

The Fingertip Top & The Spinning Vessel

by Charles Henderson

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Introduction

In the summer of '06 I cut up some still unidentified driftwood and mounted it up on the lathe. What it became is a pretty interesting...thing. I finally named it "Eureka" in the final draft of this tutorial. It spins and spins on the tip of my thumb or finger, and as you can see it also balances freely while at rest. It is pictured at left.



It is not definable by traditional terms. It isn't truly a top, and certainly not an open form or bowl as it was turned. The **Spinning Spaceships** are similar to hollow forms, but HF's don't spin upside down and are made by different methods. I could not decide, so I gave it a new name - the **Fingertip Top**. That is until I made a few that were heavy enough to be painful when spun on the finger. I also made a few more that would not accommodate a hand or finger through the opening. At some gray fuzzy point it evolves to become the subject of what I intend to be a life spanning series - the

Spinning Vessel. I've titled the series "Symmetry in Motion." The second of the series -outside of the Spinning Spaceships - is pictured at right. The woods used are Sapele and Mulberry. This will likely be the beginning of a mini or sub series for natural edged pieces.

The next development in the idea came from my roots. I have lived in Roswell, NM for most of my life and reside there now. As you can imagine I have been inundated with UFOs, aliens, and the like for as long as I can remember. Of course, this is going to overflow into my work as a woodturner.



The first **Spinning Space Ship** prototype is pictured at right. This one is a 3 piece. The body and cockpit are all held together with mortise and tenon joints. The woods are Spalted Chestnut (from E. Bud Gallespie), and Osage Orange. I discovered with this turning that a finial would make it much easier to spin. I also added the stand which makes it much easier to spin, and increases the spin time.



I figured I was on to something so I developed and practiced with the idea. At left is a one piece body of Myrtle and a cockpit of Pecan with Ebony finial that make up Prototype #2.

Another two piece with Oak and Paduak for Prototype #3 is pictured at right. “Mothership Adrastea“ (the motherships will be named after the moons of Jupiter) below is the largest at about 8”. After making these I felt I had a good idea of how the pieces work, and how they should be made to achieve the proper balance and fit.



I’ve heard it said that nothing under the Sun is new. However, I refuse to believe that originality does not exist. With that said, I felt confronted with the fear that I actually had myself a few original ideas, which I wished to share with the turning community, but at the same time I don’t care to have these ideas ripped off. I also don’t care to rip off someone else, so I researched extensively to find if the idea was truly original. I researched patents and copyrights and discovered that courts cost

a lot of money, even if you just want to protect yourself. I found no record, but that doesn't mean that so and so hasn't been making them for decades. Please, do not get me wrong, I honestly hope these ideas serve as inspiration for many turners. However, I think it would be in poor taste for another company, turner or not, to start making identical stuff in mass for sale at cheap prices. I'm relying on my reputation, association with these methods, and a copyright on this tutorial as my only protection. Still, eventually I'll see this stuff made from plastic and lead in China when I'm forced to shop at Wal Mart. I would, however, love to see them try to copy this one at right made of Sycamore, Cocobola, and Osage Orange. I think it looks like a ghost, so I titled this one, "The Spun Spirit." So, with all of that in mind, let the tutorial commence...



This is a two part tutorial. In the first I will go through the steps and considerations in making a **Fingertip Top** with a matching stand (pictured below at left). In the second section I will detail making a simple **Spinning Vessel** that I call the **Dizzy Mushroom** (pictured below at right). The two tutorial sections are independent, so you shouldn't have to read through both of them. However, I'm sure it would help to give you more ideas. I also advise reading through before beginning.



Section 1 - The Fingertip Top

Step 1:

Cut a blank roughly 4"x3"x3". Size doesn't matter so much, but achieving the balance is much easier if you stay under, or around a 3" dia. to begin with. You will want to turn the piece slightly shorter than wide, so leave the extra inch or so in length for a tenon, or faceplate screws.

Step 2:

Mount the wood in the chuck or on a faceplate and true the blank.

Step 3:

Shape the outside of the Fingertip Top. Be sure to leave enough wood on the chuck side to provide some strength when hollowing.



