Shopmade Marking Gauge

Simple but clever design makes this wide-fenced tool accurate and easy to use

BY JOHN NESSET

When I set out as a woodworker, a marking gauge was one of the first tools I bought. A straight line parallel to a straight edge is—along with a perfect right angle—the foundation of woodworking. No matter how you eventually shape a piece, if your layout lines aren't true, that table will not stand level, that drawer will not open smoothly, and those joints will be sloppy. After examining several marking gauges, I chose one made of rosewood with brass hardware, inlaid brass wear plates and graceful scrolling on its faces. It was a handsome tool that came in a nice box. However, I found it difficult to use.

For one thing, making adjustments required tightening and loosening a thumbscrew, an awkward procedure when I also had to hold the fence in place. In use, it was difficult to keep the short fence running snug against the edge of the board. Hard or soft spots in the wood and diverging grain patterns grabbed the pin and made it skip or go off track. I usually had to go over lines several times, with miscues marring the stock.

About that time, back in the mid-1970s, Japanese tools began to appear in the popular woodworking catalogs. I marveled at their simple but clever designs, but I didn't find many of them adaptable to my Western woodworking techniques. There were, however, two notable exceptions. The first was those wonderful, precise pull saws, and the other was the *kebiki*, a Japanese marking gauge. My first pass with it was a spiritual moment.

Easy adjustment and no skipping

The kebiki is a perfect piece of engineering. A wedge holds the fence in place on the arm. Precise adjustments are made by tapping one end of the arm or the other on the workbench while holding the kebiki in one hand and checking against a measuring device or workpiece held in your other hand. And the marking process is trouble-free, thanks to the long fence and the design of the pin.

The pin is actually a small knife that is beveled on one side—away from the fence—and set in the arm at a slight angle. The result of this design is that the blade wants to pull away from the fence, drawing the gauge snugly against the workpiece. Irregularities in the wood will not divert the sharp blade, and it leaves a clean mark.

Photos, except where noted: Asa Christiana

My kebiki became a true friend I could always count on. I find it indispensable for a number of common tasks, such as marking the depth of cut for dovetails; marking dadoes and rabbets; marking mortises or tenons from a straight edge; marking grooves on the inner edges of frames for accepting panels; and marking the thickness or width of stock once one side has been planed flat and straight.

