American Woodturner

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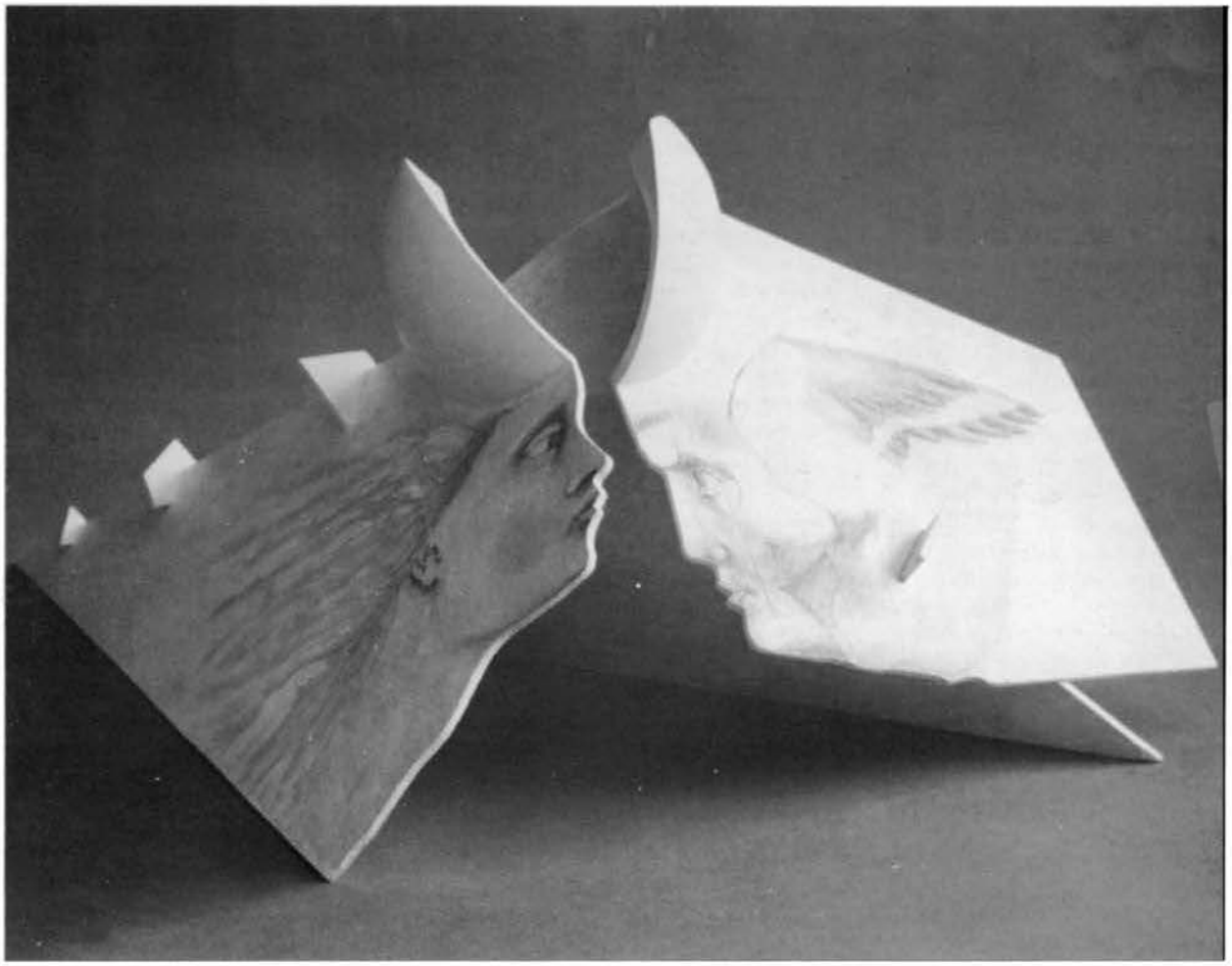

Dedicated To Providing
Education, Information, and Organization
To Those Interested in Woodturning

PRESIDENT'S MESSAGE

David Ellsworth

Year's end is a good time for reflection; and with our numerous highs and lows, the AAW has a lot to reflect upon. It has been quite a year!

With the ultimate clarity of hindsight, it is pretty obvious that our biggest low came from hiring ASMI in Texas to administer AAW. Their inability to fulfill their projections of membership growth, even to maintain our existing mailing list, was hard to swallow. But most disappointing was that they contributed to an erosion of confidence from our membership.

But solving these problems is part of the Board's job, and hiring Mary Redig as our new administrator was one of the best decisions we made—a major high. Mary's first task was to upgrade our mailing list. This involved re-entering every member's name and checking every address, one by one. Once completed, she discovered that our total number of paid-up members had plunged from 3,500 to 2,200! Fortunately, that number has been growing steadily since Mary came on board and started to do the job the right way.

Our most important task now is to rebuild our membership and establish good communication and follow-through with our members. This is happening, both through Mary's office and with an increase in promotion - a growing high.

Publicity is very important for stimulating growth and our annual symposia are an excellent vehicle for reaching the public. This year's event at the Arrowmont School of Crafts drew reporters from "American Woodworker," "Fine Woodworking," and "Woodshop News." It was an excellent symposium and an enormous success, especially for the 350 members who attended. Unfortunately, there were another 350 who wanted to come but were turned away because the school could not hold them. Oh, what a low. Honestly, if there ever existed a relationship between being caught with your pants down and shooting yourself in the foot, I think we found it. So to these folks, we owe an apology and an explanation.

In all previous AAW symposiums, we have averaged about 225 participants. We knew this year's event would be somewhat larger, but had no idea it would exceed the school's capacity, much less double it. Had we known that 700 turners would come to Tennessee, we would have found a larger facility. That is why we did not publish a limit in the brochure. Also, for the first time in the history of a woodturning event, our members signed up early instead of waiting to the last minute. We were full by August 10th! And by September 1st, the end of the early bird's special, we had 130 on a waiting list and calls were still coming in. At the eleventh hour on October 24th, we had some cancellations, so Mary Redig and I began phoning the entire waiting list, 1 through 129. We were able to reach about 25 - seven of which were already on the way.

Clearly, these problems should not have happened and will not occur again. No one could have predicted an increase from 225 to 700. But, now that we know we can draw that many members we must be sure to have a facility large enough to handle us. Our 1991 Symposium in Texas (April 5, 6, and 7, 1991) will be such a facility.

We have reserved the Hilton Hotel Conference Center in Grapevine, TX, just two miles from the Dallas-Ft. Worth Airport. Members from the North and Central Texas chapters are paving the way for a true blow out - Texas style, of course. Then in 1992, we have made tentative plans with Dale Nish to invade Brigham Young University in Provo, UT, which also has plenty of room. Everyone will receive registration forms for the Texas event in early January by First Class mail. Also included in this package will be your membership renewal forms, election ballots for new Board positions, and the list of nominees.

The Board of Directors held its annual meeting on October 23, and 24 in Arrowmont. As required by our by-laws, we held our annual election of officers from among the seated members of the Board. The results of this election will become effective in January, 1991: Palmer Sharpless as Secretary, replacing Rus Hurt; Dick Gerard as Treasurer, replacing Ernie Conover; Bonnie Klein as Vice President, replacing Alan Lacer; and Alan Lacer as President, replacing myself. I will remain on the Board for the duration of my elected term (two years), working mainly in the areas of conference development and membership promotion.

Like all grass-roots organizations, the AAW has experienced its share of growing pains that are inevitable, even necessary in its struggle to gain a true identity. We have passed the major hurdles and have now begun to develop the mental toughness needed to survive the long haul. It is not hard to predict that the field of woodturning will grow at an astounding pace in the next decade, or that the AAW will remain an integral part of that growth. I am confident that we are now secure in the areas of administration, board management and Journal development. So this is the proper time for me to step aside and begin catching up on my personal and professional life. As a founding member and President of the AAW since 1986, my personal thanks to all who have supported me and the Board. I can honestly say that this has been one of the most rewarding periods of my life

NEW ADDRESS

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Contents

On the Cover

"Psyche and Mercury"
by Stephen Hogbin, 1990.
Wood, Print and Graphic,
10 x 23 x 16 inches.
Photograph by Author

On the Back Cover

The AAW Totems at Arrowmont School,
Gatlinburg, TN, 1990
Photograph by Cynthia Huff

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Spindle Turning

Duplicating Spindles Without a Duplicator

Paul Krautmann

In my business I am frequently called upon to duplicate existing spindles. Most of the time it is a request for only ten pieces or so. Recently, though, I completed an order for one-hundred balusters.

The issue of whether or not to purchase a duplicator presented itself early in my career and I have always resisted the temptation. But perhaps a one-hundred piece job would justify the purchase in terms of timed saved. After careful evaluation of duplicators, however, I realized that after I roughed out all the spindles using the duplicator, removed them, then rechucked the roughed-out spindles to refine and sand them, I would spend more time making the balusters with the duplicator than if I had merely turned each spindle from start to finish by hand - the "hard way."

To make hand duplication quick, effective, and competitive, make every movement count. This means implementing several general guidelines:

Keep the number of measurements to a minimum.

Make tools do double duty.

Maintain keen edges on all tools. Time spent honing and sharpening is more than offset by less sanding later.

Consider yourself the engine that drives the procedure. This sounds a little mechanical, but once an efficient procedure has been devised, all that is left is to implement it in a forthright manner.

Think! Be careful! Any kind of repetitive activity can have a numbing effect on you.

Finally, it is important to realize that the end products must look identical, not be identical.

Duplicate Turning

The procedure for hand duplication is simple. For spindles with no square portion on them, cut the blanks to length, then square to about 1/16 inch over the largest diameter. With careful centering, the blanks can be turned from square to round, thus achieving the major diameter closely enough to forgo the need for a caliper check.

Chuck the first blank, turn it from square to round and then turn the lathe off. Place the spindle to be duplicated directly on top of the blank and sight with one eye across each element (bead, cove, shoulder, etc.). Make marks at the beginning and end of each of these elements directly on the blank with a pencil.

The subject spindle is then removed and the marks on the blank are extended completely around the blank. Transfer these lines from the blank to an 1/8-inch thick by 1 1/2 inch-wide strip of wood, the "Story Stick," which should be longer than the spindle (Figure 1). The last line needed on a story stick is a reference point that will be lined up with the end of the spindle each time. After all lines are marked, incise each of them with a knife or chisel so that a pencil lead will nestle in each of the marks. This type of guide is easy to use because it is stiff enough to be placed on a tool rest with the lathe running while the pencil marks are made on the blanks.

At this point, the first blank is on the lathe, marked, and ready to turn. Adjust calipers to the proper diameters taken directly off the subject spindle. (You may need a number of calipers, depending on the complexity of the job.) Lay out the calipers in order and within easy reach. It may be necessary to number or key them to certain elements in the turning.

The only thing left to do is the actual turning and, of course, sanding. Each spindle is completed before the next blank is chucked. I do most of the turning by cutting with 1/4-inch, 3/8-inch, and 1/2-inch gouges and nearly all roughing out with a 1 1/4-inch square cut gouge. I also make great use of a diamond parting tool; I part with it, scrape with it, and also use it as a 1/8-inch skew chisel. Occasionally, however, it makes sense to custom-make specific tools.

