

Start chip carving

STRAIGHTFORWARD TECHNIQUES AND BASIC SHAPES OPEN THE WAY TO ENDLESS PATTERNS

BY DANIEL CLAY

The type of chip carving I do has its roots in decorative patterns from medieval Europe, but examples of wooden objects decorated with incised geometric carving can be found all over the world. Why is this so? My intuition is that it is simply

because humans are mark-makers and tool users, and wood is a material common to virtually every culture. Given these basic conditions, the technique is just waiting to be found.

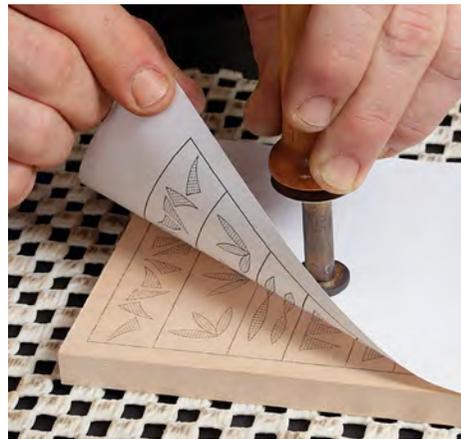
Sit long enough with a piece of wood and a sharp knife, and you might very well invent

some form of chip carving. If you've ever carved your initials or an image into a wooden surface, congratulations—you are, in effect, a chip carver. Now let's refine that ancient impulse by applying

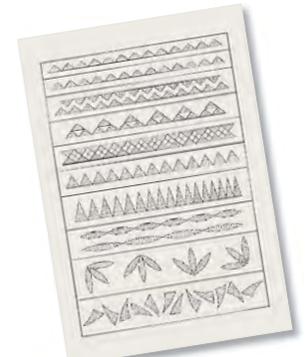


Transfer the pattern

Use heat to transfer a printed pattern to the board. To do this, Clay places the pattern facedown on the wood and runs a transfer tool, similar to a wood-burning pen and available from art-supply stores, all over it. The pattern must be printed with toner, such as that used in laser jet printers.



Spot check as you remove the pattern. Starting at a corner, lift off the pattern slowly, reheating areas that didn't transfer sufficiently.

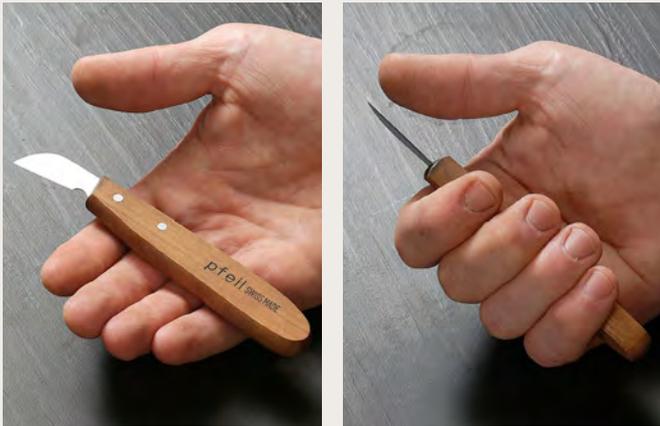


Online Extra

To download a PDF of this pattern, go to FineWoodworking.com/278.

Two grips

FIRST POSITION



Grip the knife for first position. Open your dominant hand. Cradle the knife at the bottom of your fingers with its blade pointing away from your body. Then curl your fingers around the handle so its spine nestles into the joint where your fingers meet your palm.



Thumb is the anchor. With the proper grip, plant the tip of your thumb on the workpiece. The angle of cut should be consistent and between 45° and 65°, and the blade and your thumbnail should be roughly parallel to one another.

SECOND POSITION



Thumb behind the blade for second position. This position, where you cut away from yourself, reverses and precisely mirrors first position. Grasp the knife as before, but have it rotated so your thumb presses against the back of the blade when you close your grip.



Knuckles are the anchor. Your angle of cut should be the same as in first position. For clean chips, it's important these mirror each other as much as possible. For cuts at the ends and edges of a board, Clay rests his knife hand on a piece of scrap that's the same thickness as the workpiece.

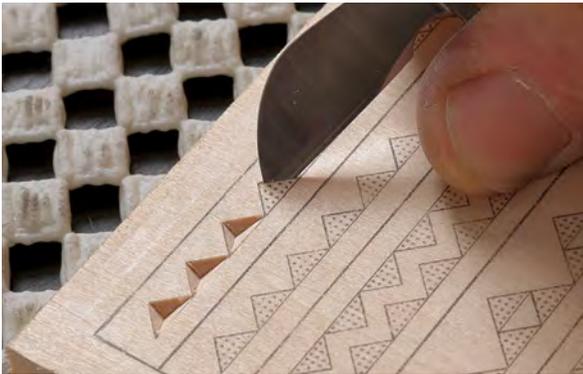
Sharpening the knife

Flatten and polish both faces. When he gets a new knife, Clay ensures both faces are flat by working them from 40-micron to 0.3-micron sandpaper. It's imperative the blade's edge remains straight.



