

# String Inlay Made Easy

Two simple, shopmade tools  
make the slits and  
the stringing

BY MICHAEL C. FORTUNE

I love my power tools, but sometimes in woodworking the most effective way of doing something does not involve plugging in a tool. That's certainly the case with string inlay. This decorative technique can light up a chair back, a tabletop, or a jewelry box, instantly increasing its appeal—and its value, by the way.

I create the slits for string inlay with a simple, shopmade cutter. It takes me an hour or so to modify a standard card scraper into a custom tool that flawlessly cuts straight or curved slits in flat stock and just as easily handles slits on convex or concave surfaces. You could use a router to cut some of these slits, but the process is far more laborious, requiring jigs and offset fences and many light passes to cut a narrow slit without snapping the fragile bit. And that's not to mention the ever-present peril: Routers are not known for small, easily repaired mistakes.

Using a shopmade inlay tool allows you to work



**Stunning stripes in any direction.** Contrasting string inlay gives furniture an infusion of elegance. Fortune uses it on tables, curved chair parts, and jewelry boxes. The inlay slits—both straight and curved—are cut using a modified card scraper.



Photos, this page: Michael Fortune (top two); Kelly J. Dunton (bottom two)

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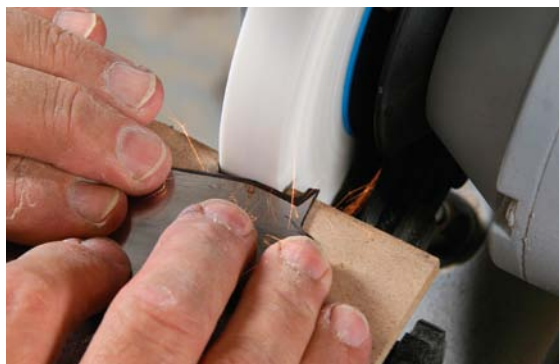


# SHOPMADE SLITTING TOOL

## 1. CREATE THE CUTTING TEETH



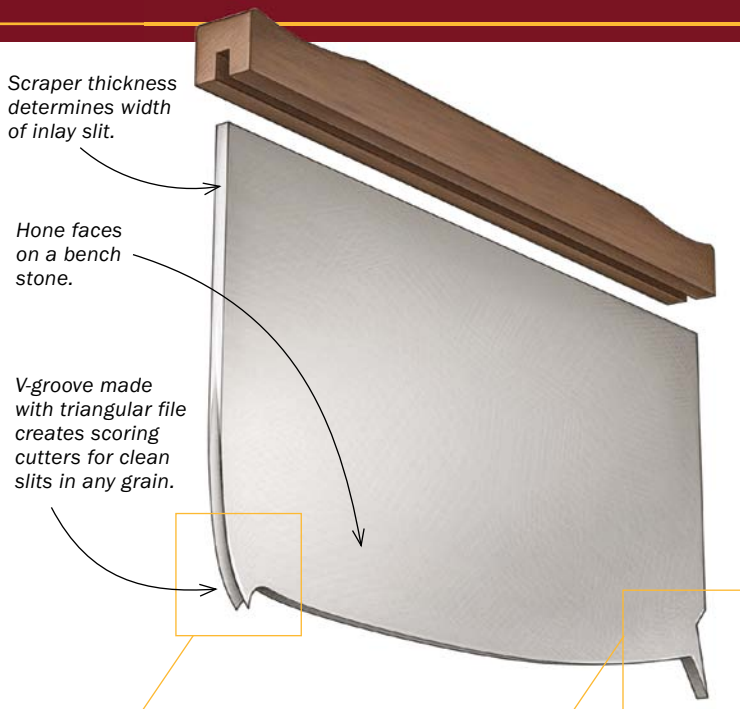
**Trace the profile.** Fortune marks the metal that he will grind away to create the tool's cutting teeth.



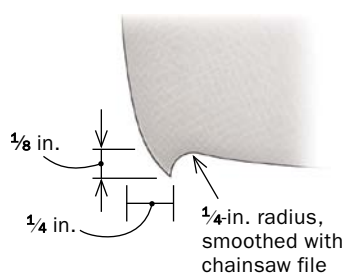
**Grind your teeth.** Making short, light passes against a grinding wheel to avoid heat buildup, Fortune removes the marked section of the scraper.