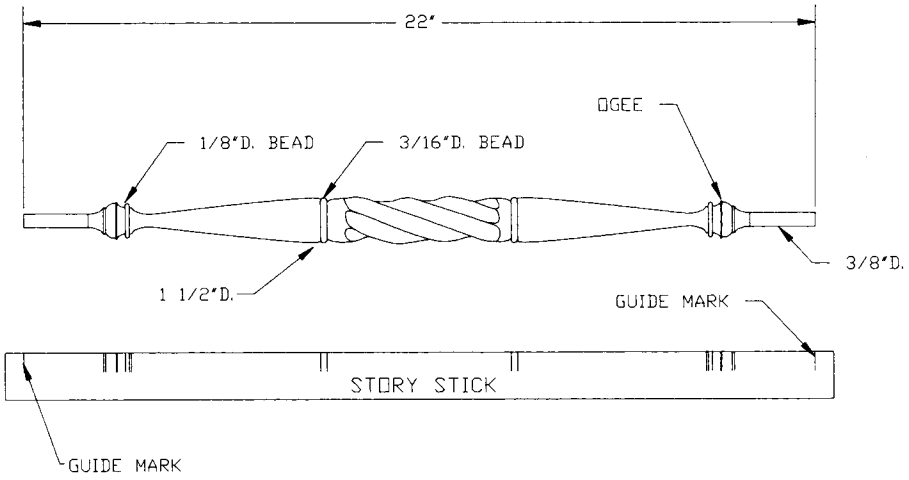
I used these guidelines when I completed the 100-baluster project of white oak. The balusters were very ornate and delicate. The center section consists of a six-inch carved spiral, both ends taper to a mere 3/8-inch diameter for several inches, and each end had an ornate bead on it. The carving was done later by another man.

I prepared the blanks for this job to a generous 1 9/16-inch square and 22 inches long. I made sure that the wood fibers closely paralleled the axis of the spindle because of the small diameter at each end, any run-out of the grain would have meant a very weak baluster.

I rounded the first blank, sighted it from the subject baluster, and made eighteen marks for the elements. I transferred the marks to my story stick for use with each subsequent blank. Since diameters were frequently repeated in each of these spindles, it was not necessary to set eighteen calipers - only four were needed. I did the rest of the turning by "eye."

For this project, I made two bead

Figure 1. "Story Stick" and the turned spindle.



Das Werk lobt den Meister.

German (The work proves the craftsman.)

cutters, one 1/8-inch diameter and the other 3/16-inch diameter. I made them from 1/4-inch square M42 high-speed steel lathe-tool blanks. I made one other tool from an old file in order to cut the shallow ogee. I made handles for the two bead cutters, but not for the ogee cutter.

Sequencing the cuts is always important in order to avoid chatter. It was especially critical with this project because of the narrow diameters. In general, I work from the center towards each end. Some experimentation and thought will help you arrive at the proper sequence for each job.

Once the right sequence and procedure have been set, keep at it! Speed and accuracy will follow. Each of these balusters took about 12 minutes to turn, sand, and lay out the spiral for the carver.

In the eight years that I have been turning professionally, I have never felt a need for a duplicator. Production turning is a great way to practice and hone your skills. You become competitive with yourself and your speed and accuracy increase dramatically. After the hum of the lathe has died, the chips have all hit the floor, and the tools are all laid away (quite warm by now!), it is all so very satisfying to see before you 10, 50, or maybe 100 spindles-all alike-and you have done it!

Paul Krautmann produces fine furniture and casework for his business, Round Oak Woodworking, in St. Louis, Missouri.

EXOTIC WOOD LETTER OPENER

Tom Sorensen

In making letter openers, I have found that by working with exotic woods I have a finished product that has a beautiful and interesting grain. These letter openers are also simple to make and require only very basic tools.

First, take the material and cut it 1 inch square by 9 1/4 inches long. Take the block and cut an "X" on the ends of the material with the band saw. Put your block in the lathe by lining up the middle of the "X" on the spur and tighten so the block is securely in place.

Using the gouge, turn the block to a diameter of 7/8 inch. Measure 5 3/4 inches from the right side of the block, and mark with a pencil line (Figure 1). This will be the length of the blade, including 1/4 inch which will need to be cut off for the finished length. From your first mark, measure 3 inches for the handle and mark with a line. This will be the finished length. Using the parting tool, make a groove at the 5 3/4-inch mark. Take it down to 1/2-inch diameter. Using the gouge, shape and detail the handle to the desired pattern (Figure 2). Turn the blade to a cone shape, 7/8 inch near the handle and 1/4 inch at the tip.

Sand the handle until smooth and buff with 0000 steel wool. Cut the tip off the handle end with the long point of the skew while it is turning at a slower speed in the lathe. Catch the turning as it falls from the lathe. Hand sand the end of the handle. Clamp a piece of plywood to the

Figure 1. Letter opener details.

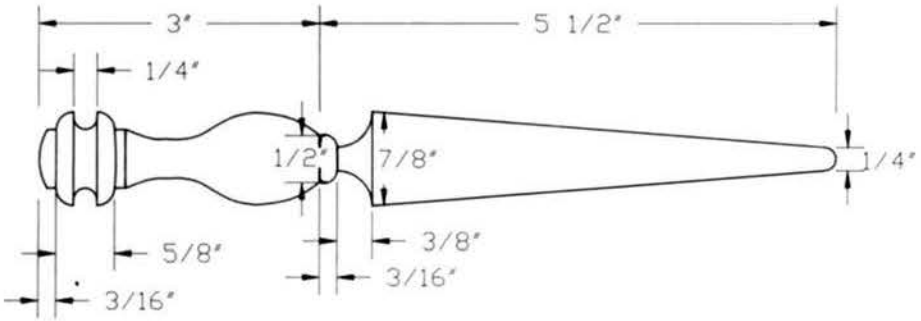


Figure 2. Blade and handle of turned letter opener.

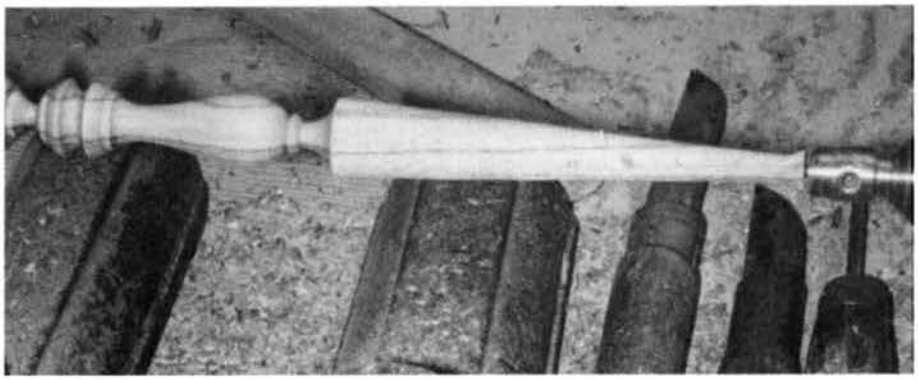
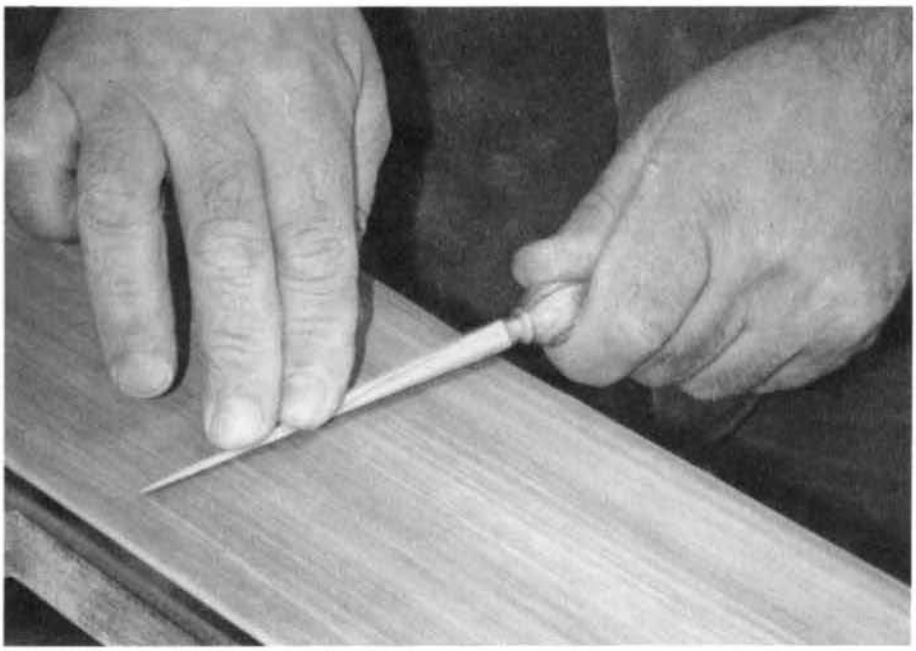


Figure 3. Shaping the blade on the belt sander.



band saw to cover the groove in the table. This protects the knife blade from falling into the groove. Hold the knife firmly with both hands and cut diagonally from the tip to the base of the handle. Cut a very small amount at the tip and taper your cut so that you have 1/4 inch when you get to the handle. Do this on both sides of the knife.

Lay the knife blade flat across the belt sander and sand flat on both sides. Make sure to keep the knife square and flat on the sander (Figure 3). With the blade still flat on the sander, begin to roll it from side to side. This will sharpen the edges and give it a graceful, curved look. Do this process on both sides, turning over as many times as needed to give the piece a symmetrical look.

Sand by hand, with the grain, to eliminate any of the rough areas. You may need to do some hand carving at the junction of the handle and blade so that they will blend nicely together. The thickness of the blade will be 3/8 inch at the handle and 1/16 inch at the tip. The blade will be thicker in the middle and rolled to a fine edge. Finish with four coats of semi-gloss acrylic spray, sanding lightly between coats.

Nothing is really work unless you would rather be doing something else.

James M. Barrie

Tom Sorensen is a production woodturner with 32 years of experience from Salt Lake City, Utah.

SPINDLE OR "CENTERS" TURNING STARTING OUT WITH THE LATHE

Russ Zimmerman

Centers turning was the first form of turning, done by mounting and rotating wood between two points or centers. These days it is reasonable to say that centers turning is more often called spindle turning and includes any turning done with the grain of the wood running parallel to the lathe shaft. The other form of turning is "Plankwise" turning in which the grain of the wood rotates at 90 to the shaft. The wood may be held between centers, supported in a chuck, or screwed to a face plate (with the screws going into end grain). Thus table legs, pepper mills, and Al Moulthrop's giant bowls are spindle turnings.

