

The Journey from *Penturning to Penmaking*

by Kurt Hertzog

Drilling Vises

The penmaking process is comprised of many steps that range from material selection through presentation of the final result. Most of the steps needed are not terribly glamorous, yet need to be done well if the maker desires the best results. One of the most boring (yes, boring with no pun intended) is the boring of the hole in the pen blank. It is a necessary part of the process, but it is usually done with the outlook of “how quickly and how painlessly can I get it accomplished.” This is not a task that anyone looks forward to and not anything that shows off the maker’s skills unless done poorly. There are many ways to drill the necessary hole in the blank. It can be done with a pistol drill and a bench clamp, drilling chucks mounted in a lathe, or the wide array of holding methods available while using a drill press. In past columns, we’ve covered drills, drill sizes, drill types, speeds and feeds, breaking the chip, quill travel, and more. In this issue, we’ll look at one of the handy shop tools that can help with the drilling process for those who favor a drill press. Let’s just focus on the holding hardware commonly called the drilling vise. This functions not only as a drilling vise, but also as an assembly press within the jaw travel limitations. I have several drilling vises that have been collected over the years, so

perhaps a mini review of them will whet your interest. These few that I’ll review are by no means the entire spectrum of what is available (see Fig. 1). Please note that the inclusion or exclusion here is no indication of quality, acceptability, or preference. The units covered here are simply the ones that I own and had at hand when writing this column. To show no favoritism, the units are listed in alphabetical order by name.

GEIST DRILLING VISE

A relative newcomer to the penmaking industry, the folks at T. V. Geist Manufacturing (www.timstoolcrib.com) in Parkersburg, West Virginia, have a pen drilling and assembly vise along with a sanding fixture. The drilling vise is aluminum and is in the style of a single-sided mechanism with a single lead screw, dual guide rod design, and bronze bushings (see Fig. 2). When you look at the mechanics of a drilling vise, there aren’t too many different ways to make things work. The vise frame components are fabricated from aluminum extrusion and use the standard V-style cutouts in the jaws for centering and clamping. The aluminum is left untreated. A cast handle fastened to the screw mechanics is provided for tightening and loosening the vise jaws (see Fig. 3).

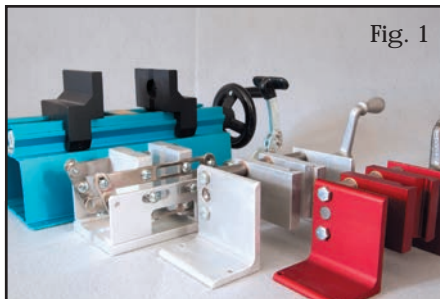


Fig. 1

There are many drilling vises on the market. Here are a few that I own and find useful. The exclusion of other makes is not negative; it only means that I didn’t have one for evaluation.



Fig. 2

The Geist drilling vise is a no-frills raw aluminum single-sided vise; it works nicely and opens to 3-5/8" to accommodate pen blanks and bottle stopper blanks.

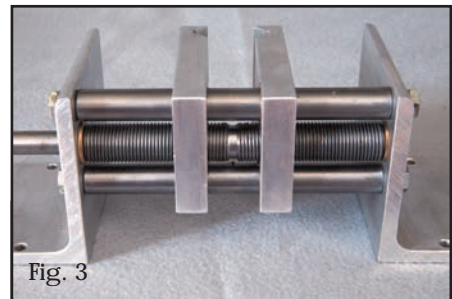


Fig. 3

The mechanics are fairly straightforward—a lead screw with a couple of guide rails riding on bronze bushings. Fabricated from extrusion materials, it is a reasonably priced, well-working drilling vise that will do some assembly.



Fig. 4

The open frame single-sided vise has the advantage of utilizing any scrap of wood as a sacrificial drill break-out material.



Fig. 5

The Paul Huffman vise is the granddaddy of them all.