Step 4:

Begin to hollow the end. It is very important that you leave the rim considerably thicker than the rest of the piece. **That alone is the key in making the piece work well.** The more weight you can get below the point - and hence lowering the center of gravity - the better, but that rule does have limits. If you have too much weight below the point it won't spin well at all, and the rim will bounce off of your finger, or stand. It is also important to leave a lip on the inside if you want to reverse mount with an expanding chuck or jam chuck to turn the top and make a hole for the finial.

Step 5 - option 1:

Complete hollowing the rest as you would a usual bowl or box, with one big exception. You will leave a conical point about 1/4"-1" high in the center. Again, it is important that this point be above the center of gravity. That point is unfortunately a guessing game. You will want to leave plenty of room for your finger, though. Don't make it too sharp or it will hurt when you spin it.

Step 5 - option 2 (option used here):
Follow the above procedure, except DO hollow as you would any other bowl or box. When you are finished, bore a hole in the top. Size doesn't matter, but it needs to be a consistent diameter. Later you'll turn a point on the finial, and it will drop all the way through from the top. If you do choose to do it this way use a very strong glue when assembling, as the weight of the piece will be held by it.



Step 5 - option 3:
Same as above, but instead of turning a point into the finial you can just turn a small cone with a tenon that will fit in the hole. This way is more secure as the weight of the piece will be held by the rim on the tenon joint instead of the glue. I used this method when I was having trouble sizing the tenons to fit tightly enough.



Step 6:
Sand all surfaces to a satisfactory finish. If you wish, now is the time to remove the piece from the lathe to sign it. I use a pyrography pen for signing, so it's necessary to remove the turning. Remount and apply on lathe finishes to the inside now (friction wax, polish, etc.). My advice is that if you do remove the piece for signing then you should remove the entire chuck/faceplate to avoid inaccurate remounting.

Step 7:
Part the turning off, but make sure you have a minimum of 1/2" thickness at the point in the top where the finial will go through. You'll need this depth/thickness for gluing strength, and this should be taken into account when determining the thickness of the lip, and the spacing of the tip on the inside.

Step 8 - optional:

After parting make use of the wood you have left in the chuck. Turn a recess to remount later, and finish all surfaces not inside the recess. Later you can turn an insert to fit inside. I use 1" jaws for remounting in this situation to turn the rest of the stand. This step isn't necessary, but it makes creating the stand that much easier and it complements the piece better.



Step 9:

Reverse the piece on the lathe. I suggest using expanding dovetail jaws with just enough pressure to hold without slipping or cracking the piece. A jam chuck can also be used, but I find them cumbersome. Ideally I would use a vacuum chuck, or cole jaws but I don't have either.

Step 10:

Turn the excess wood from the top of the piece. You'll want to leave the walls considerably thinner on the top than at the rim, but not so thin

as to weaken it. If you went with option 1 in step 5, then you'll need to make a hole to hold the tenon on the finial. Don't bore all the way through, of course. If you went with options 2 or 3, then you already have your hole. I suggest with either that you make a double mortise for the finial to rest in (accurate reverse mounting is necessary for this). That way you have plenty of torque resistance for spinning. If you choose to just use the through hole as a tenon, then make sure the fit is very tight.

Step 11a:

Complete this step only if you went with options 1 or 3 in step 5. Turn a finial with a tenon, or double tenon to fit the body of the top. Don't make it so bulky that it throws off the weight balance, but leave an adequate amount of wood to resist the torque w/o breaking.

Step 11b (option used here):

Complete this step only if you went with option 2 in step 5. Measure the length of the hole



through the top of the Fingertip Top. Mount a finial blank in the chuck, and note that you'll be turning this finial backwards. At the tailstock end turn the conical point that will be inside the top. Make it 1/4"-1" long, but keep in mind where the center of gravity might be when determining the length of that point. Back toward the headstock from there turn a tenon to fit the through hole, and a double tenon if you chose to do that as well. Leave a lip to cover the joint, and finish the finial up from there. It will be reversed in the next step, so this isn't your last chance for shaping. Careful parting is very necessary.

Step 12:

Remount the finial in reverse and make your finishing cuts. Sand and finish the finial, and glue it into the body of the top.



Step 13 - optional:

Find the would be waste wood from Step 8 and mount it in reverse using expanding dovetail jaws or a jam chuck.

Step 14 - optional:

Turn away the tenon from the block, and shape the top of the stand to your liking.

