Designing and Turning Finials

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Purpose of the Finial:

By definition the finial is a *foliated ornament forming an upper extremity*. The finial should complement the vessel and not be overpowering. It should blend with the lines of the vessel. Therefore the vessel and finial should be designed together. This is where a drawing can be beneficial. It is much easier to erase and redraw until the design looks good. Don't be tempted to include too many elements in a finial. Concentrate on creating elements that are well formed, crisp and elegant.

Selecting the Wood for the Finial:

The wood used for a finial must be a close grain wood. Ebony, Maple, Holly and Cherry are some of the suitable woods. A contrasting color of wood is often used; however a finial of the same wood as the vessel can also work. Light color woods can be dyed to create contrast.

Attaching the Finial to the Vessel:

The finial is often glued to the vessel or to the collar if they are separate pieces. If the vessel is a hollow form that is not a container, there is little reason to have the finial removable. If the finial is not glued, it should be a tight fit so there is no chance of it falling out when the vessel is handled. A removable finial is generally less delicate than is described here and often becomes a handle for a lid to a container or box.

Mounting the Blank:

There are various methods of mounting a blank on the lathe for turning. The method by which the finial will be attached to the vessel may dictate the best method of mounting. In most cases a blank will be mounted between centers to create a tenon on one end so the blank can be mounted in a chuck for final turning.

If the finial and collar are turned as one piece, the blank can be mounted between centers and a tenon created that will fit in the vessel and be used to mount in a chuck.

If the finial and collar are separate pieces, the tenon that fits in the collar is much smaller and will have to be formed last. A larger tenon should be formed on a blank that is 1 to 1 ½ longer that the final finial. The finial will be turned with 1/2 to 3/4 inch of extra material next to the chuck jaws. When the finial is complete, a parting tool or bedan is used to form a tenon of 1/4 or 3/8 inch to fit into the collar.

Turning the Finial:

Once mounted in the chuck, the tailstock should be used for support while the blank is turned to a taper that is slightly larger than each planned element of the finial. The elements of the finial should get progressively smaller toward the tip of the finial. Once the tailstock is removed, each element is completed beginning with the top element. Each element should be completed including any required sanding before moving to the next element. A small toolrest such as the 6 inch low profile Robust will allow an underhand grip so your fingers can support the finial.

Sharp tools are a necessity. A small fingernail grind detail gouge, 3/8 or 1/4 inch with a 30 degree bevel works well. Having the tool mounted in a short handle can help. A handle that allows much of the steel to be slid back in the handle allows you to grip the gouge closer to the toolrest. Long handles on tools are harder to control when making fine detail cuts. A small tool with a sharp point like a skew is useful in creating fine detail. If you are proficient with a small skew it can be useful on straight sections of the finial. The main thing is to find the tools you are comfortable with and become proficient using them.

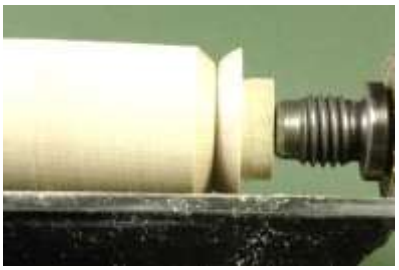
Sanding Finials:

Good turning techniques can minimize the need for sanding. When possible, restrict sanding to the higher grits (320 to 1000). A nice detail can be destroyed quickly when touched with sandpaper. Use small pieces of sandpaper, folded as necessary, sanding only the straight horizontal portions. Be sure to support the finial with your fingers when sanding.

Finishing the Finial:

A completed finial can be sprayed with light coats of lacquer until a wet look is achieved. Be careful not to get runs. Finishes that can be applied on the lathe often are applied element by element as the finial is turned. Some of these finishes include wax and gel poly. Finishes like friction polish can be difficult to apply without damaging delicate elements. Applying a dye also requires care. Avoid use of any dye that will raise the grain since you probably will not be able to sand effectively. I prefer to use Alcohol based TransTint applied while the finial is on the lathe and I can carefully smooth any blemishes. *Use lacquer not Krylon over TransTint!*

Procedure for Turning a 5 inch Finial with 3 Basic Elements



Select a blank 6 inches long and sufficient diameter to include the collar of the vessel.

Mount the blank between centers and round the blank with a roughing gouge. Create a tenon on the tailstock end to fit into scroll chuck jaws (typically step or #1 jaws). This tenon should also be sized to fit the opening in the top of the vessel. Remove and test the fit as necessary. The base of the collar should be formed at this point since the chuck jaws will limit access to this part of the collar. Care should be taken to insure that the shape of the collar blends with the curve at the top of the vessel. Only form the portion of the collar that will not be able to be accessed once it is placed in a chuck taking care not to reduce the diameter and weaken the blank.

Remove the blank from between centers and mount the tenon in the chuck. Carefully bring up the tailstock watching where the pin of the live center strikes the point left by the drive center when the blank was mounted between centers. If this is not a perfect match, pressure from the tailstock will slightly shift the blank in the chuck jaws and may jeopardize the grip of the chuck jaws once the tailstock is removed. If you are using a OneWay live center the center pin can be removed otherwise you can take a small wood disc and place it between the point of the live center and the blank when you bring up the live center.