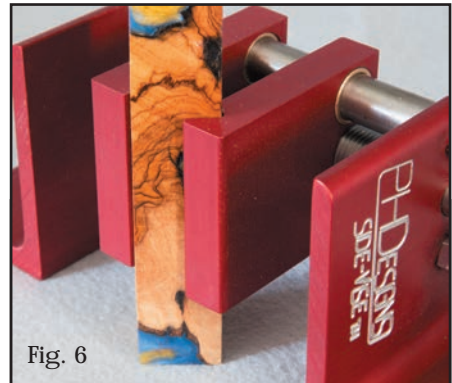


Fig. 6

All the vises reviewed utilize a V-jaw configuration that will center round, square, rectangular, and irregular shapes for drilling.

The vise has four holes provided for fastening the vise to a platform to facilitate easier handling and clamping in place if desired (see Fig. 4). Being a single-sided set of mechanics allows the user not only ease of loading and unloading, but also the ability to clamp materials in the jaws that are much larger in dimension. The wide open jaw position will open to 3-5/8" to the flats.

HUFFMAN DRILLING VISE

This vise is the granddaddy of them all. Originally designed and built by Paul Huffman, it dates back nearly as far as my time in penmaking (see Fig. 5). Paul, a machinist by trade, made these vises in his spare time and sold them directly to the end user. There was usually a waiting list for them, as there weren't other similar products available in the marketplace. Since that time, the Huffman vise is offered by Roy Robaldo at the Classic Nib (www.classicnib.com/main.html). The vise is a single-sided design, single screw, double-guide rod. It has V-slots in the jaws, the same as for all the vises in this

article. This allows for a wide variety of clamping, from round to square to irregular shapes with corners (see Fig. 6). With four mounting holes, it also can be mounted to a base of your choice. The frame construction is from extruded aluminum that has been anodized bright red with the name emblazoned and color filled. This vise and others in the same vein will let you clamp flat stock for edge or end drilling. It will hold a piece upright and stable even if the length is much longer than the jaws are wide (see Fig. 7). The actual frame size of the Huffman vise is a bit smaller than the Geist, but in use it really makes no difference. The opening dimension to the flats of the jaws is 2-13/16".

ROCKLER DRILLING VISE

The drilling vise and assembly press offered by the folks at Rockler (www.rockler.com) is unique in its design. Rather than being a single-sided mechanism, it is a traditional mechanism vise with a single-threaded rod that uses an extrusion as the guiding mechanism for both

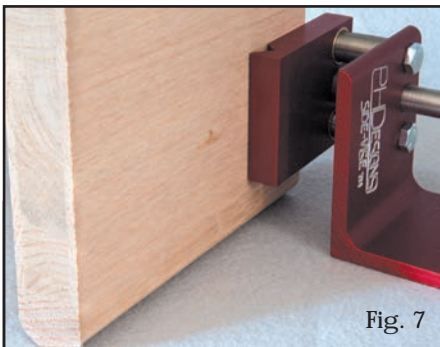


Fig. 7

The Huffman and Geist vises lend themselves well to clamping flat stock for processing.

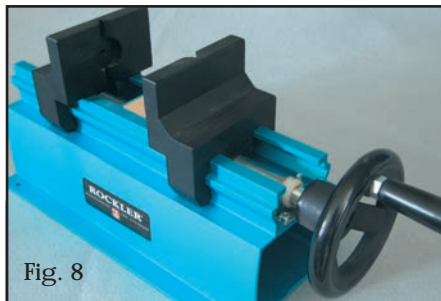


Fig. 8

One of the more unique designs is the offering by Rockler. Built on an anodized extrusion, the vise is truly a drilling and assembly device.



Fig. 9

Not as convenient as the open-frame vises, such as the Huffman and Geist, the Rockler vise can assist with supporting flat stock for drilling or assembly.

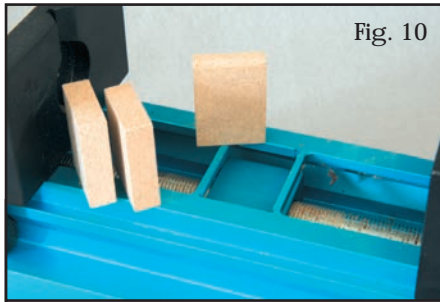


Fig. 10

The pocket for the sacrificial block is cleverly created by the top of the screw block. The problem is the awkward size and shape of the block, although it is available as a replacement part from Rockler.