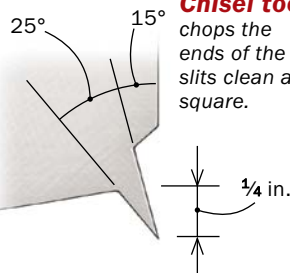
**File a groove.** A small V-groove filed in the curved tooth creates a pair of scoring cutters that permit the tool to slice cleanly through any grain. The last step is to smooth the inside curve with a round file, and then hone the edges and faces with abrasive stones.



**Curved tooth** does 95% of the cutting.



**Chisel tooth** chops the ends of the slits clean and square.



## 2. ADD A HANDLE



**Making a slit for itself.** Using the just-finished curved tooth and a straight fence, Fortune cuts a groove in a piece of hardwood to make a handle for the tool.



**Knock it home.** After ripping the handle stock to width, Fortune epoxies the scraper into the slit. Before doing so, he roughs up the gluing surfaces on the scraper with sandpaper. When the epoxy cures, he cuts the handle to length.

briskly with confidence and to position your fence right along the line where you want the inlay—there's no need to follow the edge of the workpiece as with other string-inlay techniques. It also puts you, not the router-bit manufacturer, in control of the width of the inlay.

I generally make my string inlay about  $\frac{1}{16}$  in. wide. This gives it enough presence to be noticeable without being overpowering. On a small, delicate box I might go thinner, and on a large table wider. Whatever the width I want, I start by finding a piece of metal that matches it. Scrapers are available in various thicknesses, giving you some options for the width of your



## CUTTING STRAIGHT LINES



**Score, then go deep.** Several light passes with the curved tooth along the length of the layout line (left) score the edges. Fortune starts and stops just shy of the ends. A few heavier passes (above) get him to full depth. Before cutting the grooves, he lightly coats the wood with silicone-free wax so it will resist the glue.

## TWO TOOLS IN ONE

### CURVED TOOTH CUTS THE GROOVE

Most of the groove is cut in long passes with the curved tooth.

### CHISEL TOOTH SQUARES THE ENDS

You insert the belly of the tool in the slit, and then roll the tool forward and chop downward with the front edge of the tooth at 90° to workpiece.

Fence guides  
slitter.

$\frac{1}{8}$  in.



**Nibble up to the ends.** Fortune makes three or four plunging cuts with the chisel tooth to clean up the ends of the inlay slit.

slits. After making the inlay tool and cutting the slits, I make inlay strips to fit. I bring the strips to final thickness with another shopmade tool—a wooden jig that turns another card scraper into a thicknessing device.

String inlay works equally well in solid wood or veneered panels (and plywood, though you need to go lightly to avoid lifting the thin veneer). When string inlay runs across the grain in a solid-wood workpiece, however, the design must account for wood movement. I limit lines of cross-grain inlay to  $3\frac{1}{2}$  in. or so in length, adding small accent details between the short sections of inlay.

### Making the slitting tool and cutting slits

To make the slitting tool, I shape one long edge of a card scraper on a grinding wheel, creating a cutting tooth at both ends. One tooth is curved to a slight hook and has a V-groove filed into its outside edge. The V-groove creates a pair of scoring cutters that make for clean cuts either along or across the grain. This curved tooth is the workhorse, doing 95% of the slitting. I use a jeweler's file to produce the V-groove and a round file to clean up the adjacent inside curve of the tooth. I shape the other tooth to a chisel point and use it with a chopping action to work the last  $\frac{1}{16}$  in. or so of the slits, giving them crisp, square ends.

On both the curved tooth and the chisel tooth I hone the edges with slipstones, and then I hone the faces of the tool on a bench stone. When the teeth need resharpener, I return to the sharpening stones. After five or six honings, I'll refile the edges and hone again.

The slitting tool must be guided with a fence. I use tight-grained hardwoods like maple and make the fence about  $1\frac{1}{4}$  in. high—tall enough to provide good support for the slitting tool but not so tall that it interferes with the tool's handle. To provide support at the begin-



## HOW TO MAKE STRINGING



**Slice mine a little thick.** Fortune bandsaws strips for the inlay from 1-in.-thick stock. He rips the strips just slightly over final thickness and joints the edge of the stock between rips.

