Time into EXTRA INCOME!!!
Operate your own Profitable Saw & Tool Sharpening Business!

Now, use your spare time to generate low risk, high profit income to improve your lifestyle!
With the Foley-Belsaw Model 1055 Sharp-All it's easy for you to start your own profitable Saw & Tool Sharpening Business. Yours is a service business...there's no selling involved, no inventory required. You spread the word about your business and people just start bringing in their saws and tools for you to sharpen...it's that easy...and you pocket year-round profits for the things you want to do.

Manage your own time and reap the rewards of financial success and job satisfaction!
You're your own boss, so you set the hours. Work in your spare time or build into a full time operation right at home in your garage, basement or tool shed. Work as much as you want, as long as you like.

Plenty of business just waiting for you to start your own Sharpening Business!
With all the new residential and commercial building in America today, more than enough business awaits you when you open your shop. Every home and business has saws and tools of all kinds that need sharpening periodically and with your Sharp-All you can service the needs of your community...no matter whether you live in a big city, small town or rural farm area...you'll be the sharpening headquarters for carpenters, builders, manufacturers, craftsmen, hobbyists and homeowners.

It's easy to get started, no experience necessary...and you deal direct with the factory for low prices!
You don't have to invest thousands of dollars to get started in business for yourself. In fact for less than $2.00 per day, with the low cost Sharp-All and your desire to get ahead, our Operators Manual and Guide to Profits will provide all the necessary information and step-by-step illustrated instructions you'll need to get started. With Foley-Belsaw you deal direct with a dependable company with a history of providing independent businessmen and women with quality products and superior service since 1926.

To get started... just fill in the coupon TODAY and MAIL IT!
30-DAY FREE HOME TRIAL OFFER!
We'll rush to you our FREE "Lifetime Security" Fact Kit by return mail...First Class! You'll receive full details on how to start your own profitable Saw & Tool Sharpening Business with no risk on our 30-Day FREE Home Trial Offer! There's No Obligation to buy...and No Salesman will call.

READ WHAT THESE SUCCESSFUL SHARP-ALL OPERATORS SAY...

"Sometimes I make more in a week in sharpening than I do on my regular job. I still have a lot of years before I retire, but I can handle both full and part-time jobs without any trouble."
Don Lollar, Louisiana

"...the thing that impressed me most is that just about everything that Foley-Belsaw claimed turned out to be true. You normally read the ads you know, and tend to look between the lines for what it's really like, but with Foley-Belsaw it was a straight deal and whatever they said was true."  
Al Krasnow, Connecticut

"I never sharpened a saw before in my life...only advertised in newspapers for 2 weeks and now I have more work than I am able to do. I have as many as one hundred saws ahead of me at a time."
Frank Sartin, Washington

"I have had excellent results with the Sharp-All...you just can't beat it...it is easy to set-up, doesn't take long to change stones...all in all, it's no trouble to work with."
LaVern Heim, Kansas

ACT NOW! SEND FOR FREE FACTS TODAY!

Foley-Belsaw Company  Since 1926
8301 Equitable Road, Dept. 29849
Kansas City, MO 64120

Yes, please rush me FREE "Lifetime Security" Fact Kit on starting my own profitable Saw & Tool Sharpening Business!

NAME ____________________

ADDRESS ____________________

CITY ____________________

STATE ________________ ZIP ________________

PHONE (______) ________

Foley-Belsaw Company  Since 1926
8301 Equitable Road, Dept. 29849
Kansas City, MO 64120

Foley-Belsaw Company  Since 1926
8301 Equitable Road, Dept. 29849
Kansas City, MO 64120
TEST YOUR IMAGINATION

Create Any Hollow Cylindrical Shape up to 12" dia. Cut flat wood into straight or angle rings, stack rings, glue, sand, & finish. All on your Ring Master.

Now Ring Master Attaches To Your
- SHOPSMITH MARK V
- CRAFTSMAN 12" LATHE

ORDER YOUR FREE BROCHURE TODAY

We accept Master Card, Visa, & C.O.D.
Call 1-800-634-9281 in NC 919 762-6394

PORTA-NAILS, P.O. Box 1257, Wilmington, NC 28402

EASY TO BUILD LIFELONG

ST. CROIX KITS
Dept. 4B
423 S. Main St.
Stillwater, MN 55082
(612) 439-9120

Lyres
Harp
Banjos
Violins
Psalteries
Dulcimers
Many other Musical Instrument Plans, Kits & Supplies

Send $1.00 for catalog

EQUIPMENT
- #555 Porter Cable Bisquit Joiner w/steel case $169.95
  #ADJF Adjustable fence for 555 $69.95
- 0-10-20 Splines (1000) $29.95
  assorted box of biscuits add $5.00
- #555A—555 Bisquit Joiner with case and adjustable fence $229.95

PORTER-CABLE
BISQUIT JOINER
SALE

INSPRATIONS IN WOOD
UNIQUE NEW DESIGNS
THAT YOU CAN BUILD

D& D INSPIRATIONS
P.O. Box 1852-W. Peterborough, Ont. K9J 7X6

WHERE DO OHIO’S SERIOUS
WOODWORKERS SHOP?

WOODCRAFTERS SUPPLY
5331 Sinclair Road
Columbus, Ohio 43229
(614) 436-6900

THE SCROLL SAW SPECIALISTS

1414 Cranford Dr. # Box 42745-9
Garland, TX 75047

WHERE DO OHIO’S SERIOUS
WOODWORKERS SHOP?

WOODCRAFTERS SUPPLY®
5331 Sinclair Road
Columbus, Ohio 43229
(614) 436-6900
CONCERNED ABOUT WORLD WOOD RESOURCES?
BE TREESOURCEFUL
See related article on page 46

If you want to do something about any of the issues covered in our article "What's Happening to the World's Wood?" you can turn to a number of citizen-action groups. Those listed below sponsor active programs aimed at solutions.

GLOBAL RELEAF

The American Forestry Association (AFA), with cooperation from the U.S. Department of Agriculture, the U.S. Forest Service, and private conservation groups, has launched a national campaign to reduce carbon dioxide buildup in the earth's atmosphere by planting trees. The program focuses on urban and rural areas and will assist less developed countries with forest preservation and reforestation. You can support the program financially, with donations starting at $15, or with involvement. Write: Global Releaf, The American Forestry Association, P.O. Box 2000, Washington, DC 20013.

EDF

The EDF fights for national and international legislative action on a number of fronts, including wildlife protection, clean water and air, and forest preservation. Memberships start at $10 for seniors and students. For more information, write: Environmental Defense Fund, 1616 P Street, Washington, DC 20077.

GREENPEACE

Known more for its seagoing efforts to stop the hunting of seals and whales, GREENPEACE actually encourages citizen action on a vast list of issues, including rainforest preservation. The organization's bimonthly magazine comes packed with timely articles and cites efforts you can join. Membership begins at $20. Write: GREENPEACE USA, 1436 U Street, NW, Washington, DC 20009.

THE SANDER WITH STRONG APPEAL

POWER
For Abrasive Planing

PRECISION
For Flawless Sanding

SPEED
For Production Woodworking

SUPER-MAX Heavy Duty Drum Sander

The efficient design of the Super-Max combines the proven features of the Performax 9/16 Drum Sander and the Power Feed with a 5 HP motor and a heavy duty stand for the most affordable drum sander of its size.

The patented, self-cooling, sanding drum has built-in sandpaper fasteners for quick and easy sandpaper attachment without adhesives or tape. The innovative Power Feed uses an abrasive conveyor belt for a hard, non-slip surface for precise sanding and a consistent feed rate. These exclusive features will uniformly sand veneers and boards as smooth as 2-1/4".

Performax Products offers a complete line of affordable and efficient drum sanders for use in cabinet shops, home workshops, custom furniture shops and in musical instrument making.

For a free brochure or the dealer nearest you call or write to:
1-800-334-4910
Perfomax Products, Inc.
12211 Woodlake Dr., SW, Burnsville, MN 55337
**Scheppach Aims to Serve in Wake of Tools-To-Go Debacle**

When Tools-To-Go, a Miami-based distributor of woodworking machinery, suddenly closed its doors for good in the summer of 1988, they left behind a trail of dissatisfied customers. Some woodworkers never received the equipment they ordered. Others who had purchased German-made Scheppach tablesaws, lathes, bandsaws, and other equipment were left wondering where they would find parts.

Now, Scheppach wants to see the needs of these customers served. Scheppach has provided transatlantic service since the downfall of Tools-To-Go and currently seeks an outlet to provide service in the U.S. To contact Scheppach for parts or information, write: Josef Scheppach, Maschinenfabrik GmbH & Co., D-8873 Ichenshausen, West Germany.

**“Buying U.S.” Isn’t as Easy**

WOOD® magazine receives a lot of letters from readers interested in buying U.S.-made tools. “Who makes their tools in the U.S.?” they ask. It was a lot easier to answer that question 10 years ago, but in today’s global economy, the answer can be mighty elusive.