Establish and hone bevels. Aim for 8° to 10°, raising the back of the blade about the thickness of a dime. After forming the bevels on coarse grits, hone them slightly convex, so they burnish the surface as they cut. While carving, strop regularly on a piece of leather charged with yellow compound.

Three-corner chips



Start in first position, and cut from tip to baseline. Place the knife's tip at the top of the triangle and plunge it deeper into the wood as you approach the triangle's base. To guide the cut, use your thumb as a fulcrum and your arm and shoulder as the lever.

a few standardized techniques and concepts that will allow precise, repeatable results whether you're making a decorative panel or adding accents to a piece of furniture.

This article covers two- and three-corner chips, which comprise the bulk of chip carving's design vocabulary. While my demonstrations and practice board show only a few patterns, these basic examples can appear in a wide variety of shapes and sizes, which can be assembled and combined into an infinite number of designs. Once you become familiar with these simplest forms, you'll begin to recognize them in virtually every chip carving you encounter.

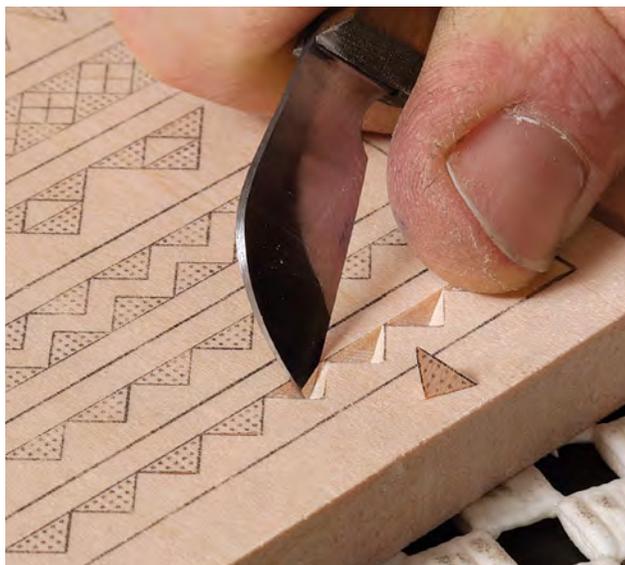
The Swiss method

There are several schools of chip carving, each with its own particular tools and approach. The method I'll outline here is commonly known as the Swiss method, or sometimes as the Barton method, after prolific chip carver, educator, and author Wayne Barton.

The knife—The Swiss method offers several advantages to the beginning chip carver: The vast majority of the work can be accomplished with a single tool. This knife, though simple in the extreme, employs some special geometry that makes it a versatile tool for removing faceted chips of varying shapes and sizes. The blade, cocked forward at a slight angle to the handle, is typically about 1½ in. long and very thin with a curved back edge. The cutting edge must be perfectly straight to produce the flat facets that make up the recess left by a properly carved chip. The blade's point should



Second position cuts the other side of the triangle. Rotate the board 120° and, with your knuckles contacting the board, plunge the blade into the board along the layout line. Like before, transmit power from your arm and shoulder, but this time pivot on your knuckles.



Return to first position to cut the baseline. Don't rotate the board. Whereas the first two cuts are plunge cuts, this relief cut involves drawing the knife across the base of the triangle as you lower its tip into the wood.



Batch cuts can speed things up. After you get comfortable doing all three cuts in succession, you can expedite matters by doing all the first cuts, then second, and then third.



