

# Old House

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JOURNAL

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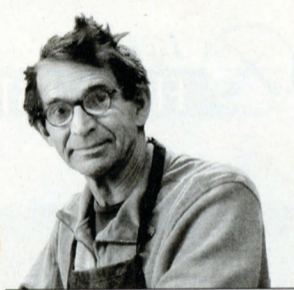


**HOW TO**  
LAY A STONE PATH  
FIX A WARPED DOOR  
BUILD A LASTING GARDEN GATE

“These principles are useful for the do-it-yourself fence builder. Joinery is paramount in wood construction subjected to the elements; my own company relies on advanced woodworking joints.”

—Charles Prowell, Prowell Woodworks

THE PRO TIP



### TENSION

Three basic ways to build a no-sag gate are illustrated here. The first two involve the principle of triangulation: introducing a diagonal to stabilize the square frame. The tension solution [1] uses a rod or a cable and turnbuckle, as shown, to keep the frame from twisting out of square. But “diagonal bracing is only as stable as the primary joint to which it’s fastened,” says woodworker Charles Prowell. “A turnbuckle cable requires periodic adjustment.”

### COMPRESSION

The compression solution [2] makes use of a solid brace along the opposite diagonal.

### JOINERY

Rigid woodworking joints [3] also will keep a gate from sagging. Rigidity keeps the frame from twisting. A pegged mortise-and-tenon joint is strong. You should try to cut the mortise accurately for a tight fit, but if there’s any play, shim around the tenon. Note that the pales (pickets) are inserted through holes drilled into the rails.

To ensure a really tight mortise-and-tenon joint, drill the holes in the tenon just a bit off center from the holes you drill in the side of the post. This way, when you drive the pegs, they will act as a wedge, tightening the joint. This is called a draw-peg joint. Taper the ends of the pegs to help them go in easier. Cut the mortise a bit deep to allow for draw.

A dovetail joint is your second alternative. And easiest to cut, but not as strong as the others, is the half-lap joint. Against crushable wood such as redwood, use a large, flat washer with the nut and bolt.

### CLOSING THE GATE

Don’t use a screen-door spring closer! There’s just too much tension on one of these; slamming will cause the gate to wrack and vibrate apart in no time. The easiest solution is to forgo automatic gate closers entirely—simply close the gate manually behind you. Or install the hinged gatepost slightly out of plumb to encourage the gate to close itself.

An early solution (still used most picturesquely at Colonial Williamsburg) is a weight on a chain [4].

No matter what the closing mechanism or the type of latch used, adding a stop piece the full height of the gate is very important. If the swinging gate is stopped against the post only at the latch point, it will wrack every time it closes.

