

sharpening a **Scraper**

A few simple steps are all it takes to get a sharp burr.

Producing a burr on a hand scraper isn't sharpening in the conventional sense. A scraper is sharpened by *burnishing* the edge to form a burr.

The key to getting a razor-sharp burr is to start with a perfectly square and smooth edge on the scraper. For this, you'll need a smooth-cut mill file and a medium oilstone. (The edge of a scraper can damage a soft waterstone.) Then it's just a matter of holding the file and stone square to the edge. For this, I use the shop-made jig shown in the illustrations below.

THE SHARPENING JIG. The first part of the jig is a groove that holds the file perpendicular for squaring the edge of the scraper. The other side is a clamping jaw that secures the scraper while burnishing.

The jig is pretty easy to build. I started by cutting a groove for the file in a piece of hardwood (Figure 1, below). Then I flipped the piece and made another groove on the opposite side. Now you can drill a



pair of holes spaced slightly wider than the length of your scraper. Finally, you'll need to cut out the clamping jaw shown in Figure 2. To do this, place the workpiece on its edge, raise the blade to the height of the groove and make the cut.

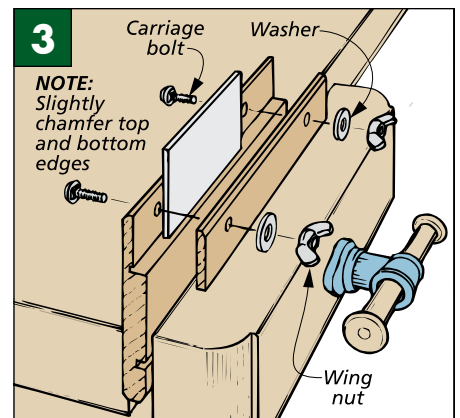
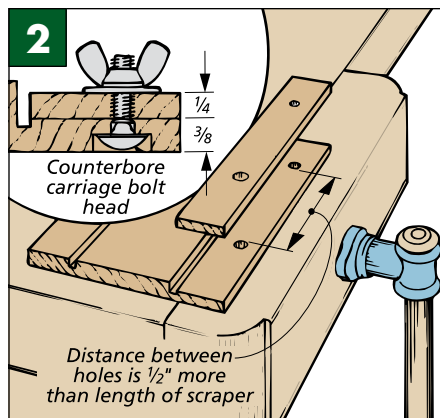
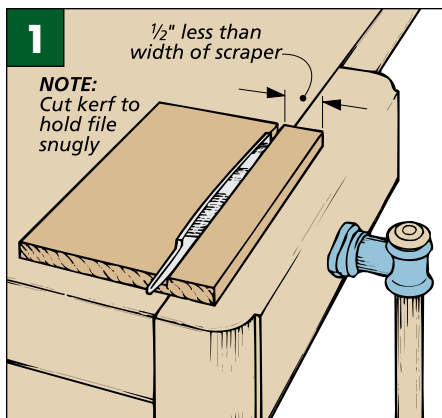
All that remains is to attach the jaw with a couple of carriage bolts and wing nuts and you've got your jig. You can hold the scraper in place by clamping it in the jaw and placing the jig in a vise. This beats clamping the scraper directly in a vise because the jig lifts it up to give you room for your hands on both sides of the scraper (Figure 3).

PREPARING THE EDGE

Now you're ready to put the jig to work. Start by clamping it flat on the bench or use bench dogs to hold it in place. You can use the step-by-step drawings on the opposite page to guide you through the process.

SQUARE THE EDGE. The first step is to remove the old burr from the cutting edge. The oilstone works well for this. You don't need to apply a lot of pressure, just enough to flatten the face (Step 1).

Now it's time to remove any nicks in the edge by filing it flat as shown in Step 2. Use just enough pressure to make a smooth shearing cut on



the edge of the scraper. Chattering means you're not applying enough pressure and results in a rippled edge and a rough burr.

I use the same technique for a curved scraper. The key here is to keep the curved edge moving forward while rotating the scraper.

HONE THE EDGE. Filing produces a square but slightly rough edge. To smooth the edge, I use an oilstone. Hold the edge against the stone and slide it back and forth until it's smooth. I put a shim under the stone to change the angle every couple of strokes to avoid grooving the stone (Step 3).

Honing produces a wire edge (not to be confused with the cutting burr). A light polishing on the face of the scraper removes this wire (Step 4).

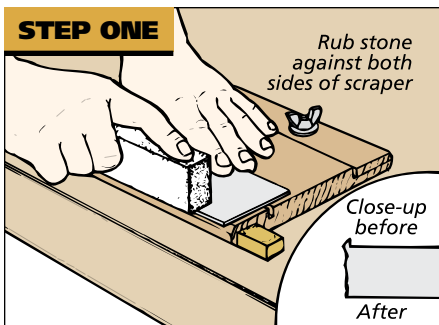
BURNISHING THE EDGE

Once the edge is square and smooth, it can be burnished. Burnishing involves two steps: drawing the edge, and rolling the burr.

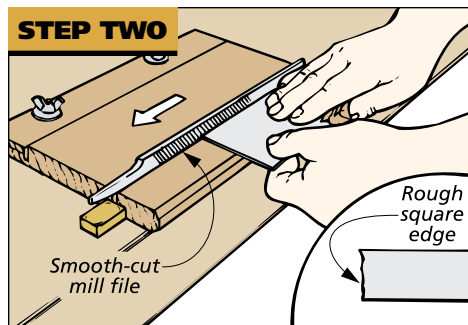
DRAW THE EDGE. To draw the edge, lay the scraper on the jig and hold the burnisher flat on the face of the scraper (Step 5). Bear down hard with the burnisher to produce the profile shown in the inset. A drop of oil on the edge reduces friction.