For example, if you’re looking for a tool with only U.S.-made parts, forget it. “It would take a bilingual book to tell someone where all the parts for power tools come from,” says Dennis Huntsman of Porter-Cable. With only one portable woodworking tool in its line made overseas—a 3½” planer—Huntsman estimates that the Porter-Cable product line “is more U.S. than most.”

Gary Compton of Bosch agrees with Huntsman’s assessment. “You won’t find any tool that’s 100 percent sourced in the U.S. For instance, Japan makes nearly all the ball bearings in power tools.”

**As in the Past**

Among complete-line stationary power tool manufacturers, Delta (formerly Rockwell) and Powertmatic products were synonymous with U.S. production. Now, because of foreign competition—primarily from the Orient—both firms manufacture some of their less-expensive machines in Taiwan.

One stationary-machine firm—Shopsmith—has resisted the shift to Taiwan. “We took a hard look at having some products built overseas, but we decided against it in order to maintain our quality levels,” says Shopsmith’s Scott Phillips. “We did see some benefit in exploring the idea, however. When we told the U.S. foundries manufacturing our castings that we were looking abroad for casting sources, their prices suddenly tumbled. Also, both quality and delivery times improved.” Shopsmith manufactures its complete line of equipment in Dayton, Ohio.
CLAMPS

Dependable extra hands for all types of clamping and work-holding jobs:
Woodworking Projects, Home Maintenance, and Furniture Repair.

Write for FREE LITERATURE.
For big 32-page "how-to-clamp-it" catalog, send $1.00.

ASK YOUR DEALER

ADJUSTABLE CLAMP COMPANY
THE CLAMP FOLKS
410 N. Ashland Avenue • Chicago, IL 60622

Special Limited Offer - Expires Oct. 31, 1989

FORSTNER BITS: WHAT THEY CAN DO FOR YOU
WHY OURS ARE BEST AND LEAST EXPENSIVE

Forstners, the only wood bits that can:
• Bore any arc of a circle at any angle
• Make entry holes in veneer, end grain, and knots
• Leave glass smooth walls and a flat bottom hole

Pros use them:
• For starting rabbets or grooves
• To make pocket holes to attach rails to tops, and
  rods, spindles and stretchers to legs
• To make blind holes for plugs and
• Through holes for locks

Best Because:
• Machined from high-carbon alloy steel
• Precision ground cutting edges, lifters and brads
• Hardened to HRC 50
• Mirror polished head to maintain splinter free
  entry holes

Inexpensive Because:
• Manufactured in China where the US dollar is still king
• Imported directly by us
• Our sincere desire to bring back sensible prices for
  woodworking tools

SPECIAL INTRODUCTORY OFFERS

BUY A 7-pc FORSTNER BIT SET (1/4, 3/8, 1/2,
5/8, 3/4, 7/8, 1") and we will give you FREE a
7-pc Brad Point Drill Set, a $12.00 value.
Ship/Handl. $4.50
ORDER #10-1426 only
$34.99

BUY A 16-pc FORSTNER BIT SET (1/4, 3/8, 1/2,
5/8, 3/4, 7/8, 1, 1-1/8, 1-1/4, 1-3/8, 1-1/2, 1-5/8,
1-3/4, 1-7/8, 2, 2-1/8") and we will give you FREE a
25-pc Brad Point Drill Set in Metal Index, a
$29.95 value. Ship/Handl. $9.50
ORDER #10-1441 only
$124.99

All Forstner Bits fit 3/8" chucks and are 3-5/8" overall. FOR A FREE PRICE LIST OF INDIVIDUAL SIZES,
SEND NAME AND ADDRESS TO: P.O. BOX 964, RIDGEFIELD, CT 06877

CALL TOLL FREE: 800-447-7770 • VISA / MC / AMEX
Dollar Trading Corp. (Est. 1953) • Dept.WM07C• P.O. BOX 8433 • GRAND RAPIDS, MI 49518
MI and CT Buyers, Please Add Sales Tax • 90 Day, Hassle-Free, Money Back Guarantee
**JET 12\" Planer $389**

Freight Prepaid

What a great value. This 2 hp JET Planer will handle boards up to 12-1/2\". Features rigid steel plate table instead of weaker roller extension, safety key type switch, sturdy handwheel to adjust head. Planer stand $39.95, rollerstand $39.95. New dust chute for planer only $19.95!!

**Jet Industrial Sanding Belts**

We think Jets sanding belt line is the best value in abrasives. Try them, and if you don't agree we will refund your money. (Min. Order 10 Belts). Orders over $50.00 shipped FREE via regular UPS.

1 x 42 $6.50 4 x 24 $3.99
3 x 21 $7.50 6 x 48 $2.95
3 x 24 $7.90 6 x 96 $5.95

36, 60, 80, 100, 120 Grits

WE also stock a full line of AMANA & BOSCH router bits at 30 to 40% off list price. Call now for FAST SERVICE.

**Santa Rosa Tool & Supply, Inc.**

38\" High Solid Wood

**Rocking Horse Kit**

Send the complete mail-order catalog featuring over 700 different router bits and accessories. (Dealer inquiries invited.)

1) Send me a FREE catalog via 3rd class mail. (Allow 4-6 week delivery.)

2) Rush me a copy TODAY via first class mail. I've enclosed a check for $3.00 for special postage and handling.

**BONUS** - You will receive with your catalog a $5.00 refund good towards your first purchase.

MAIL COUPON TO: Eagle America BHOW BOX 1999 CHARDON, OH 44024

Name

Address

City State Zip

78 full-color pages of exclusive, innovative tools and accessories for the woodworker, do-it-yourselfer and hobbyist, all guaranteed! Mail in the coupon today... or call toll-free 800-654-7817 (Dept. 115)

( ) Please rush my FREE catalog!

Name

Address

City State Zip

Mail to: Leichtung Workshops, Dept. 115
4944 Commerce Pky. • Cleveland, OH 44128

A forest fire is no picnic.
We're looking for men and women who want to start earning an extra $1,000–$2,000 a month in their spare time.

HERE'S A WAY YOU CAN BE YOUR OWN BOSS AND MAKE $55.00/hr. RIGHT FROM THE START...

If you want to make big money part-time or full-time in a very serious business, then read on. We're looking for qualified men and women who want to earn upwards of $55.00 an hour and don’t mind getting their hands dirty.

START MAKING MONEY IN 30 DAYS
We'll help you every step of the way and show you how to be your own boss in less than 30 days.

It's a proven system that requires some hard work and dedication on your part. It also requires start-up capital of about $2,000.

If you've got a few hours a week to invest in your financial future, chimney sweeping is for you.

MILLIONS OF DIRTY CHIMNEYS NEED TO BE CLEANED

Chimneys need to be cleaned and maintained on a regular basis to prevent the dangerous build-up and combustion of creosote. Even the smallest accumulation of soot can be a threat to home safety, and there are millions of dirty chimneys out there just waiting for disaster to occur.

TIME BOMB IN YOUR CHIMNEY

A quarter inch of soot contains a highly flammable substance called creosote. If a spark from your fireplace or woodstove ignites the creosote in your chimney—ouch! The draft gets stronger and stronger, and before you know it, the entire inside of the chimney catches on fire...and this excessive heat of the chimney can ignite the wood framing of your house.

Now hear it from the sweeps...

When chimney sweep Tom Anderson of Irmo, South Carolina isn't out brushing flues, chances are you'll find him behind a news desk brushing up on the weather forecast he's about to deliver on WIS-TV in Columbia, South Carolina. "In my first year as a sweep, I earned just five hundred dollars less than my yearly radio income...the second year saw a 55% increase in income over the first year." Not bad for a part-timer!

Diane and John Goodman of Montana who said: "Earn $1,000 a week, right??? RIGHT!!! From day one we saw sweeping with the August West System as a fast way to reach our goal to build a house in the mountains. Our hard work has paid off, and the house is now completed." Not bad for a former insurance agent and nurse who traded their ties and titles for top hat and tails.

12 YEARS OF DEPENDABLE SERVICE

Many years and a tremendous amount of devotion have gone into the development of the August West System. We are a strong, national company with thousands of dedicated sweeps in our network! You can join us and count on us to help you build a business you can be proud of. We take pride in the proven quality of our equipment and service to you.

NO STRINGS ATTACHED

We're not selling you a franchise, and we don't take a percentage of your earnings.

August West does provide you with what you need to start making money immediately. That includes equipment, training, newsletters, workshops, advertising and promotion ideas, and even a top hat. MasterCard and VISA are accepted so you can pay in small monthly installments if you wish.

It really is possible to write your own ticket to success and happiness as a chimney sweep using the revolutionary August West System. It's a great way of life, part-time or full-time.

FREE INFORMATION KIT TELLS MORE

Call or write today to find out more about the growing field of chimney sweeping. You'll receive information that will convince you that it will be the best $2,000 investment you'll ever make.

Call Toll-Free 1-800-225-4016 Ask for Extension 726

(in Mass.: 508-753-5544) or write:
August West Systems, Inc.
38 Austin St.
Box 658, Dept. 4408
Worcester, MA 01601

Yes, please rush me your FREE Information Kit.