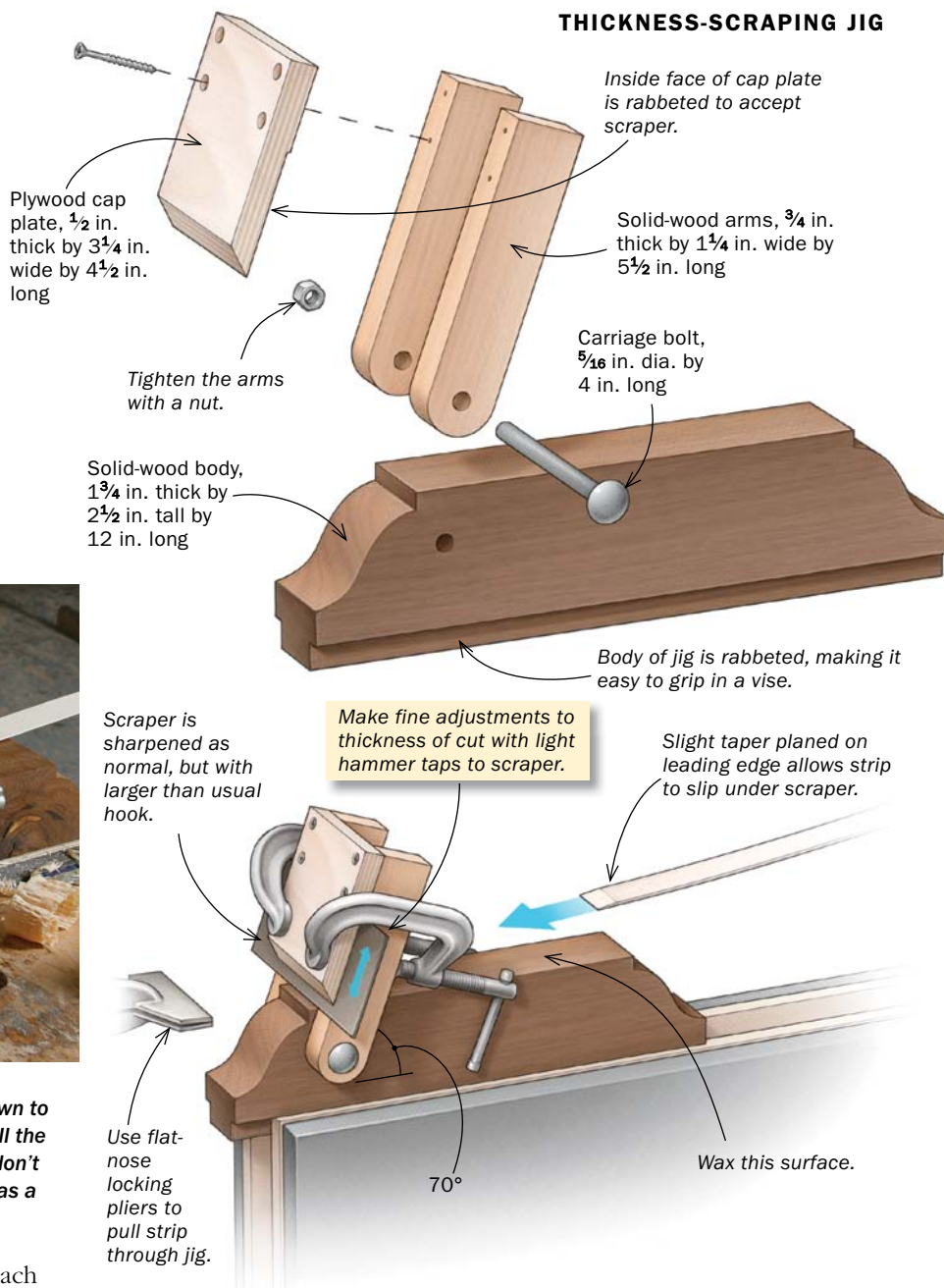


**Self-powered planer.** A few passes through Fortune's shopmade thickness scraper brings the wide strips down to final thickness—and cleans up the bandsawn face. Pull the strip through at a slight angle, so the bandsaw ridges don't catch. After taking a shaving, use the bandsaw marks as a guide to be sure the scraper is parallel to the jig body.

ning and end of the cut, the fence extends past each end of the slit by 4 or 5 in. I glue 150-grit sandpaper to the bottom of the fence to keep it from shifting in use.