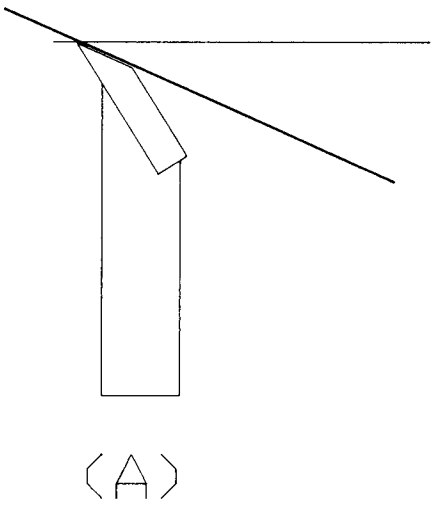
You "start" after the first time you say, "I want to make a table leg," or weed pot (or the like). What follows goes from that statement up to the point at which you have the wood in the lathe and are ready to apply the tools.

You then say, "How involved do I want to get?" There are some among us prepared to help you part with over $8000 to get started. Resist the temptation to make the investment until you have tried turning. I had a student who had bought a Sears lathe and tools 12 years ago. He had put a log in it and rounded it off a little and left it there. This year his wife asked him what he was going to do with it and he said, "Take a woodturning course." After two hours of turning he said, "This isn't as much fun as I thought it would be." Still he stayed two days and did several items. I assume he went home, removed the log and sold the lathe and tools.

Try for a while to use a friend's lathe or a lathe at a school, or take a course in woodturning. After using enough lathes you'll have a sense of what you are looking for. Decide the maximum you should spend; then the maximum you could spend. List the lathes in order of cost that fit your "should spend" and "could spend" categories (See Lathe Summary Chart; "American Woodturner," March 1990). Then look at features of each. What is desirable is not mandatory, nor must you spend to your limit. People turn on an incredible range of lathes. So consider the following.

1. The nicest lathes are quiet so they don't annoy you, and solid so they don't disturb you by shaking or vibrating. (Stability often depends on the construction of the lathe stand. A good stand can improve a lighter weight lathe.)
2. The height of the lathe can be adjusted to suit your size. For spindle turning, optimum height of the lathe spindle is the distance from the floor to your elbow when the forearm is held level with the ground.
3. The tool rest and tail stock move easily and lock solidly so that they don't slide when you put pressure on them. It is incredibly inconvenient to have to look for a wrench to move the tool rest and tail stock. It is much nicer to have a lever attached to each unit.
4. There should be a speed suited to the size wood you are turning. 2-inch to 3-inch stock can be turned on a solidly constructed lathe at 1400 to 1900 rpm.

Figure 1. Tool rest profile.
A. Good tool rest design.
B. Poor tool rest design.



Don't talk unless you can improve the silence.

Vermont Proverb

Head Stock

1. A spindle riding in adjustable roller bearings helps minimize vibration of the wood due through motor type bearings.

2. A pin that can lock the spindle in different positions (for indexing the work piece for ornamentation) is desirable. It is wonderfully convenient if that pin is solid enough to lock the spindle so that face plates and chucks can be unscrewed without looking for a wrench to hold the spindle.

3. A spindle bored with a Morse taper hole is more versatile than a spindle that is solid. Centers and accessories with a Morse taper can be had from many manufacturers. With the solid spindle your supplier of accessories is most often the manufacturer. If he does not have the range of accessories you need, you have no alternative source. For example, with some lathes, the center design is poorly suited to soft heavy pieces of wood. The center can bore its way into and then slip without rotating the wood when the flange hits the wood. Some drive centers that screw on tend to be larger than you want, and the manufacturer does not make a smaller one. So you are stuck. (Of course machinists have ways around most problems, but that can get expensive.)

4. Spindle thread sizes are not standard, so you can forget about interchangeability from one lathe to another.

5. Variable speed is nice but not essential. For spindle turning, I find that I change the speed most often when I want to drill large holes. Otherwise I turn most spindles at 1780 rpm.

Tool rest

The tool rest top should have a shape that supports your tools near the wood (Figure 1) when the tool is held with the handle down so that the tool is about 30 to 45 degrees off the horizontal. Spindle turning is supposed to be done with "cutting" techniques (bevel rubbing), with or without a slice as appropriate.

Tail Stock

1. A Morse taper in the tail stock is better than is a solid barrel, for the same reasons described in head stock section.

2. Many lathes' standard cup centers are poorly machined. Look for a polished finish. A crudely finished cup center will burn its way into the wood, even with adequate lubrication. If this burning is common, you are going to have to buy a live center. On principle, don't buy it from the same people that make a poor cup center.

3. It is convenient to have the same size Morse taper in the tail stock as in the head stock. Then your drill-chuck can easily be changed from head stock to tail stock as desired, without putting on and taking off a Morse taper sleeve.

4. Some wheels are inadequate for moving the barrel of the tail stock; consequently, it is very difficult to drill holes on the lathe.

5. In addition to the Morse taper, the tail stock may be bored all the way through. Then you can do long-hole boring right through the tail stock. (Good for floor lamps.) With a solid tail stock you need an additional hollow boring guide support, and the tail stock has to be removed.

6. Those lathes with just the Morse taper, eject the centers when the barrel is screwed in all the way. If the barrel is hollow you use a knockout bar.

Conclusion

This was written for those that are just starting out. Those spindle turners that already own a lathe know what they do and do not like about it, and they are a good source of information for you. Since they may even be thinking about the next lathe they will own, you might ask them what that one will be. By comparison, you can find out what they do not like about the one they have. But no lathe has all the features you would like, so you will end in a compromise with yourself.

Build yourself a solid bench. Buy yourself a 3/4-inch roughing-out gouge, a 1/2-inch skew chisel, a 3/8-inch spindle gouge ground to a fingernail, and a parting tool, and you can start.

Peter Child said, "The nice thing about turning is that all you need is a lathe and a few tools and you are ready to go." I laughed. It is possible.

Russ Zimmerman teaches woodturning and sells tools, videos and lathes through his House of Woodturning, RFD 3, Box 242, Putney, VT 05346

TURN A BEDWARMER WALL HANGING

Lee Carter and James Parnell

Many people are on the lookout for interesting, yet unique, decorating items for their homes or offices. This replica of an old fashioned bedwarmer could be just the "one of a kind" turning project for which they have been looking (Figure 1). This unusual turning project can be made for less than 20 dollars, and yet has a resale value of 50 dollars or more.

The first step in fabricating this attractive wall hanging is to obtain the needed supplies, all of which are relatively inexpensive.

Materials

- 1 - standard size "metal" dust pan
- 1 - aluminum, 1 1/4-inch deep cake pan, 9 to 10 inches in diameter
- 1 - Metal embossed, brass or ceramic shallow plate, approximately 12 inches in diameter
- 2 - pop rivets
- 1 - 8 x 3/4-inch round head wood screw
- 1 - medium size screw ring
- miscellaneous dried flowers to accent the wall decoration

Turning Process

A small, dried branch of Colorado Aspen was selected to turn the handle of the bedwarmer in Figure 1. Aspen is rather soft, easy to turn, and has many shades of reds and browns which makes it a very colorful wood for turning.

Mount the stock in the wood lathe between centers. Using a roughing gouge, turn the stock to the largest desired diameter needed, while maintaining a cylinder (Figure 2). Due to the wide variety of designs one can use for making a spindle turning, a drawing is not included with this article. The largest and smallest diameters used on this bedwarmer handle are 1 3/4-inch and 3/4-inch, respectively.

After turning the stock to the largest desired diameter, proceed to shape the handle to desired contours (Figure 3). A 3/8-inch spindle gouge was used for making the majority of coves, beads, and tapers of the handle (Figure 4).

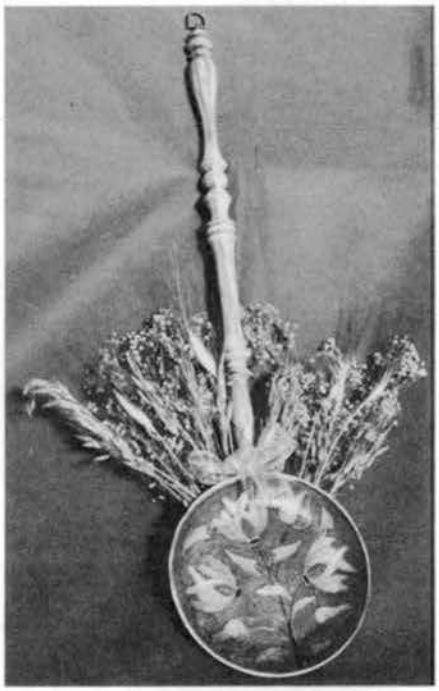
Proceed in shaping the handle by making a series of shearing cuts, starting near the tail stock and working toward the head stock. A taper should be cut on the bottom portion of the handle so it fits into the metal handle of the dust pan, which will be used to fasten the handle to the bedwarmer. Once the handle has taken the desired rough shape, resharpen the 3/8-inch gouge, and make very fine shearing cuts on all surfaces of the handle which are concave or convex. This will produce a surface that requires very little sanding. Final cuts on the various tapered sections of the handle were made with a sharp 1-inch skew chisel (Figure 5).

The sanding operation can be reduced to a minimum by using sharp tools, making shearing cuts, and employing proper lathe speed (1600 rpms). Note that when turning a spindle of this length between centers is easy to develop chatter between the wood and tool. Eliminate this hazard by reducing the speed of the lathe to under 1000 rpms; use very sharp tools; and during the turning process, support the back side of the spindle with your left hand, as illustrated in Figure 4.

Once the bedwarmer handle has been turned to its final shape, proceed with the sanding operation. The lathe speed should be reduced to between 1000-1200 rpms for sanding. Hold the abrasive on the bottom side of the handle while sanding to prevent the abrasive from becoming wrapped around the spindle.

Start sanding with 150-grit sandpaper, continue sanding with consecutively finer grits of abrasive and finish sanding with 320-grit sandpaper. It is important to remember to move the abrasive continually while the handle is rotating between centers to avoid leaving sanding marks. Use abrasive sheets which have been torn into 1/2-inch strips. This allows one to sand all areas of the spindle and still maintain sharp detail on all parts of the bedwarmer handle. The sanding process is complete when no sanding marks can be found on the turned handle, and it feels almost as smooth as glass.

Figure 1. Completed bedwarmer wall hanging.



Finishing

A quick and easy finish for spindle turnings requires only a few simple steps.

1. Apply a liberal coat of semi-gloss Deft lacquer with a brush. Allow this base coat to dry about 20 minutes, and then apply a second coat of Deft.
2. Allow the second coat to dry approximately two hours, and

Figure 2. Turning branch to a cylinder.

Figure 3. Lay lines for beads, coves and tapered sections of the spindle turning.

Figure 4. Making final cuts on spindle detail with $^{1}/_{8}$-inch spindle gauge.

then mount the spindle turning back on the lathe. Using a piece of 0000 steel wool, lightly buff the entire spindle while the lathe is running at about 800 rpms.

3. Using a spray can of semi-gloss Deft, spray the spindle handle with a light coat of lacquer, and allow to dry properly.
4. Repeat Step 3 as many times as necessary until the preferred lustre is achieved. Generally, three spray coats are required for a good finish. It is recommended to lightly buff with 000 steel wool between each spray coat. Do not buff the final spray coat if a semi-high luster is desired for a finish. If a low sheen is desired, buff the final spray coat.

Figure 5. Taking final shearing cut on tapered sections of turning.

Figure 6. Final assembly of decorative plate, cake pan and dust pan handle.