Name
Address
City State Zip
Phone

Copyright © 1989 August West Systems, Inc.
The Intelligent One Man Shop

- 10" Table Saw
- 12" Jointer
- 12" Planer
- Shaper
- Mortiser
- 50" Sliding Table
- 3 motors 3 HP. ea.

Video: Send $1 (refundable) + $2 S+H to Laguna Tools to receive a 40 min. video presentation, and learn why Robland X31 is the most popular one man shop in Europe.

For Information and your nearest dealer call
LAGUNA TOOLS
2081 Laguna Canyon Road
Laguna Beach, California 92651
1-(800) 234-1976

Whether your woodworker’s license reads “Beginner,” “Intermediate,” or “Advanced,” you’re bound to have a few questions about your favorite hobby. We can help. We’ll consult our staff and outside experts for answers. Send questions to:

Ask WOOD
Better Homes and Gardens®
WOOD® Magazine
1716 Locust St.
Des Moines, IA 50336

Due to the volume of mail, we can’t promise to answer all questions, but we’ll try. We may edit letters selected for publication.

LOOKING FOR A FEW FAVORITE WOODS

I have a problem obtaining two favorite woods in 2" thickness or greater. Beech has disappeared except for an occasional board. And, I can’t find the other, American mahogany, with the straight grain necessary for carving.

—John Jankowski, Richmond, Va.

Beech—especially in thickness 2" and larger—can be tough to find because it isn’t stable when kiln-dried, according to Bob Carr at EDLCO in Asheville, N.C. Bob suggests you try to match maple or birch for furniture repair. If you call Bob at 704/255-8765, he’ll remember to keep his eyes and ears out for those thick slabs of beech you desire. But, your best bet may be air-dried beech from a local sawyer.

As for mahogany, hardwood dealers today import much of the genuine mahogany—also known as Honduras or American mahogany—from Brazilian plantations. Ask your lumber dealer to help you find the straightest grain on the market.

After talking with John, we learned he repairs a lot of 18th- and 19th-century furniture. The mahogany he buys—even the premium grades—has a clockwise or counterclockwise twist that John finds objectionable for hand carving.

CHERRY HOTLINE

I am a subscriber to WOOD magazine, and I really enjoy your publication. I would like to know how to achieve the deep burgundy of cherry like the furniture in stores. Is this a different type of furniture or is the finish? I want the deep, dark, almost black found in stores.

—Holly Coleman, North Powder, Ore.

Patience, Holly. Light-sensitive cherry darkens with age. Finish and aging will darken the freshly milled cherry you see in hardwood stores. But, the process could take up to two years. Some woodworkers add cherry-colored stain product to speed the darkening.

Continued on page 101
FULL SIZE CHRISTIAN
Scott/Band Saw Patterns
Crosses
Doves
Music
Sororities & More!
Great for gifts, church bazaars, craft fairs, etc.
8 Wood Cutout Patterns
For $6*
1 Peter 2:21

IN HIS STEPS
4089 Via del Barco
San Diego, California 92073
*CA Residents add 7% Sales Tax

HAND SCREW CLAMPS
Build Your Own Quality Clamps
For About $3.00 Each
• NO SPECIALLY THREADED SCREWS TO BUY
• USES READILY AVAILABLE HARDWARE STORE ITEMS
• NO SPECIAL OR HARD TO FIND TOOLS TO BUY
• BUILD WITH COMMON HOME SHOP TOOLS
• THESE QUALITY CLAMPS OPERATE THE SAME AS ONE
OCCASIONS AS 10 TIMES MORE
• BUILD ANY SIZE CAPACITY YOU NEED

COMPLETE PLANS & INSTRUCTIONS INCLUDING
SHOP TIPS & METAL DRILLING JIG FOR DRILLING
BARREL NUTS & BEARINGS.
PLANS & DRILLING JIG $19.95. PLANS ONLY $9.95.
ADD $3.00 SHIPPING & HANDLING.
TEXAS RESIDENTS, ADD 8% SALES TAX.

CNJ ENTERPRISES
P.O. Box 476234 • Garland, TX 75047-6234

Full-Size Professional Plan
ADIRONDACK CHAIR

Make this classic American design. Our special version may be
folded for storage by using ordinary hardware available at your local
store. Be ready for summer and get your plan now!

CATALOG 200 full-size professional furniture plans — $3.00

FURNITURE DESIGNS, INC. Dept. BA-100
1827 Emdale Ave., Glenview, IL 60025
(312) 657-7526

FULL SIZE WOODCARVING PATTERNS
SIMPLE TO MAKE • FUN • PROFITABLE
• 125 pattern packet PLUS "Shop Secrets"
• Over 50 "Folk Art" patterns PLUS projects
• 6 enjoyable "Wind-Action" whirligigs
• 100 yard ornaments, animals, birds and more
• 27 toy cars, trucks, train, ferry and more!
• 17 "Show Stoppers" — craft show best sellers

Send $7.00 per blueprint packet or choose any 3 FOR ONLY $14.00.
Fast Service • Satisfaction Guaranteed

ACCENTS Dept. MA98, Box 7387, Gonc, NH 03867
Catalog of 1000 patterns $22.00 [Free with order]

DMT® Diamond Whetstone™
The answer to your sharpening needs
A few light strokes will sharpen knives and achieve perfect edges
on all tools.
• Durable • Fast • Versatile • Clean
Available at quality woodworking stores or
DIAMOND MACHINE TECHNOLOGY, INC.
85WD Hayes Memorial Drive
Marlborough, MA 01752

Make a Toy for a Needy Child in Your Community at the WOODWORKING WORLD TOYS FOR TOTS FACTORY!* SAVE $$$ ON EVERYTHING FOR THE WOODWORKER!
INFORMATION LINE 800-521-7623, M-TH Woodworking Association of North America POB 716 / Plymouth, MN 55447 / 612-566-3768
THE LONG ISLAND SHOW
Sept. 15-17, Nassau Coliseum, Uniondale, NY
THE CAROLINA SHOW
Sept. 22-24, McPherson Conv. Ctr., Winston-Salem, NC
THE CHICAGO AREA SHOW
Oct. 6-8, The Metro Center, Rockford, IL
THE CLEVELAND SHOW

Show Hours: Fri. 5pm-9pm / Sat, 10am-6pm / Sun, 10am-5pm (*Chicago Show: Fri. 4pm-6pm)
The Toys for Tots Factory is an officially sanctioned event of Toys for Tots sponsored by the United States Marine Corps Reserve
The Discerning Craftsman
(ADVERTISEMENT)

LUMBER YARD

- Select a wood species that's compatible with the project you're planning to build (there are several good reference books that list various species' characteristics and preferred uses).
- If you're planning to build several projects in the near future, consider ordering what you need for all of them at one time. That way, you'll have the stock you need when you're ready to build.
- If you or someone you know has a planer, and you are willing to surface your own lumber, you can save money by ordering stock that's undressed (rough sawn).
- Figure your lumber needs, then add 15% for waste. As you do this, think in terms of the number of boards of a certain size you'll need to yield the parts for your project. Make a cutting diagram showing how you plan to cut each of the boards.
- Send along your cutting diagram with your order, and explain the type of project you're planning to build. Both of these things help us in filling your order faster.
- Send for our product brochures, keep them on file in your shop. That way, when you need a particular type of stock, you'll have ready reference.
- Buying in bulk lowers the cost per board foot. Consider going together with some of your woodworking friends, and take advantage of the savings. Some of us have minimum order amounts.
- Be aware of shipping costs. Is the price quoted a shipped price? How will it be sent? UPS? Trucking firm? Etc.? Ask.
- Upon receipt of your order, please inspect it and report any damaged material to the carrier immediately.

APPALACHIAN HARDWOODS

Beautiful grain and textures. Exceptionally workable. Our Appalachian hardwoods are locally grown, personally selected and kiln-dried . . . a guarantee of our measure of quality. We handle 21 species of domestic hardwoods, softwoods and hard-to-find imports. Send $2.00 for our catalogue today (refunded with order). All purchases at delivered prices.

EDLCO
P.O. Box 5373-A, Asheville, N.C. 28813
For fast service, call 1-704-255-8765

EXOTIC WOODS

The Sawmill is an excellent wholesale source for exotic and domestic hardwoods, and musical instrument components.

Call toll free 800-345-3103 for price lists and information.

For specialty woods, Martin memorabilia, guitar kits or parts, with no minimum order, ask for Woodworker's Dream.

*In Pennsylvania, call (215) 759-2064

The Sawmill
THE MARTIN GUITAR COMPANY
Nazareth, Pa. 18064

DOMESTIC & FOREIGN HARDWOODS

Quality stock for Cabinet Work
Most all sizes from 1" to 4" in thickness

ASH—BASSWOOD—BIRCH
Chestnut—Ebony—Maple
Oak—Poplar—Rosewood
Teak—Walnut
Also hardwood plywood

SUGAR PINE—CYPRESS—CEDAR
SPruce—Douglas Fir etc.

MAURICE L. CONDON CO., INC.
242 Feeris Ave., White Plains, N.Y. 10603
914-948-4111
Monday through Friday 8 AM to 4:15 PM

SHAKER PEGS
CANDLE CUPS
MUG PEGS
$17.95 per 100, prepaid.
Wide selection of other wood products.
Catalog $2.00 or free with order.

