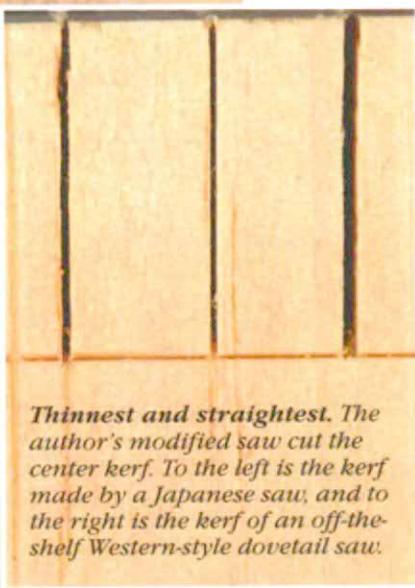


Soup up a Dovetail Saw

*Refile teeth
and reduce set
for better cuts*

by Mario Rodriguez



Thinnest and straightest. The author's modified saw cut the center kerf. To the left is the kerf made by a Japanese saw, and to the right is the kerf of an off-the-shelf Western-style dovetail saw.



1. Eliminate every other tooth. Start at the heel of the blade between the first two teeth. Position the back edge of the file vertically, perpendicular to the blade. Begin the cut with about a quarter of the file's length past the blade. Push forward and slightly toward the toe, simultaneously filing away the front tooth and recutting the face of the rear tooth. Three strokes should take out the whole front tooth. Repeat until you reach the toe of the saw. The inset photo shows what the freshly cut teeth should look like.

As a novice woodworker, I always marveled at those impossibly narrow-necked dovetails on 18th-century furniture. A chisel wouldn't have fit into such tiny openings, so it was obvious that the craftsmen didn't pare the joints. They must have cut them right the first time. I couldn't imagine cutting such tight kerfs and straight lines with any saw I owned.

A little later in my quest for perfect dovetails, I tried Japanese saws. They always cut beautifully and left a thin kerf, but I never warmed up to them. I worried about ruining their fragile but costly blades, and I couldn't get used to cutting on the pull stroke.

Now, years later, I use the same types of European-style dovetail saws I started with. But I don't use a saw before modi-

fying the shape and set of its teeth, as the photos on this and the following two pages show. The result is an American hybrid that cuts straight, whisper-thin kerfs.

The trouble with new dovetail saws

When I buy a new saw, I find that it's usually in no shape to cut dovetails. The most common problems are too many

teeth, too much set and an inappropriate tooth pattern.

Too many teeth—One problem with dovetail saws is the number of teeth they have. Most dovetail saws have between 18 and 26 teeth per inch (tpi). Many woodworkers think that the more teeth a dovetail saw has, the smoother it will cut. That's not necessarily true. The more teeth a saw has, the

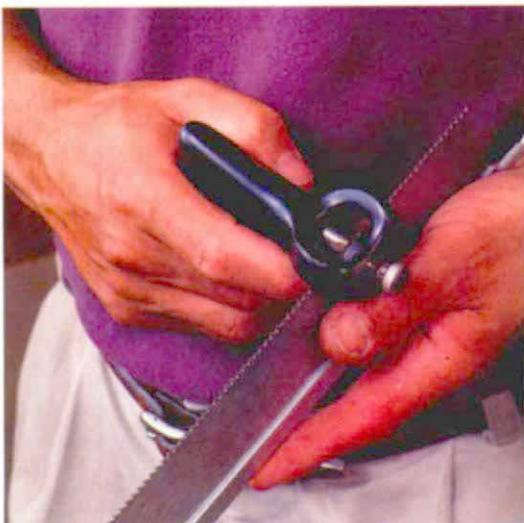


2. Remove the set. Put the blade on an anvil or similar surface, and gently hammer out the set. Light taps will do the trick. Remember, you're just flattening a thin sawblade, not working horseshoes.

more strokes it will take to reach the dovetail baseline. The more strokes it takes, the more the cut is likely to wander. On my modified saws, I've found that between 9 tpi and 12 tpi is about ideal.

