

A joiner's tool kit

FROM LOG TO FINISHED FURNITURE
WITH A MODEST SET OF TOOLS

BY PETER FOLLANSBEE

For the last 35 years, as a professional furniture maker, I've made a lot of boxes, chests, chests with drawers, chairs, stools, beds, settles, tables—fairly common forms. Less common, though, is that I typically work using 17th-century conventions, trying to adhere to the practices of the joiners—furniture makers—of the time. This means using all hand tools all the time and stock often split green from a log. My use of riven stock has ripple effects through my whole tool kit, since I get to take advantage of well-behaved, straight-grained wood, which saves me time and energy. While there's plenty of work splitting out stock, it's proved an excellent way to make furniture expeditiously and with a modestly sized set of tools.

Peter Follansbee specializes in 17th-century furniture.

The starting split. After crosscutting logs to length, Follansbee uses metal and wooden wedges to split out sections. He starts the split at the ends before leap-frogging the wedges down the long grain.



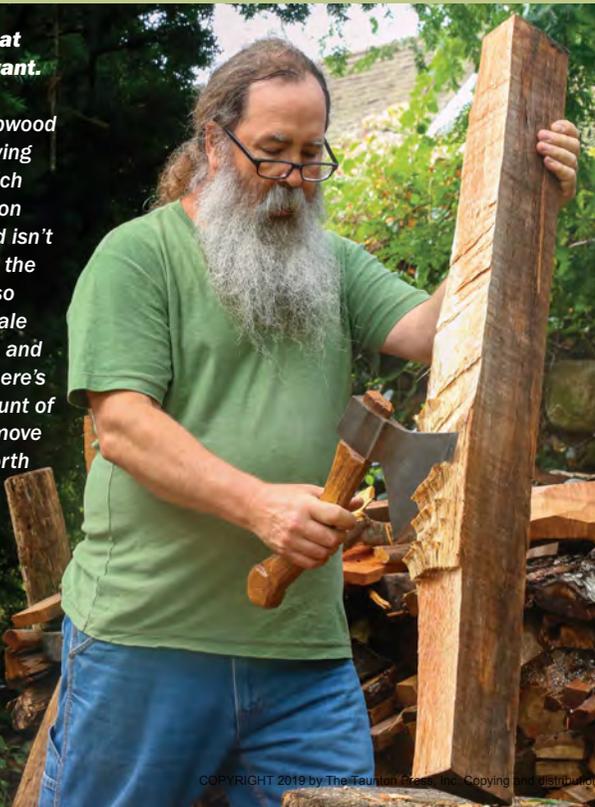
Stout tools for splitting

I start most of my work by splitting open an oak log—red or white—to make my own stock. So I begin with something to crosscut the log. A chainsaw makes short work of this, although I like them best when someone else uses them. In lieu of that, I often use a large folding saw that has 4 teeth per inch, designed for making fast cuts in large stock. To open up the log, I use steel wedges and homemade wooden wedges, a sledgehammer or large

wooden mallet, and a hatchet. My steel wedges are decades old. New ones often need regrinding; they have too blunt an angle, preventing them from easily entering end grain. When wedges bounce out of the log, shins are at risk.

Next come the finesse tools for splitting: the froe and its companion, the froe club. Used to lever apart the rough-split sections, the froe allows me to direct the split somewhat.

Hew off what you don't want. Follansbee removes sapwood with his hewing hatchet, which has a bevel on one side and isn't quite flat on the other. He also uses it to scale off the bark, and whenever there's a large amount of waste to remove that isn't worth sawing off.



Finesse splits with a froe. Whereas the wedges are good for quickly and roughly breaking down billets, the froe, a levering tool, lets you direct splits to some degree, especially when one end of the billet is trapped.



How to make a straight edge. Follansbee uses a chalk line to mark out the reference edge, usually just under the sapwood. Then he hews close to the line with his hatchet before planing.

