

Clever Clamping Tricks

Two simple, wooden clamps hold complex parts for shaping and joinery

VERSATILITY AT HAND

Wooden hand screws and cam clamps, available from many sources, provide inventive options for holding unusual workpieces. Hand screws, with hefty jaws that can be angled, will grip tapered parts. Cam clamps deliver moderate pressure with lightness and speed.

BY TIMOTHY COLEMAN



I find myself continually reaching for a couple of ordinary clamps to address many unusual holding needs. Whenever I need to hold an odd-shaped part and can't justify the time to make a dedicated jig, these two simple, versatile tools, the wooden hand-screw clamp and the wooden cam clamp, are invaluable.

My favorite hand-screw clamp has jaws 12 in. long that open almost 9 in. I often use it on my workbench, clamped between the benchdogs or in the tail vise or shoulder vise. It's especially helpful for holding a part above the bench surface to give more hand clearance when I'm carving or using a spokeshave. The hand

screw's jaws can be angled to each other, so it can easily grip many tapered objects that benchdogs couldn't handle. Because the jaws are wood, they're more friendly to an errant carving tool or router bit. The heft of the hand screw and the flat faces of its jaws provide stability on the bench.

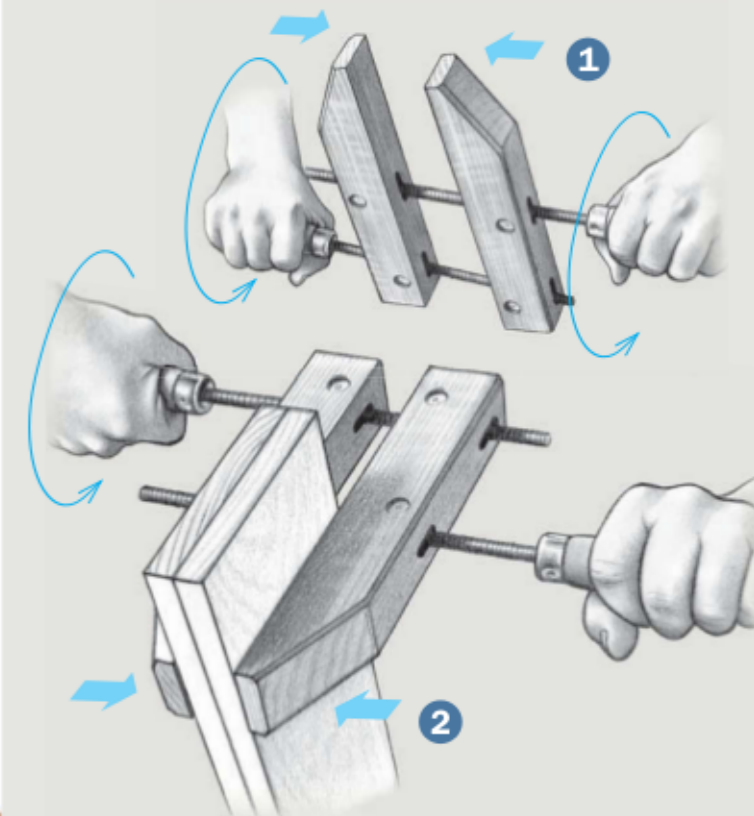
Cam clamps don't have huge holding power, but they are light, slender, and very easy and quick to use. Like hand screws, they have flat-sided jaws that make it easy to clamp them to other surfaces; because the cam clamp's jaws are thinner, they can be useful in situations where hand screws are too big. And because

the cam clamp's jaws are made of wood, it's possible to modify them or tack other parts onto them for some operations.

Both hand screws and cam clamps are great at the workbench, but they are just as useful and versatile for machine work. I'll use them to hold a part still for joinery or shaping, or as a kind of carriage to hold a part while I slide the clamp along the machine table to make a cut. Finding elegant solutions to tricky problems is the part of furniture making that makes me most satisfied.

