

Shaping Wood By Hand

A few tools let you create any shape imaginable

BY ALFRED SHARP

Before the days of portable power tools—or any power tools for that matter—craftsmen were able to generate any shape they wished in any wood. Remarkably, the tools they used—the spokeshave, the rasp, the bench chisel, and the scraper—are still the best tools for a wide variety of shaping jobs. Indeed, some tasks can *only* be accomplished using these tools. And even when a power tool can do the job, the hand tools are often quicker to use, especially if only one or two pieces of wood are involved. A power tool may require considerable setup time, whereas you can just whip out these hand tools and start making shavings.



There are other benefits to mastering these tools. They are much safer than power tools, with minimal noise and no power-propelled chips and dust, so you're freed from earmuffs and eye protectors. And often little or no sanding is needed before starting the finish.

To demonstrate, I'll create parts for a Queen Anne chair. The varying curves and shapes of the legs, back splat, crest rail, and shoe are best shaped with hand tools.

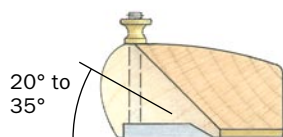
The tools I'll discuss take up very little room, and the set costs only a few hundred dollars—less if you purchase used tools. With this relatively small outlay and some practice, you'll be capable of rendering the most complex and sinuous sculptural shapes imaginable for modern or traditional furniture.

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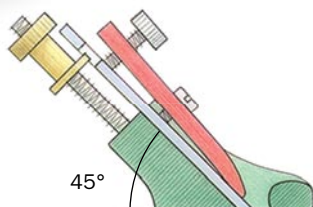
SPOKESHAVES REMOVE WOOD QUICKLY YET DELICATELY



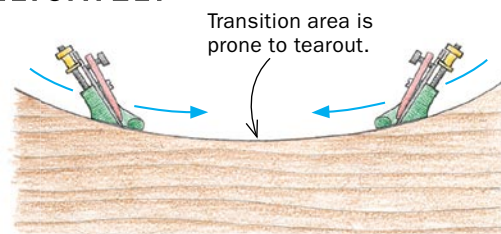
CHOOSE YOUR ANGLE



The wooden shave presents a low blade angle and is great for fine finishing cuts in straight-grained woods and for working end grain.



The metal shave presents a higher blade angle to the work surface, making it more suitable for figured woods and taking a heavier cut.



GO WITH THE GRAIN

The grain direction of a typical workpiece changes at about every 90° of arc. In this transition area, the grain will tear out and you'll have to come from the opposite direction. Learning to fair this area is one of the harder skills to master. A sharp blade, a tight throat, and a light touch help.

My favorite tool for shaping wood is the spokeshave. Spokeshaves are like handplanes for curved surfaces and, as their name implies, were originally used to fashion wagon-wheel spokes. They can be used to clean up bandsaw marks on any curved surface, to round over the sharp ridges between the curved planes of a cabriole leg, or to cut the tapered elliptical shape on the curved back legs and crest rails of Queen Anne and Chippendale chairs. Spokeshaves come in several shapes and configurations, but you can do 90% of your work with two flat-bottomed shaves: the metal type with a frog to position the blade, and the wooden shave with a very low-angle blade (see drawings, above).

The way I use them runs contrary to the practice of most woodworkers, who use wooden shaves for heavy stock removal and metal shaves for finishing the surface. While it is true that the wooden shave's lower angle can wedge deeply into the wood and take a big chip, there is also the potential tearout that results from that wedging action. When hogging off, I like the control and more self-limiting nature of the metal shave. For fine work, nothing beats the super crisp and "sparkly" surface that results from the really sharp wooden shave worked with a very tight throat, especially when using a skew angle of attack.

Second, the little thumb pads behind the blade suggest the tool can only be pushed. In reality, the shave can be pushed or pulled. Your thumbs or forefingers, placed directly behind or in front of the blade, provide the push or pull. Your other fingers rotate and revolve the shave to keep the edge engaged in the wood. It takes a little practice at first, but soon you'll be rhythmically making sweet curls. Often the shave is skewed at an angle to the direction of cut to make the going smoother. If chatter marks appear, shift the skew angle of approach so that you're cutting at an angle across them.



Smooth curves. A flat-bottomed spokeshave can work a concave surface down to about 10 in. dia. To go with the grain, work downhill from both directions.



Push or pull. The spokeshave can be pushed or pulled, so you don't have to reverse and re-clamp the workpiece each time the grain pattern changes.



Tight mouth, thin shavings. After creating the basic profile with a metal spokeshave, Sharp uses a wooden shave with its low blade angle and tight mouth to work areas of tearout.

Turn a cheap shave into a peak performer

You'll never regret spending the money for a quality spokeshave. But if you already have an inexpensive one or you can't resist a flea-market bargain, there are a couple of ways to tune them up to perform like their costlier cousins. Start by buying a thicker, after-market blade in high-carbon steel, and spend some time sharpening it until both surfaces making the edge are fairly polished.