Making a kebiki

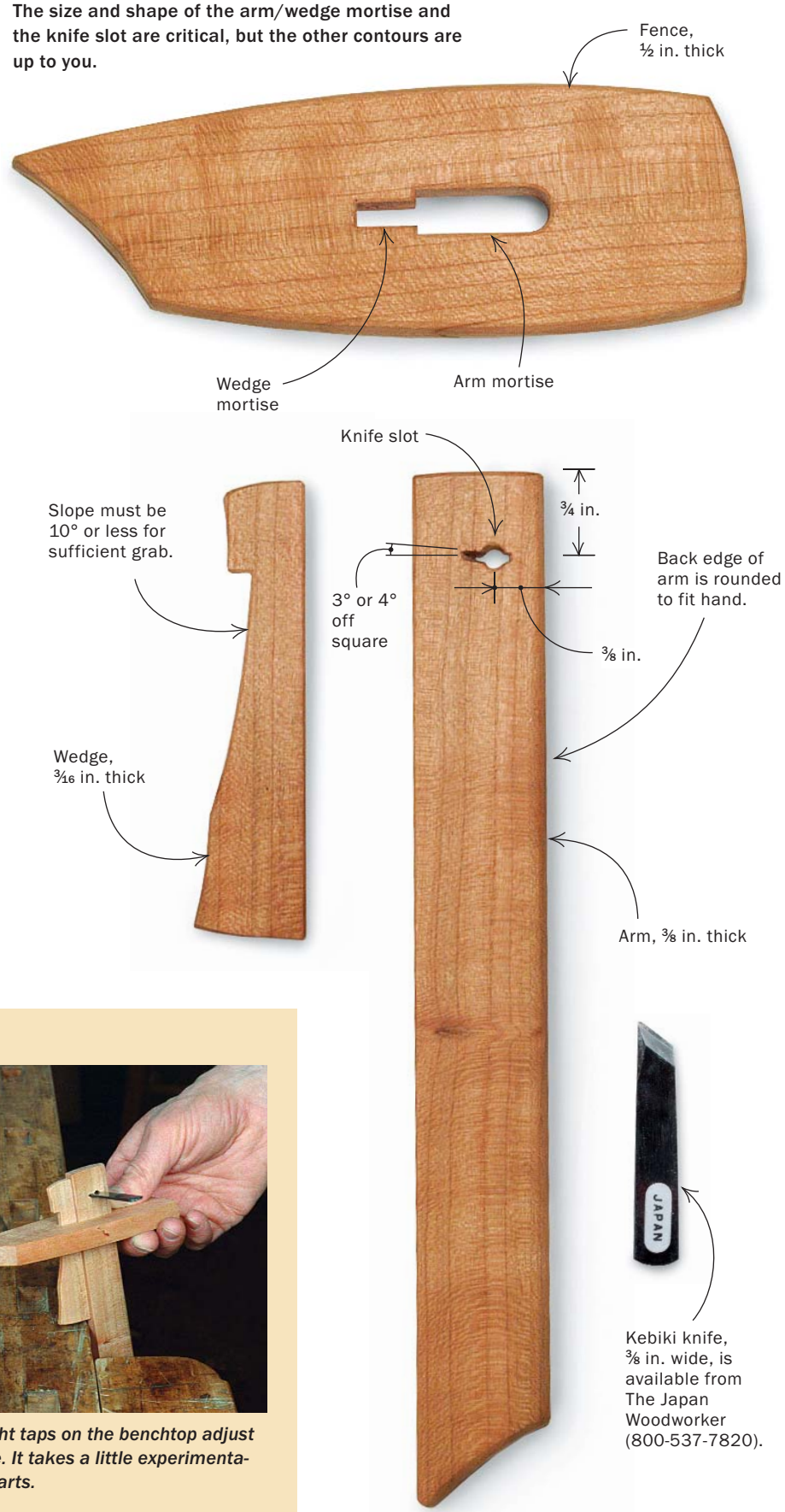
The kebiki I purchased so many years ago was made of Japanese white oak, but any hardwood will do. The fence should be about ½ in. thick, the arm around ⅜ in. thick, and the wedge about 3⁄16 in. thick (see the photos at right). If you are left-handed, reverse the orientation of the arm and knife.

Two important mortises—After thicknessing the stock, use paper templates to find pleasing grain areas for each part and trace their outlines. Before cutting the fence to its final curved shape, lay out and cut the mortises for the arm and the wedge (see the top photos on pp. 82-83). The arm will be rounded on its back edge to sit comfortably in the hand during use. That means the mortise for the arm must also be rounded at one end. Start by drilling a ⅜-in.-dia. hole through the fence and then marking the rest of the mortise off that. Chop out the mortise, checking it against the thickness of the arm stock.

The wedge securing the arm to the fence

THE TOOL HAS FOUR PARTS

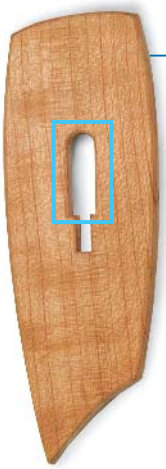
The size and shape of the arm/wedge mortise and the knife slot are critical, but the other contours are up to you.



