

BARE BONES OF CARVING

A master carver looks at essential tools and sharpening techniques.

In 1979, after five years of college and with a philosophy degree in my hand, I was heading to interview for my first job as a woodcarver. My prospective employer, a second-generation woodcarver, told me to bring along samples of what I had carved and to make sure that I brought all my woodcarving tools as well.

His parting telephone comment was, “In the end, all I really need to see are your woodcarving tools. By looking at them I can tell a lot about your carving sensibilities.”

Still new to woodworking, I thought, “What is he going to do ... use my tools like a set of Tarot cards to tell my abilities? Or is he going to read them like tea leaves in the bottom of the cup?”

Today, 27 years later, I have collected a set of tools that have all the qualities he was looking for.

by David Calvo

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For information, visit his web site at davidcalvo.com.

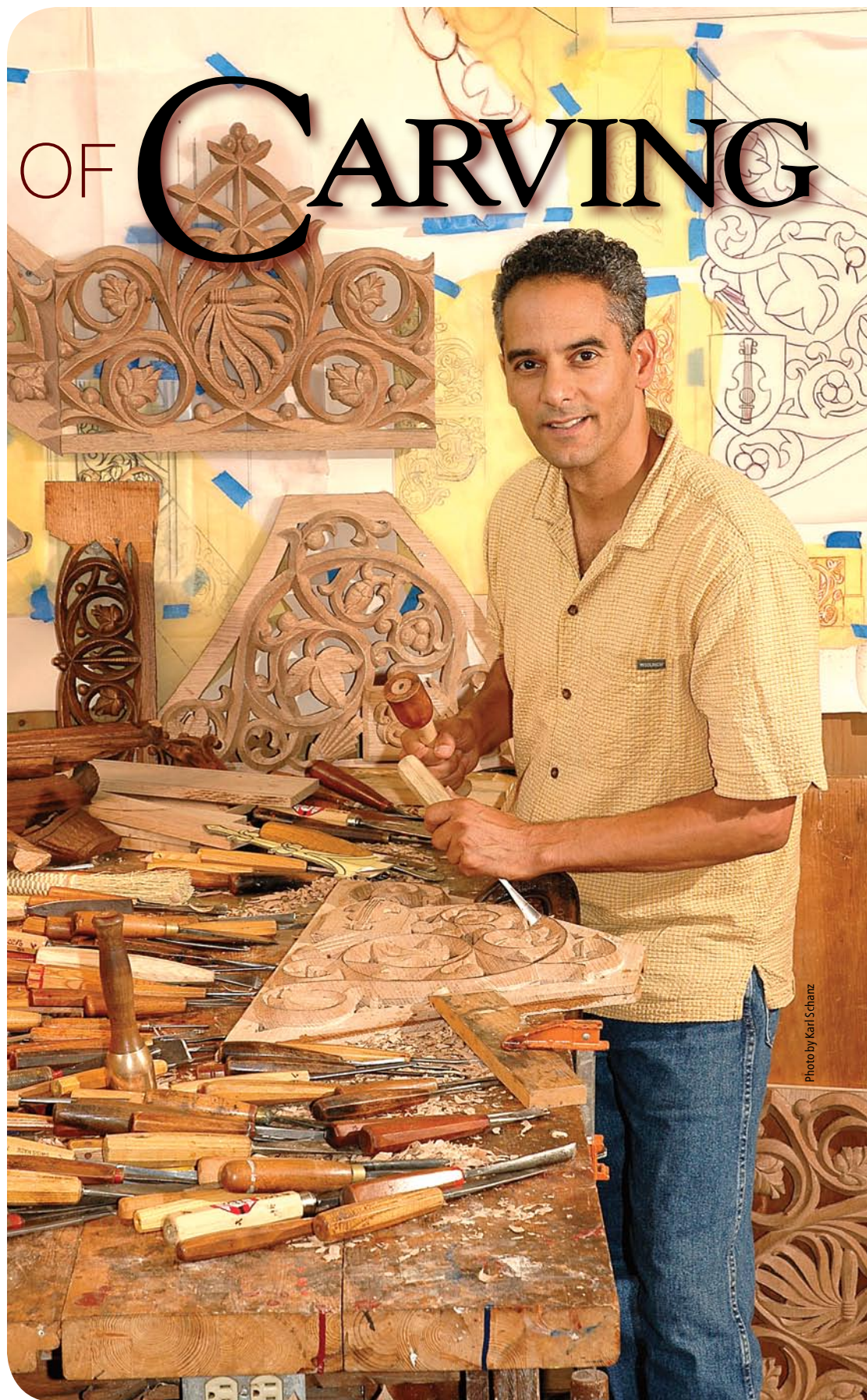


Photo by Karl Schanz

I can now easily see the importance of his point of view without a second thought. After our interview he decided to hire me, so maybe he did read my tea leaves right. Between then and now I studied with a German woodcarver named Frederick Brunner, who trained in the European apprenticeship program.

