Single Barrel Finial Twist Parker Pen

by

Jeff Powell

A.K.A "workinforwood"

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This is my adaptation of the single barrel cigar pen with finial twist as inspired by Luther Bryan aka Butch of the IAP. Although I have and use a metal lathe, a metal lathe is not required to build this pen. It is however a huge asset to at least have a collet chuck for your wood lathe and a carbide chisel such as the Rotondo or Woodchuck tool will help tremendously. Although many say that the slim pen is the most versatile pen, I personally believe that the cigar pen kit is equally versatile and provides for a better quality refill and transmission. The single barrel finial twist is actually far simpler to create than it may appear. I provide a custom nib for my pen, but the stock nib of a cigar pen can also be used in this project.

Image 1: This is the parts breakdown used in the pen, and my terminology.

Image 2: Chuck the nib coupler into a collet, unless you are going to use the stock cigar nib. Otherwise, chuck the tranny coupler into the collet. Using a parting tool, remove the ring off each coupler. The tranny activator also fits in the same collet. Insert the tube and part off the threaded section. Do not try and chuck the threaded section and part off the tube…it won't work that way..the tube has to be inside the collet.

Image 3: This is the new parts with the rings cut off. If you are using the stock nib, leave the nib coupler alone, this is only for creating a completely new pen with new nib as well. Notice the new tranny activator.

Image 4: Press the tranny coupler into the lower longer cigar kit tube, stopping at the spot where the ring used to be. Place just a drop of thick or med CA on the threads and screw on the tranny. Rough up the inside of one end of the upper tube. Place a few drops of CA on the exposed nickel where the ring used to be on the coupler and slide the tube over it. The two tubes become one tube, the coupler giving them strength and the glue holding them together. From the top, the transmission should be inside and in the center of the tube. After the glue is set, test the tranny to make sure you didn't glue it somehow to be non functional anymore…yep, done that before!

Image 5: This is a Lunar Chaos blank by Masterscroller.com™. Place the tube over the blank and mark the length and then trim the blank. Next..paint your tubes..always paint your tubes with acrylics just to be sure!

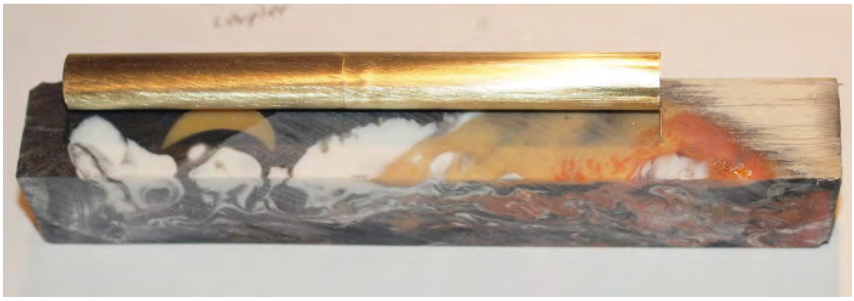

Image 6: This type of blank requires the user to locate the center for drilling. On the left, you see the face of the blank. Locate the spot on the image closest to each edge and run a line down each side, then split the distance between to locate the center of the image. On the right…the center of the image is transferred over the top of the blank. The image is 7/16 thick, so measuring back from the face of the blank 7/16 gives reference #2 and this is where the blank is drilled with a 10mm bit for this pen. Drill the blank and glue in the painted tube with epoxy.

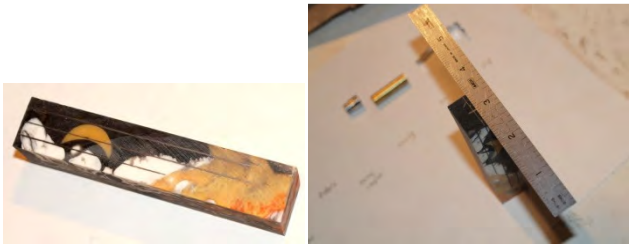

Image 7: While waiting for the pen barrel to set up, I make prepare the finial twist activator. This piece of acrylic is the scrap off the original blank. In the center of the scrap drill a 5/16 hole, 3/8 deep. Rough up the end of the brass tube and epoxy it into the hole. It's a tight fit…and it should be.