Once the fence is clamped in place, I examine the grain of the workpiece to determine which direction to pull the tool; I want the grain to draw the tool naturally toward the fence. I begin cutting the slit by taking very light passes with the curved tooth, just scoring the surface of the wood. I start and stop the cuts  $\frac{1}{16}$  in. or so from the end marks. With the slit established, it usually takes just four or five harder passes to reach the final depth of about  $\frac{1}{8}$  in. For these later cuts, grain direction is not critical, and I make passes in both directions to obtain a consistent depth of cut. The curved tooth is about  $\frac{1}{8}$  in. long, and I can use it as a rough depth gauge. Next, I use the chisel tooth to nibble up to the

### THICKNESS-SCRAPING JIG



**The fit is critical.** The inlay strip should press into the slit snugly with thumb pressure. After thicknessing and fitting the wide strips (left), Fortune bandsaws them to about  $\frac{1}{4}$  in. wide for inlaying.



## HOW TO INSTALL IT

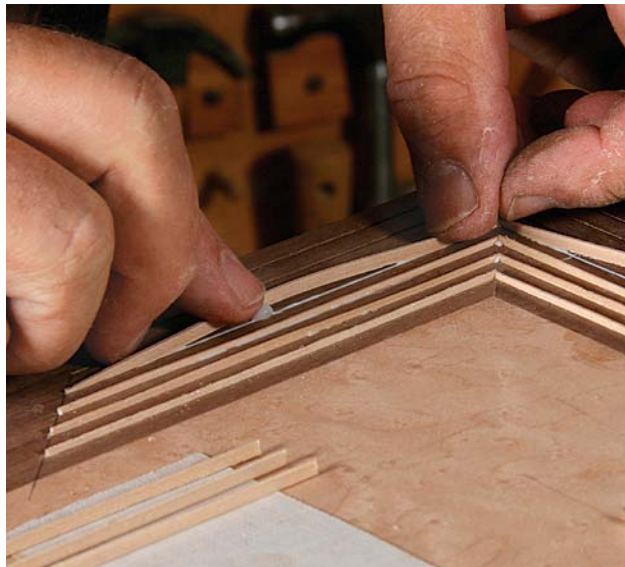
**Fit the square end, mark the miter.** Fortune fits one strip in place and marks the miter with a knife. He uses this strip to set the stop block for his miter setup (see below).



**Many miters.** A simple bench hook serves as a miniature miter box as Fortune cuts the inlay strips to length.



**Gang gluing.** Having checked the fit of all the inlay strips, Fortune keeps them in order on pieces of double-stick tape. He dispenses glue with a syringe, being careful not to overdo it.



**Miters first.** Fortune inserts the mitered end of the strip first, then toes in the far end and finishes by pressing down in the middle (left). He uses the end of a small stick of soft pine as a push stick to be sure all the strips are well seated (above).

ends of the slit. I insert the belly of the tool in the groove, rock the chisel tooth down to take a bite, and pull it back to remove the waste. Repeating this two or three times gets me to the end of the slit.

### Produce the inlay strips

I cut the slits first and then make inlay strips to fit. In choosing wood for the inlay, I aim for as much contrast as possible, and I keep in mind that dark woods lighten over time and light woods darken. If the workpiece is cherry, walnut inlay will not produce a strong contrast after the two woods have oxidized. Inlaying ebony would be much better. For a light inlay into a dark wood, English holly is more effective than maple.

I create the inlay strips in three main steps. First, I mill the inlay wood into a billet about 1 in. thick. Then I bandsaw it into thin strips, cutting them just slightly thicker than my target thickness, and I joint



**Scrape, don't sand.** Sanding dust from contrasting inlay can discolor the surrounding wood. Instead, start the flushing with a block plane and finish up with a scraper.



## WORKING WITH CURVED INLAY

**Curve the fence for serpentine stringing.** The same slitting tool can follow a curved fence, but the fence must be convex to work with the slitting tool. To make an S-curved inlay slit, move the fence from one side of the line to the other.



**Careful going cross-grain.** To avoid problems with wood movement, break up lines of inlay that run across the grain. Fortune limits cross-grain lines to 3½ in. long, and he adds accent details between them.

the billet between rips. I bring the strips to final thickness by pulling them through my shopmade thickness scraper. The fixture holds a standard scraper blade with a larger-than-normal hook. I use a block plane to create a slight ramp on one end of each strip so it will pass under the scraper and I can grip it with a pair of flat-nose pliers. Then, back at the bandsaw, I rip these pieces into a batch of ¼-in.-wide inlay strips.