Step 15 - optional:

Make a mortise in the top of the base that will receive the tenon on the finial part of the stand. If you wish to add any on lathe finishes, then now is the time.

Step 16 - optional:

Mount a finial blank in your chuck, and shape as you see fit. Be sure to size a tenon on the bottom to fit into the base. The one very



important part about the stand is the tip of the top. You will want to create a conical shaped dish with a defined center as opposed to a smooth bottom. A golf tee is a good illustration, and as blasphemous as it may sound they work pretty well.



Step 17 - optional: Mount a blank in the chuck that can be used to turn an insert for the mortise in the bottom of the stand. Turn and size to

fit. I would suggest sanding and finishing before final sizing. This will help to avoid a rounded edge and the fit will look better. When you are finished, part it off and glue in place.



Step 18 - Mandatory: Put the Fingertip Top on your stand, thumb, or finger and take it for a spin.



Section 2 - The Spinning Vessel

Step 1:

Begin with a roughed out bowl. You should have one of these laying around if you are attempting this project. If you don't have one, then you will need to turn a bowl to this point.

Step 2:

Finish turn the bowl, but pay very close attention to leaving extra thickness near the rim. **That alone is the key in making the piece work well.** The more weight you can get below the point - and hence lowering the center of gravity - the better, but that rule does have limits. If you have too much weight below the point it won't spin or balance well at all, and it may even fall off of the stem. Also, do not take too much material from the bottom of the bowl because you will be turning a mortise for reverse turning and holding the point.



Step 3:

Turn a mortise in the bottom of the bowl. I use a 1" mortise for reversing in dovetail pin jaws. Don't make it too deep, or you'll end up with a hole when you reverse it and turn away the tenon. Now it's time to sand, and finish if you wish



Step 4:

Reverse the Dizzy Mushroom cap and mount in expanding dovetail jaws. Turn away the tenon, and finish up with sanding. If you don't have a 1" jaw set, then you can use a jam chuck. However I would be very careful to use the tailstock, and even more careful when removing the tailstock to finish the center.



Step 5:

Mount a spindle blank of the same wood, if possible or desired, and true it up. At one end turn a tenon to be mounted in the chuck. The base of this stem needs to be over 2" if the mushroom has much weight to it. However, you will be surprised how stable these things are. Still, the heavier the better.

Step 6:

Mount the stem blank in the chuck. At the end (tailstock side) turn a tenon to fit the mortise in the bottom of the bowl. This will become the point on which the mushroom cap will balance. Back toward the headstock turn a cove as close to the center as you can, and then part away the rest. Leave yourself some extra length to decide where the point should be.

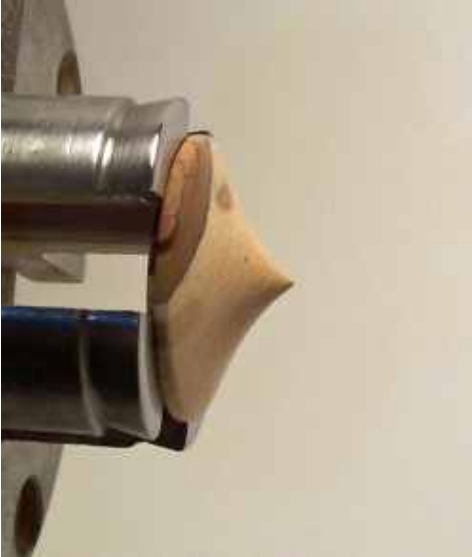


Step 7:

Turn the stem down to a satisfactory shape. At the end turn a conical dish for the point to rest in. Be sure there is a defined center as opposed to a smooth bottom. When you are done sanding and finishing, part the stem off. Try to make the bottom concave for more stability.

Step 8:

Before this step, examine the cap of your mushroom and try to determine the point of balance. You can do this by holding the bowl on the inside and letting it balance on one finger inside the rim. This point will let you approximate the center of gravity so you can place the contact point above it.



Mount the point blank that you turned earlier in pin jaws, or a jam chuck. Turn a shape you're pleased with, and then finish and sand. When you are finished, remove the point and glue it into the inside of the cap.



Step 9:

Place the Dizzy Mushroom cap on its stem, and take it for a spin!!



If you have any questions, comments, or suggestions, then please feel free to email me. Don't forget to checkout my website.

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