Assembly

Using a pair of tin snips, old scissors, or aircraft snips, cut a 5 1/2-inch opening with a slight radius on the cake pan as shown in Figure 6. Glue the cake pan to the back side of the shallow, decorative plate by gluing with a versatile, flexible hot glue stick designed for a variety of materials including wood, metal, and plastic. Place a bead of glue next to the rim of the pan and the back of the plate while holding the cake pan in the desired position. This method of gluing is effective for forming the container that will hold the dried flower arrangement in the bedwarmer.

Next, remove the metal handle from the dust pan by drilling out the pop rivets which hold the handle to the dust pan. Place the handle in the center of the cut-out portion of the pan, making sure that the top of rolled metal rim of the dust pan handle is below the edge of the decorative plate. Drill two 1/8-inch holes through the cake pan and metal dust pan handle, then insert and set pop rivets in each hole.

Once the metal dust pan handle is secured to the back of the bedwarmer, the finished turned handle can be inserted into the dust pan handle and fastened securely in place with a #8 3/4-inch round-headed wood screw. It may be desirable to place a small washer between the head of the screw and metal handle to insure a secure fit.

A small hole can be drilled in the top of the handle, which will eliminate any splitting of the handle when the medium size screw ring is installed for hanging.

The final step to completing the wall decoration is to arrange a variety of plastic, silk, or dried flowers in the pocket formed between the cake pan and decorative dish. Ribbons and other decorative items could also be used in creating this unusual wall decoration. Flower arrangements could, of course, be changed from time to time as the seasons of the year change.

Lee Carter and James Parnell are Associate Professors at Colorado State University, Department of Industrial Sciences, Fort Collins, CO 80523

FIREWOOD HANDLES

Andrew Barnum

I learned to use the skew by making firewood tool handles and the rejects were burned in our pot-bellied stove. (I did not end up with many handles, but at least we were warm that winter!) I continued practicing, and gradually handlemaking and using the skew became a little easier for me. Here is a technique I used that may also help you.

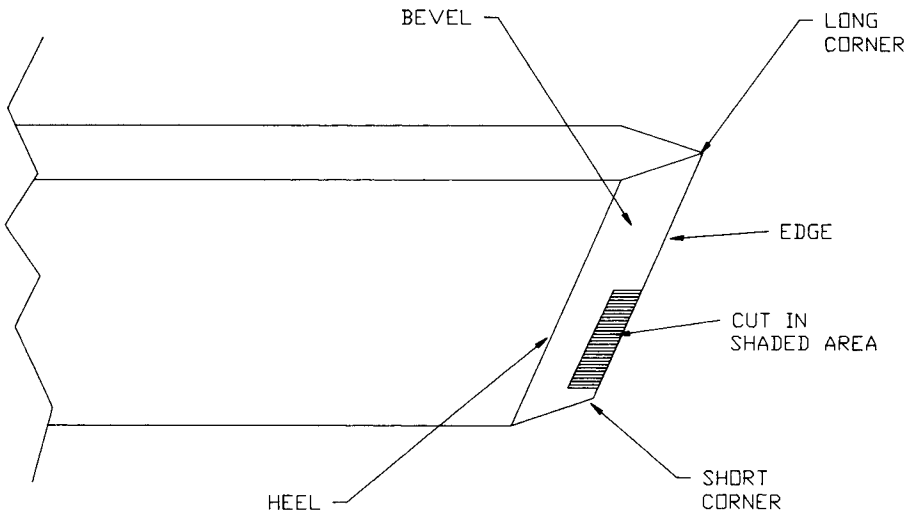
Drilling a straight hole for the tool can be the hardest part of making a handle, even for experienced turners. A way to avoid the problem is to drill before turning, and use that bored hole as your centerline. Fit a Jacobs chuck and the proper drill in the head stock; then, mount your blank between the drill and tail center. To bore, crank the handwheel with your right hand, and hold the work in your left hand to keep it from spinning. After boring, shut off the lathe with the blank still on the drill. Retract the tail center slightly, and the wood will shift to reveal the true center line. Mark this point. A veteran turner could now turn the handle by using the drill as a drive center; but it is safer to reverse the material, use a standard four prong drive, and a 60 degree live center in the bored hole.

Over 90% of the turning could be done with a gouge, but doing that would also eliminate 90% of the practice with the skew. So, knock off the corners with your gouge and try to finish only with the skew.

I used to make the mistake of placing the edge immediately on the wood, instead of starting with the heel and gradually tipping the edge into the cutting position (Figure 1). ALWAYS KEEP THE HEEL RUBBING, and try practicing without cutting at all.

Traditionally, the skew is used with the long point up; and cutting is done with the lower half of the edge, just above the short point. In cutting, the handle follows the edge, and both points are kept out of the wood to reduce the chance of catches. The heel acts as a fulcrum to pivot the edge into or out of the wood. Practice on firewood, turn the spindle down to nothing, and then try again on a new piece of wood. The practice is more valuable than the wood. Do not forget—turn from a large diameter to a small diameter, and keep the corners out of the cut, at least in the beginning. In time you will discover these rules are really just beginners' guidelines.

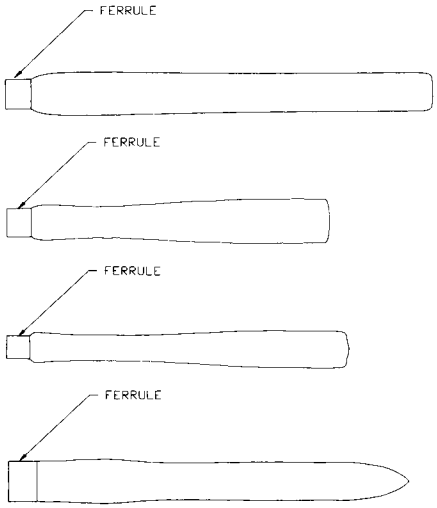
Figure 1. Profile of skew chisel.



When you are ready to turn the actual handle, use calipers, wrenches, or plywood gauges to transfer measurements from your favorite handle (Figure 2). Most people use brass, copper tubing or ferrules. Leave the wood slightly oversized where the ferrule fits, and try this trick. Heat a sand-filled pot on a hot plate or stove. The hot sand will dry and shrink the wood and expand the brass ferrule. After an hour or so, remove the two pieces and tap or press them together. With luck, they will never come apart.

Firewood is a great material with which to experiment. It has negligible value; and you can take great design risks and not worry about destroying something precious. Apple, ash, and maple tool handles may not sound glamourous, but I have seen some that are almost works of art. Chances are you will use and treasure your handle for many years to come.

Figure 2. Tool handle designs; the bottom is the author's favorite style.



Andrew Barnum is a professional turner in Carmel, NY and president of the Nutmeg Woodturners League

SPINDLE TURNING A CANDLESTICK HOLDER

Nicholas Steill

Spindle turning is a method of shaping wood between the centers of a lathe. A spur center is placed in the spindle of the head stock; and a dead center, called a cup or point center, is placed in the sleeve of the tail stock. Some turners prefer using a live center in the tail stock, as it allows the center to rotate with the wood, thus eliminating the need to lubricate the cup or point center.

The following procedures can be used to successfully complete a candlestick holder (Figure 1). This is an excellent project for a beginner as the elements of the candlestick holder are not complex.

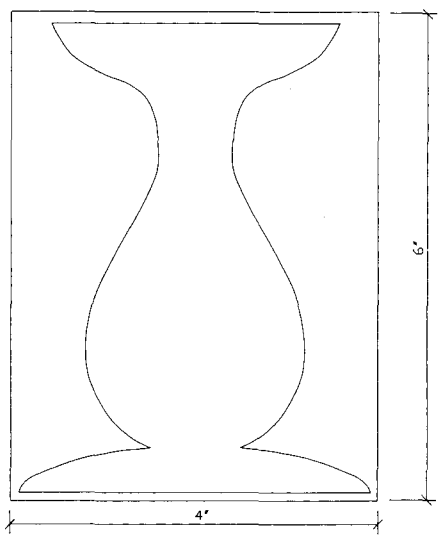
Select a piece of wood about 4 inches square and 6 inches long. Locate the center of one end by placing the wood in a V-block and make two perpendicular diagonal kerf cuts on the band saw. Drive the spur center into the turning blank with a wooden or plastic mallet. Never use a metal hammer as the spur center will eventually mushroom out and not fit into the spindle. The spur center should turn the wood, not strip itself in the end. For the other end of the turning blank, draw diagonal lines to locate the center, then tap the tail stock center into the wood.

Seat the spur center into the head stock spindle and the tail stock center into the tail stock. Place the turning blank between the centers and bring the tail stock towards the head stock. Make sure that the tail stock positions the wood firmly between centers and lock the tail stock into position.

Check the lathe speed. A good rule to remember is that the greater the diameter of the wood you are turning, the slower the lathe speed you should use. For wood this size, start at a slow speed, about 800 rpms.

Place the tool rest at the height of

Figure 1. Candlestick holder.



the spur center point and position it as close as possible to the wood, yet far enough away so that the tool sets properly on the tool rest. The flat part of the tool, not the bevel, should rest on the tool rest. Use the hand wheel to turn the wood around once to make sure the wood does not hit the tool rest.

After putting on goggles and a dust mask, turn on the lathe. For a beginner, I suggest using the scraping method of turning, rather than attempting the cutting method. For the scraping method, the tool remains horizontal at all times. Select a gouge or round-nose scraping tool and rough out the wood until it is round, taking small cuts. Reset the distance between the wood and the tool rest when the distance becomes greater than 3/4 inch.

Now that the turning blank is roughed out, increase your lathe speed; however, until you are comfortable with a greater speed, keep the rpms around 1500. Next, turn the top and bottom of the candlestick with a parting tool, making a slightly concave cut.

The indented bottom surface will keep the candle stick from rocking on a flat surface, and a slightly concave top will allow a large candle to sit firmly on its surface.

At this point, the wood will be about 3 5/8 inches in diameter and about 5 1/2 inches long. Use a parting tool to cut to the diameters of the smaller sections of the candle holder and measure the diameters with calipers. Now use a round-nosed scraper and a skew to remove excess wood between the parting tool cuts. Shape each section to flow smoothly into the next section.

For the final finish cut, sharpen and hone the lathe tools. This step will decrease sanding time, and also leave the tools sharp for the next project. To get the best surface possible, take light cuts.

You are now ready for sanding, but be sure to remove the tool rest. You may be able to start with 100-grit sandpaper; however, 80-grit will most likely be necessary. Use progressively finer grits until you are satisfied with the surface of the candle holder.

Before removing the candlestick from the lathe, turn the top and bottom portion near the centers as small as possible. Remove the candlestick from the lathe, then chisel of the small remaining portion of wood on the top and bottom.

Finish with your favorite finish.

Nicholas Steill teaches at Columbia City Joint High School, Columbia City, IN

Lunar Legacy

Peter J. Hutchinson

When it is dark enough you can see the stars.