### The string goes in

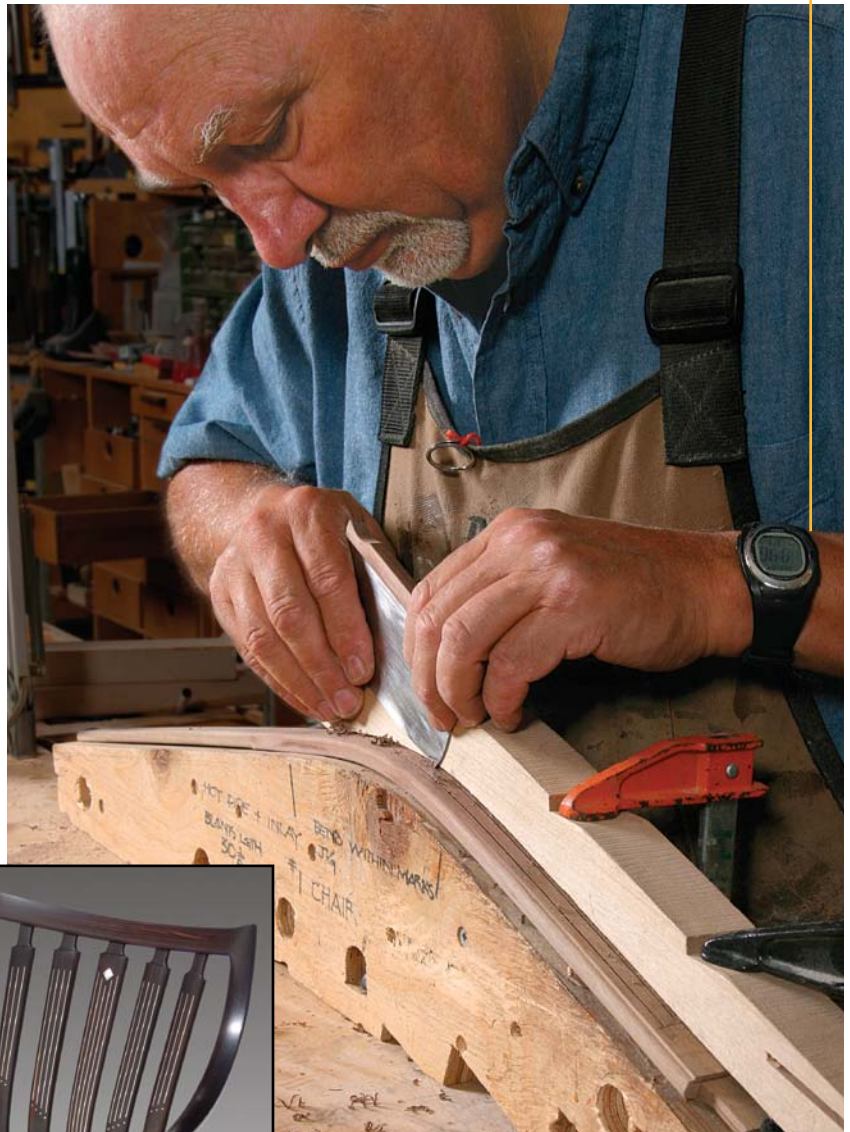
When I'm ready to inlay the stringing, I cut the strips to length with a razor saw and a shopmade bench hook that functions as a miter box. I use PVA (polyvinyl acetate) glue for most woods, but epoxy for the oily exotics. I apply the glue with a syringe (leevalley.com), taking care not to overfill the slits—I don't want hydraulic pressure fighting me as I press the inlay into place.

### How about curved inlay?

Curved inlay is not much more difficult than straight work. You follow the same steps, but use a fence with a convex curve. If a design calls for an S-curved inlay, you'll need to move the fence from one side of the line to the other as you proceed, because the slitting tool will not work properly with a concave fence. Direction of cut is especially important with curved cuts, as the grain direction changes as the line curves. Before I cut a curved design, I assess the grain and draw arrows on the workpiece to guide me.

You also can inlay a concave or convex surface, as I often do with the steam-bent back slats on dining chairs. The slitting technique is the same as for flat work, you just need a support block and a fence that conform to the curved workpiece. I also use these tools to inlay metals and other materials. I'll cover those advanced techniques in a future article. □

Michael C. Fortune is a contributing editor.



**Curves in the other direction.** To cut inlay slits in a bending chair slat, Fortune uses a fence cut to the same curve. His slitting tool works well with wood inlay, but also allows him to inlay silver—as in this chair—and many other materials.