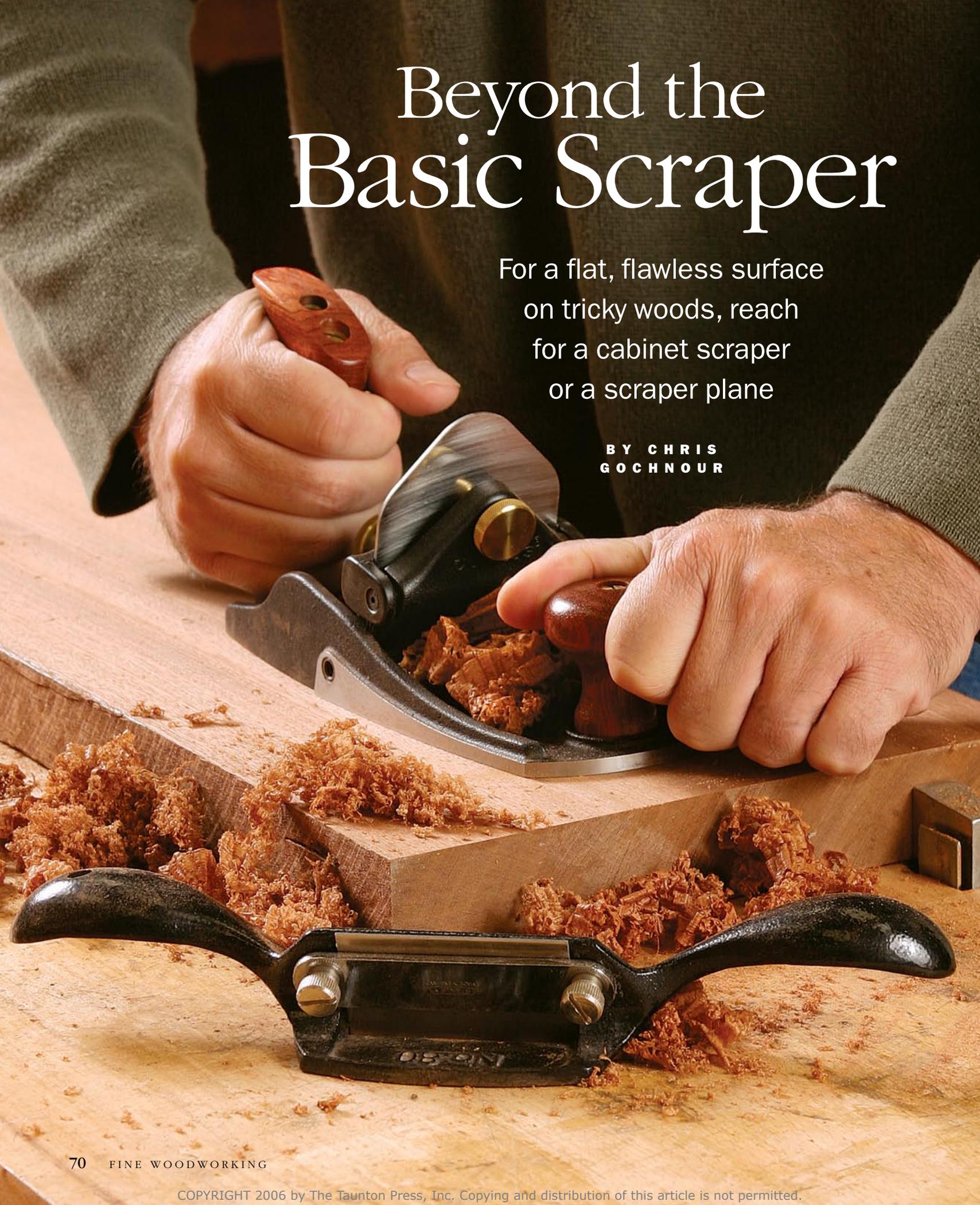


# Beyond the Basic Scraper

For a flat, flawless surface on tricky woods, reach for a cabinet scraper or a scraper plane

BY CHRIS  
GOCHNOUR



**W**hen bench planes begin to tear out tricky grain or balk at tough woods, many woodworkers reach for a card scraper. But that isn't always the best choice. Often, especially on large, flat surfaces, the job can be done easier, faster, and better by using one of the card scraper's bigger, lesser-known brothers: the cabinet scraper and the scraper plane.

I use all three scrapers in my shop, because each one has its place. Once you understand what they can do for you, what they cost, and how to use them, you can decide for yourself whether to add one or more to your tool cabinet.