 Benny's Woodworks
P.O. Box 840, Dept. WD17
Shelbyville, TN 37160
1-615-437-2295

SHAKER PEGS
Mug Peg

If you would like more information about advertising in WOOD, contact:

Terry McIntyre
WOOD Magazine
750 Third Avenue
New York, NY 10017
212-551-7130
Have a problem with your subscription?

We want to solve it to your complete satisfaction, and we want to do it fast. Please write to: Robert Austin, Better Homes and Gardens® WOOD®, P.O. Box 10628, Des Moines, Iowa 50336.

You can help us by attaching your magazine label here, or copy your name and address as it appears on your label. Send this along with your correspondence.

Name: 
Address: Apt. #
City State Zip

Moving?

Simply attach the mailing label from this magazine and write in your new address below. (Please allow 4-8 weeks.)

Name: 
Address: Apt. #
City State Zip

For Fast Service...

...it is better to write us concerning your problem and include the magazine label. Also, address changes are handled more efficiently by mail. However, should you need to reach us quickly, the following toll-free number is available:

1-800-678-2666

STEWALD LUMBER CO.
Quality Hardwoods and Woodworking Machinery For
The Craftsmen and Educational Institutions

<table>
<thead>
<tr>
<th>Wood Type</th>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ash</td>
<td>4/4</td>
<td>$53.00</td>
</tr>
<tr>
<td>Basswood</td>
<td>4/4</td>
<td>$43.00</td>
</tr>
<tr>
<td>Birch</td>
<td>4/4</td>
<td>$40.00</td>
</tr>
<tr>
<td>Butternut</td>
<td>4/4</td>
<td>$49.00</td>
</tr>
<tr>
<td>Cherry</td>
<td>4/4</td>
<td>$60.00</td>
</tr>
<tr>
<td>Hickory</td>
<td>4/4</td>
<td>$41.00</td>
</tr>
<tr>
<td>Mahogany</td>
<td>4/4</td>
<td>$40.00</td>
</tr>
<tr>
<td>Maple (Hard)</td>
<td>4/4</td>
<td>$46.00</td>
</tr>
<tr>
<td>Maple (Soft)</td>
<td>4/4</td>
<td>$37.00</td>
</tr>
<tr>
<td>Pecan</td>
<td>4/4</td>
<td>$41.00</td>
</tr>
<tr>
<td>Poplar</td>
<td>4/4</td>
<td>$37.00</td>
</tr>
<tr>
<td>White &amp; Red Oak</td>
<td>4/4</td>
<td>$35.00</td>
</tr>
<tr>
<td>Walnut</td>
<td>4/4</td>
<td>$62.00</td>
</tr>
<tr>
<td>Cedar</td>
<td>4/4</td>
<td>$40.00</td>
</tr>
<tr>
<td>White Pine</td>
<td>4/4</td>
<td>$40.00</td>
</tr>
</tbody>
</table>

For quantity discounts, other sizes and grades available.

STEVE WALL LUMBER CO.
BOX 297, MAYODAN, N.C. 27307
919-427-0637 • 1-800-633-4062 • FAX 919-427-7588

Call For Best Prices On
RBI - DELTA - MiniMar

CONTENTS
Ask Wood
Continued from page 98

I cut down a cherry tree about a year ago, and decided to save a few limbs for turning on my lathe. I stored the limb pieces in my garage for drying. Later, when I decided to turn a few pieces, I discovered that all the logs were so badly checked that I couldn’t use them. How do you prevent wood from checking?
—S.B. Quincy, Bloomington, Ill.

We coat the cut ends of wood with paraffin, although paint works well, too. Sealing the end grain slows the release of moisture and lessens the chances that the wood will check. Remember to leave the bark on the limbs and dry them slowly.

THAT DEVIL, SILICONE
I built a table about a year ago and finished it with polyurethane. Recently, I decided to put on additional coats. To my surprise, the first coat turned out be fish-eyed looking. What did I do wrong? Could it have been the furniture polish?

—Albert Turner, Plano, Texas

In a word, yes. You’ve been unlucky enough to find out why many people avoid aerosol “polishes” that contain silicones—they’re the culprits that cause fish-eyes in finish. Albert, you’ll have to remove all the finish and start over. For more information about problems with silicone polishes, see our furniture-waxing article in the June 1989 issue.

CHAIR ON THE LOOSE
I’m looking for advice on tightening some loose legs and rungs on my antique oak plank chairs. I want to take the legs and rungs completely apart so I can properly re-glue all the joints. I tried to loosen the parts by twisting them, but had no success. What method or technique could I use to remove the partially glued parts?

—Daryl Rober, Chicago

Daryl, an article in our August 1989 issue had some good tips about using bar clamps to gently break glue joints. Also, try dabbing finish stripper around the joint—but be careful if you don’t plan to refinsh the chair. (It may take a second or third application to make this work.) And, if that doesn’t do the trick, flow on a solvent such as acetone or lacquer thinner while working the parts back and forth. We recommend epoxy glue to reassemble the chair. Epoxy fills gaps, dries hard, and cleans up easily.

—Continued on page 103
**TUNGsten CARBIDE ROUTer BITS**

- Heavy duty industrial quality
- 1/4" by 1-1/4" inch long shafts
- Enclosed Ball Bearing Guides
- Tools exceed AISI standards

### Corner Round-over

<table>
<thead>
<tr>
<th>Radius</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>$12.50</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>$13.75</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>$14.50</td>
</tr>
</tbody>
</table>

### Cove Bits

<table>
<thead>
<tr>
<th>Radius</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>$14.50</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>$15.50</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>$17.00</td>
</tr>
</tbody>
</table>

### 45° Chamfer Bits

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot;</td>
<td>$12.00</td>
</tr>
<tr>
<td>1-1/4&quot;</td>
<td>$14.00</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>$15.50</td>
</tr>
</tbody>
</table>

100% Money Back Guarantee

Order now - Toll free
1-800 767-4747 Anytime
Visa - Master Charge Ok
Or mail check to:
SKYCROFT TOOLS, INC.
P.O. Box 418W1
Myersville, MD 21773-0418

---

**Ryobi Best Buys!**

- TS-251U Miter Saw $178.
- AP-10 Planer $348.
- RE-600 Router $198.
- RA-200 Radial Saw $238.

**Free Freight • Same Day Shipping**

---

**WOOD TOY**

- Patterns
- Parts
- Wheels
- Many New Patterns to Choose from.
- Executive Toys

SEND $1.00 FOR NEW CATALOG & RECEIVE COUPON FOR FREE WHEELS & AXLE PEGS.

Box 628W Lynden, Wash. 98264

---

**Wood Moisture Meter**

- Avoid Moisture Problems
- Protect your Masterpiece

**MINI LIGNO**

- Incl. Case, Batteries and Pipe for 1/16" and 1/8" Measuring Depth
- Only $10

Also from Lignomer:

**MINI-LIGNO E**

- Range: 0-5%
- Easy-to-use, sturdy instruments for the professional woodworker or serious hobbyist
- Great for lumber, veneer, hardwoods. Ask for free catalog on the complete line of moisture meters and accessories for kiln drying.

Lignomat USA Ltd.
P.O. Box 30496
Portland, OR 97298

---

**$2 Brings you our latest Tool Catalog plus the next 2 issues of Wood News**

Our TOOL CATALOG features over 2500 useful woodworking tools, books and supplies.

**WOOD NEWS** is our popular twice-yearly 48-page magazine chock full of helpful articles on getting the most out of your woodworking tools.

SUBSCRIBE TODAY! Send $2 to:

highland hardware
1045 N. Highland Ave, Dept 831
Atlanta, Georgia 30306

---

**Wood Moisture Meter**

- Avoid Moisture Problems
- Protect your Masterpiece

**MINI LIGNO**

- Incl. Case, Batteries and Pipe for 1/16" and 1/8" Measuring Depth
- Only $10

Also from Lignomer:

**MINI-LIGNO E**

- Range: 0-5%
- Easy-to-use, sturdy instruments for the professional woodworker or serious hobbyist
- Great for lumber, veneer, hardwoods. Ask for free catalog on the complete line of moisture meters and accessories for kiln drying.

Lignomat USA Ltd.
P.O. Box 30496
Portland, OR 97298

---

**$2 Brings you our latest Tool Catalog plus the next 2 issues of Wood News**

Our TOOL CATALOG features over 2500 useful woodworking tools, books and supplies.

**WOOD NEWS** is our popular twice-yearly 48-page magazine chock full of helpful articles on getting the most out of your woodworking tools.

SUBSCRIBE TODAY! Send $2 to:

highland hardware
1045 N. Highland Ave, Dept 831
Atlanta, Georgia 30306

---

**Wood Moisture Meter**

- Avoid Moisture Problems
- Protect your Masterpiece

**MINI LIGNO**

- Incl. Case, Batteries and Pipe for 1/16" and 1/8" Measuring Depth
- Only $10

Also from Lignomer:

**MINI-LIGNO E**

- Range: 0-5%
- Easy-to-use, sturdy instruments for the professional woodworker or serious hobbyist
- Great for lumber, veneer, hardwoods. Ask for free catalog on the complete line of moisture meters and accessories for kiln drying.