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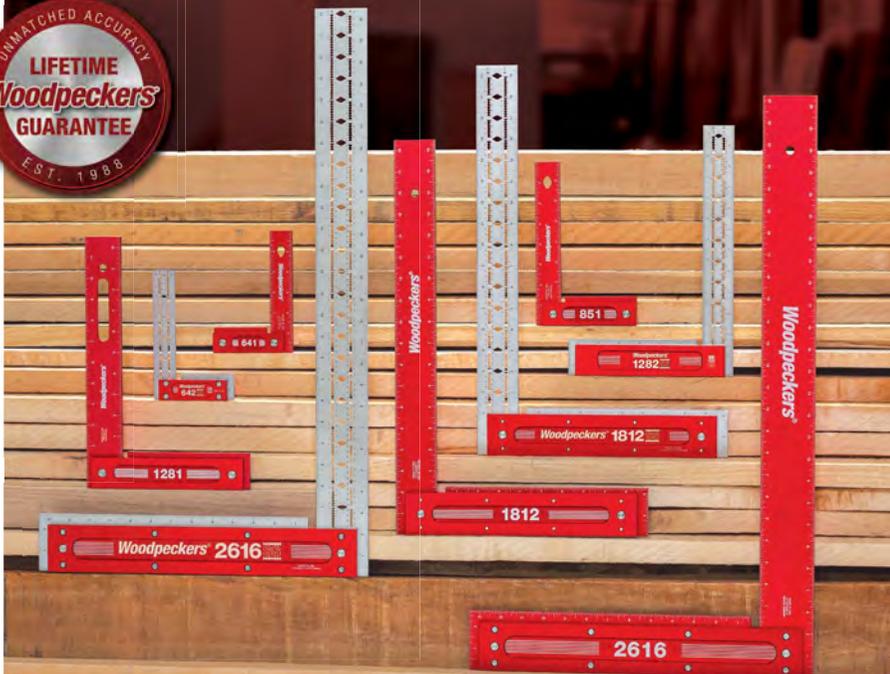
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Two-corner chips



Two cuts. Two-cornered chips are made up of a pair of opposing cuts and are typically cut entirely in first position. Start shallow (above), deepen toward the middle (right), and then pull out toward the end of the cut (below). After cutting the first side, rotate the board 180° for the second.



be needle-sharp to allow all the incisions to meet precisely at crisp corners. The sides of the blade should be polished to a mirror finish to reduce friction as the knife cuts, and to lightly burnish the facets left behind as chips are carved away. The edge is sharpened symmetrically at a very shallow angle, about 8° to 10° on both sides. The bevel is very slightly bellied.

The technique— The Swiss method's technique is just as straightforward and versatile as the knife. It is codified into two knife grips, called first and second position. These two positions are used to make cuts that mirror one another as closely as possible, as the key to chip carving is consistency. All cuts, regardless of position, should be made at the same angle between 45° and 65°.

Many patterns and shapes can be carved entirely in first position by merely rotating the board to line up the cuts. However, you'll inevitably have to use second position, so it's imperative to learn it from the very beginning. These second-position cuts must match the angle of your first-position cuts.

The best cuts are controlled cuts. To achieve them, it's important to remain anchored to the workpiece. In first position, the tip of your thumb stays on the board, and in second position, it's your knuckles. These anchors provide tactile feedback and let you apply pressure at the tip of knife with a great deal of control. The power for controlled cuts originates from your shoulder and arm, not from your wrists or by squeezing your fingers like you're peeling potatoes. Keep your hand locked in position and your wrist straight.



Tip blade up to keep from cutting into adjacent chip. While much of chip carving necessitates maintaining the same cutting angle, sometimes Clay angles the knife more toward vertical. This helps him to avoid slicing into a nearby chip, such as at the bottom of these three-point petals.

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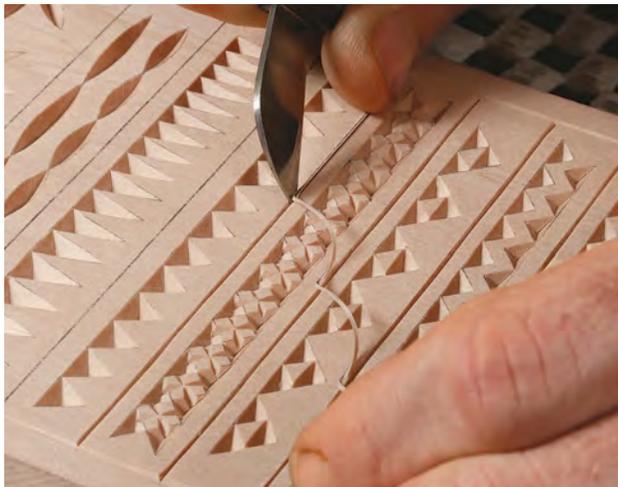
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Finish up

Carve the borderlines. Place the tip of the knife on the outside of the layout line's thickness. Use the tip to sever the fibers at one end, make the long cuts on either side of the line, and finish by severing the fibers to free the other end.



Sanding removes layout lines and smooths surface. Clay uses fine-grit paper wrapped around a sanding block, which ensures the sandpaper remains flat. Don't sand more than you have to, as this step can make the facets shallower and less dramatic.



The anchors and relatively narrow range of motion translate to a high degree of safety, too. Because the blade and hand remain in a fixed relation to one another, performing each cut as a single locked unit, the blade doesn't have the opportunity to cut the hand or fingers.

