

Funnels—The F-word that Turners Hate

How to Avoid Creating Them

Wells Shoemaker

All honest turners will confide that they have created a tapered work of art with a hole in the bottom of it...the dreaded “funnel.” Most honest turners will privately confide that they have made one within the last year or two, often despite decades of experience.

Here is one of my funnels from 2017...a lovely, 14 ½” figured maple bowl with... yep ...a thoroughly embarrassing central hole. With serendipitous fortune that rarely comes my way, that dimension fit perfectly between the studs of my shop, and I needed a clock anyway. A lot of our members have seen it, but nobody has been mean enough (yet) to call me on the goof.



Sometimes a perilously thin bottom or an outright cut-through can be mended with a patch. (Hint...it needs to be done so that it is mechanically stable, not merely a glue joint, which will assuredly fail. Another demo maybe.) Clever fixers might make the patch deliberately contrasting so it could be regarded as intentionally artistic...but really ... it's better not to make the mistake.



Wenge bowl and not exactly planned cherry insert, 2009

Talk Softly but Carry a Clever Stick...and Know Where You Are

Prudence starts by knowing where you are, whether that's in the desert, the bay, the city, the bar...or inside your bowl. I use a simple, scrap wood depth gauge with a friction fit, although you can certainly buy a shiny metal one for a couple \$20 bills. I use it inside for depth and then drape it over the outside edge, and check where I am by eye or (better) ruler. This tool also helps when I'm taking off the tenon to get a uniform bottom and side thickness while allowing a couple millimeters for a concavity in the foot.



Cleaning off the Bottom without Going Too Deep

The slippery slope that leads to a funnel is usually the cantankerous grain at the bottom of a bowl. That phase is usually the last artistic maneuver in a project that may have started two years earlier with a special chunk of wood with lots of sweat equity invested. There is no going back...any more than you can take back hurtful words.

We love the smoothness and control of cutting the sides of a bowl with a bowl gouge, which involves cutting compliant, friendly face grain. When we get to the bottom, however, turn the corner, and start moving towards the center, we are cutting right into end grain. You can hear the pitch change. Tear out is a problem, as is chattering and spiraling, especially with pieces with a lot of grain character or disparity in hardness between summer and winter growth. Naturally, we sharpen up, then go back and try to cut beneath those errors, and pretty soon, turners can find themselves out of wood and up the creek.

Plenty of master turners use freshly sharpened, heavy scrapers successfully for those last "cleaning up" steps. Others use a bottoming gouge. It's a personal preference.

A bottoming gouge, also called a "traditional gouge," is designed specifically to improve performance cleaving end grain and quilted, interlocking, and burl grains. The grind is totally different from the bowl gouge (see next page). After getting used to it (practice in the hollowing phase of every bowl), it has improved my batting average nicely.



Comparison bowl and bottoming gouges:

Left: Viewed from above, showing nearly square end of bottoming gouge and the fingernail of the bowl.

Right: Viewed from the side, contrasting the grind and bevel angle. (Both are Hamlet HSS gouges)



Detail: The bottoming gouge has a primary bevel of 60 degrees, highlighted in blue ink, with a secondary cutting bevel at 70 or even 80, creating a cutting edge which shears end grain more cleanly than a fingernail grind.

It glides along the bottom without chasing grain rabbits and chatter snipes.

It's also an ace in the hole with soft wood and unruly tangled grain and burl.

Now for the Ace to Avoid the Hole: The “Shelf”

Better still: anticipate this challenge back at the very beginning when you are roughing out the bowl. I thank Kirk deHeer, master instructor at Craft Supply, for this tip, among many others.

After you cut the tenon at the base of the bowl, cut a ¼ to 3/8” (1 cm) thick “shelf” above the tenon. Above the shelf, go ahead and make your bowl shape. You can do the same thing if you are using a waste block and faceplate. It works with equal, blessed utility for turners who use gouges and scrapers. It doesn't apply to a recessed mortise, such as a shallow platter, which has another set of challenges and workarounds.

Arrows point to the “shelf”



Why does this help? For starters, if you cut too deep, you have a cushion to save your project. If you don't need the cushion, you can blend your curves, delete the shelf, and you're done. The cushion section also affords you a design opportunity for a visual "lift" where the bowl sits on a surface, or it may leave you enough wood to tinker with legs.

True, by allocating $\frac{1}{4}$ " to the shelf initially, you might sacrifice a teensy bit in the maximum achievable bowl height. Let's face it: that is generally meaningless, and we live with that loss all the time with the corrections required to true the rim after warping. But the main thing is that you get to keep 95% of your bowls and relegate the funnel experience to canning peaches or transferring chainsaw fuel.

Another benefit of the shelf...rare...comes when you re-chuck a rough turned piece for finish turning. After drying, you often need to true up the out-of-round tenon. Especially with dramatically shrinking and deforming woods like madrone, you may discover that you have trimmed your tenon too small...and your chuck will no longer grip it.

Similarly, sometimes punky wood, ring checks, or unstable knots render your original tenon unsafe to use when it has dried. Now what?

No worries, Mate! Cut off the whole tenon, and then cut a new dovetail from the shelf to grip with a larger chuck. Nobody needs to know.

Happy Turning!

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