Lignomat USA Ltd.
P.O. Box 30496
Portland, OR 97298

---

**$2 Brings you our latest Tool Catalog plus the next 2 issues of Wood News**

Our TOOL CATALOG features over 2500 useful woodworking tools, books and supplies.

**WOOD NEWS** is our popular twice-yearly 48-page magazine chock full of helpful articles on getting the most out of your woodworking tools.

SUBSCRIBE TODAY! Send $2 to:

highland hardware
1045 N. Highland Ave, Dept 831
Atlanta, Georgia 30306

---

**Wood Moisture Meter**

- Avoid Moisture Problems
- Protect your Masterpiece

**MINI LIGNO**

- Incl. Case, Batteries and Pipe for 1/16" and 1/8" Measuring Depth
- Only $10

Also from Lignomer:

**MINI-LIGNO E**

- Range: 0-5%
- Easy-to-use, sturdy instruments for the professional woodworker or serious hobbyist
- Great for lumber, veneer, hardwoods. Ask for free catalog on the complete line of moisture meters and accessories for kiln drying.

Lignomat USA Ltd.
P.O. Box 30496
Portland, OR 97298

---

**$2 Brings you our latest Tool Catalog plus the next 2 issues of Wood News**

Our TOOL CATALOG features over 2500 useful woodworking tools, books and supplies.

**WOOD NEWS** is our popular twice-yearly 48-page magazine chock full of helpful articles on getting the most out of your woodworking tools.

SUBSCRIBE TODAY! Send $2 to:

highland hardware
1045 N. Highland Ave, Dept 831
Atlanta, Georgia 30306

---

**Wood Moisture Meter**

- Avoid Moisture Problems
- Protect your Masterpiece

**MINI LIGNO**

- Incl. Case, Batteries and Pipe for 1/16" and 1/8" Measuring Depth
- Only $10

Also from Lignomer:

**MINI-LIGNO E**

- Range: 0-5%
- Easy-to-use, sturdy instruments for the professional woodworker or serious hobbyist
- Great for lumber, veneer, hardwoods. Ask for free catalog on the complete line of moisture meters and accessories for kiln drying.

Lignomat USA Ltd.
P.O. Box 30496
Portland, OR 97298

---

**$2 Brings you our latest Tool Catalog plus the next 2 issues of Wood News**

Our TOOL CATALOG features over 2500 useful woodworking tools, books and supplies.

**WOOD NEWS** is our popular twice-yearly 48-page magazine chock full of helpful articles on getting the most out of your woodworking tools.

SUBSCRIBE TODAY! Send $2 to:

highland hardware
1045 N. Highland Ave, Dept 831
Atlanta, Georgia 30306
Continued from page 101

FILLING IN A READER ON FillERS

I've read several articles advocating the use of special wood filler on porous woods such as walnut and oak.

I've tried repeatedly to find this filler in my area, only to be met with blank stares in paint stores.

I've looked in wood hobby shops, hardware stores, paint-supply stores, and lumberyards. All offer to sell me wood filler (putty used to fill cracks and holes), but only one person admitted to knowing there was another type of filler.

—Larry A. Wolfe, Prattville, Ala.

Larry, we turned to Jim Boelling, our Project Builder, for an answer: “As I see it, Larry’s problem is that he’s asked clerks—who might not know a lot about finishing—for the wrong product. And, paste wood filler is not in heavy demand.

Much of the trend in the last 15–20 years has shifted away wood fillers because open grain has been more popular. Unfilled, open-grained woods absorb more pigment color from stains, and accentuate the grain. On the other hand, filler has a tendency to

uniformly smooth out natural grain contrasts (beechwood and sapwood). Thus, wood fillers have a more subtle overall effect on color and grain.

“Sberwin-Williams Co., with more than 2,000 stores, sells a product called “Fast-Dry Semi-Paste Filler” (catalog no. D7011). Also, Pratt and Lambert sells a natural paste filler (catalog no. F24).”

WHAT’S THE ACTUAL DIMENSION?

I have a problem. When I want to make a spice rack, jewelry box, or any other project, the plans often call for 1/2" wood. I know that a 2"×4" isn’t exactly 2"×4", but a lot less. But how do they measure hardwood?

—Alice Duvanel, Iron Springs, Alberta

This is one of the mysteries of buying wood, Alice. Lumberyards sell dimensional material. Today, a 2"×4 actually measures 1½"×3½". A hardwood lumberyard, however, sells by the board foot (1" thick, 12" wide, and 12" long equals 1 board foot). You should find most 1/2" hardwood boards, for example to measure ½". But check carefully: The mill may leave the 1/2" board slightly rough at 17½", if they dress it down to 1½", they may charge more.

Continued on page 105
ANYTIME ANYWHERE
mold plane and edge

Professionals and hobbyists alike know the strengths of the W&H moldplane. Superior US-made construction and quick two-minute cutter changes make it a snap to cut moldings and plane hardwoods. It's fast, easy, and super-smooth.

Our five-year warranty and free 30-day trial are your assurance that W&H goes the distance.

Mail this ad or call us toll-free today:
1-800-258-1380 in NH 603-654-6828

Williams & Hussey
Riverview Mill
P.O. Box 1149 Dept. 2291M
Wilton, NH 03086

YES! Send your free information kit today.

Name:
Address:
City State Zip

SAVE MONEY!
KILN DRY LUMBER

MAKE MONEY!
Kiln Dry for others.
As the nation’s largest manufacturer of dehumidification Dry Kilns, we can supply you with the same type equipment used by many of the major firms.

Call or write today for free facts that will help you make and save money.

1-800-777-NYLE
Nyle Corporation
P. O. Box 1107, Bangor, Maine 04401

BUILD A STATIONARY ROCKER
3 MODELS AVAILABLE
ORDER NOW YOUR PLANS

PLANS & PATTERNS
$7.95 EA.
ALL 3 FOR $19.95

BALL BEARING SUSPENSION KIT
(8 sealed ball bearings, washers, nuts, wood screws, and bolts plated)
$22.95 EA.
5 MORE $20.95

FOOTREST MECHANISM
(for MODERN style only)
$49.95 EA.
5 MORE $44.95

U.S. FUNDS

All prices include shipping & duty
Tel.: (418) 898-2601
Fax.: (418) 898-2606

VIEL TOOLS INC.
P.O. BOX 660, MADAWASKA, ME 04758-0660

MAKE THESE!
WAGNER SAFE-PLANER
Fits Drill Press or Radial Arm Saw
ABSOLUTELY SAFE! Impossible to Grab or Kick Back

PICTURE FRAMES, RAISED PANELS, ROSETTES, PLATES, RABBIT, TENONS, MOULDINGS

KIT INCLUDES: 3 lifetime hi-speed steel cutters, grinding wheel, arbor, wrench, 8 pg. photo instructions.

MONEY BACK GUARANTEE!

DRILL PRESS KIT $35.00
RADIAL SAW KIT $40.00

Order Direct—Write For Free Literature
G & W Tool, Inc.
P.O. Box 691464
Tulsa, OK 74164
(918) 456-2761

“Quality Planers Since 1956”

SQUARE DRIVE SCREWS
Simply the Best!

• Square Drive Beats Driver Slippage
• Hardened Steel for Extra Strength
• Deep Thread for Super Grip
• Also Brass & Stainless

Samples and Catalog $3. Catalog Only $1

McFEELY HARDWARES
P.O. BOX 5 - 712 12th St.
Lynchburg, Va. 24505
Toll Free 1-800-434-7937
or FAX (804) 847-7198
NEW! "Quad-Drive"
with Infinitely Variable Power Feed!

At last! A complete power-feed Drum Sander at an affordable price! Choose from 26" and 36" models. SAVES TIME...IMPROVES RESULTS. Use this high-tolerance machine for light dimensioning as well as the finest finish work. Now you can add new beauty to each woodworking project, save hours of tedious hand sanding! In a matter of seconds you can produce a satin-smooth finish impossible to duplicate with hand methods or hand-held power sanders...no more low spots, waves or cross-grain marks! Check these advantages...

FREE FACTS!
Send for complete facts on how you can try this low-cost tool in your own shop for one full month without risk. See how the sander can dimension and finish-sand cabinet pieces, resawn stock, paneling, toys, tabletops, knees, bars, crotches and much, much more! You'll soon find it's one of the most valuable tools in your shop! Made in U.S.A. Easy Terms.
Call Toll-Free 1-(800) 538-4200, Ext. RW33

THE WELL-VENTILATED WORKSHOP
I can't finish what I start! I do my woodworking in the garage and subbasement of our raised-ranch home. When I apply the standard lacquer, varnish, and oil finishes to my projects, the vapors work their way through the upper levels of the house, much to the dismay of my family. I also worry that the gas furnace, which is in the garage, may ignite the lacquer vapors. Please offer suggestions.
—Jack A. Loganbill, Woodridge, Ill.

