




handwork

The right way to sharpen your scraper

TURN A SMALLER HOOK TO GET BETTER SHAVINGS

BY MICHAEL PEKOVICH

 **Online Extra**

To watch Pekovich sharpen a scraper, go to FineWoodworking.com/extras.

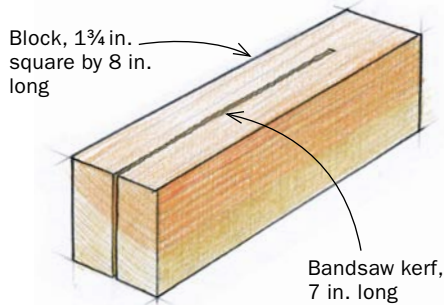
When you think of working with hand tools, the humble card scraper is probably not the first tool to come to mind.

But what it lacks in sex appeal it makes up for in ease of setup and use with no risk of tearout. Whether or not you use a handplane, the scraper is still a must-have for dealing with any tearout from the planer or jointer and for tricky grain that a handplane can't handle.

What transforms this piece of steel into a tool is the hook on its edge, often mistakenly referred to as a "burr." Creating the hook is the key to good performance. But a few common missteps

THE LITTLE BLOCK THAT DOES IT ALL

The invention of chairmaker Brian Boggs, this simple block makes it easy to file, polish, and hone the scraper for great results.



when burnishing the hook prevent most woodworkers from getting the best out of their scrapers. I'll show you the best way.

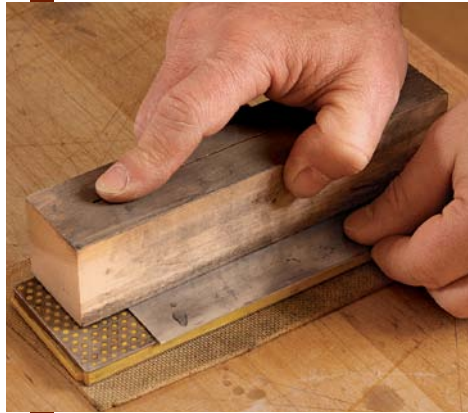
A great hook starts with a polished edge

Just like a plane blade and chisel, a scraper has a cutting edge. And just like the edges on those tools, it needs to be polished and scratch-free to work its best. So, before you burnish the scraper, you need to polish the faces and edges. I use a DMT fine/extrafine combination diamond plate (\$90, woodcraft.com), because it's more durable than waterstones and the polish it provides is good enough for a scraper. A less-expensive alternative is wet-or-dry sandpaper on glass. Start with 320 grit and work up through 600 grit.

A simple wood block helps with this task (and it comes in handy when you're burnishing, too). A bandsawn kerf runs most of its length and holds the scraper square for filing, polishing, and honing. For

Hone the surfaces first

You won't get a clean, sharp hook unless you start with perfectly flat, smooth, 90° angles on all four corners.



Polish the faces. Apply pressure with the honing block. Hold the scraper with your other hand (left). Force is distributed over the length of the scraper, polishing the edge evenly and completely (right).



File the edges. Put the scraper in the kerf (left). That makes it easier to clamp in a vise and because the edge barely sticks above the block, it's impossible to file it out of square to the faces (right). Take long, smooth strokes with a single-cut mill file to expose fresh steel.



Polish the edges. The block supports the scraper and keeps it square to the diamond stone. Last, re-hone the faces to remove the slight burr there.

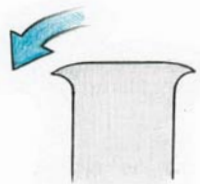


Turn the hook in two steps

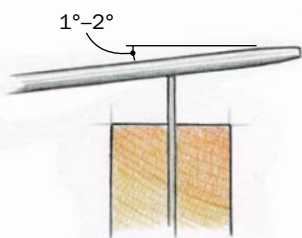
A light touch is better than a heavy hand. You don't want a big hook with a heavy angle—that makes the scraper harder to use.



1. Draw the edge. Keep the burnisher flat, so that the edge extends straight out from the scraper, making it easier to turn it into a hook. Take two light passes on each edge.



2. Turn the hook. The goal is a small hook with a shallow angle. So, keep the burnisher nearly perpendicular and take a couple of passes using moderate pressure.



now, we'll just lay the block on top of the scraper to polish the faces. This distributes the pressure evenly along the flexible scraper and ensures a nice polish along the entire edge. Using your fingers would leave shiny spots where your fingers were.

After the faces are scratch-free and polished, move on to the edges. The first step is to file them square. On a scraper that's been used, this is especially important. Turning the hook multiple times causes the steel to become brittle, much like bending a paper clip back and forth until it breaks. Filing cuts through

this work-hardened edge to softer steel, which makes turning a hook easier.

