



The Spokeshave

Choosing, tuning and using this neglected but essential tool

by Mario Rodriguez

One of my students brought a flea market spokeshave to school last fall, complaining he couldn't get it to work. A group of students gathered as I disassembled, cleaned and tuned up the tool. As I reassembled the spokeshave, I looked around the shop for just the right piece of wood to help me demonstrate how well the tool now worked. Across the shop, I spied a student tediously sanding an inside curve on the first of what looked to be a dozen thick, pine brackets. She'd already spent more than 15 minutes at the oscillating spindle sander, working on a single bracket. Choking on the dust and going deaf from

the noise, she didn't look like she was enjoying herself. I took one of her unsanded brackets to my workbench, and just three minutes later, I handed her a silky smooth, perfectly shaped bracket. She nearly passed out.

That's what a spokeshave can do. As a reproduction furniture-maker, I use spokeshaves most often to clean up cabriole legs, shape Windsor chair seats and fine-tune spindles. Whenever I have to shape a curve, regardless of the style of furniture, a spokeshave is the first tool I reach for (see the photo above).

Some woodworkers who have used spokeshaves complain that

CHOOSING A SPOKESHAVE



A parade of spokeshaves. Everything about a spokeshave has been experimented with over the years, from the material the tool is made of to the sole shape to the adjustment mechanism. Stanley even made a double spokeshave (second from top left).



Preventing wear—Spokeshaves used to wear quickly in front of the blade. To prevent this, manufacturers turned to wooden wear plates, usually boxwood. Brass wear plates were an improvement, and metal spokeshaves eliminated the problem.



Going by feel. The author adjusts an old wooden spokeshave by tapping the tangs of the blade with a hammer. Then he checks the setting by feel.



Knurled nuts allow precise adjustment. Because there are two posts, the blade can be skewed so that one side takes a fine cut and the other a heavy cut.

they skip, chatter or just tear up the wood. A quick tune-up, the right grip and a basic technique will eliminate these problems.

The evolution of the spokeshave

The earliest spokeshaves, dating at least to the 15th century, were wooden affairs with U-shaped, friction-fitted blades. Adjustments were made by tapping the tangs of the blade with a hammer. Many shaves of this type can still be found in antique-tool shops and auctions. Because they're so light and have such a low blade angle, these spokeshaves are a delight to use.

Over the years, the addition of threaded adjustment mechanisms improved the spokeshave. Toolmakers also began introducing spokeshaves with wear plates of boxwood (which is a very dense, tight-grained wood) and brass (see the bottom left photo on the facing page).

However, the real change came with the introduction of the metal spokeshave in 1860. The blade in a metal spokeshave is flat so that it can be sharpened easily—just like a plane blade. With a wooden spokeshave, the easiest way to sharpen its U-shaped blade is on a buffing wheel. This is a freehand operation that takes some practice.

The flat blade in a metal spokeshave also affects the cutting angle. Wooden spokeshaves have a low cutting angle, somewhere between 19° and 27°. Metal spokeshaves, however, are set like bench planes, at 45°, with the bevel facing down. Though the metal spokeshave's higher angle doesn't cut the wood as well, most woodworkers prefer the ease of sharpening its flat blade and willingly accept the trade-off. Metal spokeshaves also eliminated the problem of wear at the throat of the spokeshave.

Choose a set: round- and flat-bottomed

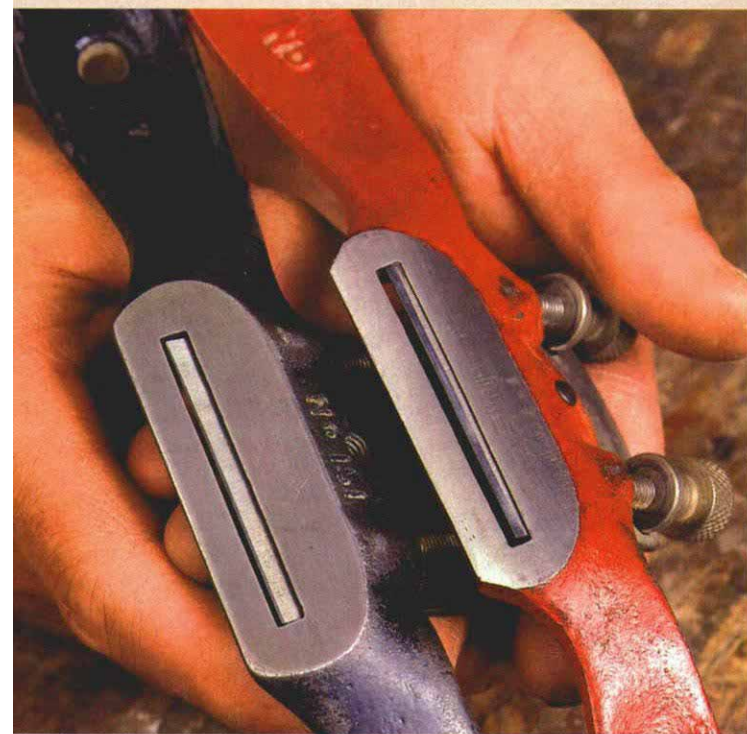
Spokeshaves are available in a bewildering variety of sizes and materials and with a number of sole shapes and means of adjustment. I use a half-dozen or so different spokeshaves, but I could get by with just two metal ones: one flat-bottomed and one round-bottomed (see the bottom photo at left). They belong in every woodworker's toolbox. With these two tools, you can shape just about any inside or outside curve.