The typical lower-priced metal shave has a wide throat that looks ready to take a chunk worthy of a drawknife. To correct this, you'll need to make a shim that fits between the frog and blade and closes the throat. Use a dense wood like maple. If your shave has the two blade-adjusting screws, the shim shouldn't be so thick that the blade no longer engages these screws. I find that a maximum throat opening of 0.020 in. allows for a reasonably thick shaving while still cutting cleanly and without chatter. (I like a throat opening of 0.005 in. to 0.008 in. for a wooden-bodied shave.)

While you are working on the throat clearance, inspect the frog and correct any problems you find there. Often the paint used on the body of the shave has gotten onto the frog's surface, even collecting in a fat sag. Carefully scrape down to the metal and then check the surface for flatness. A little judicious filing may be in order. Careful: Don't nick the front edge of the throat or you'll be left with an irregular mouth opening. If the frog doesn't register the blade square to the sole, correct that too by filing. Then you can calculate the thickness of shim needed to create the proper throat.



Body and sole. Scrape away any surplus paint and then check the surface for flatness and whether the blade registers square to the sole. A little judicious filing (left) will correct either problem, but be careful not to nick the front edge of the throat. Budget spokeshaves often come with coarse scratches on the sole. Use a file to remove these and flatten the sole at the same time (right).



Smooth the chipbreaker. Rough casting and paint prevent many chipbreakers from making good contact with the blade. File down to flat metal (left). Bevel the leading edge (right) to create a tight joint with the blade, which keeps shavings from getting caught under the chipbreaker.



Close the throat. Make a dense hardwood shim (left) that fits between the frog and blade. The shim shouldn't be so thick that the blade no longer engages the adjustment screws. The tighter throat (right) makes for much smoother cuts.

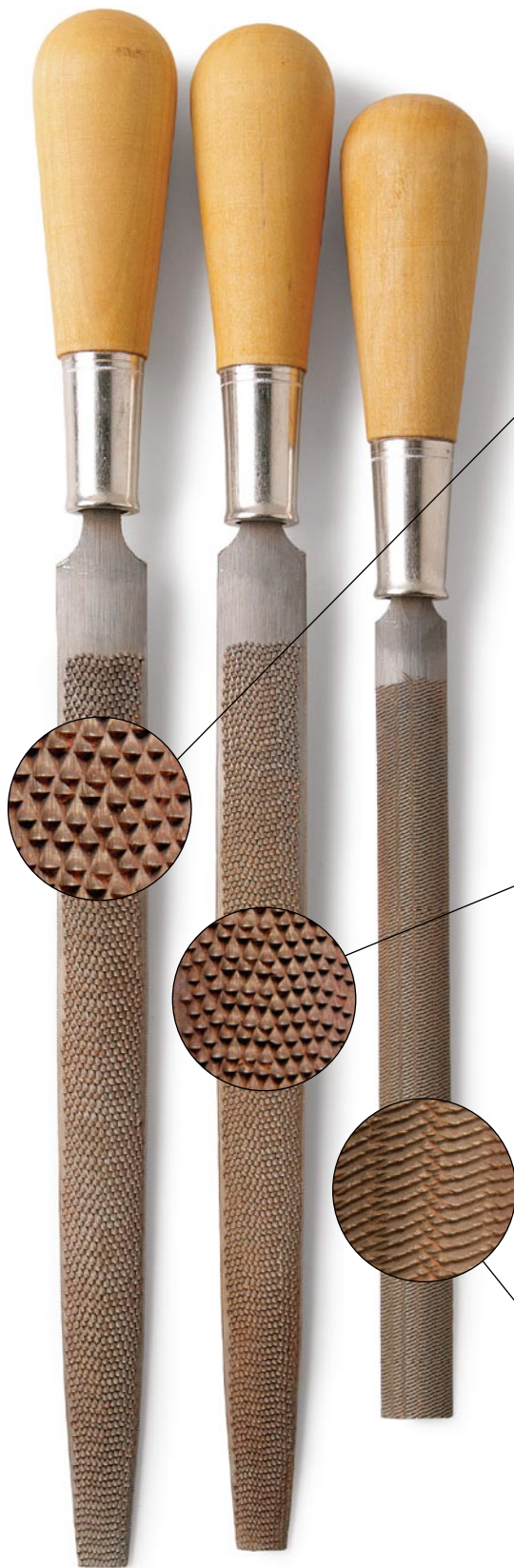
RASPS AND FILES HANDLE TOUGH GRAIN AND TIGHT CURVES

The rasp is one of the most elementary woodworking tools and is very versatile. Coarse rasps can remove a lot of wood quickly in tight situations, for example the ankle area of a cabriole leg. Rasps are especially helpful when trying to sculpt highly figured or difficult woods, or when the approach to the work is awkward for an edge tool such as a chisel or a shave. A finer-toothed rasp can help at that troublesome grain-shift point discussed with the spokeshave.

