

Using a Bench Chisel

As a young boy, I used a blunt old chisel to open cans of paint (and you know what they say about a hammer and everything else a nail...). Today, I use a sharp chisel as a cutting and shaping tool for doing joinery work, shaping forms and sometimes, sharpening my carpenter's pencil.



Chisels can be used in a myriad of other ways. British teacher Paul Sellers, for example, has made a version of his "poor man's" hand router using a chisel as the cutter. In another example, Bill Carter, a British plane maker, ground a chisel's cutting edge square, turning it into a scraping tool that cuts cleanly across the grain as well as end grain. I'll show you some ways of using a bench chisel with good results. First, though, a few words on why I have more than one set of chisels.

With a "poor man's" hand router, the chisel is used bevel down, while the scraping chisel is used with the bevel up as you push the tool forward.



Bench Chisels — the More the Better

Some woodworkers take a minimalist approach to chisels, owning very few and using a narrower size for both narrow and wide cuts. That works for them because they have both the skill and time to finish cuts that way. I like to have access to a wide range of chisels of different widths so that I can choose the right one for the job. As author and furniture maker Garrett Hack once pointed out, it is more accurate to cut a line in one stroke with a wide chisel than in two or more cuts with a narrow edge.

Here is another reason I own more than one set of bench chisels: I have them ground at different angles, such as 25° for general use and 30° for chopping hard wood. I also have a few ground with a round bevel for working concave surfaces. For me, keeping extra chisels on hand is like having extra blades for my hand planes.



Bevel Up versus Bevel Down

In general, I use a chisel with the bevel down for roughing cuts. I control the depth of cut by raising or lowering the handle. Since the bevel-down orientation tends to resist digging in, I use it for excavating a mortise, initial horizontal chiselling to a line, shaping concaves, paring in a tight spot, and removing waste.

For smoothing cuts, such as cutting flat or working with convex curves, I use the chisel held bevel up. Sometimes, you can use both types of bevel cuts interchangeably. For example, you can make feather cuts in mortising a hinge using the chisel with the bevel up or down. In many instances, both methods are needed to complete the job.

When chopping or paring vertically, face the bevel side toward the waste and begin the initial few cuts away from a scribed line. If you force a cutting edge on the line, the wedging

action of the bevel will push back the scribed line.

Top) With the bevel down, there is less tendency for the chisel to dig in

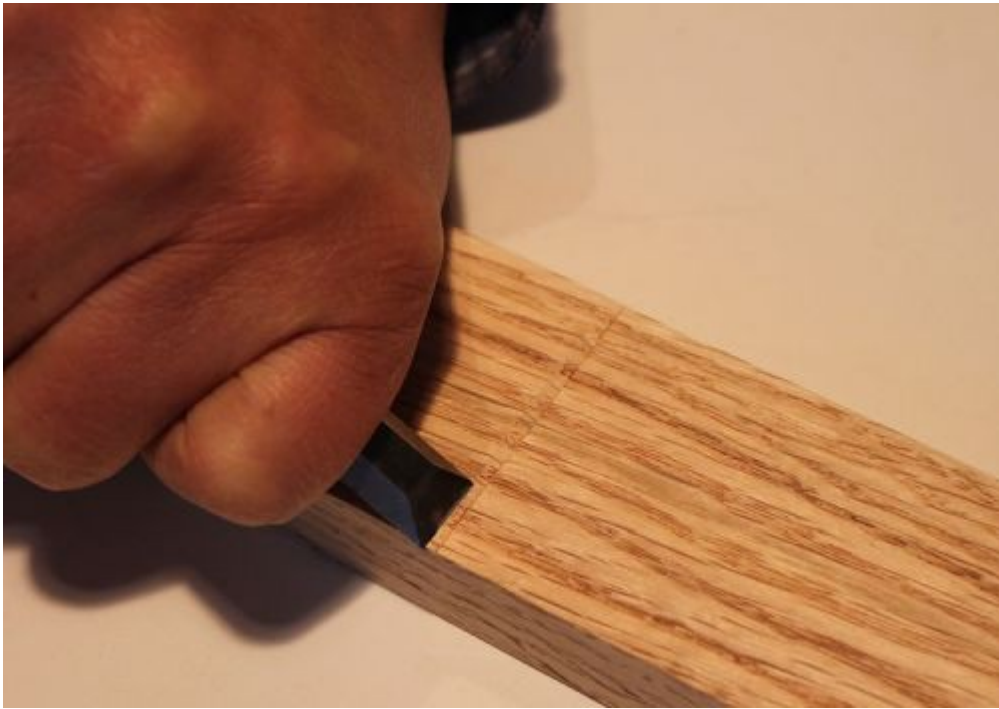
Bottom) The bevel pushes the cutting edge away from the direction of the cut



Making the Finest Cuts

Using a sharp edge and working with the grain gives a clean and smooth result. Paring or chopping straight across grain and end grain could result in a rough or even a pitted surface. To achieve a better finish, take light shavings and use slicing cuts — either pare with the trailing corner of the chisel, a technique woodworker and illustrator Aldren Weston called "compass stroke", or move the chisel laterally at the same time as you push it forward.