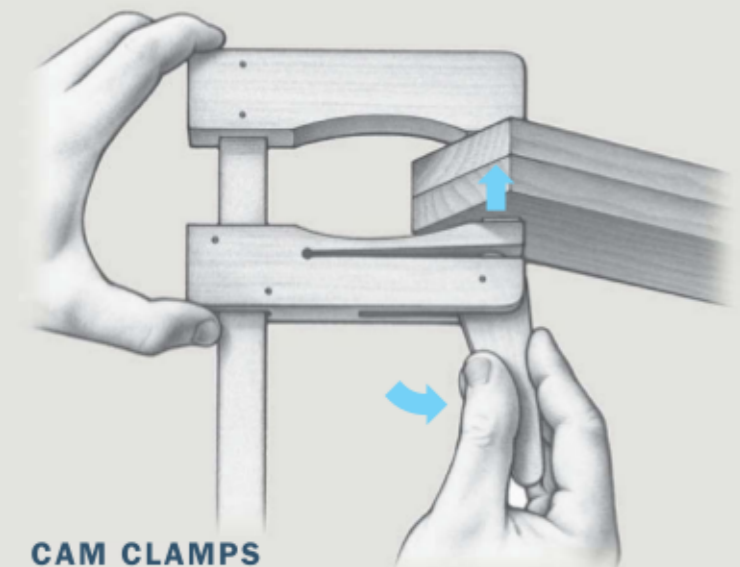
Timothy Coleman builds furniture in Shelburne Falls, Mass.

Get a handle on traditional clamps



HAND-SCREW CLAMPS

Opening or closing a hand-screw clamp is like riding a bicycle: Once you know how to do it, you're off to the races. Hold the handles and crank them as though you are hand-cranking the pedals of an inverted bicycle. The clamp will open or close in a blur (1). To exert pressure with the tips of a hand screw, always open the back screw rather than tightening the front screw (2).



CAM CLAMPS

The cam clamp is activated by flipping forward a cam on the movable jaw. Most cam clamps have cork pads on their jaws to avoid marring the workpiece.

Clamp odd shapes for handwork

Hand-screw clamps are an irreplaceable supplement to the vises on a workbench. Whether gripped between benchdogs, held in one of the vises, or fixed in place with a quick-release clamp, a hand screw offers a means to grip all sorts of curved, tapered, and irregular parts for hand shaping.

The right grip for curved parts

A hand-screw clamp pinched in the tail vise provides a versatile means of holding a curved workpiece for shaping. By elevating one end of the part, the clamp provides hand clearance and access to the sides.



Stabilize a plank

You can use a hand screw to hold tall boards tight for planing or shaping the top edge. A clamp holds the hand screw firmly flat to the bench.



Hold tapers tight

The hand screw's jaws can be quickly adjusted to grip a wedge-shaped workpiece. Here Coleman uses benchdogs to clamp the hand screw in place.



Odd shapes, exposed ends

The hand screw's jaws can grip all sorts of unusual shapes, and it also lifts the workpiece, exposing its ends for shaping.



Any table becomes a bench

Hand screws and cam clamps make a quick improvised vise on most any surface in the shop.



Wooden clamps amp up the router

The hand screw's versatility is especially evident when it's paired with a router. It can hold an unusual workpiece still, it can hold the router itself, or it can be used as a carriage, moving the workpiece across a router table while holding an odd-shaped piece at an angle. Cam clamps, too, pair well with routers.



Routing a wedge-shaped workpiece

While template routing, Coleman uses a hand-screw clamp to hold a small, tapered workpiece that affords no extra space for hold-downs.



Carriage for a curved part

To rout a slot in the end of a curved part, Coleman grips it with a hand screw and moves the clamp across the table to make the cut.

Stable but slender

Like hand screws, cam clamps have flat-sided jaws that lie nicely on the bench. Their jaws are narrow, making them the right choice here, as they pinch a workpiece by its tenons without getting in the way of the router.



Instant router table

For routing small parts, Coleman uses an inverted trim router. He locks the router in place with a hand screw, and fixes the hand screw to the bench with a clamp.

Of clamps and machines

Hand screws and cam clamps are very useful for machine work. Although it's best to cut the joinery on shaped parts while they are still rectilinear blanks, sometimes that's not practical. In those cases, wooden clamps can provide an alternative to building a complicated fixture for cutting joinery on an oddly shaped part.



Holding tight to a sinuous workpiece

To mortise the end of an S-shaped chair arm, Coleman uses a cam clamp in conjunction with his slot mortiser's hold-down. To provide a support for the part at the proper angle, he tacked a scrap across the jaws of the clamp.



Pinching a tiny part

Drilling into a small part with a high-torque bit can be dangerous. Here, Coleman uses a hand screw clamped to the drill-press table to hold a small workpiece safely for drilling with a Forstner bit.



A tricky bit of drilling

The mating pair of notches Coleman cut into the jaws of his hand-screw clamp hold a dowel tight and upright for end-grain drilling.



Online Extra

Find hand screws challenging? For a few tips on how to avoid fumbling with yours, go to FineWoodworking.com/261.



Suction where you want it

Coleman uses a hand screw and some cam clamps to hold the dust-collection hose just where he needs it.



Bandsaw work at a challenging angle

Using the hand screw as a carriage enables Coleman to accurately and safely make a curved end cut on a curved workpiece.