Image 8: Yes..we are still waiting for the pen to dry, and now we move on to prepping the clip. The clip needs to slip over the tube. I use a carbide cutter in a rotary tool to enlarge the hole in the clip. The new hole does not need to be pretty, but it does need to be somewhat even all around. I put a piece of plastic tube over the clip to protect it from accidental damage and to absorb some heat. Also wear some goggles! When finished, you are looking for a tight fit over top of a 10mm cigar tube. On the right..this is my test fitting.

Image 9: Now it is time to square the ends of the pen…but no way will you get a barrel trimmer in there. This is not a big deal as long as you have the tubes real nice and close to the ends of the blank, and if you don't, simply trim the blank on a saw to get the tubes almost to the ends. Slide a cigar nib bushing into the nib side of the pen. On the tranny side, simply use a 60 degree live center. Mount the blank between centers and spin it straight across. Yes, you can use a chisel and wood lathe…but if you have a metal lathe, this is much faster and less tedious! <especially spinning the blank perfectly straight. Once the blank is round, chuck the blank and part the ends down to the tubes…now it's square.

Image 10: This is the blank, squared and ready to be shaped. The nib bushing is used whether you are going to use the stock nib or not. Set a pair of calipers to match the OD of your clip.

Image 11: Mount the blank on your wood lathe as shown. For using the stock nib, simply turn to bushing size on the nib end. If not using a stock nib, you can turn the nib side undersize or oversized, up to you. On the finial side, part of about 3/8 of material down to the tube. The moon can only be turned so small, so after the moon, a little slope is spun to match the OD of the clip ring. I find that no matter what, if you have a little slope like that, it makes for a nicer transition to the clip anyhow. Wet sand and polish the blank. * Look at the moon in this blank. See it is even on both sides. See that if I was to keep spinning it any further down, then the moon would be over spun and blend down the sides to the point of being ruined. You must have a little material left on both sides of the image is my point.

Image 12: This is a piece of ½" aluminum rod chucked and drilled out at 25/64. It is for the clip retainer ring. You could also use a piece of acrylic..the material choice doesn't matter. On the right, the pen is used as a guide for the length of the ring to be cut. The ring should be just a hair less than the mortise because the clip itself will be sandwiched in there.

Image 13: Part the ring but only half way through. Do not cut it off! Using a file, round the two edges of the ring and then sand and polish the ring while still on the rod. After the ring is finished, then you part it the rest of the way off the rod. With some 5 min epoxy, glue the clip and ring to the end of the pen. Clean off all glue squeeze out immediately with paper towel. Set the pen to dry with the finial end facing down, so any squeeze out inside the pen does not drip down into the transmission area. After it is dry, any glue inside is easily scraped out and any bits of glue that get on the top of the metal retainer ring will easily come off just with your fingernails as it won't stick well to the polished aluminum.

Image 14: This is the finial twist activator. On the left, chuck the activator tube, but not all the way into the collet. You need just a little room because you need to square the tube with the block using a parting tool. Use a live center to stabilize your finial. Spin the finial to be just a little bit smaller than the clip retainer ring. Back by the tube, make a little tennon that is just a tiny bit smaller in OD than a 10mm tube is on its ID. So measure inside a 10mm tube and make this tennon just a little smaller. Finally, decide how long the finial will be…I say 7/16 is pretty nice and comfortable, and part the end off. Spin and polish and you should have something like the lower picture. There is a reason for the little tennon. The transmission has a little bit of play, so it can move a bit side to side inside the pen. The tennon will keep the finial centered on top of the pen. If it is too big a tennon, the fit will be too tight and thus it will not turn comfortably on the pen.

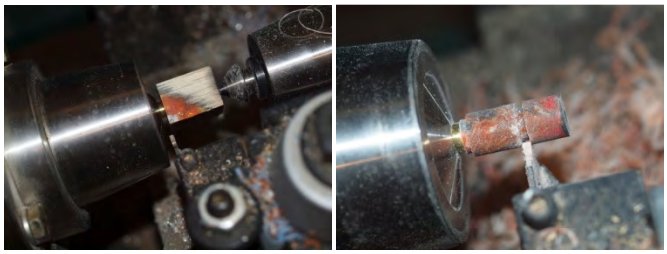

Image 15: If you are just using the stock cigar nib and coupler..press it in and your pen is done! Otherwise…let's keep going. Press in the modified nib coupler, all the way in so only the threads are exposed. Insert a refill into the pen and screw on a stock nib. Twist the tranny so the refill is extended. Now, look how much further the refill sticks out…this is because the modified nib coupler has no ring on it anymore and thus is further up inside the pen. Measure from the end of the pen body to the spot where the tip on the refill tapers. This will be the length of the new nib. It can vary a bit each time, but 1" is the average length I find it to be.

