Profile Scraping Jig for Moulding Planes

By Bill Anderson

The jig that I use either to create or to refine profiles is one that I developed myself.

The base is basically a U-shaped holder made of poplar. The device is about 14" long. The length is long enough to hold a plane (9 ½" long or so) plus 2-3 inches at each end for follow-through on the scraping action. The jig is wide enough to accommodate the width of planes I generally work on, plus additional room for ¼" thick clamping cauls. The height of the jig (on the inside) is just a bit more than the standard plane body height (about 1/8"). This allows me to use tapered shims underneath the plane body when clamping it, to set the top of the plane flush with the top edge of the jig. Slots were cut into both ends of both sides of the jig so that a pair of 6" Jorgensen style F-clamps could be set in to clamp the plane body. Holes were drilled on one side of the jig so that the clamp pad could pass through the side and engage the plane body. The underside of the jig has a wide, thick register for clamping in a shoulder vise.

The first shows the device, plus two cauls and shows how the clamps are set into the jig.

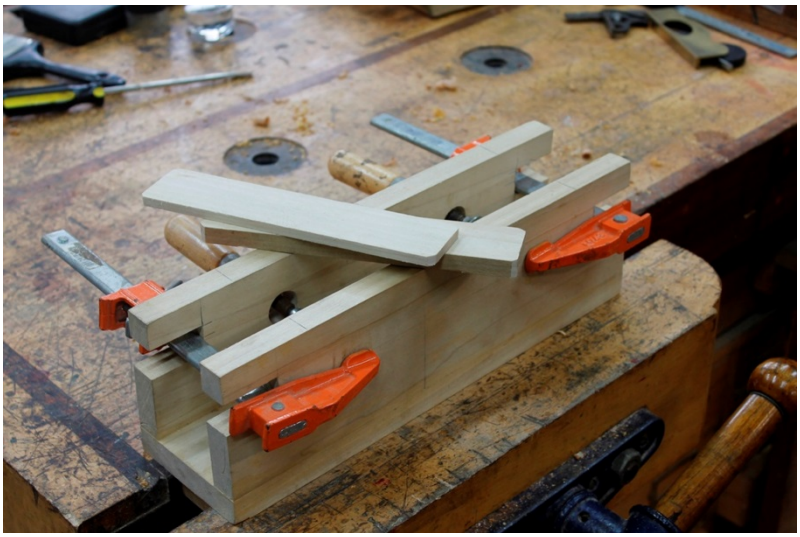
The scraper holder is shown in the second. This holder has a long thin bar, with a saw kerf down the middle at one end and various screw holes positioned along the length. The opposite end of the bar is shaped with an open slot (note that the saw kerf and the open slot in the bar have to be separated by about ½-1" of intact stock to maintain the integrity of the bar). There is a wide scraper body (fence) which has a slot that engages the bar snugly. The body has a threaded insert and a bolt, which fits into the slot of the bar.

In use, the scraper body (fence) bears against the right face of the jig and the bar rests on the top two long edges of the jig. In this manner, the profile that is scraped is parallel in two dimensions to the sole of the plane body.

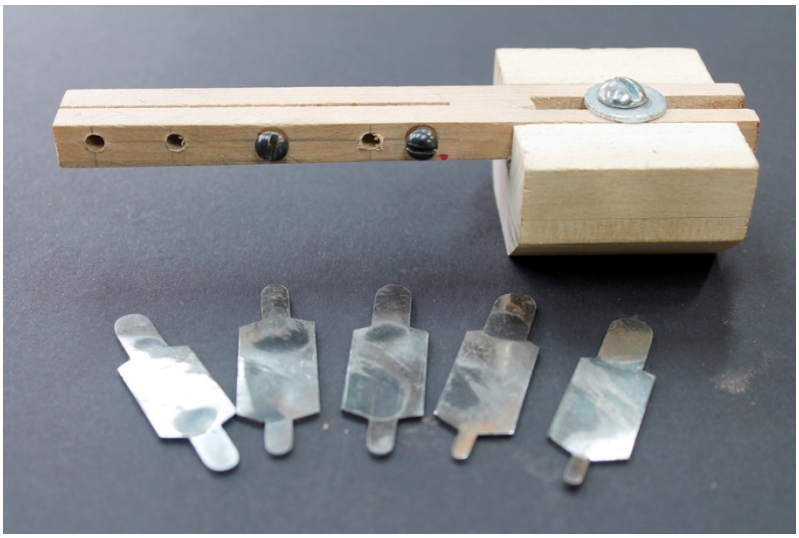
The cutters are shaped from thick bandsaw blades, saw blades, scraper blades, or similar material (a set of two-ended beading cutters is pictured). The profiles of the cutters are shaped with hacksaw, file or grinder as needed. Once the profile is attained, the two faces of the cutter are flattened and polished. The cutting edge of the cutter is honed square across. Because the cutters can sometimes extend out from the bar a fair distance (particularly the beading cutters), I generally harden the cutters, but do not temper them. This keeps the cutters from bending or deforming when being used.

In use, I set the plane body in the jig, clamp it lightly, and shim both ends of the body to make the body flush with the top of the jig, and then snug down the clamps. The plane body is centered on the length of the jig. The cutter is inserted in the scraper bar between pairs of screws and snugged down loosely. The cutter needs to be set for the depth of cut, for the lateral positioning from the right face of the jig, and to the appropriate spring line of the plane (if applicable). This process is trial and error. Generally some tweaking occurs here. Set the cutter for a light cut, and advance the cutter as the scraping action proceeds. Note that the scraper is generally tilted in the direction of the cutting action, usually from the heel to the toe of the plane. You can work in the opposite direction, with some risk of tearout.

One thing to remember is that the profile being scraped is different when the cutter is held at an angle than when it is held vertical. I do all of the scraping with the cutter leaning into the direction of the cut, but finish out the scraping process by keeping the cutter as vertical as possible.



Scraping jig body



Scraping jig holder and cutters