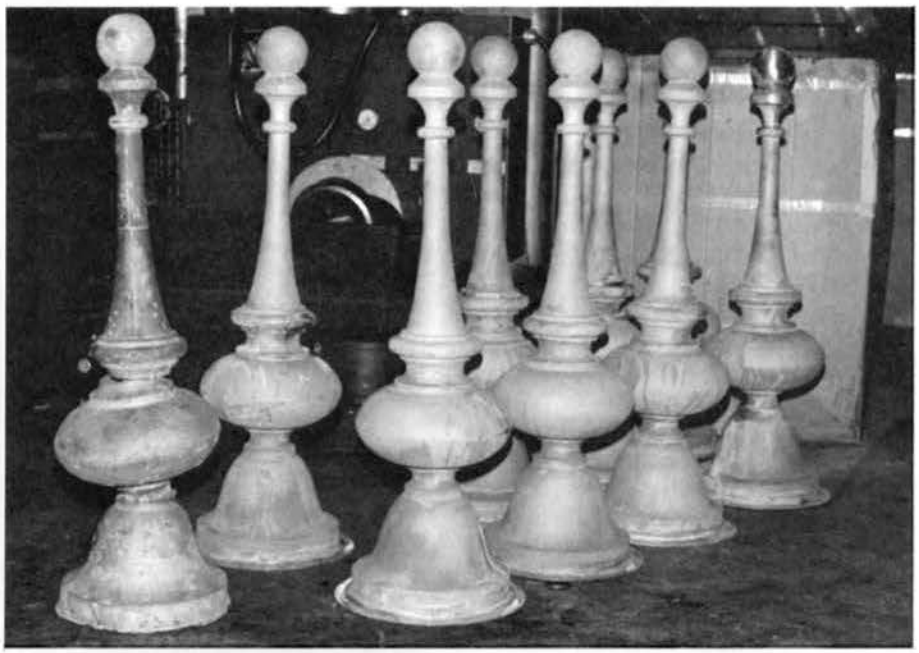
Ralph Waldo Emerson

Dale Harrison, who runs a metal spinning business, E. H. Schwab Co., Inc. in Pittsburgh, PA, ponders the status of a camera lens cover he has made. Several years ago Westinghouse contracted with Harrison to manufacture a lens cover for the first camera to go to the moon. "Once it landed and the dust settled the lens cover was popped off and it remains on the moon to this day," Harrison laments. Some day archaeologists may find the lens cover on the moon and postulate its function and origin.

Actually, metal spinning is an old craft that has survived and is thriving in the Twenty-first Century. Although, Paul Revere was a silversmith, technically he was a metal spinner who spun the Revere bowls and goblets. Today metal spinners do job work for the aerospace, aircraft, electric, steel, refractory, cookware, and music industries. However, they also do specialty work such as parts for old cars, decorative items, and technically specialized parts.

When Harrison bought the business from the two Schwab brothers in 1968, it was already 40 years old. "In those days, they made mostly lighting fixtures and parts for Westinghouse," he recalled. Since then, he has removed the old belt-driven machinery and has installed six handlathes, six automatic CNC (Computer Numerical Control) lathes and three machine lathes.

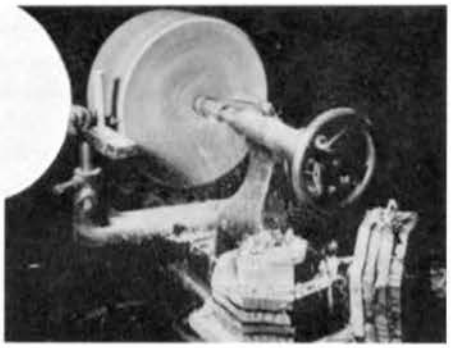
Today, Harrison enjoys the one-off specialty work such as finials for the restoration of the Frick House roof and for the Danny Thomas' hospital in St. Judes which constitute a small but enjoyable part of his business. Harrison with his crew of ten, recreate, by hand-turning specially glued-up blocks of Wisconsinan hard-rock maple, fifteen different wooden forms for just one finial design. The wooden parts are chucked onto a lathe and the copper sheet is trapped between the live center and the rotating block. An adhesive lubricant is applied to the spinning metal and the metal is forced to flow smoothly over the form with a blunt tool. The fifteen finial forms are welded together and sandblasted, then epoxy-coated.



Three-foot tall copper church finials awaiting final polishing step. Prototype is on left.

Over one year ago, the company was contracted to spin a bottle cap for an outdoor advertisement. The bottle cap was three feet in diameter. Another time, Alcoa asked them to make a five-foot frying pan with lid for a promotional tour. Primarily Harrison employs aluminum, copper, brass, mild steel, and stainless steel; however, he has used nickel, titanium and other exotic metals. Also, Crucible has Harrison spin complex containers for their HIP process. The HIP process is the technique of filling the metal-spun void with powdered metal and transforming it, in a vacuum, into a solid high-density part. The spun-metal casing is cut away from the solid and discarded, yielding a better product than can be achieved from a conventional casting. Harrison does not appear upset that his hard work is discarded after use; after all his best work is on the moon.

The Mechanics of Metal Spinning



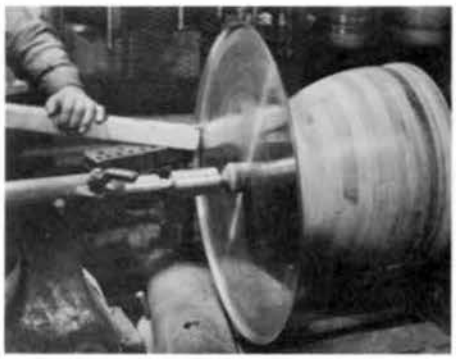
1 A wood or metal form is turned to the exact shape and dimensions of the final spinning.

HAND OR MANUAL SPINNING

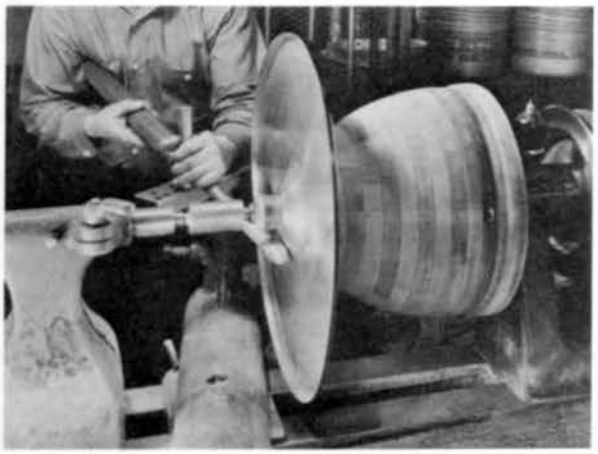
Hand or manual spinning is the simplest form of metal spinning. In this process, the metal is formed by hand pressure on a spinning tool or roller.

2 A flat metal disc, the blank, is clamped into position in front of the form. Both revolve at a high rate of speed.

3 Adhesive lubricants, applied to the metals, cling to them at high speeds and prevent binding. Most commonly used is yellow soap.



4 The disc edge is bent to insure rigidity and prevent the metal from buckling. On heavy gauges, the edge is spun over on a preliminary form or block.



5 The craftsman, called a spinner, exerts pressure on the disc with a long, blunt tool.

6 This tool is deftly controlled with arm, hands and body. It forces the metal to flow snugly over the form.

Courtesy of the American Metal Stamping Association, Richmond Heights, Ohio.

BUILDING THE ANTIQUES OF TOMORROW

Thomas Kramer

From the point of view of a third generation antique dealer and importer of principally English and European country and formal furniture, I arrived at the conclusion that the diminishing supply of quality antique furniture made it necessary to explore new avenues. My background was more of furniture design and function than that of technical comprehension of furniture manufacturing.

At that junction, I became aware of the availability of components related to antique restoration and furniture reproductions. Soon afterwards, we began marketing the products throughout the United States, available by catalogue. The idea of shipping legs, knobs, and feet nationwide soon proved to be an effective means of expanding our territory beyond the Midwest.

The further depletion of antiques in Europe forced us to fill our partially empty containers with English reproduction pine country furniture. I soon realized the indifference of our supplier towards quality and detail. Shortly thereafter, I came to the conclusion that it was time to address the notion of manufacturing under our own roof.

The search for a domestic turning mill was our next goal, after setting up a plant to reproduce pine and hardwood English and American style country furniture. To our surprise, the first shipment of turnings was a major breakthrough. The precision of the American components no longer made it necessary for us to spend inordinate amounts of time preparing the turnings to make the furniture.

A second catalogue focusing on our new furniture line was published in hopes that a response would result from our national advertising campaign. Our enthusiasm increased with the many requests. Fortunately, a steady number of orders arrived which provided the opportunity to better understand furniture building.

Only an optimist can win in playing the game of business.

J. P. Morgan

The next few years brought the need to refine the design and function of our furniture. Custom orders, which deviated from catalog illustrations, provided further comprehension of clients tastes. Design alone is only part of a completed piece, next we addressed finishes. Different finishes, whether it be stain or paint colors, enhance the aesthetic pleasure of a good design.

Today, with the beginning of our fourth year of operation, we continue to add to our product line to better serve the demands of our discerning clientele. In addition to furniture manufacturing, we maintain our market relationship, supplying the secondary market with turnings. This also includes our stock assortment plus custom designs.

Thomas Kramer is a furniture and spindle manufacturer from Columbus, IN.

THE ARROWMONT SYMPOSIUM

Alan Lacer

The Arrowmont Symposium was the smoothest running Symposium yet, especially since it had some difficult times getting started (changes in administration and a demand to attend that far exceeded all expectations).

The Unity Totem project turned out far better than anyone's wildest dreams (see back cover photograph). In the end, 24 local chapters participated with some of the most innovative and exciting turning I have ever encountered. The pieces ranged from simple forms from a single block, to pieces which had as many as 40 to 50 separate turnings attached to a central component.

Several weeks before the Symposium, two pipe bases were set into two four-foot deep holes with a concrete slab to support the totems. On a cold and rainy first day of the Symposium, the segments were slipped over the pipe that passed through all segments. It went up effortlessly with the help of the Arrowmont staff, as well as several AAW members. Thanks to everyone who had a part in planning, making, and assembling the project. The finished totems had the appearance of growing directly from the woods surrounding Arrowmont. The real excitement will be watching the weathering process take effect over the next few years.

A central part of any Symposium is the demonstrations. As the size of the conference grew, so did the number of sessions. In the end there were over 50 demonstrations, panel discussions, open meetings, or informal critiques. Some of the subjects consisted of hollow vessels, carving, chatter work, design, production techniques, multiple axis turning, applying to galleries, taking slides, spindle turning, the teaching of woodturning, and a potter's perspective of vessel form. The demonstrators included Dale Nish, John Jordan, Tom Neff, Giles Gilson, Stoney Lamar, James Johnson, Steve Loar, Frank Cummings, David Ellsworth, Bonnie Klein, Tommy Sorenson, Paul Pitts, and many other fine demonstrators. We also witnessed living history with Jay Weber and Clay Compton, two turners with many, many years of experience on the lathe.

If your interest in attending a conference was to see examples of turning, you had ample opportunities. There were three separate exhibits from which to choose. As a tribute to five years ago, there was the juried exhibition, "Vision and Concept II," which included 78 pieces from 67 turners. This was one of but a few national shows that contained all juried pieces. There were no invited turners in this exhibit. The show had its official opening on the first evening of the Symposium and was a focal point of interest throughout the conference. This exhibition will run until December 8, 1990 in the Arrowmont Gallery.

