

OFF-CENTER-TURNED TOP HAT BOTTLE STOPPER

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Give them something they couldn't possibly have

if they will use and appreciate it,

I am always looking at things with an eye for turning them. The other stoppers I made for friends and family seemed to be too much like everyone else had been making; I wanted something **different!** Reading a Dr. Seuss book to one of the grandsons is a likely candidate for the idea – think “Cat in a Hat”. Since the project takes little wood, it didn't take me long to try to make one. My wife's “Oh, that's different.” added encouragement – confirmed by the people that received them as gifts.



The woods in these pictures are, from left to right, spalted maple, cherry burl, black walnut and English walnut.



The ones on the far ends are laminated birch. The two on the ends are, “over the top”, exaggerated off turnings and are kind of “whimsical”. I use the flat-bottom stoppers so that they can be displayed on a shelf if not in use. Sometimes I think using colored wood

compromises the turning: Does the design of the turning really need a color component to draw attention to it or is the color just another option for the end user? On the other hand, “color” is “in” with many people and may be a preference.

Metal stoppers are available from many suppliers of woodturning accessories and kits. I use the flat-bottom style stoppers from Ruth Niles so that they can be displayed on a shelf when they aren't doing their job in a bottle. I want a high-quality stopper that will add to the decorative aspect and last “forever”.

Choose and prepare the wood

The figure in the wood really adds to the attractiveness, so I immediately looked for pieces that had an unusual grain or a distinctive feature such as spalted patterns in maple or a cherry burl. I am sure you have pieces of wood that look very distinctive in your “stash” that are cut-offs left over from another project that can be put to good use. **Grab one of those pieces and have some fun making an off-center-turned top hat stopper!**

The finished hat has a brim of about 1-3/4" – 1-7/8" (44mm – 48mm); the smallest part of the hat band is slightly less than 1" (25mm) in diameter. The height varies from 1-3/4" – 2" (5cm) depending on the brim diameter. I personally like the taller ones.

Using a band saw or table saw, start with stock that is about 2"- square and 3" (8cm) long; the length can be as little as 2-3/4" (7cm), but 3" gives you room to maneuver your tools. A 6"- (15cm-) long piece will easily give you two top hats. I usually find several pieces of different woods or interesting grains and prepare them for the lathe. I am not a production turner but have given at least fifty to family or as gifts.

Rough turn

I do not round the end but use one of the square ends in the chuck; the piece will always be secured by the live center on the tail stock.



You should do what you feel is best for you; if you want a rounded end for the cuck, use whatever tool you usually use - a roughing gouge or a small bowl gouge. The wood should be rounded to about 2" before you start shaping it.



Drill size

Make a shearing cut across the end grain with a freshly sharpened tool making the end grain a very smooth surface, slightly concave the central part near what will become the hole for the stopper. A spindle gouge is a great to to use, but choose the tool that works best for you. This cut will reduce any chance of a gap between the wood and stopper. Drill a 23/64 inch hole to a depth slightly larger than the threaded tenon on the wine stopper. **3/8 inch is too large!**

By hand, thread the stopper on to the wood. You will have to repeatedly turn it on and off, blowing out the hole, until you get a tight fit. Remove the stopper and bring up your live-center on the tail stock to support the piece.

Shape the hat

Shape the bottom part of the hat that includes the brim; the smallest part of the diameter of the head band is slightly less an inch. The brim is slightly less than 2 inches. (Adjust the ratio to the size of your wood.) Crudely taper the top portion of the hat.



Sand and add the headband

Sand to a very smooth finish; this includes the large tapered toward the top of the hat. I sand objects to 400 or 600 grit.

The head band is about 3/8 inch in height. I use an ultra-fine sharpie to identify the top and bottom of the head band, then use a chisel sharpie to color the rest of it. Using newer sharpies make the process much easier. I was dissatisfied with other colors for the head band.

Part off the unfinished hat

Part it off at a length of about 2 inches or more if you want a “stove-pipe” hat.



Friction drive

Make a friction drive by mounting a small piece of hardwood or a dowel in your chuck—a piece slightly larger than 3/8" in diameter will work. Note that a piece of stock this small won't fit in the jaws but can be securely held by the center of the jaws and extend back into the headstock spindle. Turn the end to a taper of about 23/64" (9mm) at the tip.



Was the large tapered part of the hat sanded before you parted it off? If not, center the hat on the lathe the best you can and sand it.