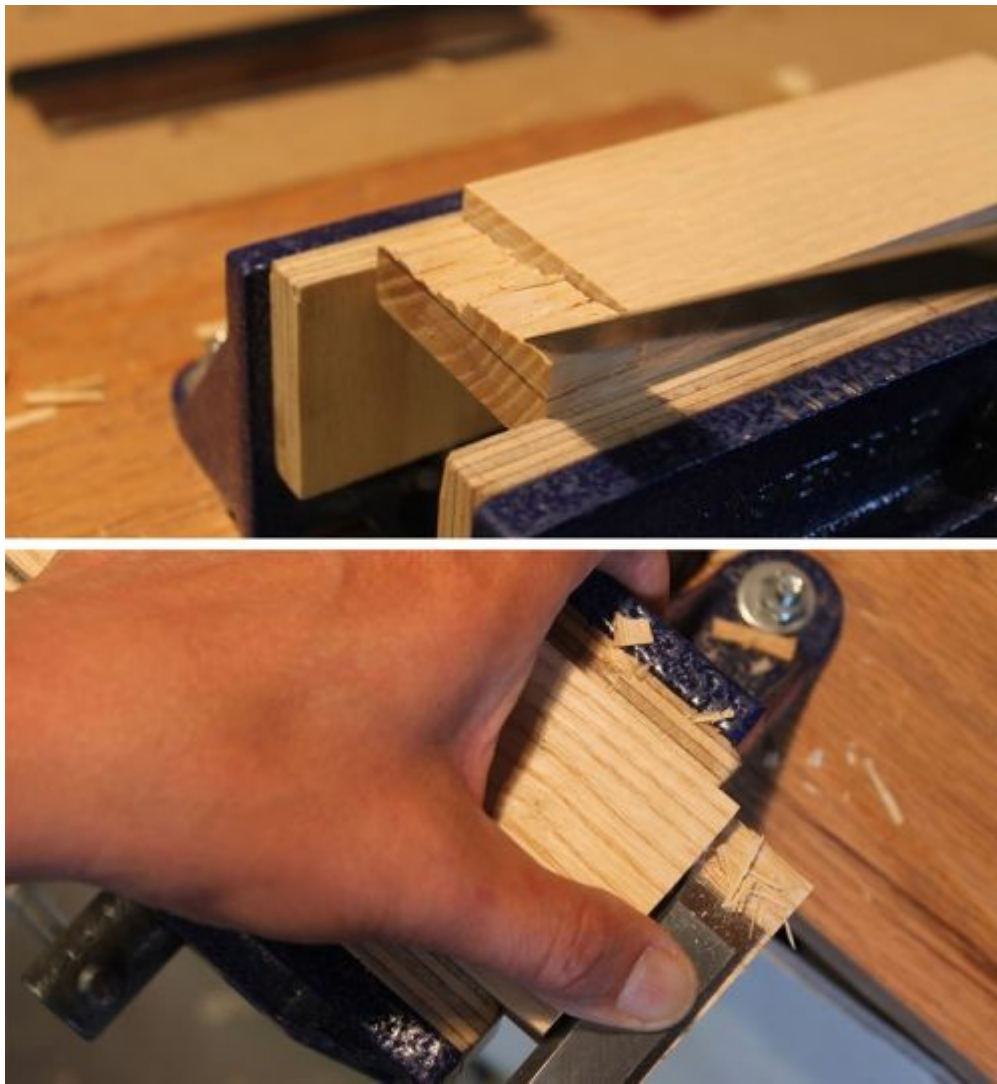
Holding the chisel at a slight angle, push it to one side as you make a slicing cut



Cutting a Rabbet

I'll use two examples to illustrate step by step how a chisel can be used, starting with cutting an end rabbet. First, lay out the shoulder or recess using a marking knife on the face and a marking gauge on the end grain. Pare at an angle with the bevel up to form a V-groove (Paul Sellers calls it a "knife wall") at the shoulder line. Repeat the knifing and paring to create a deeper wall, then handsaw the wall to depth.

