

## Winding sticks guarantee accuracy

TRADITIONAL TOOL HELPS WITH MILLING, JOINERY, AND ASSEMBLY

BY BILL PAVLAK

### Uses

#### LOOK FOR TWIST

Because they are typically longer than a workpiece is wide, winding sticks exaggerate any twist, making it easier to see if things are off-kilter.

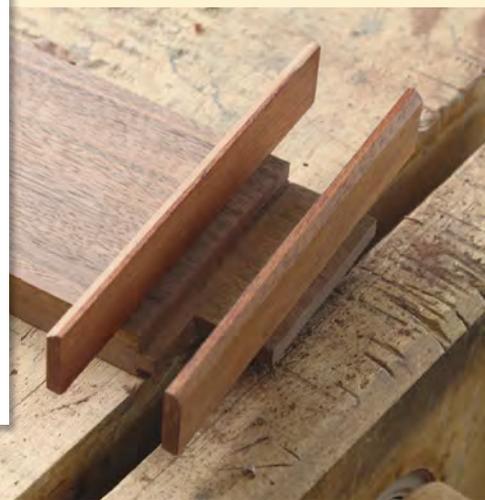
#### KEEP ASSEMBLIES IN LINE

Whether he's making a chair, table, or case, Pavlak checks for twist during dry-fitting and glue-ups. Well-placed mallet blows, changes in clamping pressure, or additional clamps can bring things into alignment. If not, evaluate whether the twist can be planed out later or if you need to work individual joints.



#### SMALL STICKS FOR TENONS

With one stick placed across the end of a tenon cheek and the other just behind the shoulder, you can discern if there is any twist. Though the sticks are at different elevations, they work just as well.





**Contrasting inlay helps with sighting.**  
Adding two strips of inlay to one of the winding sticks causes the upper edges of the sticks to stand out from one another and the background.

Most woodworkers quickly grasp how vital squares and straightedges are in checking their work for accuracy. Yet neither of those essential tools indicates twist, just a bit of which can throw everything off-kilter.

That's where winding sticks come in. In essence a pair of narrow boards with parallel edges, winding sticks allow you to determine if a board, joint, or assembly is—or is not—free of twist (or wind, if you prefer to speak the old-timey way). How do they do this? Simple. Place one stick across one end of a board and the other at the opposite end and then, with one eye closed and level with the stick nearer to you, sight across the top edges of the two. If they are parallel, there is no twist. If they are not, then there's twist that you need to address. What's more, a single winding stick can double as a straightedge, letting you examine for cup and bow, too. From milling to assembly,

winding sticks are essential for fine work.

### From milling ...

Winding sticks excel when you are flattening a board's face. Just first remove any cup, which causes the sticks to seesaw, resulting in a false reading. For the same reason, it's important to center your winding sticks on the stock, so I knife a vertical line at the middle of each stick as a handy visual guide.

Similarly, make sure the board's face and the bottom edge of each winding stick are clean. Just one shaving trapped between them can lead to inaccuracy.

If a board is twisted, generally the high points are on diagonally opposite corners. To bring them down, either plane on a diagonal path from one offending corner to the other or plane each corner individually. The approach I choose depends on how the grain is running and how much bow and twist there are. If the board still has some bow in it, I might hit each corner independently, feathering my strokes to avoid creating further irregularities.



### CHECK FOR STRAIGHT

A single winding stick is essentially a straightedge, making it handy for examining if a board is cupped or bowed.



## Make your own

Winding sticks are fundamental to successful furniture making, so while you can whip up a pair using any two pieces of wood with parallel edges, they're a lifetime tool that deserves a more careful approach. Fortunately, you can make a nice pair in an afternoon.

### CAREFULLY MILL THE STOCK



**True the bottom edges.** This will be the reference surface, so act like you're creating a proper glue joint; in other words, make them dead straight. Make sure to dress a face perfectly square to this edge, too.



**Let there be no light.** Hold the bottom edges against one another to inspect for gaps. If you see any, plane them away. You're making the tool you'll use to check all of your future work, so don't skimp on this step.



**Scribe and plane to width.** Using a marking gauge, scribe a line across the top of each stick to mark the desired width (above). Plane the top edges down, but don't take the line. The remainder will get planed off when you make the inlay flush to the stick.