The least complex spokeshave available today is set by eye or by feel, much like an old wooden spokeshave. The blade is held down with a cap iron secured with a screw. With a little practice, any woodworker can set it for a fine cut. Stanley manufactures a pair of full-sized, manually adjustable shaves, the No. 51 (flat-bottomed) and the No. 51R (round-bottomed), as well as a pair of lightweight, manually adjustable spokeshaves, the No. 63 (round) and the No. 64 (flat). The lightweight spokeshaves are smaller, so they cut tighter inside curves.

The most popular spokeshaves being manufactured today are the Stanley No. 151 and the No. 151R (and the Record equivalents, the No. 0151 and the No. 0151R). These spokeshaves have shallow metal bodies, slightly arched handles and mechanically adjustable, 2½-in.-wide blades.

The blades on these spokeshaves hang on two knurled nuts that travel on threaded posts (see the bottom right photo on the facing page). This design not only allows precise adjustment but also enables the woodworker to set blade projection to take heavy cuts on one side and light cuts on the other, without readjusting the blade. This feature can come in handy. The Stanley and Record tools are also available in unbreakable, malleable iron.

Prices will vary depending on where you buy them, but a pair of



There are a lot of choices, but you only need two. Most furniture makers can get by with just two metal spokeshaves—one with a flat-sole and one with a rounded sole for tight inside curves.

TUNING A SPOKESHAVE

1. Flatten the sole with a file and then a sharpening stone. Polish round-bottomed spokeshaves with emery cloth followed by 600-grit wet-or-dry paper. This helps the tool glide across the wood.



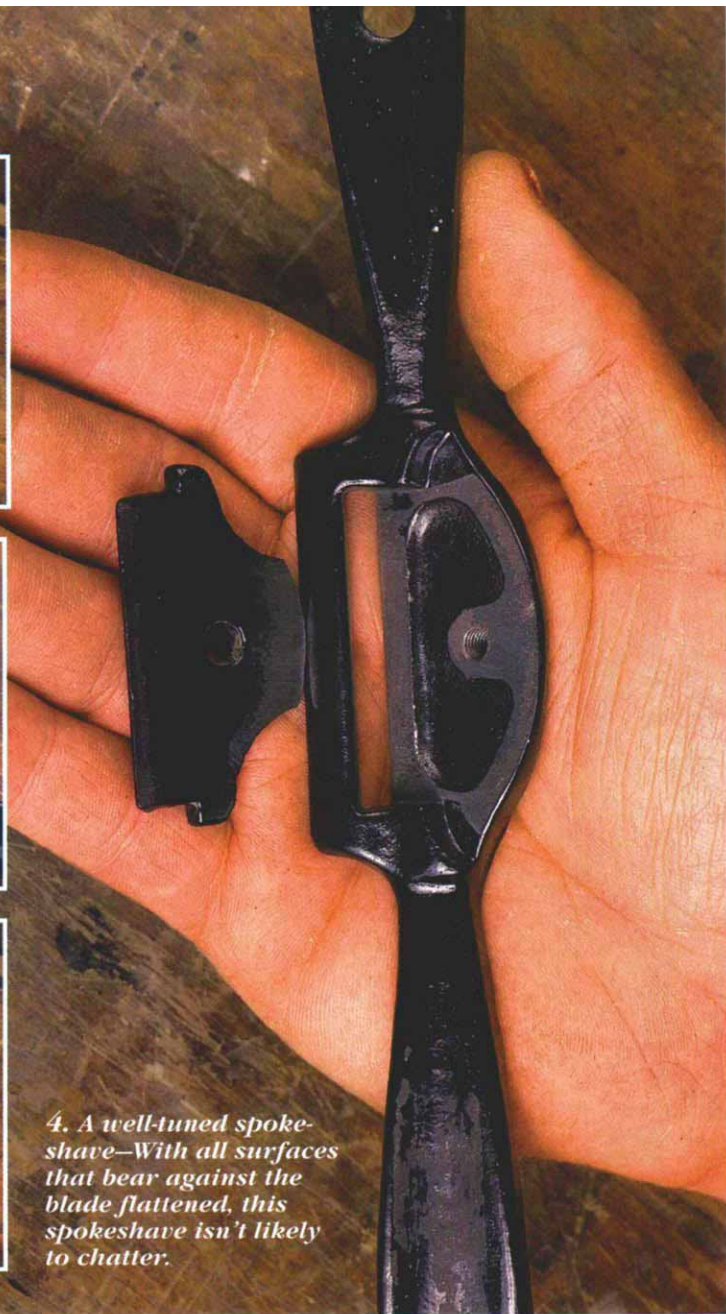
2. File the bed flat to seat the blade properly. Check for flatness with the blade of a small square, and take down the high spots.