### **Basic card scraper is best on smaller surfaces**

Because it's held in both hands with finger pressure slightly flexing the steel, a card scraper lets you make light to moderate cuts depending on how it is held and engaged with the wood surface.

The scraper can be pushed or pulled. To make cutting easier, I sometimes create a shearing cut by holding the scraper about 30° to the direction of travel.

As useful as a card scraper is, though, it has significant limitations. It is not an aggressive tool, so it won't remove a lot of material quickly. It cuts with a lot of resistance and, consequently, the cutting edge dulls fairly rapidly. Mainly, though, the card scraper is uncomfortable to hold because your hands are always in contact

with sharp corners. Then, too, it creates a lot of friction as it cuts, so the steel can get hot to the touch within minutes. And because it lacks a flat sole to maintain a consistent cutting depth, you have to work carefully to avoid creating shallow dips and valleys.

So, I use a card scraper mostly to smooth smaller surfaces, typically under 18 in. sq. By the time my fingers are hot and my hands are tiring, the work is done. (For more on tuning and using a card scraper, including sharpening at 90°, see "Sharpening and using card scrapers," *FWW* #172, pp. 26-30.)

### **Cabinet scraper is better for everything else**

Compared to the card scraper, the cabinet scraper is considerably more comfortable to use, even over extended time periods. The handles provide a place for the hands, and because fingers never touch the blade, heat is a nonissue. Plus, a cabinet scraper is more likely to maintain a flat, even surface because its sole helps regulate and control the depth of cut. The sole also makes it easy to start and finish cuts on the edges of panels. And a thumbscrew at the center of the scraper keeps the blade flexed for you.

**Versatile and easy to use**—The cabinet scraper excels at removing mill marks from board edges. Its sole provides the control needed to ensure that a board edge stays true as it is worked.

I typically use a cabinet scraper when the surface gets into the 18-in.-sq. to 36-in.-sq. range, such as a tabletop or panel. You can use one on even larger surfaces

## **When to plane and when to scrape**

**Whenever I'm working to smooth a relatively straight-grained wood, my tool of choice is a handplane. In my opinion, there's no better way to prepare a wood surface for a finish. But wood is not always straight-grained. Sometimes grain is wavy, curly, bird's eye, or has some other form of general nonconformity. I often use such wood for panels and tabletops, as it's a sure way to add a dramatic look to a furniture piece. As you might expect, wild grain—with wood fibers going up, down, and sideways at all angles—can be difficult to smooth. No matter how well the blade is sharpened, or how**

**light a cut you make, a handplane tends to tear grain that runs helter-skelter. That's when I skip the plane and use a scraper.**

**Contrary to the names, card scrapers, cabinet scrapers, and scraper blades don't scrape—they cut. Sharpened and properly tuned, they can produce a pile of shavings. A couple of factors enable them to smooth wood without tearing the wood fiber. First, scrapers meet the wood at a steep cutting angle. That means it's almost impossible for the steel to get under the wood and lift and pry the fibers. Second, as a scraper cuts, the wood chip breaks immediately. That way, a long chip can't peel back, only to ultimately break and create a noticeable tear.**

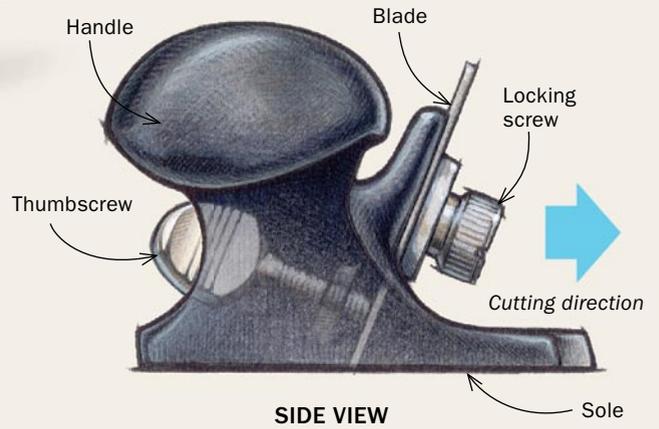


**Figured grain begs a scraper.** When smoothing wood with irregular grain, as in curly maple (top) and sapele (bottom), a scraper is less likely to create tearout than even a finely tuned handplane.

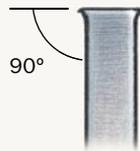
# Cabinet scraper



The Stanley No. 80 (available from [toolsforworkingwood.com](http://toolsforworkingwood.com)), a tool that hasn't changed significantly in more than a century, is Gochneur's favorite cabinet scraper. Well-designed, lightweight, and comfortable, it produces excellent results.