Dimensioning devices

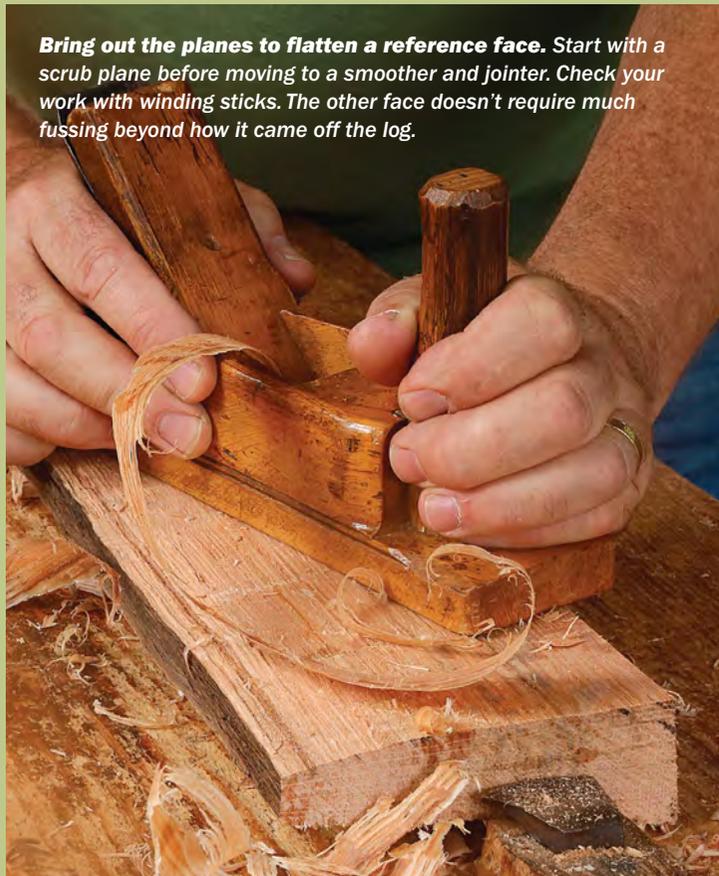
Because I split my workpieces from straight logs, I can rely on a hewing hatchet for accurate cuts. The tool isn't absolutely necessary, but I'd hate to practice this craft without one. My favorite is a single-bevel model with a large, curved cutting edge, about 6 in. long, which allows it to slice through wood easier than a straight edge. It weighs around 2½ lb. and has a short handle. Its inside face is slightly convex, allowing it to ever-so-slightly scoop the chips off the board's surface. But don't worry if you can't find one. Common double-bevel hatchets can do the trick too.

Then there are my planes—a scrub, a jointer, and a smoother. With truly straight workpieces, I don't even have to worry about grain direction. My planes have wooden bodies; metal-bodied ones can react poorly with the tannins in green oak.

To cut boards to rough length, I use a 21-in. saw marked "A.J. Wilkinson & Co."—the hardware store where my father worked.

Winding sticks, a marking gauge, and a straightedge are essential during dimensioning to ensure workpieces are flat and square.

Bring out the planes to flatten a reference face. Start with a scrub plane before moving to a smoother and jointer. Check your work with winding sticks. The other face doesn't require much fussing beyond how it came off the log.



Joint a reference edge square to the face. Depending on how close you hewed to the chalk line, this should be quick work with a jointer plane. Aim for full-width shavings along the length of the edge.



Scribe the width with a marking gauge. Follansbee uses a shopmade gauge that tightens with a wedge through the fence. For workpieces too wide for the gauge, just measure and use the chalkline again.