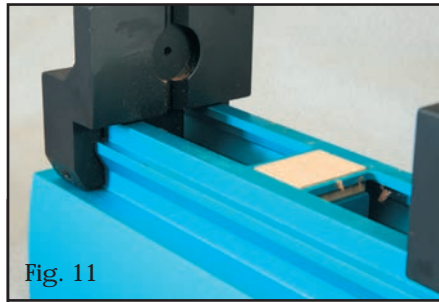


Fig. 11

The only vise that can truly be an assembly press as well, the Rockler design folks thoughtfully included a circular recess and center point recess in both jaw faces. Opening to 6-1/2", it can easily be used to assemble any kit that I'm familiar with.

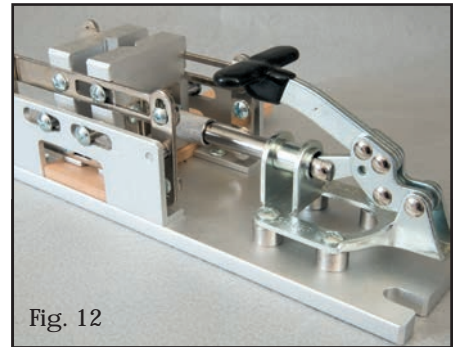


Fig. 12

The Woodcraft drilling vise is a combination aluminum and stamped steel assembly. The adjustment mechanism and De-Sta-Co clamp operation are quick and effective.

jaws (see Fig. 8). This presents some pluses and minuses. The first big plus is that as an assembly press, it has the longest throat opening of the bunch, opening to 6-1/2" to the flats. Using a wheel for opening and closing, the press has the force needed, yet also retains the fine resolution for precision presses. The minus to the design is that the jaws are elevated, so that its use for end clamping flat stock for "non-pen" operations is much less flexible, although it can be made to work (see Fig. 9). The jaws sport the standard idea of a V-recess in both sides for clamping of round and rectangular cross sections. It has a location for a sacrificial block to support the break-out location of the blank. It is sized specifically and unwieldy for replacement by comparison to just sliding a throwaway scrap as you can with the Geist or Huffman vises. It does work and they provide several pieces with the vise when purchased (see Fig. 10). The aluminum extrusion is anodized in the Rockler corporate blue color and is delivered with holes in the base for

mounting. Rockler even suggests that you can marry your drilling vise with their drill press table using T-slots to easily and accurately position the vise. It is certainly doable for those needing that feature. The Rockler vise is the only really true assembly vise opening to 6-1/2". Cleverly, they have provided a center point in both jaws, along with a round recess for enabling the assembly process (see Fig. 11).

WOODCRAFT DELUXE SELF-CENTERING PEN AND BOTTLE STOPPER DRILLING VISE

The last of the drilling vises that I have in my collection is the Woodcraft Deluxe Self-Centering Pen and Bottle Stopper Drilling Vise offered in their WoodRiver product line (www.woodcraft.com) (see Fig. 12). A bit different than the others covered, the Woodcraft version doesn't operate by a threaded screw mechanism. It uses a locking clamp mechanism with the jaws guided by two side rails. It has the same style V-reliefs in the jaws to locate



Fig. 13

Not totally wide open, but certainly workable, the sacrificial drilling block is limited in thickness and must fit within the allowed opening. The vise is supplied with extra blocks, and the block can slide back and forth for maximum use including both sides.



Fig. 14

All the vises can grip bottle stopper blanks for drilling. Some open far enough to grip on the corners in the V-jaws or on the flats of the jaws. Either way, the bottle stopper blanks are securely held for drilling.

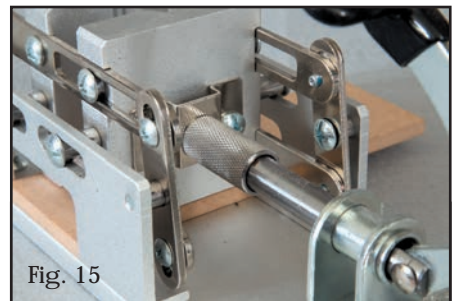


Fig. 15

The adjustment for the Woodcraft vise is by a knurled threaded collar. The adjustment sets the opening and closing range, as well as the "snap over" location of the De-Sta-Co clamp.