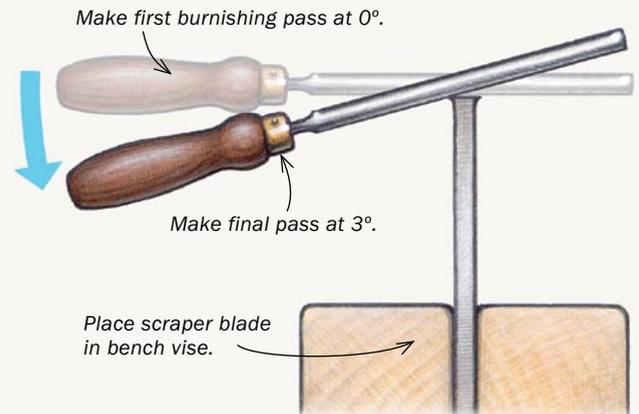


**Create shavings, not sawdust.** Properly sharpened and tuned, a cabinet scraper produces long, thin shavings, much like a plane. A typical stroke ranges from 12 in. to 24 in.



## CREATING THE CUTTING BURR

A cabinet-scraper blade can be honed to either 90° or 45°. Of the two options, a 90° angle produces a smoother finish. Plus, you get two cutting burrs along one edge of the blade. See p. 74 to find out how to sharpen a blade to 45°.



**Form the burr.** Hold the blade on the bench and burnish the face, keeping the burnisher flat against the blade (1). Clamp the blade in a vise and create the burr, starting the burnisher at 0° to the edge. Tilt the burnisher 3° and make a few more passes (2).

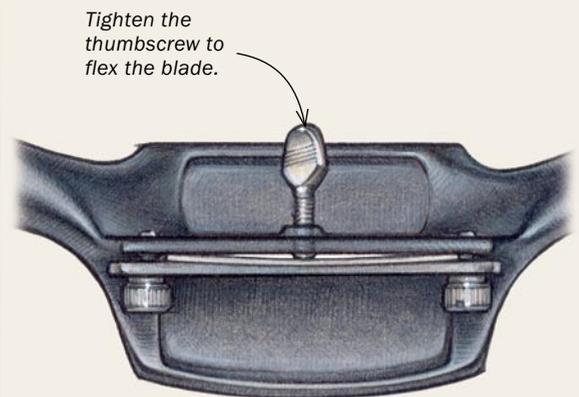
## TIPS FOR SETUP AND USE



**Set the cutting depth.** A sheet of paper and a flat surface are all you need to set the depth of cut.



**Set the blade flex.** Tighten the thumbscrew to flex the blade about 0.002 in. to 0.003 in.



TOP VIEW

with good results, though that is where I turn to the scraper plane, which I'll cover shortly.

In use, I normally push the tool, but it cuts just as well when pulled. Like a card scraper, a cabinet scraper generally cuts better when skewed to about 30°.

**Two ways to sharpen the blade**—You have two options when it comes to sharpening a cabinet scraper. You can sharpen it as you would a card scraper, with its edges filed at a right angle to its face and a small burr, or hook, burnished onto each of its cutting edges. I find that cabinet scrapers work very well with this configuration. They are easy to sharpen, and, like on a card scraper, you get two working burrs along each edge.

To sharpen a blade to 90°, I start by securing it in a vise. Then, I use an 8-in. bastard file to create a flat, straight edge. As I push the file, I try to keep it at a right angle to the face surfaces of the blade. Three or four strokes usually are enough to get the job done. Then, with the blade still in the vise, I use a fine-grit, flat slipstone to smooth each side of the scraper at the filed edge. Once the edge is prepared, I'm ready to use a burnisher to form the cutting burr (see drawing, facing page).

The second approach is to sharpen the scraper edge with a 45° bevel. This method produces a more aggressive cutting edge, useful if you want to remove material faster. For example, if a thickness planer produced some fairly heavy tearout, I'd use the 45° edge to speed up the process of thinning the stock until the tearout disappeared (see "Forming the burr," p. 74).

**Setting up a cabinet scraper**—Place the freshly sharpened blade into the body of the scraper. To establish the blade extension, place one or two pieces of paper on a flat surface. Then, to elevate the sole ever so slightly, place the front of the sole on the paper. Press the blade down against the flat surface while tightening the thumbscrews to secure the blade. This step sets the blade extension to match the thickness of the paper, typically about 0.004 in. per sheet.

Next, turn the scraper over and sight down the bottom of the sole. The cutting edge of the blade should be parallel to the sole.