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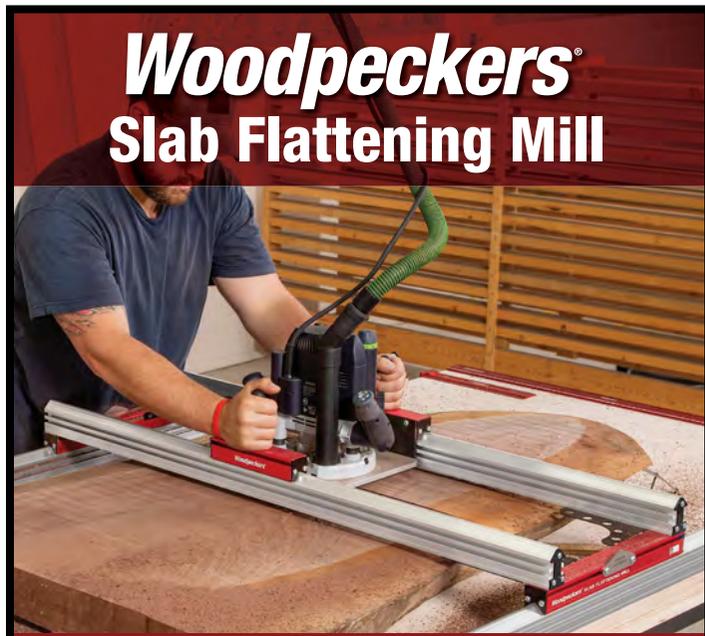


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Mortise gauge lays out mortises and tenons. This gauge has two pins spaced to the width of Follansbee's mortise chisel, and a movable fence. He uses the same pin setting when laying out the mortises and the tenons.



Stout chisel for heavy chopping. Mortising into oak is physical work, even when it's still slightly green. So Follansbee prefers an English-style mortise chisel, whose thick blade gives the tool the strength to withstand heavy prying.

Tools for joinery

Once the stock has been prepped, I lay out the joinery. For this I use the marking gauge I mentioned, and a square and an awl for striking lines across the board. If I'm doing angled work, I swap the square for an adjustable bevel. Then there's a mortise gauge for laying out mortises and tenons. While I try not to measure too much, a couple of rulers might sneak in, too. My standard pair is a 3-ft. rule and, for minor stuff, a 6-in. one.

My essential chisels are few but varied. When mortising, I rely on a $\frac{5}{16}$ -in. mortise chisel. For tenons, again because of the straight riven grain, I can quickly split out the cheeks with a $1\frac{1}{2}$ -in.-wide bench chisel after sawing the shoulders with a 12-in.

backsaw. I often use a framing chisel, large and heavy, to pare tenons to fit and chamfer their ends. A narrow chisel, about $\frac{3}{8}$ in. wide, is useful for cutting notches for a till in a chest or box. And a large square-headed mallet or a turned carving mallet pairs well with any of these chisels.

While cutting joinery, I add the plow plane. Joiner's work is mostly frame-and-panel construction, so the plow plane is essential. With a wider blade, the plane also comes in handy when I'm making scratched profiles in the middle of a rail or stile. Just plow a groove and then run a scratch stock along each edge of it for what in period work are called "crease moldings."



Wide chisels handle tenons in riven stock. With stock split from straight-grain billets, you can saw tenon shoulders and then use a wide chisel to split straight cheeks close to the line (left). From there, Follansbee brings them to final thickness with a large, heavy framing chisel.



Plow for panels. Follansbee uses two irons in his plow plane. Carcase frames get a $\frac{3}{16}$ -in. groove for their panels, whereas chests get grooves closer to $\frac{1}{4}$ in. for their floor boards. This plane, an antique, uses wedges to lock the fence in place.



Scratch stocks for quick profiles. Follansbee has a wide selection of scratch stocks, many made from old sawblades. He uses them for moldings at the edges and middle of boards.



Hatchet bevels the panel's back. To fit into their grooves, Follansbee bevels his panels to a near feather edge. He hews and planes the long edges before doing the same to the ends, which he keeps carefully supported on a flat surface.

