“Small Scale Carving” by Janel Jacobson
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It is truly an honor to share this article with our membership. As I’ve seen more jewelers and metalsmiths exploring carving wood and other alternative materials, I thought an article on the topic might be of interest. I would like to thank Sharon Church for referring me to Janel Jacobson. Ms. Jacobson is a tremendously skilled woodcarver and graciously agreed to share her experiences with us. She created this article with the same conscientious attention to detail that she uses to make her beautifully carved pieces. Enjoy! -- James Thurman, Technical Article Editor

Carving is the continuum that has driven my small-sculptural explorations since the mid-1970s. The materials were first stoneware and then porcelain clays until 1995 when I began to carve wood. The subjects in the compositions are often small in life and inspire me to work in a similar, small scale.

My carving bench with Pin Oak Sentinel when the bark texture was being developed.

Boxwood, is a very hard and dense, light colored, fine-grained wood, well suited to small detail work. It is my favored choice for carving.

Pin Oak Sentinel, *boxwood*

I also use other dense, fine-grained hard woods that offer interesting color variations.

Wood & Moth, *ebony*

Centipede, *ebony*

Hyacinth Bean & Walking Stick, *oysterwood*: Some woods have a distinct difference between the sapwood and heartwood, and that contrast is used to differentiate elements in a composition.

Tools! They are very essential partners on my carving journey. With them I can change flat surfaces into dimensional imagery, carving to bring the light and shadow of the form and detail to a point where the piece begins to sing visually. There are intrinsic challenges to carving on such a small scale. Tools that suit my needs are not easily found commercially, and carving small requires me to wear magnification for careful tool placement while carving the sculptural details.

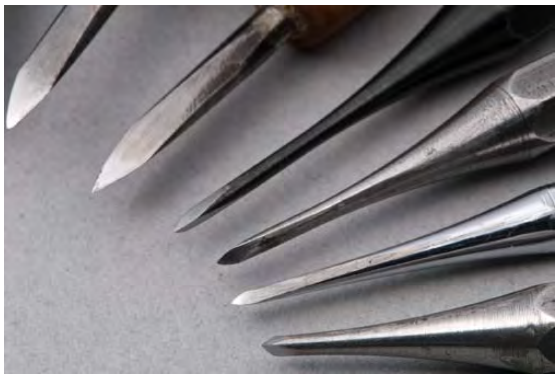
My carving techniques have evolved with the tools through the progression of materials. The wood responds to a well-sharpened edge with a unique and pleasant sound while creating a curly shaving. Working against the grain creates an unpleasant chatter and one runs the risk of lifting a splinter with the potential of ruining that part of the sculpture. Working with dull tools makes the carving action less effective by using more pressure that can compress the wood unintentionally, and which may cause problems later on.

My first tools were made from the butt end of high-speed drill bits. Subsequently acquired tools: Dockyard – tiny, commercial, woodcarving chisels and gouges and knives; repurposed dental tools and Sears Craftsman pin punches were big steps towards more fluent, detail carving; and, I found that inexpensive woodblock cutting tool sets could be useful. But, these were not enough to meet the challenges that I kept finding as the compositions evolved. I have since learned to make my own tools using O-1 drill rod to shape from, harden and temper into useful tools.

Shaving/scraping/planing tools of two basic styles are made from cylindrical rod: One has an angled, oval face and ranges in diameter from a sewing needle to 3/8 inch O-1 drill rod, and function well as scrapers and gouges. Some are made from Sears Craftsman pin punches using whet stones to shape and sharpen the 3/32 – 1/4 inch diameter tools to retain the temper. That they are sharp on both the end and sides allows strokes to be taken, starting from either the left or the right when making a shaving/scraping/planing motion with the grain of the wood.


Oval faced tools

A second style made from cylindrical rod has three faces that form a triangle with any choice of angles and length to create a range of tools. The faces can be equal with equal angles; or one face can be from wide to very narrow in width with the other two faces being opposite, mirrored shapes, creating a narrower cutting/scraping angle and two alternate, wider shaving edge shapes. The cutting/shaving edges can be nearly straight or curved to suit the tool's overall purpose. Such tools have wide ranging functions, from wood removal in chip form by cutting to delicate sheering/scraping/planing for smooth surface finishing without sandpaper. The smallest are indispensable for fine detail work and undercutting for greater definition. Some of these tools may function as gravers to create lines, as materials permit.