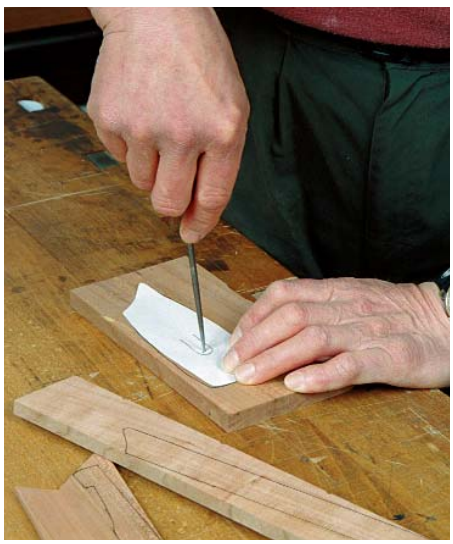
ADJUST THE MARKING GAUGE

Fine adjustments are made with one hand. *Light taps on the benchtop adjust the arm, and another quick tap tightens the wedge. It takes a little experimentation to get used to the interplay between the two parts.*

Photos, this page (of parts): Erika Marks



CUT THE ARM MORTISE



Start with paper patterns. *Use them to find the best grain location for each part. Then use the fence pattern to lay out the mortise for the arm.*

Use a marking gauge to lay out the sides. *A ⅜-in.-dia. hole defines the rounded end. The mortise extends from the edges of the hole.*

Chop out the rest. *Insert one corner of the arm stock to test the width of the mortise.*

When the arm and wedge mortises are complete, cut out the arm and fence. *The author shapes the roughsawn parts with hand tools, using a shallow gouge and a block plane.*

is a critical element. The angle should not exceed 10°, and the mortise that it wedges against should be cut to exactly the same angle. Cut the wedge first, then use it to determine the angle of the mortise wall.

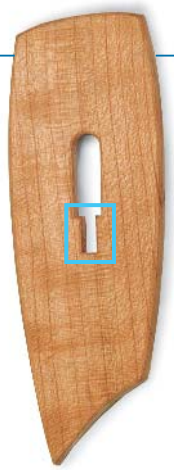
After giving the edges of the mortises a slight bevel to protect them, you can shape the fence block. I saw out the rough outline and then smooth it with a block plane or spokeshave rather than with sandpaper. The tool marks give the kebiki character, and they remain there as a satisfying reminder of the work you did.

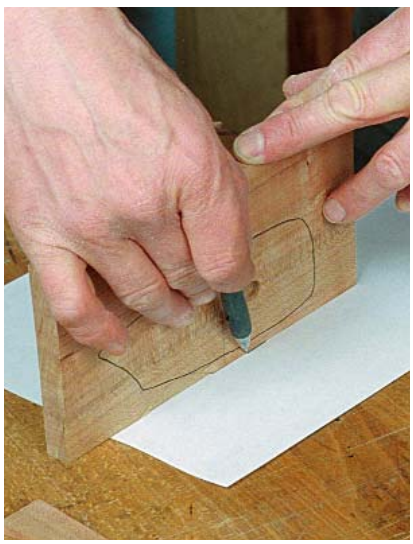
Finally, saw and shape the ends of the arm, and use a block plane to round its back edge. Before rounding this edge to fit its ⅜-in. mortise, lay out lines 3⁄16 in. down from the edge on each side, to guide your work. When you reach these lines, the rounded profile should be correct. A little fine-tuning of the arm and wedge gets them working smoothly in the fence block.

Adding the knife—Kebiki knives, made of laminated steel, are now available for under $10, but I've also had success adapting a Japanese marking knife. In fact, any piece of good steel will work. Grind the edge to a shallow angle (without overheating the steel) and hacksaw it off at the desired length. Always leave enough length to grip when resharpening the blade. (I use locking pliers to remove the knife from the arm and to hold it in place on the grinding