Jack, we normally turn to our friends at the Center for Occupational Hazards on questions such as these. Their executive director, Michael McCann, suggests that exhausting to the outdoors remains the only effective way to remove fumes. Consider installing an exhaust fan. Michael doesn't recommend using lacquer solvents near gas furnaces or water heaters.

MOISTURE ROUNDUP
We get a couple of letters each month from readers who uncover wood that's been stored for "years and years." Even wood stored for decades, may not be at the optimum 7 to 9 percent for furniture-making. Put a moisture meter to the wood before you saw.

NEW INFINITELY VARIABLE FEED RATE gives you total control in any sanding situation!

EXCLUSIVE QUAD-DRIVE FEED SYSTEM...four, power-fed rollers for maximum traction. Eliminates over-sanding at first and last few inches of a board!

NEW FELT-BACKED ABRASIVE mounts in just seconds to Velcro covered drum. The harder you sand, the tighter it stays! Eliminates stretching...allows fast removal and re-use!

WORLD'S LARGEST SELLING Glue Gun
Superlack Hot Melt Glue & Guns
Buy the best at below wholesale. Free samples—Free Freight. Translucent Sticks 1 1/2" Diameter 4" or 10" Length. PRICES—Delivered (West Coast) add $3.93/pair. 100 111.00 200 22.00 300 33.00 400 44.00 500 55.00 1000 99.00

GREAT SANDING
SANDPAPER
EMPIREGRIP
PREMIUM QUALITY—DISCOUNT PRICES—FREE FREIGHT most areas
BELTS BEST RESIN OVER RESIN, “X” WEIGHT 100’s

1 x 62 5 70 ea. 4 x 24 50.00 ea
3 x 62 75 4 x 24 65.00 ea
3 x 21 80 6 x 41 60.00 ea
3 x 36 85 8 x 36 65.00 ea
Abrasives .80 each, other grades available.

ADHESIVE CLOTH DISCS: BEST RESIN OVER RESIN, “X” WEIGHT
diameter 8 6.00
6 5.00
5 4.00
4 3.00

WOODCARVING IS FUN & PROFITABLE!
Want to carve decoys, statues or gun stocks?
It's easy when you use the Dupli-Carver Series wood carving machines. A patented five axis carving action allows these machines to complete difficult undercuts and contours as no other machine can. Complete machines are available starting as low as $395.00.
SEND $1.00 FOR OUR FULL LINE BROCHURE AND PRICE LIST AND START PLANNING YOUR FULL OR PART-TIME BUSINESS.

MARLIN INDUSTRIES, INC.
713 S. Main St., Forestville, NY 14068
(716) 634-3343

30-DAY FREE TRIAL!

FREE FACTS!
Send for complete facts on how you can try this low-cost tool in your own shop for one full month without risk. See how the sander can dimension and finish-sand cabinet pieces, resawn stock, paneling, toys, tabletops, knees, bars, crotches and much, much more! You'll soon find it's one of the most valuable tools in your shop! Made in U.S.A. Easy Terms.
Call Toll-Free 1-(800) 538-4200, Ext. RW33

SUFFOLK MACHINERY CORP.
124 Store Ave. Ste 25, Patchogue, NY 11772
Call Toll Free 1-800-234-SAWS Ext. 25
13 YEARS OF GROWTH NATIOWIDE

Guaranteed or your money back
band saw blades
Electro Heat
Induction
Hardened

Profit
Profit
Profit
Profit
Find It Fast with the All-New WOOD® INDEX

A cumulative listing of projects, tips, techniques, and other information in WOOD® Magazine all the way back to issue 1.

You Get:
★ Six Easy-Access Mini Indexes
  - Finishing and Refinishing
  - Projects
  - Tools
  - Turning
  - Carving
  - Wood — From Tree to Board

★ An Extensive General Index
★ A Three-Page Quick-Reference Wood-Species Guide

Also Included:
The WOOD® Reprint Service
Just fill out one of the handy coupons at the back of the index, and for a nominal charge, we'll send you a high-quality photo-copy of any article we've ever published.

Order Your All-New WOOD® Cumulative Index Now!

Only $4.95
Includes postage and handling! (Foreign orders $5.95)

Please send me the WOOD® Cumulative Index. Here is my check or money order for $4.95 (Foreign orders $5.95). Send to: WOOD® Cumulative Index P.O. Box 11454 Des Moines, IA 50336-1454

My Name ________________________________
Address _____________________________ Apt. # ______
City _________________________________ State ______ Zip ______

☐ MasterCard ☐ VISA Expiration Date ______
Card No. _____________________________
Signature ____________________________

We will begin shipping orders about August 30, 1989.
You can get useful ideas and product information by mail. Use the coupon in this section to order your choice of literature listed below.

POWER TOOLS

ACME ELECTRIC IS ANNOUNCING OUR NEW 170- PAGE CATALOG—It features a wide selection of merchandise for your home workshop to your industrial builder. The manufacturers such as Black & Decker, Delta, Makita, Porter Cable, Bosch, Milwaukee, Ryobi, Freud and many more. We offer competitive prices with quality service and same day shipping. Send today for your new 1989 Acme Electric catalog. It’s worth it. ACME ELECTRIC, INC. 308 Plymouth Road, Norwalk, CT 06855.

BOSCH BELT SANDER, MODEL 1273 DV—10.5 amp 4" x 48" Belt Sander with 6 speeds, speed selector guide. Use higher speeds with coarse grits; slower with finer ones. Faster belt changes, automatic belt tensioning uses dust collection bag or vacuum-boosted Bosch Air Swep
t system. BOSCH POWER TOOL CORP. Free. Circle No. 17.

BOSCH LAMINATE TRIMMER KIT, MODEL 1500—Trim laminate, wood, metallic, vinyl, sheet metal. Complete with all bases; accessories for shop, installation tasks. One base handles both hand and machine trim work. Includes safety switch, adjustable depth of cut and fence. BOSCH POWER TOOL CORP. Free. Circle No. 18.

FREE FULL COLOR POWER TOOLS APPLICATION GUIDE—A description of companies’ product line of compact power tools, attachments, and accessories. It features normally designed units—Motors, Ratchets, Drill, and many more. DREMEL. Free. Circle No. 35.

MANUFACTURED SINCE 1926—The Foley-Belsaw Model M-14 Circular Sawmill lets you right to the trees to turn out smooth, true lumber. Available with heavy-duty base or plans and track for provider owned wood yards. Will accurately saw logs up to 14 ft. in length and up to 24 in. in diameter. Complete money-back guarantee. Send for details. FOLEY-BELSAW CO. Free. Circle No. 19.

POWER TOOLS YOU CAN BUILD AND SAVE—Build sturdy woodworking tools from kits and save for over 40 years—5 year warranty on parts. Simple step-by-step plans with full size drawings. Plans can be purchased separately. Send for descriptive brochure. GILLION MFG. INC. $1.00. Circle No. 47.

LOBO POWER TOOLS—Our lower prices make our fine woodworking machine a very good value for you, our customers. We sell a complete line of band saws, planers, lathe, drill press, etc. comes with a 1-year warranty. Order today for a free catalog. LOBO POWER TOOLS. Free. Circle No. 57.

MAKITA U.S.A. INC.—offers all new 86-page catalog on their professional line with special emphasis on the entire cordless line. Catalog provides complete information along with valuable accessories and electrical applications suggested retail prices. MAKITA U.S.A., INC. Free. Circle No. 61.

SCROLL SAW—information package available from Penn State Industries describing the specifications and applications of its super 16-inch scroll saw. Special discount pricing available on current premium. PENN STATE INDUSTRIES. Free. Circle No. 76.

AFFORDABLE PRECISION SURFACE Sander—Tired of high low spots and countless hours of sanding? Now you can buy the components to fit your budget and your needs. Thrifty 110V Sander/Planer attachment kit can be ordered for stand, optional power feed conveyor unit, standard hardware kit, a band saw kit and part of the metal, ready-to-assemble pro stand. Send for informative brochure. PERFORMANCE PRODUCTS. $1.00. Circle No. 78.

QUALITY AMERICAN-MADE SCROLL SAW—The R&B Hawk family of Precision Scroll Saws has 6 models, one to fit your needs. Patent pending Camover Quick Blade Change system means less time changing blades. Two speeds Variable. Guaranteed all add up to make this Hawk the best value yet on the market today. Virtually end sanding forever! Send for the facts. R&B INDUSTRIES, INC. Free. Circle No. 94.

SAKURA SCROLL SAW INFORMATION—You owe it to yourself to compare the value-priced 14-inch 3-speed ScrollMate with other units before you make your buying decision. It offers a built-in air blowers; standard, quick, safety, and speed changes; and a 3-year limited warranty—all at a price that’s tough to beat. SAKURA USA. $1.00. Circle No. 87.

THE VERSATILE TOOLMAX T310—woodworking machine solves the "too small a shop" problem by combining a 10" table saw, 1" spindle shaper, 12" jointer, 12" planer & router table in a compact size. Adjustable rip fence cuts to 12" and 60% on space and 60% on investment. Send for complete color information pack. TOOLMAX.$1.00. Circle No. 90.

