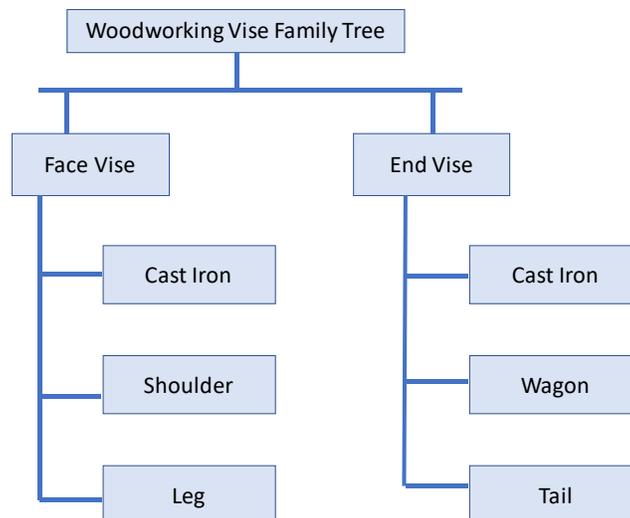


Bevel Cut: November 2017

## Woodworking Visers

When I started woodworking just a few years ago, I thought my first project would be to build myself a bench. As I looked at benches in the market, and books on benches, I was struck by the different visers that were recommended for woodworkers. So I fell into the traditional trap, since I didn't know what kind of vise I would need or want, I didn't build a bench. Instead, I found one on sale at Woodcraft, and the rest is history. At least up to a FIG meeting six months ago when Nicholas Kathmann spoke about building his Roubo workbench from supplies at benchcrafted.com and bellforestproducts.com. The Roubo workbench has a leg vise and a tail vise (sometimes, but not always called a wagon vise), neither of which were familiar to me. Last year I visited the private workshop of my instructor from the NBSS class I took on hand tools, and his homemade workbench had a shoulder vise. Add more confusion.

So I decided to put together a family tree of woodworking visers. My diagram covers the major branches with all the first cousins, but doesn't include all the children or distant relatives that are seldom heard from such as the Moxon vise. Much of the literature I've come across online describes the major family branches in terms of whether the vise sits on the front face or the side (end) of the workbench.

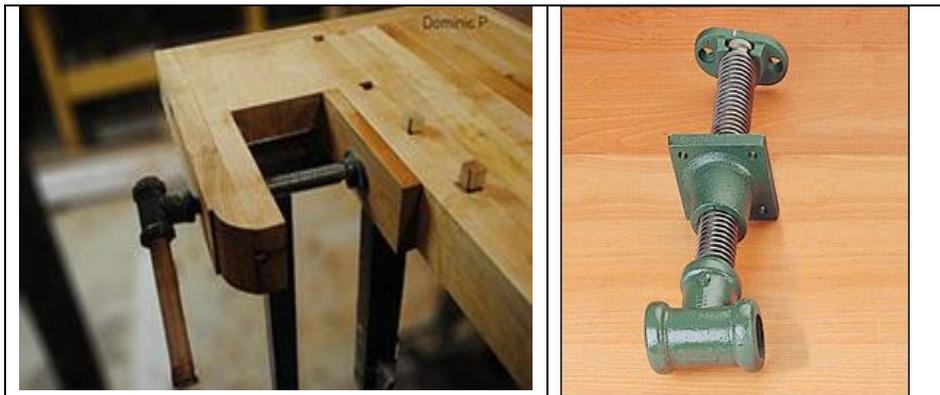


## Face Visers

Clearly, the most common vise is the face vise with large flat jaws. While most non-woodworking bench visers mount on top of the workbench via a pedestal mount, woodworking visers usually mount on the underside of the bench, typically on the left or right side, but sometimes in the middle. These face or front visers may feature a quick release mechanism and single or twin screw designs. Another option is a built-in bench dog. Face visers come in a variety of width and depth specifications. Face visers are also commonly mounted on the side of the bench, which technically makes them end visers (see below). In this end position, they often have wooden jaws that are the same dimension as that of the bench depth itself. My own workbench (Sjobergs) came with two face visers, while the bench has four predrilled positions, face left and face right, left and right ends, so I can move each vise around as needed.



The shoulder vise (apparently more popular in Europe) is integrated into the bench top itself in an “L” shaped configuration while also requiring a fifth leg to support it. The shoulder vise excels in dovetailing because there’s no hardware in the way if you want to let a long work piece extend toward the floor. Shoulder vise kits are available from several woodworking suppliers.



The leg vise probably wins out when it comes to “tradition.” Probably making a comeback along with the Roubo bench. Benchcrafted.com sells kits for at least two versions of the leg design, each with knob options. According to the benchcrafted website, “Without the two guide rods of the iron vise, workpieces can be held right up against the screw, virtually eliminating racking and providing a better overall grip. Iron face vises provide around 4” of workable depth from the top of the bench to the screw and guide rods. Leg vises are usually more than double this, around 9”. Leg vises are also more powerful due to the large lever provided by the lower position of the fulcrum. Leg vises are also simpler and easier to maintain than iron vises. The auxiliary wood jaws necessary for iron vises are unnecessary with a leg vise since the vise itself, along with the bench's leg and top, forms the jaws of the vise.”



Traditional leg vises work around a simple principle. A single screw passes through a moving jaw or "chop" and provides the clamping force. The screw engages a threaded hole in the bench's leg. A means of preventing rack is present at the opposite end from where the wood is held. Traditionally this is a perforated length of wood attached to the chop (the "parallel guide") through which a pin is inserted to match the workpiece thickness. But other means have also been used, such as a second threaded rod, or a scissors-type mechanism.

## End Vises

The end vise is found on the end of the workbench. No surprise. While the end vise can be used for clamping stock perpendicular to the bench top, it really excels when used in combination with bench dogs for clamping stock flat. An iron vise installed at the end of a bench often has dog holes that match those in the benchtop itself.

The wagon vise consists of a screw that passes through a frame buried within the bench top, creating a moving dog hole. The wagon vise is typically designed into the bench before the bench is built and is typically not used for anything other than securing wood blat to the bench top.





The tail vise nests into the front of the bench top, so it's designed in, not typically added-on. The tail vise is a surface-clamping design that holds stock between bench dogs. The moving jaw is surrounded by the bench top, providing excellent workpiece support. It resists sagging, unlike a cantilevered (shoulder) vise. Capacity is limited only by the length of the work surface, and since clamping force is closely aligned with the screw axis, the vise cannot rack.

I know of one Roubo bench user that installed a face vise on the front and right side, and another woodworker that has a leg vise on the front, tail vise on the right, and no face vise at all. I gather that vise selection then includes a large element of personal preference, reverence for tradition, and some consideration for the type of work most commonly required. I'm guessing that a major divide is between those that do a lot of hand planing and those that are partial to hand-made dovetails. But maybe not?