Rasps come in a variety of grades, but you can get by with two or three. They all should be tapered half-rounds and have random-cut teeth, which are almost always hand-cut. Most machine-cut tools have perfectly spaced teeth, which contribute to “railroading” (rows of grooves on the work surface) and chatter. The only machine-cut tools I know of that have random teeth are the Nicholson pattern-maker’s rasps.

Unfortunately, there is no standard nomenclature for coarseness, and each brand varies significantly from the others. The best way I can describe my most useful rasps is by tooth height, which may be difficult to judge, especially when buying from a catalog. The coarsest rasp I normally use has teeth about 0.085 in. high, the next size down about 0.035 in., and the finest, often called a cabinet rasp, has teeth that look more like a very coarse file—which is a good substitute. Always put a wooden handle on the tang of a rasp or file to prevent a nasty wound.

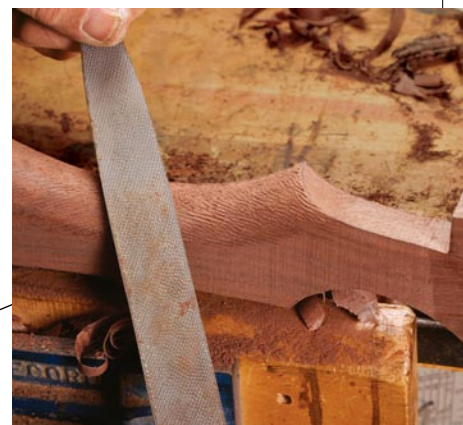
There are a few tricks to using a rasp. A rasp will remove the most wood when worked approximately 90° to the grain direction, but the resulting surface will be rougher than if worked along the grain. Therefore when using the coarse rasp, stop a little short of your final desired shape and work through the finer rasps, finishing with the cabinet rasp and working along the grain direction if possible. From this point, a scraper usually will easily remove any remaining rasp marks.



THREE ARE ALL YOU NEED



Fast cutting. A coarse rasp removes wood quickly, especially when used at 90° to the grain. To avoid creating deep grooves, look for a rasp with teeth that are not in a straight line, lengthwise.



Less aggressive. A medium rasp removes the lines left by the previous rasp. Tapered, half-round rasps are the most useful for shaping wood.



File a smooth surface. A coarse/medium file cleans up any remaining rasp marks and leaves the surface ready for scraping and sanding.

CARVE WITH A BENCH CHISEL BEVEL-SIDE DOWN



Bench chisels are often overlooked as carving tools, perhaps because some people haven't tried using them bevel down. Using a flat chisel this way positions the handle higher off the work, keeping it out of the way and leaving the chisel free to move around. Also, the chisel becomes like a spokeshave with a very short "sole" that allows you to work into remarkably tight curves. And you can use the heel of the bevel as a fulcrum, levering away chips, and keeping the edge from digging too far into the cut. I often use a chisel to carve the ankle of a cabriole leg. With it, I can get into the tight curve and then use the heel of the bevel as a fulcrum.

For this type of work, I recommend a shorter chisel like a butt chisel, approximately $\frac{5}{32}$ in. thick with a beveled edge. The slight flexibility of thinner or longer chisels means they can "load up" and then spring forward in an undesirable burst. A bevel angle of 25° to 30° is best, higher if you find you are doing a lot of levering (which is tough on the edge). I use $\frac{3}{4}$ -in., 1-in., and $1\frac{1}{2}$ -in. sizes.



How to control it. Using the bevel of the chisel in the same way as the sole of a spokeshave allows you to get into tight spaces, such as the beveled edges of this chair splat, with perfect control.

CLEAN UP WITH THE CARD SCRAPER

The best tool for final shaping and smoothing of both curved and flat surfaces is a card scraper. Even on curved surfaces, most of the time I reach for a straight scraper, only using the french-curved scraper if the profile exactly fits the piece. All the facets left by the spokeshave and the chisel, and the grooves left by the rasp, can be removed with a sharp scraper and a light touch. Almost any surface that's been carved freehand can be faired and refined with a properly sharpened scraper.

(For more on tune-up, see Fundamentals: "Mastering the Card Scraper," FWW #201. For more on using a goose-neck scraper, see Rules of Thumb:

"The Scraper Can Replace a Stack of Sandpaper," FWW #147.)



Scrape wide areas. You can clean up wide curved surfaces such as this chair splat with a card scraper.



Scrape long curves. A scraper quickly removes the facets left by the spokeshave, fairing the surface into a smooth curve.



Use a curved scraper. The gooseneck scraper has varying curves that can be fitted precisely into a cove. This is the shoe molding on a chair back.

SOURCES OF SUPPLY

Economical metal spokeshaves from Stanley and Kunz are widely available.

www.hocktools.com

Aftermarket spokeshave blades

www.leevalley.com

Wooden shave kit, Nicholson rasps, economical hand-cut rasps, and coarse and medium wood files

www.toolsforworkingwood.com

Hand-cut rasps from Pakistan and the Auriou brand from France

www.lie-nielsen.com

Auriou rasps