All demonstrators were asked to bring examples of their work, and these comprised a second exhibition of the conference. As always, the Instant Gallery was overwhelming. The fine work brought by both familiar and "unknown" turners was a delight to behold. On the final day of the conference, Steve Loar, Frank Cummings, and David Ellsworth conducted an informal critique of the Instant Gallery.

Another feature was the trade show of woodturning products, where a dozen businesses and individuals had something to sell. If you were looking to buy a lathe, turning tools, videos, books, exotic wood blanks or just thick pieces of domestic wood, this was the place to visit.

At every symposium, we hold an auction to benefit the AAW Educational Fund. This year, we tried something a little different. We held a "silent auction" for pieces of wood that continued for most of the conference, plus we had the auction following the banquet dinner. The banquet auction was presided over by our renowned auctioneer Bob Fleming from West Virginia who managed to extract over 7,000 dollars from those in attendance. In this auction, the most numerous items were well-turned pieces from demonstrators and AAW members. Also, several businesses donated products or very special pieces of wood to benefit the fund. There were also other pieces of wood, t-shirts from the early days of the AAW, and a couple of the first Journals signed by all AAW Board members. We thank everyone who donated items to either auction and to the many who purchased items.

We ended the activities with a blow-out picnic and dance in the national park. Even though we all had a full and tiring week, we ended on a good note.

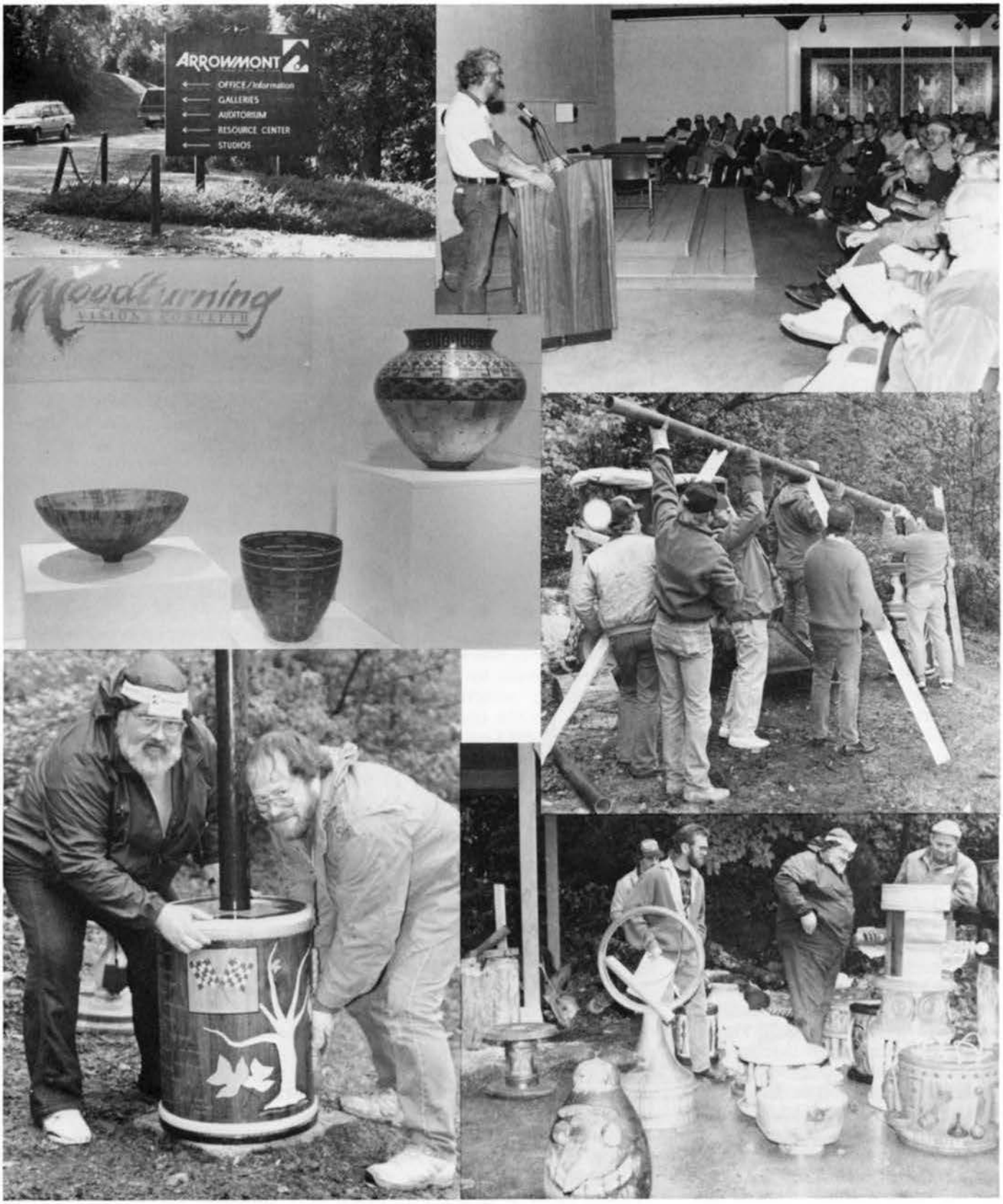
Why go to a conference? It is certainly not for hard and fast skill building, but rather to immerse yourself in woodturning by watching and listening, through discussions (sometimes around the clock), by seeing the works of others or having other turners comment upon our work, to see the tools and woods that are often only experienced in a catalog, and to find old friends and maybe make some new ones (who understand your passion for turning when those around you may not). For variety and breadth of activities, this Symposium must rank at the very top in the short history of the AAW.

This Symposium is now history; and because of the growth of the AAW, we will probably not be able to return to Arrowmont for a national conference. Once again, we apologize to all of you who wished to attend but were unable because of the space limitations. For the future, we are committed to sites which will accommodate very large groups, and we can expand the activities to allow all who wish to attend.

The next symposium is only a few months away and will be held in Texas the early part of April. Hope to see many of your there and be prepared for another blowout event.

Arrowmont Symposium:

A photo essay by
Nancy Gerard



Announcing the New Editor-in-Chief

Betty Scarpino

I am delighted to be selected as the next Editor-in-Chief of "American Woodturner" and will do my best to follow Pete Hutchinson's lead in improving the quality of the Journal. Achieving this goal will require the help of all AAW members. Some of you will be willing to submit articles or brief "turning tips," many can help by offering suggestions for articles, and more advanced turners will occasionally be called upon to read Journal submissions for content and accuracy. Those who have constructive criticism will be listened to. Most of all, everyone can help create enthusiasm about woodturning by reading the Journal and discussing various articles with fellow turners.

I would like to share with you a brief sketch of my background in editing and woodturning. For the past three years I worked as an editorial assistant for the "Journal of the Early Republic," a scholarly history journal. There I learned the mechanics of editing a journal. My woodworking background started some fifteen years ago when I enrolled, just for fun, in a beginning woodworking class at the University of Missouri. I fell in love with woodworking and decided to pursue it as a career. I obtained a degree in industrial arts, worked as woodshop supervisor and safety instructor for a university craft studio, and helped start a cooperative craft store where I marketed my woodworking. Most recently (the last seven years) I started to specialize in woodturning. I am currently president of the Central Indiana Chapter of AAW as well as an active member of the International Wood Collectors Society. In August of this year, I resigned my part-time position with the "Journal of the Early Republic" and am finally able to devote all of my working time to woodturning-related activities.

An expert in all areas of woodturning I am not. Praise me when I do something well, and constructively criticize me when I fall short. I will do my best to answer every letter I receive and to acknowledge the receipt of each submission to the journal. Together, with the help of those who have the desire and time to contribute to the Journal, we can keep improving the quality of the "American Woodturner."

The new address for the editor of the "American Woodturner" is 5613 Ralston, Indianapolis, Indiana, 46220

AAW Scholarships

The Scholarship Committee is still working out some new guidelines for the 1991 scholarships. Between forest fires in California and traveling, it has been difficult to get the committee together. Be patient and look for news in the March Journal.

The recipients of AAW scholarships for 1990 are:

Michael Lee		Bob Kopec
Bayard Blessing	Michael Laverriere	David Sterling
Joel Pensley	Shelly Leon Croyle	B. F. Porterfield
Dana Alder		Ron Markley

WOOD AND TOOL EXCHANGE

Hapfo AP5000ME Lathe. Similar to one pictured in AAW March, 1990, pg. 11, except motor driven. For more information call or write George Carter, 753 Grove Park Boulevard, Jacksonville, FL 32216, 904/721-7353.

FACEPLATES AND TOOLRESTS at reasonable prices. Send request for pricelist to: HWB ENTERPRISES INC.; 25275 SE Hoffmeister; Boring, OR 97009.

"Went out of Business." Black Walnut, air dried 6 years, ends waxed, 400 pcs 2 3/4" square x 13 to 18" long: $800. Mahogany, rough turned 3" diameter x 11 3/4" long; 116 pcs: $180. Vega duplicator 1D; never used: $350. Ceramic Kiln, Duncan "The Teacher" used 3 times with extras, cost $1600: $450. Expo Systems backdrop for indoor shows used only 4 times, cost $2900: $1900. Phone: John Domster (518) 251-5682.

For Sale: Thompson 36" wood lathe, featured in October 1990 "Fine Woodworking" issue #84, used 160 hrs, lathe sold with all standard equipment, plus large amount of special equipment for $10,000. Call Bill Johnson of Spun Alchemy (619) 561-7366

LETTERS TO THE EDITOR

Dear Editor:

For the past several months, I have suffered with an elbow problem, which may or may not be the same thing as the article in the Journal. I was barely keeping it under control with caster oil and heat. (The oil on the joint wrapped in plastic wrap and the heating pad over that for about 45 minutes everyday.)

When I attended the May Woodturner's Symposium at BYU in Utah, I talked to Mike Shuler, who had experienced the same problem. After chiropractic treatments and being told it was caused by vibration, Mike switched to a shot loaded gouge by Glaser (sold by Dale Nish). His problem quickly cleared up.

Based on Mike's experience, when I returned home, I drilled 3/4 by 3 1/2-inch holes in the base of my tools and filled them with lead bird shot. This was much cheaper than replacing all my tools. Within two weeks, my problem was gone!

I hope this is some help.

Russell R. Smith

Dear Editor:

. . . I think you have done a bang-up job on the Journal. You have met the objective of covering the amateur, professional, and artistic turner. I'm an intermediate amateur turner, and I appreciate the projects and techniques you publish at that level (especially the one on making pens. I've made about a half-dozen so far, with the Journal propped up over my lathe). However, I am also interested in what the "big boys" are doing. If I don't see things that are way over my head, what do I have to shoot for? I like to hear about the professional turners as well. Is there any possibility *I* could make a profit off my lathe?

. . .There are always gripers that want instant perfection (their definition) that leaves no room for growth. As a new organization and a new publication, you (they? we?) have had to do some growing. I think you have grown into a fine publication and organization that is well rounded and meeting our needs. Well done!