Fig. 16

The open-frame vises, Geist and Huffman, have the most flexibility for sacrificial break-out blocks. The thickness is extremely wide-ranged, as is the shape and size. Inserting any scrap that will fit in height or width will work.

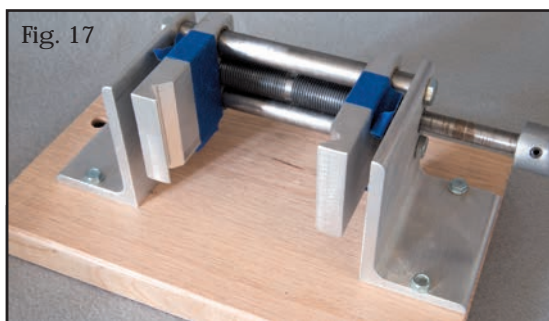


Fig. 17

Any of the vises, mounted to a support block by the provided holes, allow for additional stability and clamping capability. I also use painter's tape on the inside faces for preventing scratches during assembly. Note the location for pressing up near the inside guide bars.

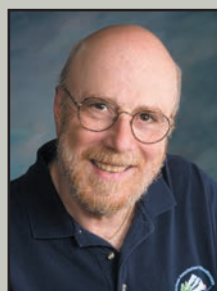
clamping in position on the drill press if desired. So what is the real difference between them all? In my mind, the things you might use to distinguish between any of these drilling vises and the others that are available are the ease of use/replacement of break-out support and the total open working dimension if you wish to use the clamp for assembly (see Fig. 17). If those are important to you, make certain that you make your decision based on the functionality of each vise with respect

and lock both round and cornered stock in place for drilling. It provides a slot for the insertion of a sacrificial backup drilling blank. Though more convenient for replacement than the smaller fitted ones in the Rockler, it still is a more fussy fit than the open-frame vises, such as the Geist and Huffman (see Fig. 13). As for the other vises, it will not only position and clamp pen blanks, but it can also easily accommodate bottle stopper blanks that are up to nearly 2-1/4" (see Fig. 14). Fabricated from aluminum, stamped steel, threaded fasteners, and a guided plunger operated by a De-Sta-Co style clamp, it serves nicely as a clamp for drilling. With the long clamp arm, it easily supplies the force for using it as an assembly press. The adjustability of the stop point also allows for fixed depth presses if that suits your needs (see Fig. 15).

CLOSING THOUGHTS

The vises shown all work quite nicely for their intended purpose. They clamp the work in their V-jaws, allowing for round or rectangular work to be held securely for drilling. They all have some provision for a drill "break-out" support to help minimize blank blowout at the exit hole (see Fig. 16). With mounting holes provided, they can all be fastened to a base for easier handling or

to these issues. If these aren't important to you, any of them will serve you well. If speed of operation could be a factor between the cam lock and the screw thread, they all work quickly and effectively. If you are only drilling, pick the one you like that is in your price range and I am fairly certain that you'll be content with your selection. If you are going to use the press for assembly, be sure that it will open far enough to accept your work to allow for the press operation. They all should last a lifetime of reasonable use and care. Barring those two items, I'd compare the selection to picking an automobile. They all offer four wheels and a motor to get you across town. Some are more posh than others and the price reflects that difference. Make your selection at your price point based on your wallet, your appreciation for workmanship, and your desire to support a company or person. Any one of these drilling vises will do you proud. Repeating what I've stated so many times in the past, "The magic isn't in the tool, but in the hands of the craftsman."



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A professional woodturner, demonstrator, and teacher, Kurt Hertzog enjoys the continuum of woodturning, from making his own turning tools to photographing his finished turnings.

Kurt is a regular feature columnist for both *Woodturning Design* and *Woodturning* magazines, one of the five Council Members of the Pen Makers Guild, and a member of the Board of Directors of the American Association of Woodturners.

Kurt's work has been featured in the American Association of Woodturners "Rounding The Corners" Exhibit, and he has been published in *Woodturning Design*, *American Woodturner*, *Woodturning*, *Pen World*, and *Stylus* magazines. You can see his work on his website at www.kurthertzog.com.