He and his protégé put in my hands refined tools and hand techniques that made the carving tool move through the wood like butter. Later, I worked as an apprentice at the renowned studio of Cascieri and Di Biccari in Boston. This studio had a team of woodcarvers and sculptors creat-

ing work sent all over the United States and abroad.

I got the chance to work with wonderful carving tools that had been refined through many creative woodcarvers hands. These tools did nothing but encourage me to keep on going. In addition, I had the opportunity to look through my teachers' eyes during the creative process and watch their pencil designs come to life.

Am I trying to entice you with the romance of woodcarving? You bet. It's an approachable skill. And with knowledgeable guidance and enthusiasm on your part, you will be able to add personality to your woodworking projects too.

In a series of articles, we are going to consider woodcarving from the tool edge out. The carving tool is the only thing between you and the wood. Think about that for a moment. This is one of the simplest forms of woodworking. It's woodworking unplugged. So here's where we're going to begin climbing the learning curve: with the study of tool design.

Commercial Tools

I am going to stand on a soapbox for a moment and be absolutely honest. The single largest thing that has discouraged the popularity of woodcarving in the amateur and professional woodworking

community has been the poor quality of commercial tools on the market today.

Remember the apprenticeship: This interested young lad walked into the carving studio and the old timer put one of his own gouges in the eager student's hand so that he could feel the beauty of the way it went through the wood. This was encouragement without words. It is the reason why so many professional woodcarvers, out of all other woodworking trades, chase the old tools.

There are a lot of tools on the market today, so like a reality television show, I will address only the best and the worst. German

ESSENTIAL CARVING TOOLS



tools have a lot of integrity. To this day, one of the most famous woodcarving schools in Oberramergau, Germany, is still training woodcarvers. Woodcarving as an occupation is still robust there. German-forged steel is excellent, and the tool designs have remained consistent in quality. Tool steel is very important because carving puts maximum stress to a thin, almost invisible, micro-edge of steel; hence all the steel's characteristics, both good and bad, become quickly apparent.

On the other side of the coin, the poorest quality tools on the market today are the Swiss brands. Their tool design over the years has gotten thin. More significant, the steel quality has deteriorated. Initially, they made a good tool and I have a few old ones myself, but time and untrained consumers have gotten the better of them.

There are a lot of tool suppliers in between these two margins and after reading these articles you will be a more educated consumer. If you want to chase old tools, the English ones are quite a find and there are a lot of them still in circulation today.

'Desert Island' Carving Set

If I were marooned, here are the tools I consider necessary as a basic

set in woodcarving. They are the result of the consistent favorites that I have used over the years. They consist of 10 tools, which obviously can be broadened like adding letters to an alphabet. They are organized by sweep radius and width of the gouge or chisel.

This calibration is fairly standardized across most companies. See the photo and illustrations at the bottom of the facing page. The set should also include a brass mallet (shown is the 1.5-pound Calvo Brass Mallet), a whisk brush for cleaning carved surfaces and burnishing the wood, and a set of water slipstones for honing. For most applications these are well suited tools.

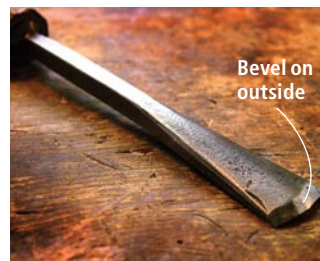
An Old Trade Secret

If you are a painter, you know a painting is built on contrast of many colors. But in woodcarving, what do you think the contrast might be? Like night and day, the opposite in woodcarving is as simple as concave versus convex.

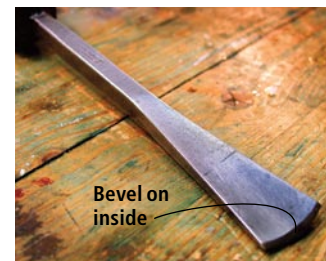
Woodcarving is built on the contrasts of shapes. If you look at our tools, the variety of their shapes are exactly for that reason, creating contrast. Here then is our first lesson on tool design. Each tool, by design, is its own contrast. Look at the gouge above right. A bevel is put on the outside of the tool so that you have a shoulder to ride on in the wood.