Three-equal-sided tools


Three-sided tools for cutting, shaving, scraping or planing

Flat, straight, and curved chisels and gouges are used in a fairly straightforward manner to remove wood in small chips. I use them throughout the carving, from roughing in with the wider tools, to defining the minute details with the smallest widths.


Chisel and skew tools

The techniques for holding the tools and the small sculpture vary according to its size and how the tool is used at any point during the carving process. I use three basic options for holding the carving. I use a wad of white poster-tacky-sticky-stuff (found in office supply stores) stuck onto the 4 x 4 inch cedar post attached to the carving bench. The carving peg is cut away at a 45° angle to give my holding hand some room. I still need to hold the piece when it is stuck to the putty, but its use reduces the stress to my holding hand. Sometimes just the cedar peg is used to stabilize the piece without the putty. With larger pieces, or to prevent the putty and hand oils from affecting the wood in its final surfacing stages, I use a firmly packed suede sand bag, and I wear cheap, white, cotton gloves with the thumb, index and middle finger tips cut off of the tool holding hand's glove to allow for secure tool control.

Carving is done with the hands in contact with one another much of the time. I am right-handed. My left hand thumb serves as a fulcrum and the right hand middle finger is placed opposite the left thumb with the tool shank in between. The right wrist, fingers and forearm work in concert to twist, cut or sweep the tool in the direction that is required by the grain of the wood. I prefer the tool to move from left to right so will turn the sculpture around to orient the changing grain properly.


Tool holding position: Thumb as fulcrum; middle finger applies pressure opposite the thumb with both hands anchored on the wood.

Chisels, gouges and at times the oval tools work differently than the three-sided tools to cut or gouge instead of scraping. Both hands are involved by holding the piece firmly (in my left hand again), and with the tool-holding hand ring and pinky fingers bracing against the sculpture or the support behind the sculpture. The point is, when possible, is to have the hands united and stable. I try to keep my flesh out of the path of these tools, especially when working on a rounded surface. It is essential to have all cutting tools be well sharpened and to cut with the grain.

The tool hand and sculpture's positions vary according to the nature of the tool and the removal that needs doing. The pressure of the tools vary according to the stage of the carving, firm actions earlier on in the removal process, to very light and delicate sweeping motions when finishing the surfaces.

Carving the small sculptural pieces can take weeks or months to complete. The wood is very hard and dense, and is capable of receiving fine details. The approach to all carvings follows a similar workflow, from composing the design and selecting the material(s), through roughing out and carving, to the final surface finishing. I work around the whole piece through each stage before moving on to the next phase.

Once the design and material choice has been made I do a rough sketch on the surface of the wood.

When beginning a piece will I use a power tool, an NSK-Elector micro-grinder, to rough out the form and subject areas. Next I redefine the outlines more carefully and begin to balance the depths of the components with the micro-grinder, files, gouges and flat chisels. Extra depth must be reserved for textures to be carved at a much later stage.

For the next several rounds, I use the larger three-sided scrapers, some flat or skew chisels, and gouges while carving each part of the composition's form with more definition while balancing the relationships between the elements.

Undercutting is a technique done by using the equal-faced, three-sided scrapers. It is used to emphasize the separation between foreground and background elements with the play between light and shadow and imbues subjects with a more life-like quality. This is done after everything is well settled into position and ready for the first stage of addressing the detail work.

For this piece, the trunk of the "tree" became almost like a dancing torso, and with that the visual music began for me.

With each subsequent round less wood is removed with a lighter touch, using a lamp to see how light and shadow work with the forms as they reach their final shapes prior to carving the details. Work on the bark textures and other details are begun, followed by the final leaf and branch details. At the last is the frog and its toes (if included in the composition). I pay attention to each detail and toe, undercutting to emphasize the frog's roundness or softness.

With very sharp and thin scrapers, the surfaces are smoothed carefully. Close inspection is made of each overlap and recess to be sure that no debris or detail was missed. I may use 600 and 1000 grit wet/dry sandpaper to further smooth the surfaces without scratches.

At the very last, the frog's eyes are created and inlaid. Recently I chose to use a lathe and acrylic rod for the lenses for the frog's eyes in Pin Oak Sentinel, instead of hand-carving each lens from amber.

The final step is to apply a protective finish and to again check every overlap and crevice to remove any buildup left after applying and wiping off the oil finish. On some pieces, instead of applying a hardening oil, some pieces are colored with artist's oil paint that is applied over a very thin, protective layer of shellac that was sanded to 1000 grit.


Leaf and Moth


Janel Jacobson at her carving bench