Good tools for a glueless joint. A drawbored joint can hold up for centuries without adhesive. Instead, you just need some tools for boring holes and some for making tapered pegs.

Tools for drawboring

My 17th-century work doesn't involve much glue or many clamps. Instead, I drawbore or nail the joints. I use a brace and a $\frac{1}{4}$ -in. bit to bore the peg holes. For the bit, I prefer an antique piercer bit, mostly because they leave period-correct holes, a bit torn up and somewhat oval. But they're not for

everyone, and modern bits will do the job. To make the drawbore pegs themselves, I use a small cleaver or sloyd knife to rive out blanks before shaving them to size and tapering them with my framing chisel. No one—no one—likes the way I shave pegs, but I've done thousands this way. It works just fine.



Brace yourself. The hole in the tenon is closer to the shoulder than the hole through the mortise. So, when you drive the pegs, the joint cinches up tight.



Split out the pegs. Use arrow-straight, bone-dry stock. Follansbee uses a blacksmith-made cleaver or a sloyd knife, striking them with a wooden mallet.



Metal hammer drives pegs. Tapering the ends of the pegs allows them to better snake through the offset holes.



Dividers lay out the curves. After scribing borders and centerlines with a marking gauge, use dividers to lay out circular elements and spacing between patterns.

Carving kit

While you can do this 17th-century work without carving, why would you? That'd be like peanut butter without jelly.

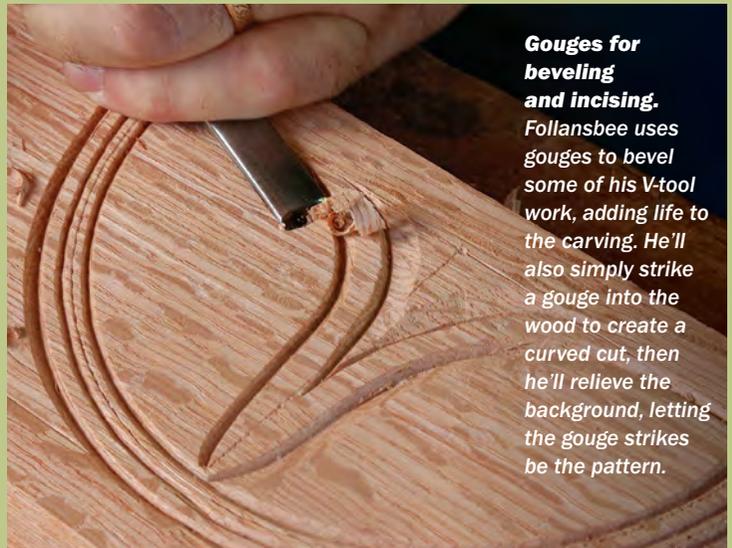
The carving doesn't require much layout, just more awl and square work, with the addition of a compass or dividers to mark borders and spacing. Sometimes a miter square proves useful too.

Lay out the carvings before cutting the joinery. Most of the carving is done by striking a V-tool or gouge into oak with a hickory mallet—heavy work. If I did it afterward, when the joints have been cut, I'd be putting my work at significant risk. I don't want to find myself pounding a gouge over an open mortise.

I have lots and lots of carving tools, but most patterns I use only require five to eight tools: a V-tool; some wide, shallow gouges; a #5 1/2-in. gouge for removing background; and two narrow gouges. Punches add the final touches.



V-tool is a workhorse. Follansbee gets a lot of use out of his V-tool, which lets him carve free-flowing lines quickly and cleanly. He strikes it with a turned mallet to maintain control.



Gouges for beveling and incising. Follansbee uses gouges to bevel some of his V-tool work, adding life to the carving. He'll also simply strike a gouge into the wood to create a curved cut, then he'll relieve the background, letting the gouge strikes be the pattern.



Punches add detail. These punches, mostly shopmade and one a simple nail set, provide texture and accents to a carving. The background stippling here was done by the wide punch.