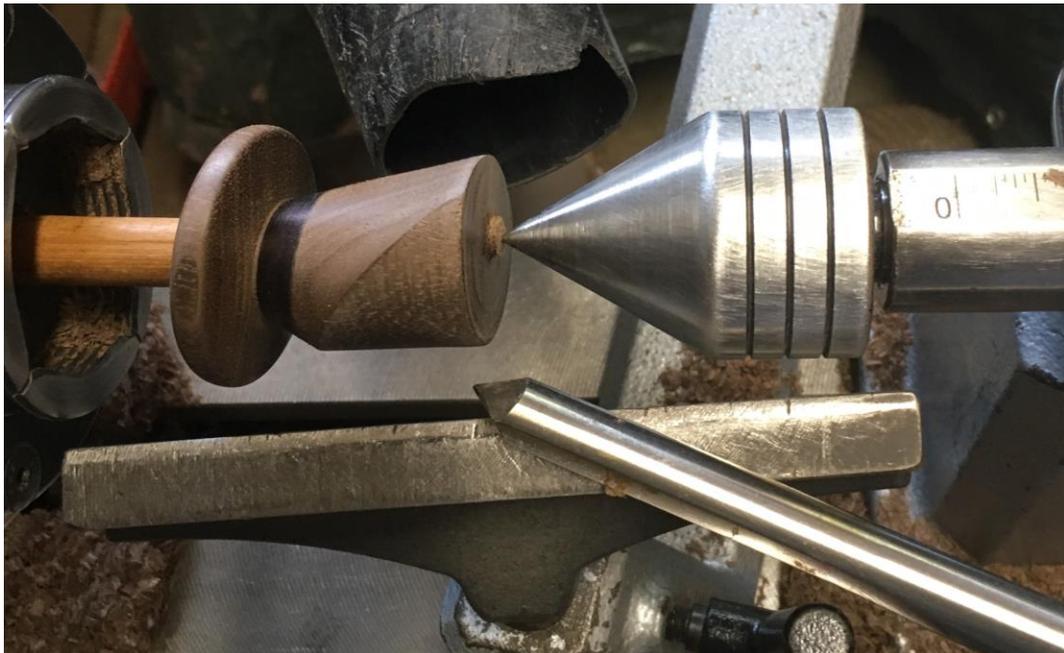
Choose your new axis for the off-center turning Off-center turning

Examine the top portion of the hat. Consider whether there is a feature or some grain figure in the wood you want to retain and emphasize. You will have to position the blank on the friction drive so that feature is retained and other side of waste wood is removed. Just keep in mind that moving a section of the wood away from the axis of rotation will place it in the path of the gouge and be cut off. Placing a section of the wood closer to the axis of rotation means it will remain on the finished piece. Use a pointed object to mark the spot for the live center on the tail stock.



Remount the piece in the off-center position

Having chosen an off-center spot on the top of the hat, remount the hat; try different spots if you want to do so. Tighten the live center against the spot you have chosen and, on a slow speed with your face mask lowered, and standing to one side, slowly increase the speed to a high rpm.



Start forming the top portion

With a very sharp tool with a thick shaft, start shaving off small portions, often checking that you are not cutting into the head band. Choose a line you want to traverse and stick to it by looking at the “ghosting effect” of an object rotating through space. **The piece may loosen as it pushes against the compression chuck**, so occasionally **tighten it** using the live center on the tail stock. **Adjust your tool rest often** to get your tool as close to the turning as possible. This will give you more control of the tool as you shave off wood. Use the tool that satisfies your skill level; I often use a half-inch bowl gouge. (If you do hit the head band, after hand sanding, use some clear tape to line up the two ends and filling in the hat band.)

More sanding

Hand sand the portion you shaved off to your satisfaction; sand in the direction of the grain. I sand it to 400 or 600 grit. Also **slightly** sanding the ridge between what you shaved off and the remaining turning. You want to **maintain the ridge**.

Once you are satisfied with what has been removed, shear off wood on the top of the hat toward the live center. I often use a detail gouge. Obviously, there will be a small piece, knob, where the tail stock is supporting the turning. This will be cut off with a knife or some other way and sanded to a smooth finish by putting sandpaper against a flat surface such as the bed of the lathe and rubbing the piece across it. Use increasingly finer grits.





Once you remove it from the lathe, you'll have to finish it. Are you worried the brim might break if the stopper is dropped? You could put a little of Kirk Kopp's odorless, thin CA glue across the grain of the bottom side of the brim. **I have never had a brim break** even when dropped with the metal stopper attached.

I use multiple layers of wipe-on poly but you should use what you like. There is also a clear polyurethane that will not "yellow".

I hope you had some fun making it and possibly learned some new techniques.



Here are more pictures of stoppers - maple, English walnut, spalted maple and cherry burl.



What do you think? Was this your first off-center (off-axis) turning? These make great gifts.

Give them something they couldn't possibly have if they will use and appreciate it!

You may want to write **“STOP your WINEing”** on your business or gift card!

Below are **Mike Peace elf ornaments** with off-center turned top hats; the eye hook for hanging is centered on the top of the hat.