Image 16: Hmmmm…oil in a cup..this will be tasty! But really…any oil will do just fine, and an acid brush. You need this, not to prevent any type of heat issues, but to prevent the aluminum from sticking to your drill bits and your taps. Just brush the drill bit, drill in a bit, back out, brush off any debris while at the same time applying some more oil and plunge in some more..over and over again.

Image 17: This is ½ inch aluminum rod. Start with the small hole first..so this is the tip of the pen. With a small pilot hole, punch into the rod. Then drill a 2.5 mm hole about ½" deep or more is ok too..it's not critical at this point. Keep the little bit oiled and debris free so it does not break off. Notice I keep the rod fairly close to the collet..the closer to the collet, the less run out. Once the hole is complete, pull out the rod and part it at 1 inch < this may change..depends on your previous nib length determination!

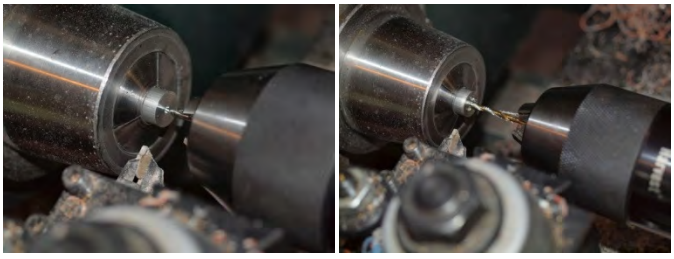

Image 18: This is the nib and it is flipped to the back side now. Drill another pilot hole. Use a 7.25 drill bit and drill 3/8 deep…if you go 1/16 deeper, that will be ok, but not less than 3/8 and not too much more either. After this, change to a 4.5 mm drill bit. Drill ¾ deep, no more. This is the hole for the refill spring. When I say drill ¾ deep, I mean from the outside edge of the rod, not ¾ deeper than the already 3/8 deep..otherwise you'd be all the way through! YIKES!

Image 19: Now it is time to tap the hole. Insert a starter tap in a drill chuck. Oil the tap. Push in the tail stock and slowly turn the collet chuck back and forth to work the tap into the hole. After that, I switch to a bottom tap and spin it in by hand..yes it's still oiled. ¼ turn in, then ¼ turn out, then ¼ turn in then ¼ turn out and so on until it bottoms out in the hole. The tap size for the cigar nib is m8x.75

Image 20: Clean out the nib and do a test fit with refill installed. On my pen, I say the refill does not quite stick out enough…very close, but not quite. I will simply part a hair off the tip to adjust the length.

Image 21: On the left, I simply chucked a nib coupler and this is what will hold the nib for shaping. Screw the nib on to the coupler real nice and tight. On the right are the tools I will use. Normally I would just use my metal lathe to shape the nib, but I am going to use hand tools instead to show that this can also be done on a wood lathe. Any chisels will work, but these carbide chisels are far superior. I like the rotondo tool best for turning acrylics. The Woodchuck on the other hand seems to work best for me when turning metal, go figure!

Image 22: Although spinning the nib by hand does not produce as nice a finish, the woodchuck allows for some really fun creativity for nib design. Any little bit of chatter or scratches are easily sanded out. I sand with 220 and then wet sand up to 12000 mm and finally use aluminum polish to bring it to a bright shine. There is one small problem. All that turning has wedged the nib tight on to that coupler and as smooth as the finished nib is, it will not come off and you sure can't use pliers on it. The solution is to remove the entire assembly. Wrap the nib with a layer of masking tape. Insert the nib into a collet and tighten it down. Now grab the end of the nib coupler with some pliers and unscrew it. Now you have your very own nib!


The end!