The next step is to look at the blank and think about where each element will be created in the blank. Determine the diameter of the largest element excluding the collar. In this case it will be the bulb (asymmetrical bead) or sometimes called the onion. With the concept of the desired finial in mind, using a roughing gouge taper the diameter of the blank toward the tailstock getting rid of as much stock as possible while support is provided by the tailstock. The diameter just short of the live center should be about 3/8 inch. Since you won't be able to cut the taper all the way to the live center, about 1/4 inch of waste will eventually be cut off. The diameter of the taper at the maximum point of the bulb should be approximately 1 1/8 inch.

Now is a good time to talk about the turning tools that are useful for turning finials and how they are used. A small detail gouge (either a 1/4 or 3/8 inch) with a long fingernail grind and with the bevel sharpened at about 30 degrees is desirable. This detail gouge should have a short handle with only 3 or 4 inches of steel extending out of the handle. A small roughing gouge is handy for removing larger amounts of wood. If you are comfortable with a skew, a 1/4 inch round skew is handy for forming the long taper of the bulb. A smaller round skew (3/16 inch or smaller) with a long grind yielding a long sharp point is very handy for getting clean cuts in the bottom of a V. These skews are easily homemade with a 4 to 6 inch piece of high speed steel. Rubbing the bevel of the detail gouge is a definite requirement to avoid a catch that can ruin the finial. Most cuts with the detail gouge are slicing cuts using a cutting edge to the right or left of the point with the bevel rubbing. When starting a cove, remember to keep the flute in the direction of the cut with the cutting edge vertical to avoid having the gouge skew to the one side or the other.

Since most of the finial is turned without use of the tailstock, additional support from the left hand (this description for right handed turners) is necessary. This support is critical since you have up to 5 inches of unsupported material and the grip in the jaws can easily be shifted. If this happens after you have completed part of the finial, it may be nearly impossible to get the tip of the finial to run true. This support is achieved with a small toolrest using an underhand grip with the left hand. The toolrest should be placed with the post to the right of the area to be turned so the left hand can be placed under the rest with the fingers providing support to the back of the finial. Since the fingers of the left hand are supporting the wood, only the thumb is above the toolrest to guide the tool. This is where the short tool is helpful, allowing the right hand to be close to the toolrest providing maximum control.

The next step is to get rid of the 1/4 inch or so of waste while you are forming the tip of the finial. Now that the tailstock has been removed, the left hand will be supporting the work. Carefully make downhill cuts toward the tip until the waste is removed. Form the point of the tip about 5 inches from the base of the collar.

The tip should be about 1/4 inch in diameter with slight concave shape toward the tip with slight convex cuts on the back of the tip. Keep the detail of the tip clean.

The next element is a couple of discs which are also about 1/4 inch in diameter and about 1/4 inch back from the tip. This is where you make a V or cove cut to form each disc. Start the cut with the cutting edge vertical and the flute left or right to avoid the gouge skewing to one side when the cutting edge touches the wood. Don't make the discs so close together you can't get clean cuts between without destroying the clean edge of each disc with the bevel of the tool. About 1/8 inch between the discs is nice. A tiny skew with a long point held with the point down can be used to get a clean V between the discs. One method of getting clean sharp edges on the discs is to leave the diameter proud of the final diameter and make the final cove cut by starting the cut on one side of the disc and cutting across to the other side.

Now determine where the largest diameter of the bulb will occur (about 3 inches from the last disc) and either mark that point or using a parting tool reduce the diameter just proud of the desired diameter of about 1 inch.

Now start forming the long part of the bulb remembering to make cuts downhill with grain of the wood. Work from the tip back. If you are comfortable with a skew, a 1/4 inch round skew can be handy making the long taper of the bulb. Once you have the long taper formed but short of the final form start some cove cuts toward the collar to form the base of the bulb. This is where you can take a look at the form of the bulb and make the necessary cuts to get a good form.

Now is the time to stop and sand the taper of the bulb. The tip and the discs should not require any sanding. If the cuts have been relatively clean sanding may be able to start with 320 or possibly 220 and progress up to 800 or 1000. Always provide support with the left hand to prevent stress being applied that could fracture the thin portions of the finial.

The last element is a cove between the base of the bulb and the collar. This element requires basic cove cuts always cutting downhill. A small fillet makes a nice transition between the cove and the base of the bulb. A second fillet makes a nice transition to the collar. This only leaves the task of completing the collar by blending the cuts started when the work was between centers into the lower fillet. Take care when making cuts close to the chuck jaws. Complete any required sanding at this point taking care not to destroy the clean edges of the fillets.

If the natural color of the wood is to be the final color an application of gel poly can be applied while the finial is on the lathe or a coat of spray lacquer can be applied after it is removed. If a spray can of lacquer is used, hold the finial about 16 inches away and spray with quick bursts taking care not to get runs. If the finial is to be dyed black, TransTint can be mixed with alcohol and applied on the lathe. Once the dye has dried, a dull matt and slightly grainy finish may remain. A careful smoothing may be required. A small piece of paper towel may be sufficient but 800 or 1000 grit paper may be required to restore the surface. A second application of dye may be required if the buffing removed some of the dye. An application of spray lacquer may now be applied off the lathe.

Completed Finial