

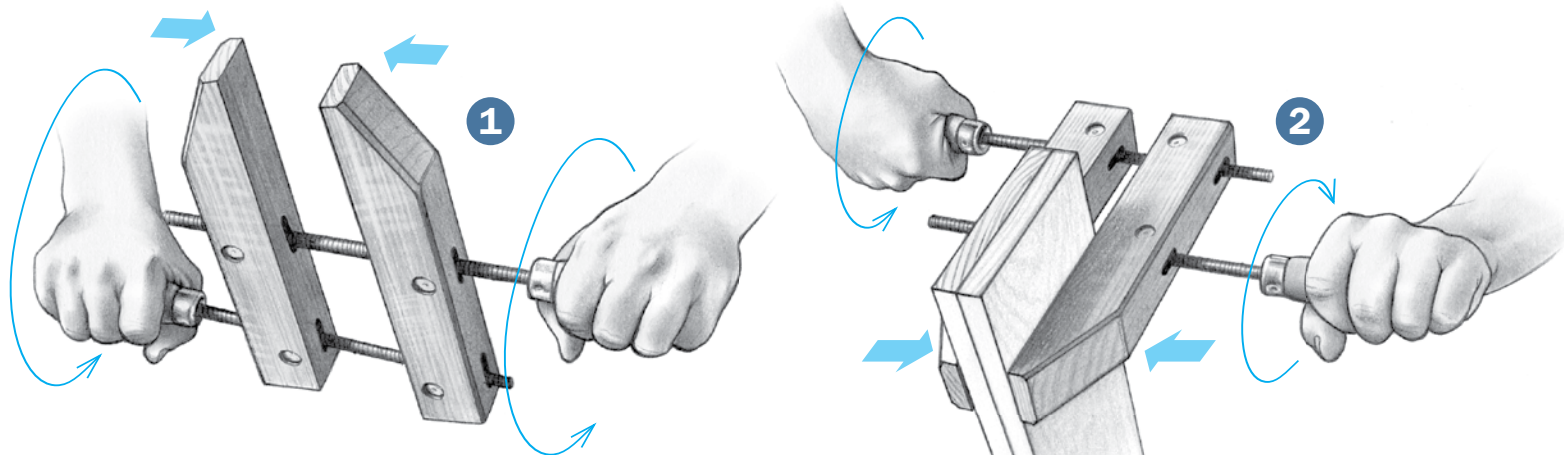


# Using Hand Screws

Time-honored  
tool is still  
first choice  
for a variety  
of shop tasks

BY GARRETT HACK





Useful tools survive. They find a place in your shop because they do certain tasks easily or well. With all sorts of modern clamps available, simple hand screws might seem outdated—quaint reminders of woodworking past. Hardly. Their design is ancient, but hand screws are still my first choice for a variety of tasks. Their parallel screws let them grip where other clamps won't, and their large, flat jaws can act as built-in cauls. This lets them fill several roles in glue-ups and in securing small or oddly shaped work.

The hand screw's basic design—a pair of wooden jaws linked with two threaded handles that screw the jaws open or closed—probably came from the Romans. Modern versions feature steel screws threaded into nuts embedded in the jaws. On most, these embedded nuts also can rotate, allowing the jaws to be angled considerably for grabbing tapered work.

Hand screws are commonly available with jaws from 4 in. to 12 in. long. The reach—and the opening—of the jaws is usually half of the length. Hand screws can

#### EASY AS RIDING A BIKE

Hand screws operate with a simple “pedaling” motion. Pedal to close the jaws to the general opening size that you want (1), then firmly twist the handles to clamp the piece (2). With practice, you'll be able to clamp the jaws tight and parallel in seconds.

## Gluing tricks

**Skew the jaws.** By turning one screw more than another, the jaws can be adjusted for a tight hold on angled work such as these staves for a coopered panel.



**Good for a variety of glue-ups.** A small hand screw applies even pressure when gluing a piece of banding into place. The wooden jaws are less likely to mar the work.



**A positive grip, even on corners.** The hand screw's light weight and precise adjustability make it great for repairs like this chipped-out edge.



## Clamping panels



**Keep glue off your clamps.** A quick coat of wax on the clamping surface of the jaws will keep glue from sticking.



**Straighten a bowed panel.** Adjust the hand screw to span the pipe clamp and the panel. Tightening pulls the panel into a straight line. Check with a straightedge.



**Keep edges aligned.** Straddle the joint with the width of the hand screw's jaws and tighten. Pressure from the flat, parallel jaws brings the adjoining surfaces flush at the glue lines.

be frustrating to use at first. They seem to adjust slowly, and it's easy to get confused and find yourself opening one handle while closing another.

The trick is to grab both handles and pedal the jaws (just as you would a bicycle) open or closed to an approximate fit of what you are clamping. Place the clamp in position, and then close up the jaws by tightening both handles. It takes a bit of practice to know which handle to turn to fine-tune the angle of the jaws, but you'll soon get the hang of it.

### A highly adaptable clamp

When gluing up panels, the stout and rigid jaws of a hand screw are particularly useful for keeping the boards flat and flush with one another. As you bring the boards together with bar or pipe clamps, it's common for the panel to bow slightly, especially if the stock is thin. I use a hand screw between the bowed face and the side of one of the bar clamps to pinch the panel flat, adjusting the clamp one-handed if I have to. Other clamps are much harder to use for this purpose, as it is difficult to get a grip on a round pipe clamp or the thin edge of a bar clamp.

Another common problem assembling a panel is slight misalignment of the faces of the boards. The large, flat faces of the hand screw's jaws act as wooden cauls, applying even pressure to both sides of the joint and bringing the boards flush. A little wax on the jaws keeps glue from sticking to them.

Smaller hand screws are ideal for delicate clamping such as furniture repairs, which always seem to involve odd angles or shaped parts. The twin screws pull the jaws together with the same sort of clamping action as the parallel jaws of a vise. As a result, they won't slip. It is also possible to apply pressure solely with the tips of the jaws by opening the rear screw more than the front.





## Use as a vise

**Stand work securely on edge.** Blocks underneath the hand screw elevate its grip on the end of the piece to prevent tipping.



**Hold small work at the bench.** Held firmly in a front vise, a hand screw securely holds a small pull upright (right). Leather-lined jaws improve the grip (left).



Leather pads

### A small, portable vise

A hand screw makes it possible to hold work that would otherwise be challenging to grip.

If your bench has no vise, for instance, a hand screw allows you to hold a board lengthwise on the benchtop for edge planing. Grasp the end of the piece with a hand screw and secure the setup to the bench with a second screw or bar clamp. This is also effective for curved work that cannot be held easily in a side vise.

I often use a hand screw in my side vise to hold the round tenon of a knob I'm cutting an inlay into, or to hold a card scraper where the flat jaws guide me in filing a new square edge. Not only can the hand screw grasp odd shapes, but a slight twist of one of the handles releases the jaws, or quickly retightens them on the next part when working multiples. □

Garrett Hack is a contributing editor.

## Tools

**A handy jig.** Clamp the hand screw to the benchtop and use it to hold a card scraper on edge for filing.



**A simple stop block.** A hand screw takes the place of a clamp-and-block setup for indexing repeated crosscuts.