Robert F. Brown
Bellevue, WA

Dear Editor:

With the September issue sent to me I have decided to renew my membership in the AAW. Until now I have had my doubts as to exactly what the AAW had to offer me as a "serious, enthusiastic, amateur woodturner." I can see that there are several areas which are of interest to me, specifically the articles dealing with the "cutting edge" technology, as I like to know just what the latest ideas are, even if I never make use of them. . . I can see the improvements in the Journal, it now fairly resembles a magazine. On a [low] budget. . .with a circulation of only 3,000, it is amazing you have been able to get as far as you have. "Atta-Boy" and a couple of pats on the back are deserved. . .the September issue of the Journal [is] the best one yet. . .It has something of interest to a wide variety of readers with one small minuscule thing in common-turning.

I am including $20 towards the education fund, five chances on that lathe and the money going to help educate someone in the "Art" of turning is well worth it.

It amazes me to read about groups of turners who have gotten into a rut so deep that they become tunnelized. This Journal could not survive catering only to one specific element of the turning aspect of woodworking. Imagine reading article after article about the latest cutting method, or lathe comparisons. It would be boring. . . The variety now coming into the Journal is most welcome. Most of us love to turn, but we make a table or build a shed once in a while, too. Personally, I like to see what other people turn, how they do it, and what wood they use. I like to try some of their ideas and add a few of my own touches, copy other designs, and work with exotics. Give each area, professionals, amateurs, and artists, a little space and we all will benefit.

Lawrence F. Kneip
Columbia Township, Ohio

Dear Editor:

The last several issues of the Journal have carried letters from discontented members of AAW. Do we belong to the same organization?

The American Association of Woodturners to which I belong put me in touch with Palmer Sharpless who help us organize a local chapter. In the short time we have been in existence, I have learned to make tools; photograph my own work; improve the performance of my lathe; control dust and protect my lungs and hearing; put on a gallery show; improve the quality of my work, both in tool control and finishing techniques; and on top of all this, have been provided the opportunity to spend turning weekends with Al Stirt and Del Stubbs.

The people I have met through AAW are the most friendly and helpful of any group with whom I have ever been associated. All are quite supportive of each other and more than willing to share their knowledge and experience.

All this for $20! It is the best buy in my town!

Charles Brown
Mountaineer Woodturners

Dear Editor:

I was recently given a copy of the December, 1989 issue of "American Woodturner." I thoroughly enjoyed reading it, but was shocked to see photographs of woodturners demonstrating without wearing safety glasses or face shields.

I feel that you have an obligation to your readers to promote good safety practices by selecting photographs that illustrate good practices. Your legal counsel may even advise you that you could become involved in a law suit because a reader saw that it was what others were doing in your publication.

Please, take the initiative to only use photographs featuring good safety practices before someone is seriously injured by emulating what they have seen in your publication.

Sue Hakala
Mesa, AZ

Dear Editor:

I don't understand! When everybody in the AAW is giving of themselves, still the complaints come. If every one of the members would, myself included, give of themselves - as a few have done -then they might have a reason to complain.

There has not been an issued of the "American Woodturner" that I have not learned something. This is more than I can say of some other publications that I have read.

To the Board of Directors, past and present, and all Editors and contributors, THANKS FOR A JOB WELL DONE!

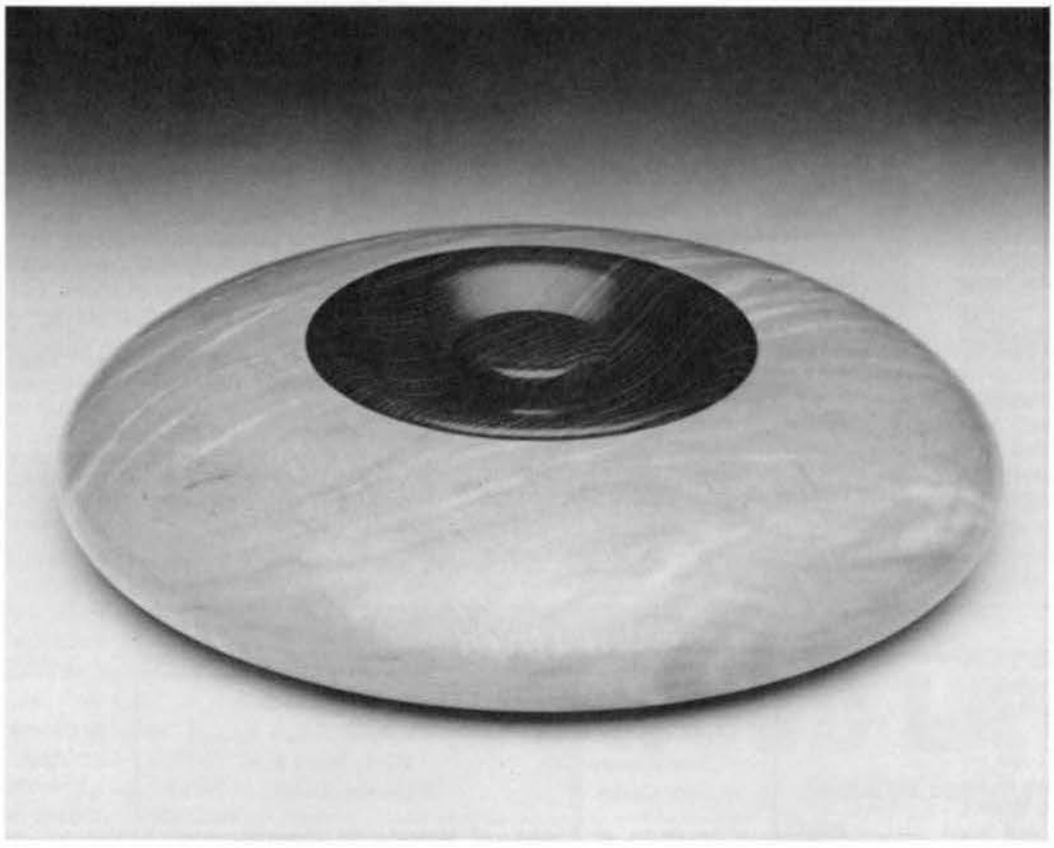
Tom Strickland
Lancaster, SC

A Focus on HIDDEN TALENT

Curated by Albert LeCoff

Photo: Sheryl Smith-Roggers

Roger A. Felps
Six-Sided Nut Bowl (1990)
Mesquite
H. 2½ " x Diam. 6"



William H. Livingston/ Brenda Livingston
Lidded Vessel (1990)
Maple and cocobolo
H. 1¾" x Diam. 10"

Roger A. Felps, Route 1, Box 391-B, Blanco, TX 78606
William H. Livingston/Brenda Livingston, Livingston's Wood Creations, 12309 E. Los Altos, Clovis, CA 93612

This page is dedicated to those who make objects from the lathe. Photos are selected from the Wood Turning Center's archives. If you feel you are a *Hidden Talent*, send your 5" x 7" glossy b/w photos to Albert LeCoff, HIDDEN TALENT, 42 W. Washington Lane, Philadelphia, PA 19144. Accepted photos will not be returned; nonpublished photos will be returned if a self-addressed stamped envelope is supplied.

"Nikau Forest" by Gael Montgomerie, 1990.
Sycamore, burned and incised; 8.5 inches by 3.5 inches.

THE OVAL LATHE

OVAL TURNING TECHNIQUES

J. Volmer

Part Three of a Three Part Series

The main differences between circular and oval turning is that oval turning requires much more training and higher skill than normal (circular) turning. It also demands more care and time. The differences are with the turning of the face or the side and with the turning of the inner or outer wall of the bowl (Figure 6). The grain of oval works can be either parallel to or at a right-angle to the spindle's axis; ie., oval works are center work or face work, although mostly oval bowls, plates, and frames are turned as face work.

1. The trued faces of a circular work (left) and of an oval work (right) are presented in Figure 7. Locating the long point of the chisel at cutting point C in equally distanced positions C_1 along the centerline (horizontal line going through the spindle center point A), will scrape a series of concentric circles into the face of the work. A series of concentric circles is also obtained naturally if the positions C_2 are chosen along an arbitrary straight or curved line, called the cutting line. On the face of the elliptical work, we have to expect quite another result. The cutting point positions C_1 on the centerline going through center points A and B yield a series of concentric, coaxial ellipses. If cutting point C_1 is positioned in A the ellipse degenerates to a finite line of length 2*AB = 2†; this ellipse's minor half-axis equals zero. For the cutting point series C_2 along any other straight or curved cutting line outside the centerline, we obtain a series of concentric ellipses, but all twisted to each other. Those twisted ellipses could make a beautiful pattern on the oval work's face; but in general, the turner ought to cut faces along the centerline in order to get clean plane surfaces.

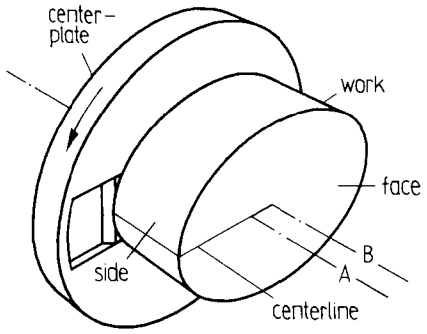


Figure 6. The wood as it is mounted upon the oval lathe mechanism.

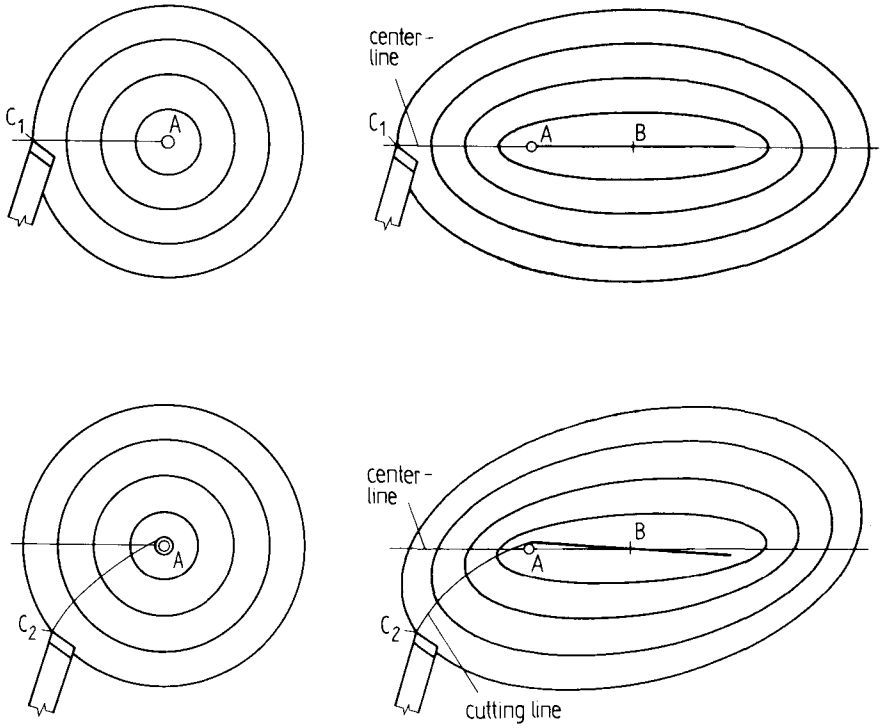


Figure 7. Comparison of circular and oval work.