#### TIP

#### WORKS ON THE PULL STROKE, TOO

*Although Gochmour normally pushes a cabinet scraper, there are occasions when it's easier to pull the tool. Either way, it works equally well.*

If it isn't, lightly tap the side of the blade with a hammer until it is. Finally, turn the thumbscrews that flex the blade until the blade has a very slight (about 0.002 in. to 0.003 in.) crown. The scraper is now ready to go to work.

#### Scraper plane: best choice for large surfaces

All the scraper planes on the market are patterned after the Stanley No. 112, a tool that was developed in 1874. Like the original 112, the new scraper planes have a pivoting lever-cap and thumbscrew that clamp the blade to the frog. The frog is adjustable from zero to 25°, making it easy to dial in the cutting angle of the plane. This adjustment is critical, as the scraper's cutting angle needs to work in harmony with the angle of the burr on the scraper's edge. The pivoting frog also regulates the depth of cut.

**Use it like a handplane**—Handle the tool just as you would a bench plane. I find that a light touch, with a smooth, steady stroke, produces the best results. Just as with a bench plane, start the cut with pressure on the front knob. As the cut proceeds, equalize the



**Start flat.** The scraper cuts with less effort when at about 30° to the direction of travel. To start a cut at an edge, add pressure to the forward handle so that extra force is applied to the front of the sole. As the sole slides onto the stock, shift the hand pressure so that both handles end up with downward force.



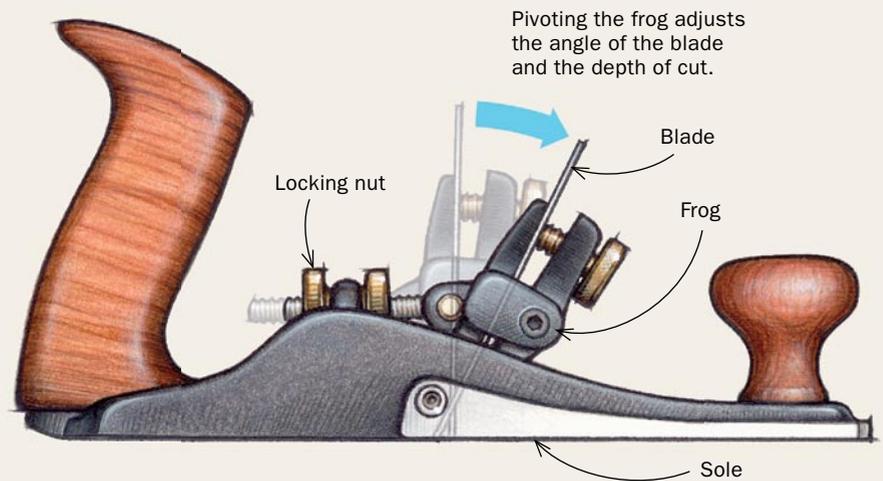
**Finish flat.** As the sole of the cabinet scraper begins to extend over the end of the board, reduce pressure on the forward handle while maintaining pressure on the trailing handle. Finish the cut with full pressure on the back handle.



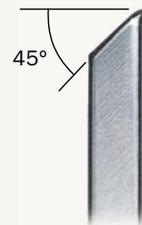
**Keep the edges flat.** When scraping close to the edge of a board, allow the sole to overhang only slightly, keeping most of it on the board. That way the cabinet scraper can't tip and give the surface an unwanted taper.

# Scraper plane

The scraper plane has some advantages over a cabinet scraper. First, it's secured to a cast-iron, plane-like body with a generous sole that helps ensure that the board surface stays flat and true. Also, the angle of the blade and the depth of cut can be adjusted precisely. The handle and knob provide extra comfort and control.



Pivoting the frog adjusts the angle of the blade and the depth of cut.