Begin with basswood

There are a number of woods that can be carved using the Swiss method, but the most popular is undoubtedly tilia, a genus of deciduous trees and bushes commonly known as basswood, linden, or lime. Basswood's fine, straight grain, virtually homogenous creamy color, and, above all, softness



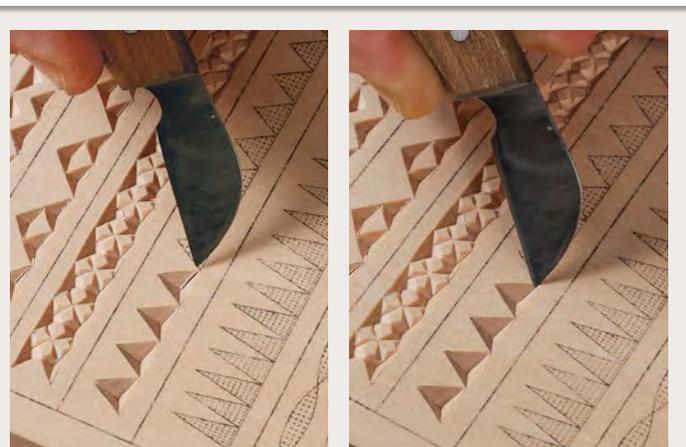
Erase trouble spots. Sometimes during the carving process, layout lines get pressed below the surface of the board. At these times, Clay uses a sand eraser, which is like a pencil eraser with grit in it, available at art-supply stores.

CLEAN UP LEFTOVER WASTE



Deepen facets within layout lines when cuts don't meet. If the whole chip doesn't release, don't pry the chip or dig it out. Instead, repeat your cuts until they meet, severing the fibers that are holding onto the chip. Stay within the layout lines, using them as guides.

HIDE THE OVERCUTS



Zip up cuts that go too far. Sometimes a cut slices into a finished facet (left). To conceal this, Clay puts the spine of the knife in the chip and, while pressing, pulls up (right). He calls this fix *zippering up*, which takes advantage of basswood's compressibility.

Carved beauty

and workability make it the ideal wood for chip carving. Other workable woods include butternut, Spanish cedar, eastern white pine, catalpa, and paulownia. Though it is possible to carve harder, denser woods such as walnut, I strongly recommend that you begin with basswood. It's easy to carve, easy to find, and very affordable. I particularly prefer basswood that has tighter grain.

Moisture content is also an important consideration. Wood that has been dried to about 10% to 12% moisture content is best, as it will carve easily and take detail well. Dry, brittle wood is much harder to carve. It will crunch and crush under the knife and is more likely to split.

I find spray film finishes, such as polyurethane or lacquer, work well, and they're easy to apply. I avoid oil finishes because they diminish the crisp detail I strive for.

Two- and three-corner chips

Many motifs in chip carving comprise two- and three-cornered chips, so getting the techniques down from the start is a good idea. I recommend starting with small, straight-lined, three-cornered chips on a basswood practice board. Removing the chip involves three cuts, starting with first position, moving to second, and then returning to first, so with each chip you get to practice both positions.

Two-cornered chips, typically done only in first position, require a bit more finesse. They involve two opposing cuts along a shared centerline. With curved cuts, the knife is more likely to chatter, producing haggard surfaces. To reduce this tendency, tip the handle up—effectively reducing the width of the blade—as you pull through the cut.

Fixing mistakes

When you successfully carve out a chip, you'll hear a satisfying little pop when you sever the final fibers. But things don't always go smoothly. If the chip does not release, that means that your cuts do not fully intersect and the chip is still attached by unsevered wood fibers. Resist the urge to pry or dig it out with the tip of the knife; this can break the tip of the knife or chew up the facets and split out wood that you don't want to remove. Instead, make each cut again until the chip's walls meet. Stay within the layout lines, and register the knife against the carving's existing walls. □

Daniel Clay is a woodworker in Knoxville, Tenn.

With chip carving, patterns can form quickly, letting you test ideas at a fast clip. Clay often uses the interplay of light and shadow to highlight symmetry in his carvings, relying on both clean three-corner geometric shapes and flowing two-corner curves.



Flower on fire. This disk is made up of deep two-corner chips only, producing a repeating fractal-like pattern reminiscent of petals and flames.



Sparse and dense. One winter, Clay designed and carved snowflake patterns, letting him explore how the size of facets affected the overall carving.



Opposites attract. Clay nested the positive and negative versions of a carving here, which creates the sense of a regular pattern while lending a subtly different visual interest.

Add color. Whether you paint the whole surface or just the facets, adding color to a carving can help the overall pattern pop without muddying the effect of shadows.