Converting a saw with a lot of teeth is pretty straightforward: Just file away every other tooth. You may never have sharpened a saw, let alone altered the number of teeth, but it's actually a lot simpler than it sounds. A saw vise is helpful, but the blade can also be held in a regular woodworking vise or a machinist's vise, with wood strips on either side of the blade to grip and protect it. For both dovetail and tenon saws, I use a double, extra-slim taper saw file. These files are available at many hardware stores.

Too much set—A bigger problem with a new saw is the set, the amount the teeth are bent away from the blade. Set allows the saw to cut a kerf wider than the blade is thick. This keeps the saw from binding or kinking. But most new saws have so much set that it's impossible to keep the saw cutting to a precise line. For that reason, I start out by eliminating all the set on my dovetail saws. For a saw destined to cut dovetails in pine, I don't need any set. For a saw that I'll use on harder woods, I'll put back a little set. Tools that are used to make this adjustment (called saw sets) are available by mail and from antique-tool dealers.



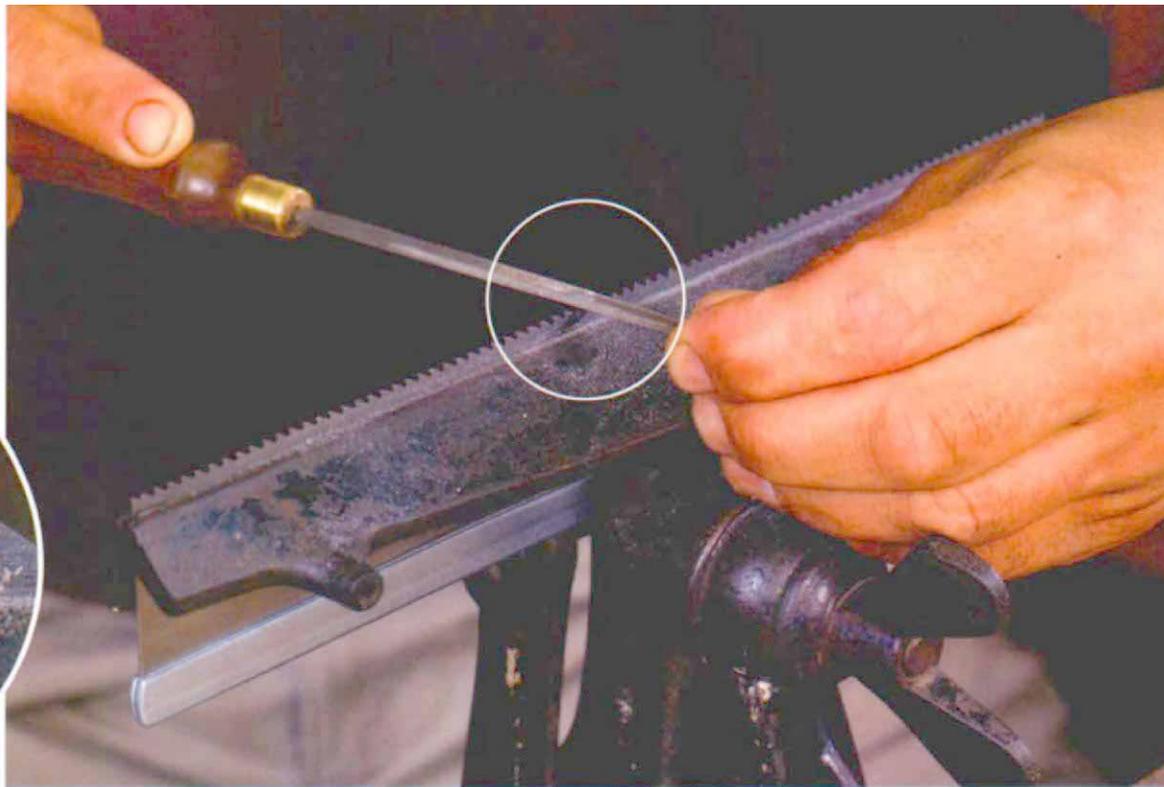
3- Set the teeth. For a dovetail saw used mostly on hardwoods, the author uses the minimum setting (the highest number) on the saw set. For a dovetail saw used mostly on softwoods or thin stock, he doesn't add any set.