3. Flatten the cap iron so it exerts uniform pressure against the blade and across the cutting edge.



4. A well-tuned spokeshave—With all surfaces that bear against the blade flattened, this spokeshave isn't likely to chatter.



even the most expensive of these spokeshaves, mechanically adjustable and made of malleable iron, will cost less than \$45.

Tuning up your spokeshave

Any new hand tool needs tuning before it works properly. But take heart. This initial tuning goes quickly with spokeshaves. First, with the blade removed, carefully file the sole flat, and then clean it up on a sharpening stone (see the top left photo). This usually takes only a few minutes. Next inspect the bed where the blade seats. If it looks rough or uneven, file it flat (see the center left photo). The blade should sit on the bed without rocking. File and then stone the cap iron, too, so that it will exert uniform pressure on the blade and across the cutting edge (see the bottom left photo). Mating parts in a properly tuned spokeshave are flat and seat well—that's what eliminates blade chatter (see the photo at right).

Sharpening your spokeshave blade properly is also crucial to smooth performance. I grind my blade at a 25° primary bevel and finish it off on my waterstones with a secondary bevel of about 2°.

To get even better performance from my Stanley No. 151, I replaced the stock blade with a thicker, aftermarket blade made by Ron Hock (available from a number of woodworking supply catalogs). These blades are hardened to Rc62, measure a full 3/2 in. thick and cost a bit less than \$20. The thicker blade creates a finer, or narrower, mouth opening and reduces chatter.

Using the spokeshave

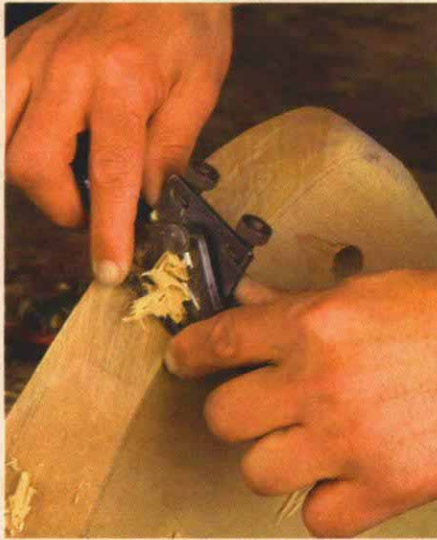
A spokeshave is a fairly simple tool, but there are some basic techniques that will go a long way toward reducing frustration and achieving smooth cuts.

Maintain three points of contact—When using the spokeshave, always maintain three points of contact between the spokeshave and the workpiece: front of the sole, back of the sole and the blade (see the drawing on the facing page). A good grip will help prevent the tool from rocking and skipping across the workpiece.

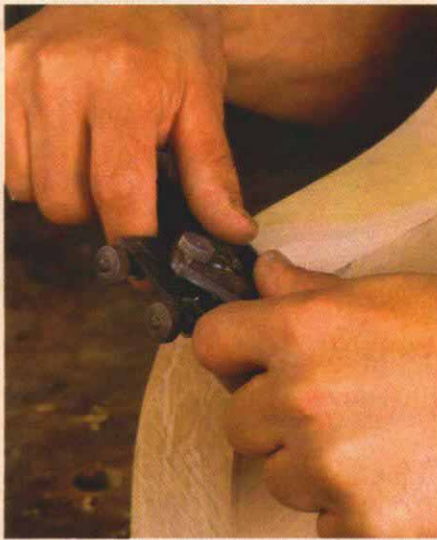
The spokeshave is designed to be a push tool, and that's how it

USING A SPOKESHAVE

Proper grip eliminates rocking. When pushing the spokeshave, hold it loosely with forefingers wrapped over the top and ahead of the blade, thumbs behind the blade. Maintain even pressure on the workpiece ahead of and behind the blade.