Deepen the V-groove before sawing the rabbet wall with a cross-cut saw



I have tried two different approaches for removing the rabbet waste using a chisel and each has its own merits. The first method entails paring or chopping away the waste from each side in turn using either straight horizontal cuts or slanting cuts. The second method calls for chiseling from the end. The first method is quicker but works across the grain. The second approach, working with the grain, gives a cleaner finish and is the only practical option if the rabbet is an especially wide one.

In the photo (top), the bulk of the waste was removed using the first approach, with the chopping chisel held bevel down. You can then use a router plane or pare the bottom flat with a chisel held bevel up.

Top) With the bevel down, chop away the waste from each side in turn or with the bevel up from the end

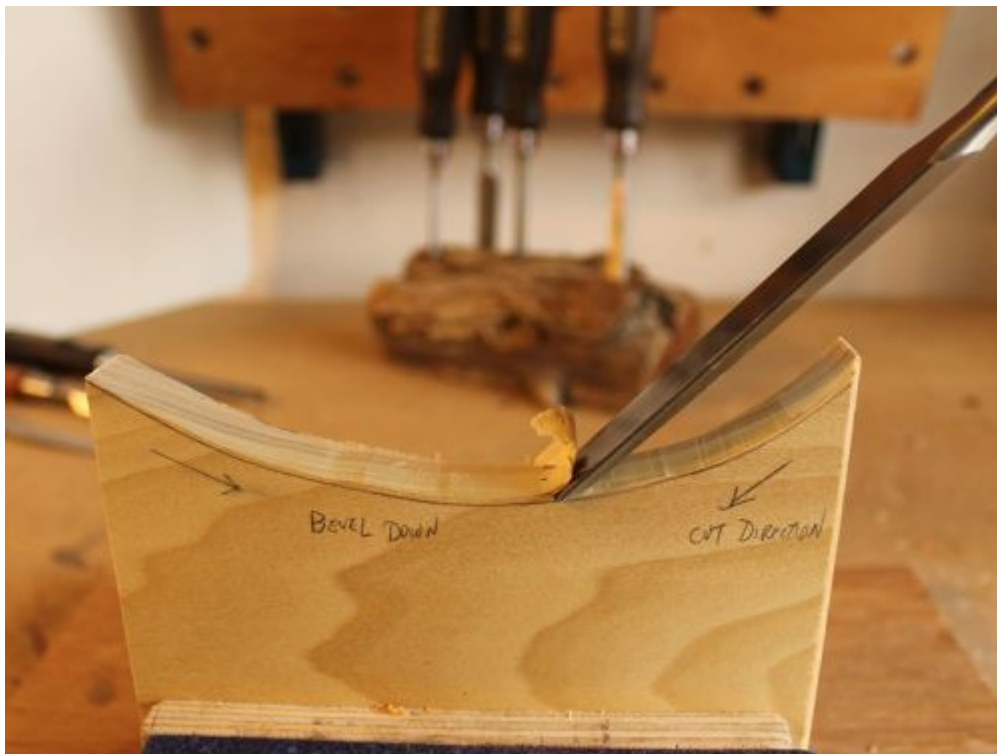
Bottom) Apply pressure to the front of the chisel as you push it forward while keeping all fingers out of the path of the cutting edge



Shaping a Concave

Chisels can shape a concave or convex curve. To cut a concave curve, use a chisel wider than the thickness of the workpiece and hold it with its bevel down (bevel up for a convex curve). For tight curves, I find that a chisel with a round bevel rides more smoothly.

A round bevel rides more smoothly on a tight



After laying out the curve on the workpiece, clamp it in the vise and remove the bulk of the waste with a coping saw. Cut with the grain, using short mallet strokes as you get closer to the line, advancing the cutting edge 1/4" or so each stroke. As you chop, raise or lower your arm to keep the cutting edge from going beyond the layout line. The final smoothing can be

done with a paring chisel. In addition to sighting, I find that running my hand along the curve gives me constant feedback on how fair the curve is.

Raise or lower the handle to adjust the cutting angle as you chop to remove the waste

Keep your chisels sharp — really sharp, and they are a joy to use. And you won't make my childhood mistake of using them for anything other than fine woodwork.

Photos and text by Charles Mak

Charles Mak, now in retirement, is an enthusiastic hobby woodworker, teacher, writer and tipster. He formerly worked part-time at his local Lee Valley Tools store.

Further Reading

Lee Valley Tools. (2012, May 16). Cutting Curves with a Chisel [Video file]. Retrieved from http://www.youtube.com/watch?v=sGVeu9832nY&feature=player_embedded

Watson, Aldren. Hand Tools: Their Ways and Workings. W. W. Norton & Co. New York. 2002: 87 – 104.