My German teacher taught me to put a bevel on the inside of the tool as well to have another shoulder to ride on the contrasting side of the gouge. Now you have just doubled your value with a tool that embraces the opposites of woodcarving: a concave shape and a convex cutting shape. The photo above shows this inside bevel.

Equally important, when we add the second bevel the tool controls better and no longer has a mind of its own. It yields to your



The bevel on the outside of the tool provides a shoulder that gives control to the cutting edge.



The bevel on the inside of the tool creates another shoulder, allowing the tool to cut both concave and convex shapes.



A properly shaped flat bevel allows the tool to bite into the work. If the bevel is rounded from the cutting edge back, the tool will skate on the surface and will grab unpredictably.

direction. Often, students come to my class with tools that are of poor quality and not sharpened well, so they have to muscle the tool to work it and I ask, "How did you keep your enthusiasm up?"

Flat Bevels or a Good Shave?

The German woodcarver, Frederick Brunner, made me aware of another important key: the necessity for an absolutely flat bevel. We want a straight line from the cutting edge back to where the bevel begins, so there is no resistance.

Having a rounded bevel is like driving down the road with your emergency brake on. The rounded curve gives inherent drag to the activity. We establish the outside bevel first. The angle of the bevel is based on the thickness of the tools. The first rule is that you do not want a long, thin bevel. I always tell my students, "A shaving razor blade is sharp but it is lousy in woodcarving." You need the shoulder to ride on. The inside

bevel is usually one-third the length of the outside bevel.

When bevels are set and sharpened, the tools will always act in one of two ways depending on how well it was done. It will either bite or it will skate and grab. If the bevel is rounded instead of flat it will skate just like a skater on ice, it will glide on the surface and won't grab the wood immediately.

If the bevel is flat it will bite. And when it bites into the wood this is the beginning of control in woodcarving as seen in the photo above. A good carver is not fast in terms of miles per hour; it is his or her sensitive control that gives agility and quickness.

Sharpening: The First Step

If you were to ask a room full of woodcarving teachers, "Who knows the best way to sharpen a tool?" every person would raise his or her hand. The fact of the matter is that for each teacher's particular application, they are

SUPPLIES

- Waterstone sharpening machines are available at:

Lap-Sharp
707-838-1976 or
woodartistry.com

Tormek
tormek.com

Sheppach
877-884-5167 or rikontools.com

- The Two Cherries carving tools recommended in this article are available at a number of retailers or from David Calvo's web site at davidcalvo.com.

probably each correct. What is important is that they achieve their desired results.

In woodcarving, we have a peculiar set of circumstances. We have very few flat chisels and a whole variety of shapes and sizes of gouges with outside and possible inside bevels. Therefore, we need a consistent hand-sharpening method that addresses both tool varieties, and gives us a consistent working reference point.

There are a lot of sharpening machines out there and we will approach each for its merits. For more than 20 years, I have owned a Japanese horizontal waterstone grinder. We all know the traditional dry grinders found in most workshops. Tormek and Schepach have the vertical wet grinder market, and there is also the Lap-Sharp which uses 3M abrasive paper technology.

I like the wet grinders and the Lap-Sharp because they also protect your lungs. Respiratory protection is an important topic, worthy of careful consideration.

Finally, don't forget the little mechanical gerbil of grinding: the Dremel, shown above. What is important in woodcarving is first a flat bevel and in the process of sharpening not burning the temper out of delicate tools while shaping. This will be the basis in how to use the machines.

Today, most of the sharpening market in woodworking has progressed to slow-grind machines. Slow ones are the best since grinding should not be a dangerous act. I prefer to use my hands, specifically my wrists, as a guide in sharpening because in my carving style I reference my wrist all the time.

The Best Possible Jig

Woodcarving is a hand skill and I believe we enjoy it because we like to do wonderful things with our hands. They are the most mar-



A Dremel tool can be used to shape the bevels on the inside edge of carving gouges.



The outer edge of the waterstone can also be used to shape the inside bevel on larger tools.

velous jig money can buy. I try to approach the machine with only the tool and myself. Here is my overview on sharpening: I use the machine for shaping the tool; once done, I use slipstones to refine the edge and finish on the strop.

We always need to redesign newly purchased tools so let's address our approach to each machine. The reason I like the Japanese horizontal waterstone, upper right, is it makes it easy to get a flat bevel. It has a #1,000-grit stone, which shapes without excessive scratch marks.