MOLDER-PLANERS FROM WILLIAMS & HUSSIE—Mold and planer in one unit for use up to 20". You get two functions in one machine, saving time and money. Williams & Hussie, Inc. Circle No. 91.

PORTABLE SAWMILLS—Convert logs into valuable lumber—Wood-Mizer Products manufactures a line of portable sawmills that allow the customer to safely convert logs into lumber. The Wood-Mizer is the only powered mill that can be delivered anywhere in the world. WOOD-MIZER PRODUCTS. Circle No. 94.

BRIDGEWOOD WOODWORKING MACHINERY—a new 15-page catalog of fine BRIDGEWOOD wood and metal. The woodworking machinery is available from Wilkie Machinery Company. The BRIDGEWOOD line includes a wide range of products for use in the serious home workshops up through the industrial applications. WILKIE MACHINERY CO. $1.00. Circle No. 93.

12", 18", and 25" PORTABLE MOLDER/PLANER FROM WOODMASTER CATALOG—a size to meet any shop requirement, all with exclusive variable feed control. Beige. Free. Circle No. 44.

COMPACT STROKE SANDER FEATURES BIG CAPACITIES—Compact stroke sander features 8" wide x 15" long belt, top quality, long life belts. Includes instructions. BOSCH POWER TOOL CORP. Free. Circle No. 10.


PERSONAL BRANDING IRONS—Brochure describes branding irons that enable you to make your own steaks, cakes, salami, sausages, etc. Send for free catalog. NOVA TOOL CO. $1.00. Circle No. 160.

THE JAPAN WOODWORKER 1989 CATALOG—is loaded with the best tools you can get your hands on. In our catalog you will find a complete selection of Japanese tools for woodcarving, woodcutting, and cabinet making. Send for catalog plus supplier list for years 1989-1998. WOODLINE-THE JAPAN TOOL & SUPPLY, $1.00. Circle No. 100.

STAINS/FINISHES

ARTI ANILINE DYES—Color chart features 28 aniline color tests, 10 fastness tests. Additional information included. HIGHLAND HARDWARE. $1.00. Circle No. 232.

PLANS

OVER 1000 WOODCRAFT PATTERNS—Create gifts, toys, whirligigs, lamp ornaments, folk art, bird houses and more. A wide variety of patterns to choose from. Prices vary depending on quantity. Over 1000 plans are available for making toys, desks, clocks, pool tables, lamps, chests, and other furniture. Movements, plaques, moldings, ornaments, dollhouses, etc. Order large plans, 1/2" parts, and original designs at low prices. All patterns are also available on floppy disk. Make easy-to-read patterns for simple, fun, profitable woodworking. 20-page catalog of over 400 unique country projects. DAKOTA WIND, $1.00. Circle No. 333.

PATTERNS BY DESIGN GROUP—Hundreds of interesting, useful and fun items to create for personal use or profi-tably sell. Personal use: good ideas for gifts, crafts and more. All Design Group patterns are profession-al, "same size" blueprints. No enlarging or reducing is neces-sary. Simply trace outline of item onto wood and create it. All patterns designed by pattern designers for home, gifts, patterns to thousands of satisfied customers. Prices start at $1.00. All patterns come with a full money-back guarantee. Wholesale and bulk prices are available on request. Fully illustrated catalog. DESIGN GROUP. $1.00. Circle No. 340.

FULL-SIZE FURNITURE PLANS CATALOG—Illustrates every plan in full-size line of quality plans and patterns for making traditional furniture. Plans include beds, tables, chairs, dressers, shelves, benches, etc. Full-size patterns available for sale. Send for our latest catalog of full-size patterns and patterns for making traditional furniture. HAMMERMARK ASSOCIATES. $1.00. Circle No. 370.

MASTERCRAFT PLANS WEST—Catalog of full-size plans for building furniture such as desks, chairs, cabinets, tables, etc. Send for full-size pattern catalog. $1.00. Circle No. 390.

WOODWORKING PLANS—Catalog of full-size plans for building furniture such as desks, chairs, cabinets, tables, etc. Send for full-size pattern catalog. 1 Peter 2:21. IN HIS STEPS. $1.50. Circle No. 375.

STATIONARY ROCKER PLANS—Build a fine and comfort-able rocking chair using these plans. Hardware kit available for use with the plans. STATIONARY ROCKER PLANS WEST. $1.00 (refunded with first order). Circle No. 390.

KIDDIE KISSES—promises miles of smiles. Kid and teenagers will love this exuberantly designed backyard candy trolley. It will give them a fun, easy-to-build with scrap wood, and a material and hardware kit, 3 mod. available. All sharpening machines, 12" klin edge, profile grinder, sanding-ginder, planning, joinery, etc. Send for our color brochure. VIET TOOL INC. $1.00. Circle No. 417.

MAKE TOPSELLING COUNTRY WOODCRAFTS—from fun and interesting to decorative and highly profitable projects. Easy to make from our full size patterns and instructions—no enlarging necessary! Over 300 unique designs include popular folkart, old fashioned St. Nick's, nostalgic country furniture, action toys, shell attrac-tors, country cutters, life size yard animals, Christmas and decorations and more! Fast service, satisfaction guaran-
QUALITY EXOTIC WOOD/TURNING WOODS—We offer a comprehensive selection of fine quality exotic woods: Ebony, Kingwood, Tigerwood, Snakewood, African Blackwood, Cocobolo, Bloodwood, Figured Maple, Doisicat, Para, Paduk, etc. Unique and unusual turning woods and burls are also available. For catalog, BEREZA HARDWOODS, $1.00. Circle #510.

TOOL/WORKER'S CATALOG—78 full-color pages. Over 400 practical exclusive and hard-to-find tools at factory direct prices. Complete selection of eight huge sale catalogs. Thousands of industrial distributors and hundreds of tool stores, sporting goods stores, and specialty tool stores are featured at sale. The fee is refundable with purchase. R. A. NISS & CO., the tool distribution specialists. Circle #878.

TOOLSALE—A division of Seven Corners Ace Hardware Inc. offers a comprehensive catalog featuring over 400 pages of the most competitive prices in the industry. If you're looking for savings and fast delivery on over 4000 items, request our catalog. This catalog offers one of the most complete selections of power tools available anywhere from the most respected manufacturers in the industry: Milwaukee, Makita, Porter-Cable, Black & Decker, Freud, Bosch, Delta, and many more. SEVEN CORNERS ACE HARDWARE. $1.00. Circle #920.

A WOODWORKER'S DREAM BOOK—Power tools...hand tools...starting materials...the complete selection of stationary & portable power tools...hand tools, accessories, supplies, books, and shop equipment. PRICES TO SAVE YOU MONEY IN ALL CATEGORIES. TOOL CITY. $5.00. Circle #845.

WOODWORKING TOOLS OF EXCEPTIONAL QUALITY—Since 1917, Chicago Hardware and Supply has been a leader in the wholesale and retail world of fine hardwoods, specialty hardware and woodturning materials. Our catalog features over 4,000 tools and accessories that have become a part of every woodworking enthusiast's workshop. CHICAGO HARDWARE & SUPPLY CO. Circle #825.

THE WOODWORKERS STORE—114 pages of domino and exotic hardwoods, veneers, wood parts, specialty hardware, kitchen accessories, finishing supplies, tools, books, and plans. CATALOG FEATURES 1,200 SPECIALTIES. Orders shipped within 48 hours. Customer satisfaction guaranteed. WOODWORKERS STORE. $1.00. Circle #845.

WOODWORKER'S SUPPLY—offers high quality tools and supplies to the woodworker. Our catalog features over 2,000 items. Our complete catalog includes machinery, hand tools, supplies, plans, and stock and is available for $1, plus 75c for shipping. For your two year subscription send to WOODWORKER'S SUPPLY OF NEW MEXICO. Free. Circle #975.

FREE STANDING BACKYARD GYMS—Countryside Woodworking Inc. (CWI) offers 8 models and 11 options for a wide variety of family fun gyms. The only Backyard Gym you can buy in more than 48 different colors. The minimum order is $125. For prompt, free UPS shipment to most areas. Literature, price list. RED HILL CORP. Circle #1267.

MUSIC MAKER'S KEEP BOOK—a 36-page resource catalog for building and learning how to play handmade musical instruments. This source book contains plans, blueprints, books, hardware, stringing accessories for building stringed musical instruments, and sound. Plans for 97 wind, string, and pipe instruments. Full color, 248 pages. ST CROIX KITS. $1.00. Circle #1090.

BUILDING DIRECT GRANDFATHER CLOCKS—Build a magnificent grandfather clock kit from world's largest manufacturer. Clocks are made of solid 1/4" hardwoods, primary woods. All materials included. Minimum order $125. Prompt, free UPS shipment to most areas. Literature, price list. RED HILL CORP. Circle #1267.

WOOD CARVING — You can obtain information on learning woodcarving by sending for literature. The offer includes sample copy of The Mallard Magazine and two lesson sheets on carving. NATIONAL CARVERS MUSEUM. $2.00. Circle #1146.