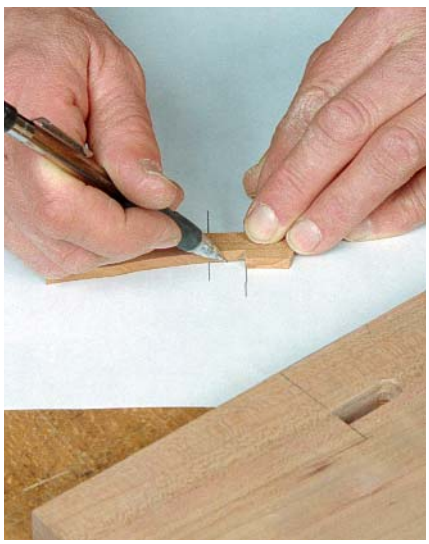
Photo, this page (top left): Erika Marks

CUT THE WEDGE MORTISE

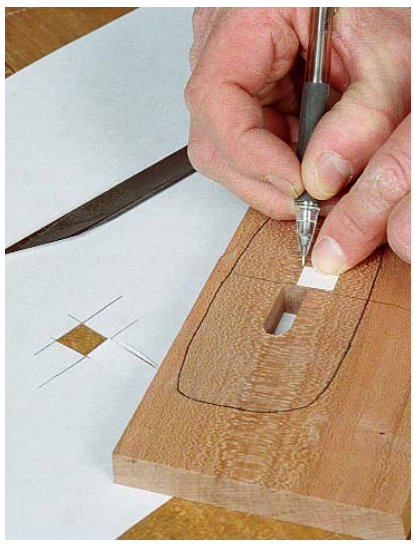




More fun with paper. *To make an accurate angled mortise, start by tracing the thickness of the fence onto paper.*



Then overlay the wedge to trace a cross section of the mortise needed. *Use the narrowest portion of the wedge.*



The resulting paper block now contains the exact lengths of each side of the angled mortise. *Lay out each side and chop out the mortise.*

wheel or sharpening stone.) Smooth the rough edges on a grinder or with a file.

For the tool to work properly, it is critical that the knife be square to the surface of the arm but turned slightly away from parallel with the fence. Make practice runs on scrap stock until you get it down. Start by marking a 3°or 4° line on the arm, then drill a ¼-in.-dia. hole on that line. The hole and the slot that follows must be exactly perpendicular to the bottom face of the arm. Next, with a sharp knife, chisel or thin keyhole saw, cut a notch just slightly thinner than the blade on each side of the hole, following the angled layout line and using the hole as a guide.

To tap the knife in, place the arm over a benchdog hole in your workbench so the blade tip can emerge below. The blade tip should protrude no more than ⅛ in. and be securely wedged.

Now and then your kebiki will need fine-tuning. Occasionally, you'll need to sharpen the blade. Eventually, you may have to replace the wedge as it wears, or at least give the edges that get the most wear a few licks with a plane or chisel. Otherwise it should serve you for many years. Like me, you will come to cherish this simple, useful and elegant little tool. □

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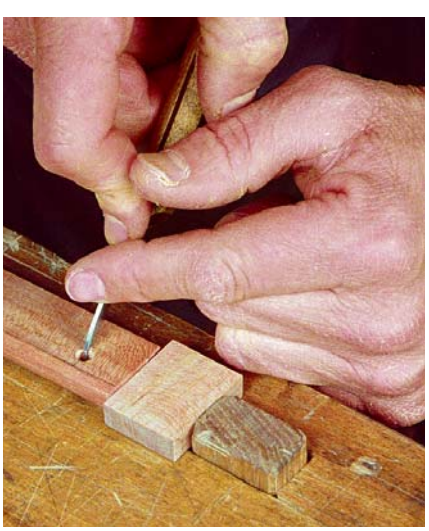
SET THE KNIFE

The slight angle is critical to the tool's cutting action. *The thin slot is laid out 3° or 4° off square, but it will be square vertically through the arm.*

Lay out and drill the ¼-in.-dia. relief hole. *With the center relieved and only the front and back of the slot to worry about, the blade will be easier to fit.*



Whittle out the two ends of the slot, fitting them to the blade. *Only ⅛ in. of the blade should protrude from the bottom of the arm.*

Photos, this page (top and bottom left): Erika Marks