The outer edge on the stone is turned over so that I can address the inside bevel on my broader tools. I also like it because of continuity. I use the corresponding water slipstones to bring the edge up. The other thing I like about the waterstones is that you can shape them easily.



The horizontal waterstone features a large flat surface, making it easy to achieve a flat bevel on the tool.



The Lap-Sharp has a large flat area next to the wheel. This allows sharpening with the hands in a natural carving position.



On a bench grinder, the left hand acts as a jig, so the tool can be returned to the same position after visual inspection.

I approach sharpening the same way I approach carving. I try to find a way to drop my hands into position, and register my wrist on the grinder as if I were carving on wood, and use the same angle of approach. My intention is that I will get the corresponding bevel

appropriate to my natural hand-carving position. On my Japanese grinder there is a tool rest that goes over a small portion of the wheel. It is perfect, like a bird perch for registering your wrist.

Japanese woodworkers think through their hands, so the



The upper bar support on the Tormek provides a place to rest the wrist while grinding the edge.



The best way to grind a good edge is with the hands as close as possible to the position they will be in when carving.



Holding the Dremel against the body allows the wrists to control both the tool and the grinder.

waterstones they use characteristically have a drag that gives your hand a feeling for whether or not you're establishing a flat bevel. We can learn from their tradition; in all phases of carving you need to think more with your hands and rely less on your eyes.

The other horizontal machine is the Lap-Sharp, shown middle left on the previous page. The first carver I worked for sharpened on a machine he made; it had a vertical, rotating, circular plywood face on which he rubber-cemented fine grits of sandpaper. Technology has come a long way since then and the Lap-Sharp capitalizes on it with its horizontal wheel.

It comes with a variety of jigs for versatility but, like the Japanese waterstone machine, I always look for how I can achieve my hand-carving position as I approach

the machine. I found a wonderful place to rest my wrist so that I can get into carving position.

I use the micro-finishing film starting with 40 micron or 80 micron depending on the tool, then the 1 micron lapping film for final honing. Part of shaping the tool is doing as little as possible to get there.

I like that the Lap-Sharp is a gentle machine and you can get a flat bevel with no heat to ruin the temper. I did not like that I could not address inside bevels, critical for woodcarving.

Vertical Grinders

To sharpen on the outside face on a vertical style wheel-grinder the approach is a little different. For the dry-stone grinder you want the slowest speed available (I use only the slow 1,725 revolutions

per minute variety).

My German teacher used a dry grinder and he made hundreds of tools. When you are shaping carving tools a light touch is the best. Brunner's touch was so light that he only used a little water for quenching with his assortment of dry grinding wheels. If you are right handed, your left hand acts as the jig on the tool support. It always stays in the same place.

Your right hand holds the tool close to the grinding edge. Set the bevel visually and lock the right hand into the left hand jig, as seen at left on the previous page, so that it is always in the same place. If at any point you lift the tool to inspect it you will not lose your registration on the wheel.

When sharpening, you want to rotate the tool like a pencil. With the faces of round wheels

it is important to remember that you approach the stone diagonally. This is hollow grinding, so shifting it to a diagonal approach will give us the closest thing it can to a flat bevel. It will give you your longest straight line.

What I do not like with the dry stones is that you cannot get into hand-carving position to set the angle. Both the Tormek and the Scheppach wet-grinding systems address this problem. First a larger wheel will give less of a hollow bevel on the tool, which is an important consideration. Once again, the machines are supplied with clever jigs but I always prefer to see if I can use my hands as a jig instead.

With both machines, I found an upper bar support a convenient place to perch my wrist so that I could get into carving position to set the bevel as shown at left. I had to adjust the height of the machine low enough so that I could reach over the top, but I like it. With the Tormek and the Scheppach, as with the horizontal waterstone, you can round over the edge of the stone to get the inside bevels.

Whatever grinder you have, there is an approach to setting the tool bevels. Look to see if there is a natural way that you can hold the tool against the stone.

Finally, to address the inside bevel of gouges above a #5 sweep, I use my Dremel. I hold the tool close to my body as in the photo above to make contact so that I can register and control using my wrists. I use a chainsaw blade sharpening bit; for corresponding smaller tools I use smaller aluminum oxide wheels.

Once the bevels, both inside and out, have been set to our new angle we are ready to address hand sharpening. I will share my methods in an upcoming issue of this magazine. **PW**