4. Joint the teeth. Eliminating teeth and removing the set can create teeth of varying heights. Use a 10-in. mill file to take the tops of the teeth down until they are all at the same height.

Wrong tooth pattern—The third problem is the tooth con-

5. Sharpen the teeth. Keep the back edge of the file straight up and down, and file straight across the blade. Take light passes until you've brought each tooth to a sharp point, as in the inset photo. File all the teeth from the same side.



6. Deburr the teeth. Filing the teeth will create burrs on the far side of the blade that can cause your saw to catch, drag or wander slightly. To remove these burrs, just pass a coarse stone lightly across the blade.

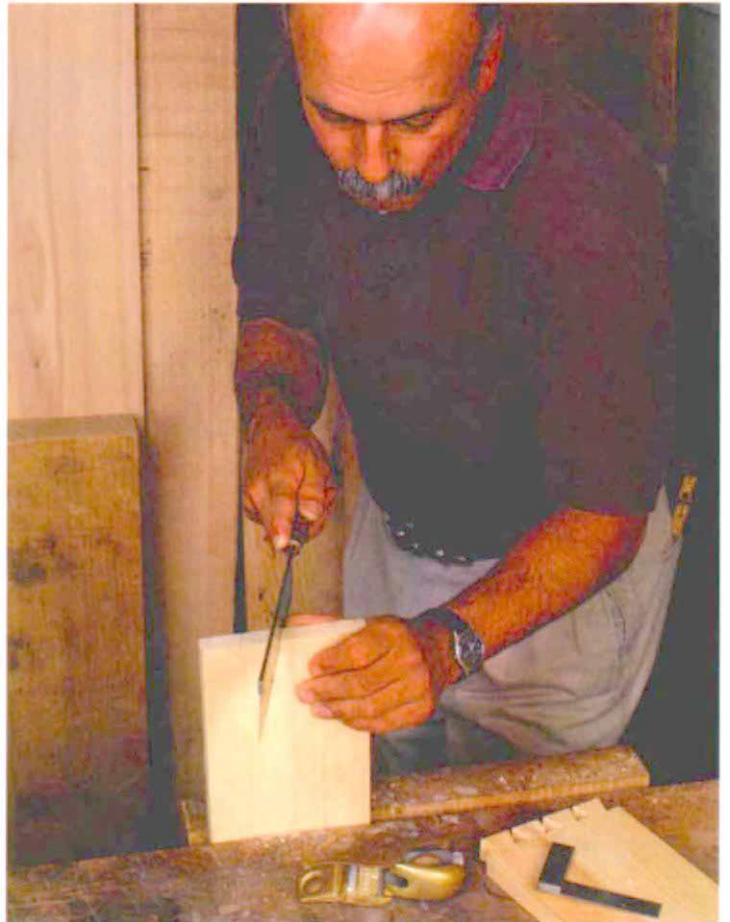


figuration. The teeth on dovetail saws are in a crosscut pattern: The teeth are angled back slightly for a better cut across the grain. But dovetails are cut predominantly with the grain. So it made sense to me that a rip pattern, in which the leading edge of each tooth is perpendicular to the blade, might work better. When I eliminate the extra teeth, I file the leading edge of the remaining teeth straight up and down.

Practice first

If you're nervous about drastically altering the fancy, imported hacksaw that cost \$65, consider first overhauling a cheaper saw with a turned handle. Stanley makes a good one that retails for about \$10. If you're happy with the results, then you can redo your pride and joy. □

Mario Rodriguez is a contributing editor to Fine Woodworking magazine.



7. Take the saw for a test drive. While using a slow, full stroke, notice whether the saw wanders (could be an uneven set) or wants to snag (possibly uneven tooth height). If you've prepared the saw carefully, it should cut true to a marked line, take few strokes to get to the baseline and leave a thin kerf.