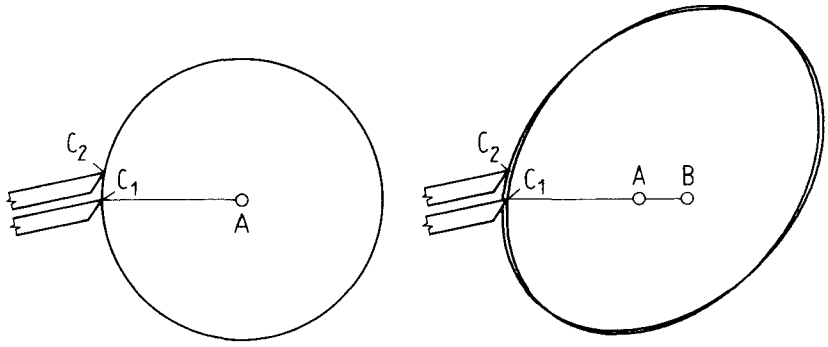


Figure 8. The comparison of how wood is cut between a circular lathe and an oval lathe.

2. When you turn a circular work's side, the position of the tool's cutting point does not play any role. In any case, you will get a circle (Figure 8; left). There is a remarkable difference with turning the side of an oval work. In Figure 8 (right), the cutting point C_1 should be seen as exactly positioned in the level of an imaginary horizontal plane through the spindle axis A and the ring axis B. For better understanding, call this plane the centerplane (see centerplane in Figure 9). To turn an elliptical cylinder, keep the cutting point exactly in the level of the center plane and move it along the line parallel to the spindle axis A. Next, turn a second cut on the work's side but with the cutting point raised above the centerplane (Figure 8 (right), point C_2). The cutting point describes an ellipse twisted to the first one cut by C_1. As the drawing in Figure 8 (right) shows the second ellipse intersects the first ellipse; ie., the second cut goes through two diametrical spheres of the work, and the other parts of the work remain untouched. In other words, the second cut penetrates into the surface of the work yielded by the first cut.

From the geometrical relations considered under Points 1 and 2, one of the main rules for oval turning is that the oval turner must control the cutting point of his tool to cut only along cutting lines lying in the centerplane. Otherwise, he does not get clean-cut surfaces. A dislocation of the cutting point of 1/16th inch (1mm) above or below the centerplane evidently influences the surface's quality; one can feel or see the irregularities. For roughing oval works, this rule is of no importance.

3. A circular turned work piece on the running lathe looks like it is standing still; its contour seems to be resting in place, and the turner can touch - with necessary care - the spinning work with his fingers, as for sanding.

A spinning oval work is not visible and appears to be whirling before the turner's eyes. Only one point or one line of the spinning work appears to be at a standstill. That is the cutting point or the sequence of its positions, the cutting line (Figure 8). This line appears to be standing still while the work runs and whirls. It helps to highlight the cutting line with an halogen projector that generates a light plane exactly coinciding with the centerplane of the lathe. This method helps to efficiently control the tools and to find the wanted inner and outer shape of a bowl. In some cases, the projector makes both shapes visible; ie., the turner can see the oval bowl's cross section.

At the cutting line along the side of the work and nearby this line, the turner may touch the running work with his fingers. For sanding, this is an unavoidable operation.

4. The clearance angle is the angle between the tool's bevel shoulder and the oval work's side, and is not constant as with circular turning. The clearance angle alternates periodically twice per revolution of the work. The clearance angle lies between the tangents of the ellipse and the tool's bevel shoulder (see Figure 5, "American Woodturner," March 1990, page 27). The narrower the ellipse, the taller is the range of the tangent and of the alternating clearance angle.

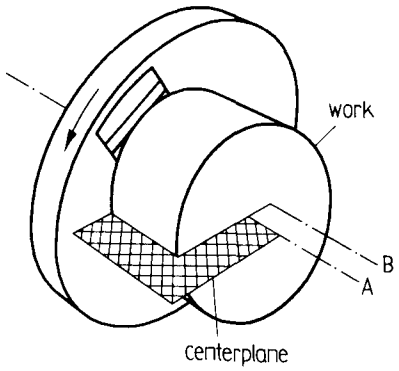


Figure 9. Illustration of the oval lathe centerplane.

The alternating clearance angle is the most important difference between circular and oval turning: The turner cannot have the bevel of the tool in contact with the work; he has to guide and control the tool edge freely without using any support by the work's surface.

5. The cutting speed is as variable as the clearance angle mentioned above. The cutting force follows this alternation, and the turner feels the changing resistance at the tool's handle. He should grip the handle more firmly than with circular turning; although, the higher the average cutting speed, the lower is the influence of the alternation and the cleaner the surfaces obtained.

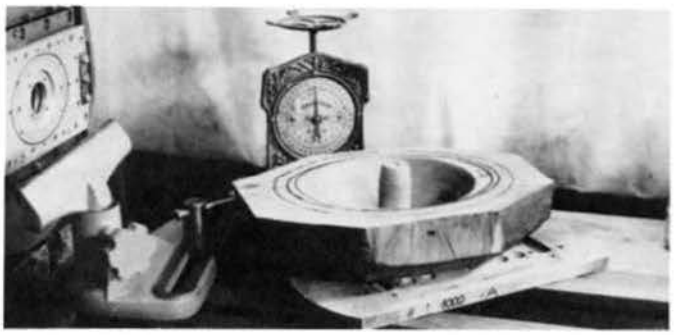


Figure 10. Rough out blank with the band saw and circular turning. The bowl is weighed and mounted. The half-axis difference and the counterbalance measurements are calculated for the appropriate adjustments to the oval lathe.

Figure 11. Ellipses are drawn upon the work to illustrate the cutting. Note the centerline of Figure 9, cutting only occurs along this line.

Figure 12. After sanding, the work is reweighed, the oval lathe is readjusted and the bowl is mounted in a jam-fit chuck.

Figure 13. Turning the inside wall and bottom is done from the rim towards the bottom and with light cuts along the cutting line.

Figure 14. The finished oval bowl

Dr. J. Volmer is a professor and oval turner from the German Democratic Republic.

LOW TECH PHOTOGRAPHY

James F. Poppell

In my first juried show, I was nearly rejected for bad pictures of my work. Ever since, I have been aware of the need for good photographs. I contacted several professional photographers, but they charged from 40 to 60 dollars an hour and 10 to 15 dollars a picture with no guarantee. So, I decided it was worth the effort to learn how to photograph my own work.

I made a light box after seeing Dan Kavitka's presentation at the Lexington Symposium '87. The box is very simple and can be built for about 100 dollars (Figure 1). Start with a piece of 3/4-inch plywood, 17 inches by 30 inches. On the plywood are mounted two ceramic light fixtures. They have to be ceramic to stand up to the heat of the photo-floodlamps. Drill a hole through the center of the plywood and install a small cooling fan from Radio Shack to exhaust excess heat. The sides of the box are made from foamcore, which can be found at most framing shops, and are put together with tape. To diffuse the light from the bulbs, a sheet of Mylar, from a blueprint shop, is taped across the bottom of the box. The foamcore shell is held on to the plywood with push pins. Do not forget to cut holes near the bottom edge of the foamcore to draw

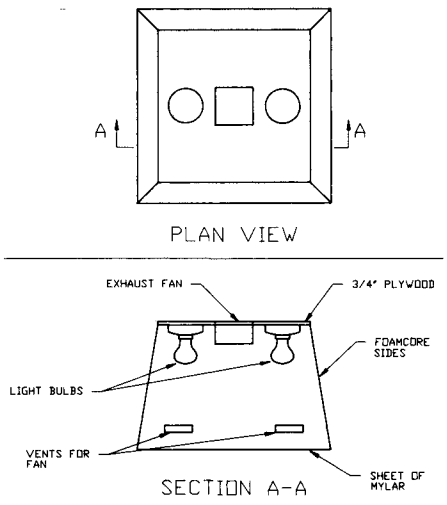


Figure 1. Plan view and section for light box.

air for the fan. Use #2 photo-floodlamps bulbs for the best results. It also helps to use some clamp-on reflector lights with small #2 photo-floodlamps in them for sidelighting (Figure 2). These reflectors have a

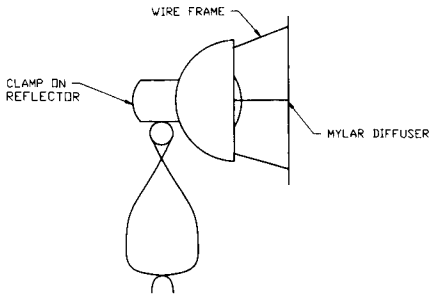


Figure 2. Clamp on reflector.

piece of Mylar suspended 8 to 10 inches in front of them on a wire frame.

The camera needs to be a 35mm with interchangeable lenses, as most juried shows will only accept 35mm slides. The lens I use is an Auto Zoom 80mm - 200mm with *close focus* or a macro range. This allows you to frame the item in the picture by using the zoom feature. To keep glare to a minimum, install a polarizing filter on the end of the lens. For photographing miniatures, use a standard 50mm lens with a set of Vivitar close-up add-on adapters, which allows you to get within a couple of inches and fill the slide with the miniatures. It is essential that you use a cable release so the pressure of your finger on the shutter button does not move the camera. Of course, the camera should be mounted on a sturdy tripod. The tripod should be fully adjustable so you can flip the camera on its side to shoot tall items. You should also weight the tripod to make it steady. Hang a bucket with several bricks in it (about 10 to 15 pounds) underneath the tripod for stability.

There are so many different types of film available it is hard to know what to choose. I have had good results using several types. I started with Kodak ET 160 film, which is a tungsten-balanced film to match the lights. This is a good film available in print or slide. I am currently using a movie film, Eastman 5294, customized for 35mm cameras, that can be made into prints, slides, and negatives for about the same cost as one roll of slide film. I keep the prints in a scrapbook for display at shows, and the slides are for submission to juried shows and galleries. This is very convenient, even though the film has to be specially developed.

The first picture on each roll of film should be a "Gray Card." This gives the developer a guide for color when processing the film. They can be bought at any good photography store.

Set up a small "studio" in one corner of a seldom-used room. You need about 10 to 15 feet to move the camera back for larger items. Hang the light box from the ceiling on pulleys, so it can be raised up and out of the way when not in use. For a background, use a piece of neutral gray cloth, so it will not clash with the color of any object. Shoot with a high F-stop to keep the objects in focus. The higher the F-stop, the deeper the field will be in focus. Use F16 to F22 to ensure that both front and back of bowls are in focus. To get the right exposure, my camera has a built-in light meter, which I adjust to the right setting by slowing down the shutter speed to around 1 or 2 seconds. This is a long exposure time, but it yields excellent pictures. It is generally better to shoot only at night so you can shut off any outside light sources. Even a small light can affect the outcome of the pictures. It is best to wait until you have enough pieces to fill a roll of film, but it would be better to have an extra camera you could leave set up and photograph a piece as soon as it is completed. With a little experimentation, you will soon be taking good pictures.

James F. Poppell is a professional woodturner from Belton, TX.

American Association of Woodturners
667 Harriet Avenue
Shorview, MN 55126

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