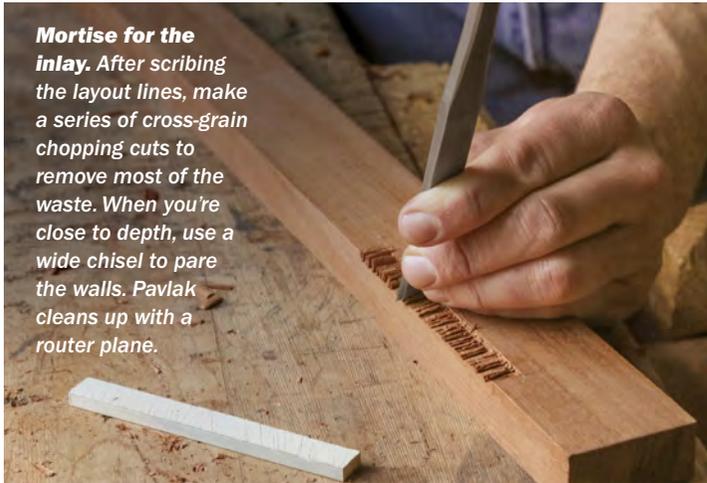
To treat smaller and less bowed boards, I sometimes plane from corner to corner.

#### ... to assembly

While most discussions on the use of this simple tool begin and end with stock prep, there are plenty of other ways for twist to wind its way into your work. Essentially any surface that is supposed to be flat, no matter its size, can be twisted enough to throw everything off. Winding sticks are the tool to diagnose this.

When dry-fitting most structures and again during glue-ups, I will check for twist. For example, even though a table may have legs of equal length and sit on a level surface, it can still rock and wobble because of twist. To

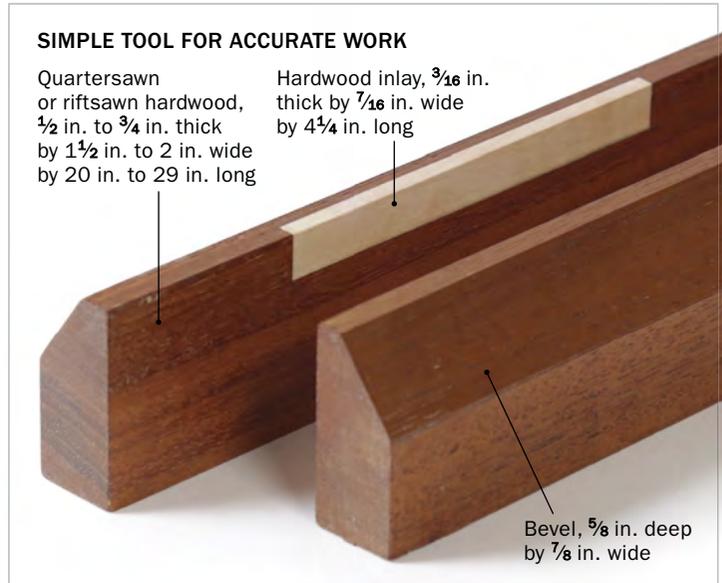
## ADD CONTRASTING INLAY



**Mortise for the inlay.** After scribing the layout lines, make a series of cross-grain chopping cuts to remove most of the waste. When you're close to depth, use a wide chisel to pare the walls. Pavlak cleans up with a router plane.



**Glue and clamp.** Apply firm, even pressure. A caul on the other side of the stick protects it from being marred by the clamp's movable jaw.



**Flush inlay to the surface.** It's easier to leave the inlay proud of the surface at glue-up than to try to dial in the depth perfectly.

check, place winding sticks across the table frame, from apron to apron, and sight along them. If there is a little wind, try to find the cause. Sometimes it's uneven or excessive clamping pressure, while other times a joint might not be fully seated. If neither's the issue, and the twist is not extreme, perhaps you can simply plane out the twist after the glue dries. If that seems unlikely, disassemble everything to evaluate each joint. To be safe, I check for wind during dry-fitting and again at glue-up.

I also use small winding sticks to check the accuracy

of tenons, placing one at the end of the tenon's cheek and the other right behind the shoulder. Essentially any surface that is supposed to be flat, no matter its size, can be twisted enough to throw everything off course. Winding sticks are the tool to diagnose this. □

*Bill Pavlak is the supervisor at the Anthony Hay Cabinet Shop at Colonial Williamsburg in Virginia.*

### Online Extra

Bill Pavlak answers our questions at [FineWoodworking.com/276](http://FineWoodworking.com/276).

## PLANE A BEVEL



**Top edge gets a heavy bevel.** On a winding stick, a wide bottom edge is good for stability while a narrow top edge creates a cleaner line for the eye, making precise readings easier.