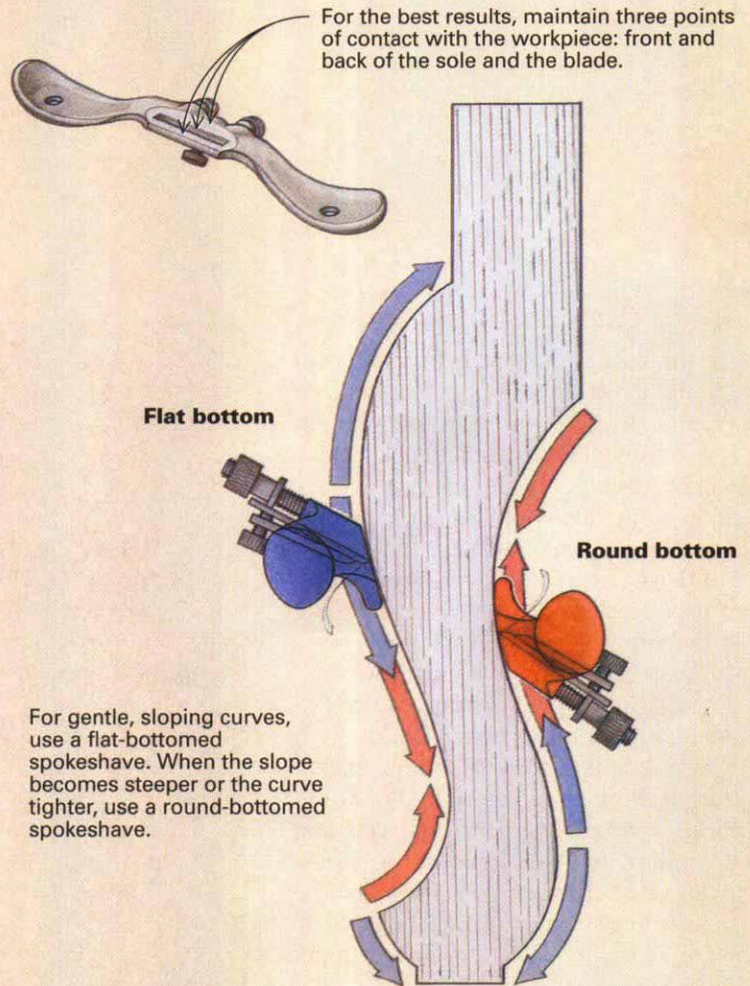


When pulling the spokeshave, flip it around so your thumbs lead and your forefingers follow. Maintain even pressure on the work.



Cutting curves: Go with the grain

The general rule is to cut down, from high to low. This works as long as the grain is straight and in line with the workpiece. Otherwise, observe grain direction, and cut with it.



works best. Sometimes, however, pulling it is necessary because of sharp grain reversals or the position of the workpiece in a vise. I find that pulling the spokeshave is less efficient and more tiring, though, so I try to push it whenever possible.

When I'm pushing the spokeshave, I grip it loosely. I rest the handles in my palms and position my thumbs almost directly behind the blade. My forefingers go over the toe and just in front of the throat (see the top photo above). This grip is comfortable and provides excellent control and even pressure across the sole. For a pull stroke, I simply flip the spokeshave around in my hand so that the blade is facing my thumbs (see the bottom photo).

Set the blade for a light cut—As with a bench plane, I set the spokeshave with almost no blade showing. When I run my finger over the mouth of the spokeshave (carefully, mind you), I can just barely feel the blade coming through. If I don't get a shaving, I advance the blade just a little at a time.

Skewing the spokeshave can help the cut, too. A skewed blade

meets with less resistance and comes closer to imitating the slicing action of the antique wooden spokeshaves. And because curves always present a significant amount of end grain to the blade, the lower angle leaves a smoother, cleaner surface.

Cut with the grain—It's just as important to cut with the grain when shaping curves as it is when you're smoothing a flat board. If you try cutting against the grain, you're sure to get chatter and tearout. The general rule is that you always cut down, from high to low (see the drawing above). But that doesn't always work. Sometimes you need to read the grain and make adjustments accordingly. For gentle curves, a flat-soled spokeshave works well, but for tighter areas, you may need a round-bottomed version.

Mario Rodriguez teaches woodworking at the Fashion Institute of Technology in New York City and at Warwick Country Workshops in Warwick, N.Y. He's also a contributing editor to Fine Woodworking magazine.