SHOP ACCESSORIES

PARA GAUGE, THE WOODWORKER'S SOLUTION TO SETTING A TABLE AND RADIAL ARM SAW—Para Gauge is a revolutionary new tool that allows you to make perfectly parallel cuts on your table or radial arm saw. A great time-saving tool that eliminates tears out of the fence. Para Gauge accurately measures distances up to 10 in. in length between two blade tip and no fence and up to 36 in. in length between the blade and fence. Para Gauge is completely portable and can be used on just about any saw, table or radial arm. ACCURATE TOOL CO. INC. Free. Circle #1205.

RIPSTRAVES SAVES FINGERS—for table saw and radial arm saw users. Brochure describes the RIPSTRAVE and shows how it can help protect you and your work. It shows how it prevents kickbacks, and keeps hands away from the blade. FISHER HILL PRODUCTS. 25c. Circle #1205.

CLASSIC SKIDDLE—This is a space saver's dream. Sturdy and portable, it can be used down anywhere. Its beautifully crafted, handcrafted, and delivered. A classic skiddle is made of Danish Red Beech with a handmade stool, and a top-quality hand tool. SANDLERS. $2.50. Circle #1205.

WOOD MOISTURE METER—Avoid moisture problems such as cracking, warping, splitting, delamination etc. by using a moisture meter, as described in the latest brochure. INGERSOLL METER MFG. LTD. Free. Circle #1251.

WHOLESALE SANDPAPER, SANDING BELTS, SANDING DISCS—SUPERGRIT offers its quality line of abrasive products at wholesale prices directly to the consumer. Full or partial orders welcome. Minimum order $25. Prompt, free UPS shipment to most areas. Literature, price list. RED HILL CORP. Circle #1267.

WEDGE INNOVATIONS' "Smartlevel"—Digital electronic level that automatically measures incline or decline to ±1/1000 of an inch. Digital level that automatically compensates for temperature change and provides instant accuracy. Automatically calculates percent of slope and automatically compensates for temperature change and provides instant accuracy. Helps you achieve exact measurements and provides a level of confidence. WEDGE INNOVATIONS. Free. Circle #1292.

WOODWORKING TOOLS—Fraid provides the finest in hand tools, carbide cutting tools, and hand held power tools. CARBIDE TIPPED ROUTER BITS AND SHAPER CUTTERS—Complete line of 2-1/4" shaper cutters designed for maximum durability, shaper cutters. An outstanding selection of top quality shaper cutters available in hi-1-, 1-1/4-, and 2" diameter. Full color catalog featuring precision shaper cutters with carbide inserts. CARBIDE TIPPED SHAPER CUTTERS. Catalog available for free. Circle #1235.

BITES, BLADES CUTTING TOOLS

WOOD CARVING MACHINES AND ACCESSORIES—make all types of wood carving easy, fun and profitable. The square drive recepies virtually eliminates work-damage, driver bit "cam-out", the deep threads result in exceptional holding power, and the teat heat treated for strength. Sizes from \( \frac{1}{4}" \) to \( \frac{3}{4}" \), with stainless steel, solid brass, brass plated, and zinc plated available. Quantity discounts. Send for catalog. MGFEELY HARDWARE. 754. Free. Circle No. 1497.

WOODWORKER'S SPECIALTIES—48-page catalog of plans and hard-to-find hardware for woodworkers. Dozens of detailed views of wood toys and accessories, including wood wheels. Also wood turnings, brass hardware, cabinetry, and many other items. MILLER HARDWARE SPECIALTIES. $1.00. Circle No. 1496.

WOOD TOY PATTERNS—Patterns for all ages including children's patterns and executive toys. New catalog has many new patterns for parts and wheels. Send for new catalog and receive a coupon for free wheels and axe pegs. TOYS AND JOYS. $1.00. Circle No. 1496.

DESIGN & DECORATE WITH WOOD MOLDINGS—contains full-color photos of various household rooms showing extensive use of wood moldings. Profile drawings of all wood moldings used to create these finished designs are also shown, plus suggested alternative profiles. A simple way to transform any ordinary room into a showplace or a minimum budget. WOODWORKS & MILLWORK PRODUCERS ASSN. 754. Circle No. 1497.

QUALITY AMERICAN-MADE WOOD TURNINGS—such as shaker pegs, spindles, toy wheels, toy parts, craft items, and dowels in birch, oak, maple, and walnut. Send for complete 32-page catalog. WOODWORKS. $1.00. Circle No. 1496.

INCOME OPPORTUNITIES


Better Homes and Gardens, WOOD MAGAZINE, October 1989

Dept. SOWO99, P.O. BOX 5103
Plymouth, MA 02103-5103

TO ENSURE PROMPT HANDLING OF YOUR ORDER FOLLOW THESE INSTRUCTIONS:

- Circle your choice
- Enclose cash or money order for cost of books plus $2.00 service charge (no stamps/foreign)

WOOD SUBSCRIPTION

1. A 1 year WOOD subscription (6 issues) for $18.00 (U.S. price) — a $3.00 savings off newsstand rate. Allow 6-8 weeks for first issue. Canadian price $24.00. Be sure to include payment with total below. NO FOREIGN ORDERS ACCEPTED ON THIS COUPON; please contact Subscription Dept. directly.

FREE LITERATURE

Circle numbers below corresponding to items in this issue. Please include $2.00 for handling charge

17. 91. 565. 975. 1251. 1381.
18. 19. 76. 1017. 251. 1381.
33. 34. 98. 1250. 1385. 2320.
49. 50. 125. 1385. 2320.
59. 103. 98. 125. 1385. 2320.

PRICED LITERATURE

Numbers below refer to items on which there is a charge. Please include proper remittance.

$6.00 200. 190. 150.
$7.00 200. 190. 150.
$8.00 200. 190. 150.
$9.00 200. 190. 150.
$10.00 200. 190. 150.
$11.00 200. 190. 150.
$12.00 200. 190. 150.
$13.00 200. 190. 150.
$14.00 200. 190. 150.
$15.00 200. 190. 150.

I AM ENCLOSING:

$ for priced items
for handling

$ .20

WOCUSL-MAGAZINE OCTOBER 1989

MISCELLANEOUS

FOLEY-BELSAW INSTITUTES' NEW WOODWORKING CORRESPONDENCE COURSE—for people with the desire to learn how to do it all, Foley-Belsaw is here to provide the proper tools of the trade. Foley-Belsaw's Woodworking Course is designed for the hobbyist and professional alike. Foley-Belsaw offers over 100 projects using professional tools and plans for you to learn from and build your own. Foley-Belsaw provides you with all the necessary materials and equipment to complete each project and all the necessary tools to complete every project. The Foley-Belsaw Institute offers a complete series of courses for the hobbyist and professional alike. The Foley-Belsaw Institute offers courses in woodcutting, woodworking, and woodcarving. Foley-Belsaw Institute offers courses in woodcutting, woodworking, and woodcarving. Foley-Belsaw Institute offers courses in woodcutting, woodworking, and woodcarving.

We Thank You!

Thanks a lot, readers, for your continued support. On our fifth anniversary, we promise you even better WOOD® magazines in the years ahead.

"Your enthusiasm as readers still inspires us to provide you with the very best woodworking publication available. To continue the tradition we began five years ago, count on me and the rest of the staff to pull out all the stops on your behalf. From top-notch projects to tools, techniques, and features, we'll aim at your interests in every issue. And, if you have a question, we'll try to answer it. When you have a problem, we'll solve it. With us, you, our readers, always come first. We want to remain as your favorite woodworking magazine."

—Larry Clayton, for the WOOD magazine staff
As "the" producer of top end industrial woodworking machines since 1921, Powermatic now focuses their engineering expertise and resources for the craftsman, contractor and home hobbyist.

- **Industrial Quality Vega Fence System** provides unsurpassed rigidity for accuracy & speed
- **T-Slot Miter Gauge** for increased accuracy and flexibility in stock width capabilities
- **Built-In Dust Shroud** for shop cleanliness
- **Cast Iron Grate Extensions** provide ruggedness for increased accuracy and longevity
- **Unitized Wiring System** readily removed for portability
- **The Powermatic Name** for value and service

You'll find no better quality or value... anywhere. For just a little more than you'd spend on a run-of-the-mill machine, Talk to your Powermatic distributor today. For those who want the best: the Powermatic 10" Artisan's Saw. Truly a new standard for the industry.

**The Artisan's Choice**

A Division of Stanwich Industries, Inc.
McMinnville, Tennessee 37110
800/248-0144 □ 615/473-5551
TELEX - 554455
FAX # 615/473-7819
Dinn Corporation of Cincinnati, Ohio, depends on quality Makita Power Tools to build exciting roller coaster rides all over the United States. When you're working on wooden structures hundreds of feet in the air, you've got to have faith in the tools you use.

That's why more tradesmen use Makita tools than any other cordless. And that's why more and more do-it-yourselfers and home craftsmen are turning to Makita.

Makita offers two complete cordless tool systems, each with its own interchangeable battery. Choose from the extensive 18-tool, 7.2 volt system, or the powerful 9.6 volt system with 12 tools.

But don't forget that Makita also offers over 100 corded power tools in its extensive line.

All our power tools, whether corded or cordless, bear the Makita trademark. Quality and durability.