It's important to maintain a 90° angle when filing, so insert the scraper into the block with the edge just barely proud of the surface (no more than 1/64 in.) and clamp it in a vise. This will force you to keep the file square as you work. As long as you're not hitting wood, you should be within a fraction of a degree of square. On a work-hardened edge, the file skips and skates across the steel. Keep filing until you take a consistent cut. You'll feel the difference once you

hit the softer steel. Also, use a single long stroke to get from end to end. Short ones can create an uneven surface.

Filing leaves a burr along the corners. It's easy to mistake this burr for the hook you'll burnish later. Although the burr could take a shaving, it would leave a rough surface and the ragged steel would break down and dull quickly. So, it's important to remove the burr and polish the edge. To do this, leave the scraper in the block and place it on the diamond plate. Use a folded paper towel as a cushion for your hand and press down on the block and scraper together as you polish the edge. The block keeps the scraper square.

At this point, there probably is a slight burr along the corner. To remove it, alternate between polishing the face and edge on the extrafine diamond plate. The result should be a smooth, sharp corner, the foundation for a great-performing scraper. This sharp edge yields a single continuous hook—one that leaves a smooth surface and lasts a long time.

Keep the pressure and angle low

Burnishing properly is easy, but doing it wrong is easy, too. It's at this stage where common mistakes are made that limit the performance of the tool. The first mistake is using too much pressure. During demonstrations, people are always amazed at how little pressure I use when turning the hook. The area of contact between the burnisher and scraper edge is so small that just a little pressure equals a lot of psi. Using too much pressure creates an unnecessarily large hook, which is difficult to re-hone when dull. It can also crimp the steel, which ruins the edge and requires re-filing. To get an idea of the pressure necessary, extend your index fingers and run one along the other. Use moderate pressure, but not enough to deflect your finger, and you've got it.

Creating the hook involves first drawing the steel with a burnisher to create a razor-thin edge that extends out from the scraper, and then turning over that edge to create the hook.

To draw the steel, lay the scraper flat on the bench and rest the burnisher

Two ways to use it

Honing at a low angle allows you to remove stock quickly or tilt forward for a smooth finish.



For an aggressive cut, keep the scraper nearly vertical and don't flex it. Bending it just reduces how much of the hook engages the wood (right). Keeping your thumbs apart spreads the pressure over the entire edge and makes for a better shaving (above).

flat on the scraper. As you push the burnisher along the edge, keep it flat, but apply pressure to the edge. Also, angle the burnisher so that the tip is forward of the handle. Two light passes will yield a very slight hook along the edge.

Now it's finally time to turn the hook and here's where mistake number two comes in: using too much angle. The angle you burnish at is important because it determines how much you need to tilt the scraper forward before it starts cutting. If you burnish at 10°, you'll need to tilt it that far in use. If you burnish at 1° or 2°, it will dramatically alter the performance of the tool, allowing you to scrape at an almost vertical angle. With the scraper in this position your thumbs—the driving force—are behind the cutting edge. You can get your mass behind the tool and push for a really aggressive cut. On the other hand, scraping with more forward tilt puts your thumbs ahead of the cutting edge and the scraper wants to pivot back and out of the cut. More downward pressure and flexing is necessary to keep it engaged. You are pulling the tool through the cut instead of pushing it.

The great thing about honing at a shallow angle is that while you can take a really aggressive cut, you can also tilt the scraper farther forward when you



Go low for light shavings. The hook is less engaged and there's less force on it. Save this technique for final smoothing.

want a light, smoothing cut. Hone at a shallow angle and get two tools in one.

To turn the hook, place the scraper back in the block with 1/8 in. protruding. Rest the burnisher flat on the edge and angle it just enough to be sure that you are in contact with the corner you are honing. You shouldn't come close to contacting the block. Again, angle the burnisher front to back so that you draw the steel out as you move forward. Two swipes on each corner are all you need. The resulting hook is small and can just be felt by running your finger up

TIP

DUST MEANS DULL



When the shavings stop coming, you can just repeat the drawing and turning steps for a fresh hook. But after you've done that a few times, you'll need to file the edge again.

from the edge. When I pass a burnished scraper around to an audience, I'm invariably met with "wow, that's all?" They're equally surprised when I take a big old shaving with it.

When the edge dulls, just draw the edge back up and turn the hook again. It lasts longer the second and third time you turn it, because the steel gets progressively harder. But eventually the steel becomes brittle and it's necessary to file off the edge and start again. □

Michael Pekovich is FWW's art director.