ROLL THE BURR. Now you're ready to form the cutting burr. To prevent flexing, clamp the scraper in the jig and tighten the wing nuts. Then, with the burnisher angled to about 5° pull the burnisher along the edge to roll the burr (Step 6). You'll need to take several strokes, pushing down on the edge hard enough to flatten the steel and form a uniform burr along the edge. Then repeat the process on the opposite edge so you have both sharpened.

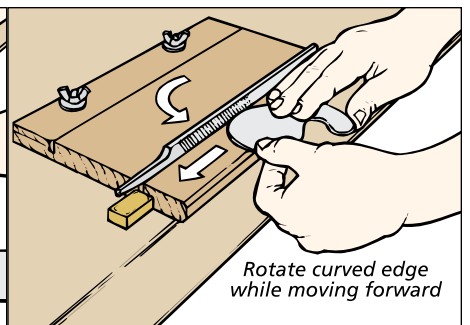
After a few strokes, you should be able to feel the burr. Now it's just a matter of trying it out to find the cutting angle (Step 7). **W**



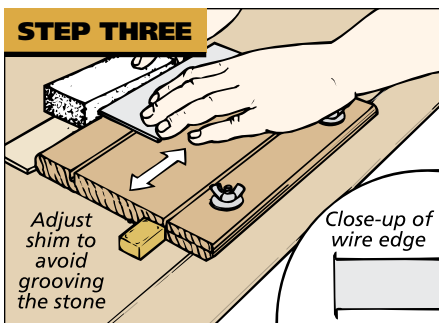
Smooth off the old burr by honing the face with a medium oil stone. (Inset drawings are exaggerated for clarity.)



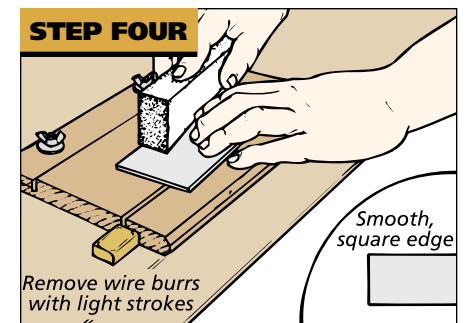
Hold the scraper flat on the jig and press it firmly against the file. Then push it toward the tang to square the edge.



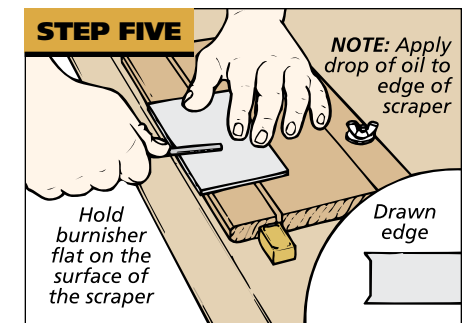
To square the edge of a curved scraper, use the same technique, but rotate the edge while pushing forward.



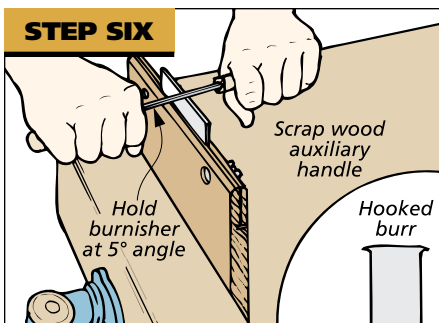
Smooth the edge after filing by honing with an oil stone. A shim under the stone allows you to vary its position.



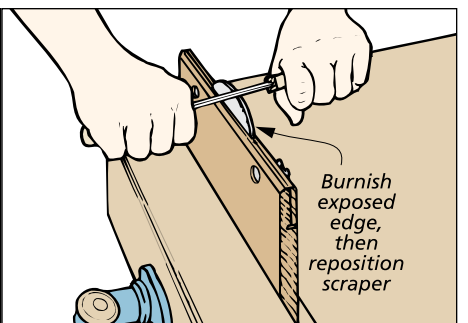
Remove the wire edge by rubbing the stone flat on the face of the scraper. Now the edge is smooth and square.



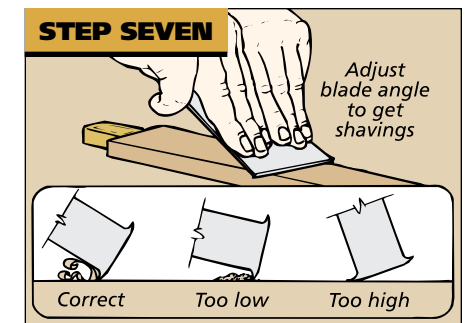
To create a cutting burr, draw the edge (see inset) by placing the burnisher flat on the surface and stroking from end to end.



With the scraper in the jig and clamped in a vise, form the hooked burr, (inset) by pulling the burnisher at a slight angle.



For a curved scraper, draw the burr in small sections, repositioning the scraper in the jig as necessary to do the entire edge.



Finding the best cutting angle is a matter of feel. Hold the scraper at an angle and pull until it produces fine shavings (not dust).