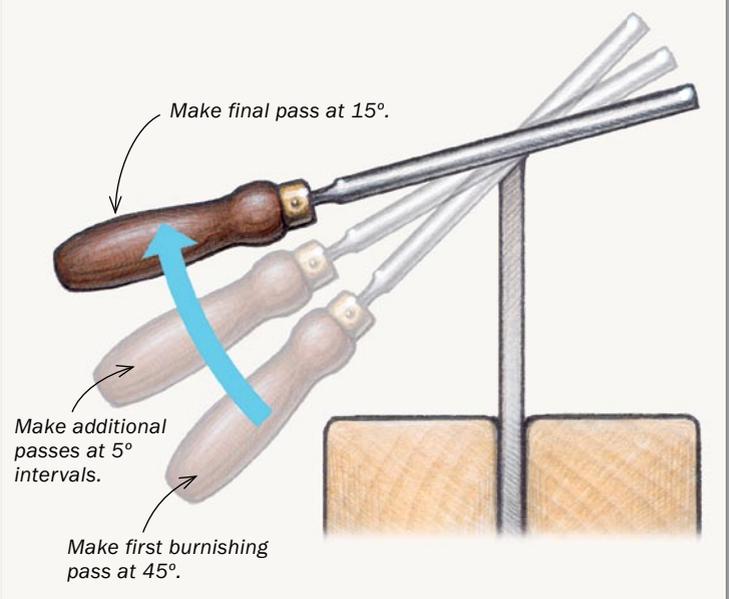


## FORMING THE BURR

Gochnour prefers to sharpen the scraper-plane blade at a 45° angle because it produces a more aggressive cut. On the downside, you get one working edge and it can't be burnished as often between sharpenings.



**Form the burr on a 45° angle.** Make the first pass along the bevel using a burnisher held at 45° (left). Then make a series of passes flattening the angle by about 5°, with the last pass at 15°. A board with a 15° line provides guidance for the final pass (right).



pressure on the knob and the rear handle. Then, upon completing the pass, shift your weight to the rear handle.

**Choosing a scraper plane**—Of the scraper planes on the market, the one made by Veritas ([www.leevalley.com](http://www.leevalley.com)) is the only one with an adjustment screw that lets you flex the 0.055-in.-thick blade to produce a slight camber, a feature that makes it less likely that you'll dig into the wood and also gives a very smooth cutting action. On the other models, I keep dig-ins under control by rounding the corners of the blade to about a 1/16-in. radius.

**Sharpening a scraper plane**—The 45° bevel can be created with a file, but I get the best results by “grinding” the edge with sandpaper. First I use spray adhesive to mount 120-grit sandpaper to a flat surface such as a chunk of granite or a piece of plate glass. Then I mount the blade in a Veritas Mark II honing guide (the only guide I've found that can hold a thin, wide scraper blade without causing distortion). With the guide set to create a 45° bevel, I roll it back and forth until the bevel is formed. With the blade still in the jig, I hone the beveled edge on a 1,000-grit waterstone. Then I use a 6,000-grit stone to polish the edge. After honing the edge, I form the cutting burr using a burnisher.

**Setup is easy**—When setting up a scraper plane, the first thing to do is tilt the adjustable frog 15° forward. Then set the plane on a flat benchtop and insert the blade into the plane with its bevel facing toward the back. With the blade resting on the benchtop,

## TIPS FOR SETUP AND USE



**Load and lock.** With the frog of the scraper plane set to a 15° angle (see illustration), and with the plane on a flat surface, slip the blade (bevel facing back) into the plane until the burred edge bottoms out on the flat surface. Then turn the locking nut to secure the blade.



**Set the depth of cut.** To set the depth of cut, pivot the frog forward 15°. When the blade begins to dull, pivot the frog farther forward to improve the cutting action.



clamp the blade in place by tensioning the thumbscrew. Next, to extend the blade slightly from the sole, move the frog forward slightly. This is done by backing the rear locking nut a quarter-turn off the post and tightening the front nut up against the post.

Test the cut on a flat piece of wood and make depth adjustments accordingly. If the blade isn't parallel to the sole, you will feel the plane turning sideways as it cuts. If this occurs, make lateral adjustments by tapping the side of the blade with a hammer.

A scraper plane works best when set for a light cut. That said, it should produce a nice, wide shaving, not dust. If your scraper is not cutting shavings, adjust the frog angle so that it is working in harmony with the burr you have created on the blade's edge.

To find the best angle, remove the blade from the plane and make a pass or two while holding it like a card scraper. Find the angle at which the blade best engages the stock, then adjust the scraper frog to that angle, reinstall the blade, advance it slightly, and take another test cut. After using the scraper plane for a while, the blade will dull and the cut will be lighter and less efficient. Tilt the frog forward a degree or so to reengage the blade.

Wood with uneven grain is an inevitable part of woodworking. Short of sanding forever, the next best option is to use a tool from the scraper family. You'll end up with a smoother board, in less time, with less dust. That's a rare win-win situation. □

*Chris Gochnour builds furniture and teaches woodworking in Murray, Utah.*

**Skew the plane for easier cuts.** Like a cabinet scraper, a scraper plane cuts more easily when angled about 30° to the direction of travel.



**Scraper plane has the edge when doing edges.** When an edge requires scraping, the scraper plane has the best balance and control, so you're less likely to tip the scraper and create an out-of-square edge.