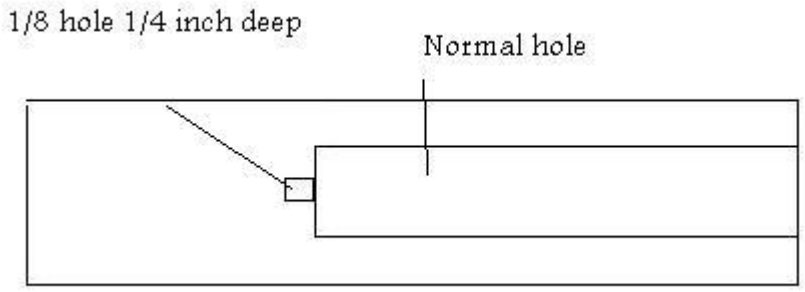
Invisible Clip Tutorial

I first saw what I call the Invisible Clip in Russ Fairfield's PMG gallery and fell in love with it. I could not figure out how he made them so I sent him an e-mail and he was kind enough to share his basic technique with me.

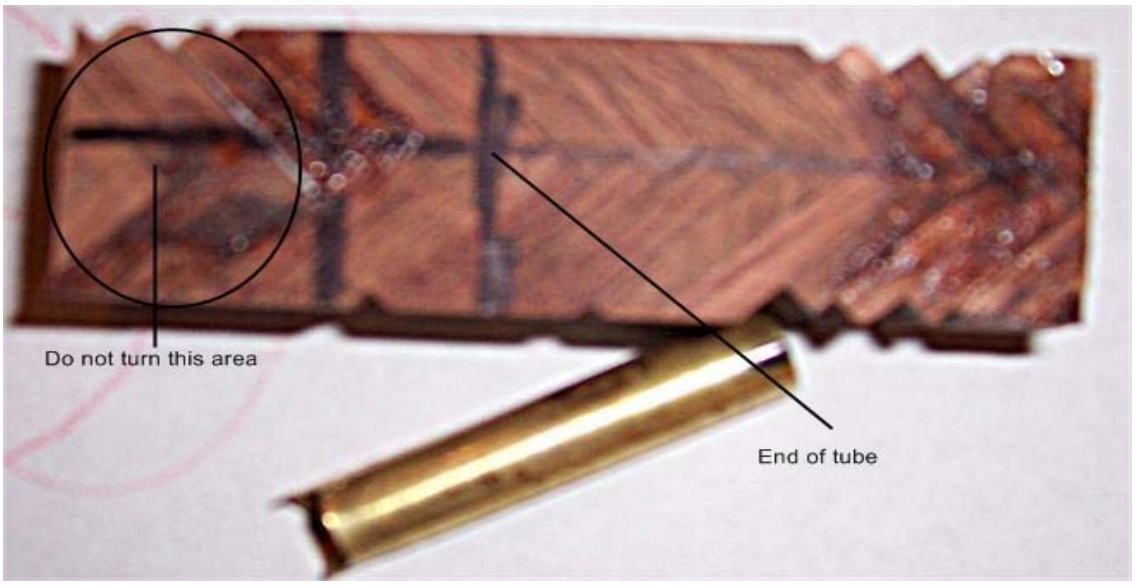
It is important to note that not all pens are good candidates for the Invisible Clip. This technique requires that the clip has a small hole in it and I have only used the Americana Snap Cap, and screw caps to make these. Any kit with a larger hole in the clip would be a poor candidate for this and the reason why will become apparent in the section about grinding the clip.

When drilling the cap section on the pen you will be drilling a blind hole for the tube to fit in. After drilling the initial hole and before moving anything drill a 1/8 inch diameter hole about ¼ inch deep into the existing wood (see figure below).



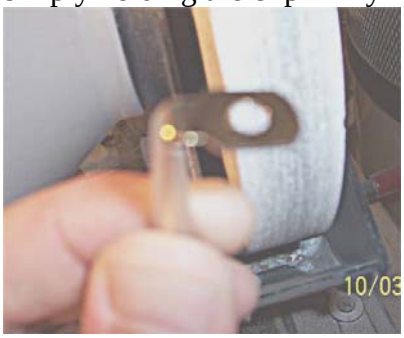
Next take the cap tube and cut a slot in the top wide enough for the trimmed clip (clip explained below). The method used is not important but I usually cut it out with wire cutter than smooth over the sharp edges using a Dremel.

Next mark your cap blank. I make three lines. One where the tube ends, one where I will part off the cap and then a horizontal line to mark the alignment of the slot in the blank.

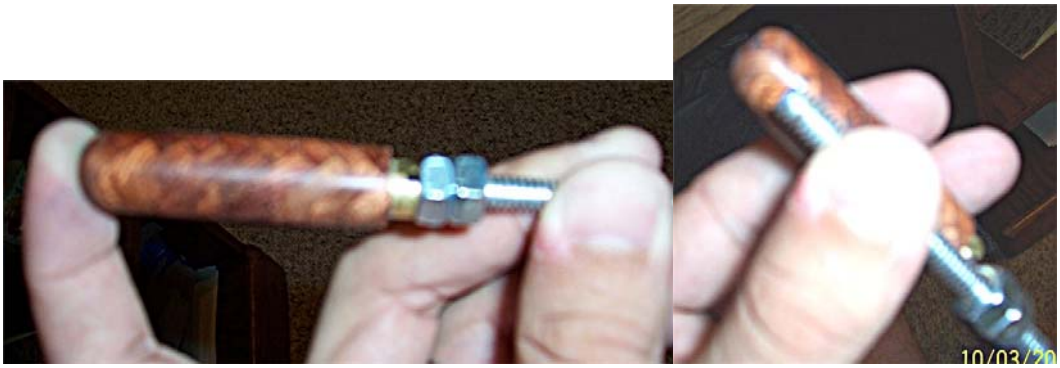


When gluing the tube in I am very careful to keep the slot centered on the line running horizontally in the above picture. You can draw a line on the tube using a sharpie to help you align them. I will use a parting tool at the left most line to mark the end of the cap but will not part it completely off. This will allow me to locate the slot after I have turned off the horizontal line to the right on the cap section.

Now take the clip and grind it to where there is just a tab section that we will insert into the cap through a slot that we will cut later. I use a slow speed grinder to do this while simply holding the clip in my hand.



After turning the cap to shape but prior to sanding take the cap and use a pencil to mark just below the end of the tube where the slot cut in the tube is. I use a piece of all-thread with 2 nuts as my depth finder. Usually you would have the end with the line on it to help you locate the slot. Unfortunately I messed up and broke off the end so I had to probe around the inside with my depth finder to locate the slots location on the tube.



Using a coping saw with a fine blade make a shallow cut where you marked with the pencil. Do not go too far or your hole will go wider than the tab on the clip.

Use a dental pick to pick through the thin layer of wood just enough to fit our slot cutting tool into.

The slot cutter pictured is a fine tooth coping saw blade that I cut the end off of. The idea is to pick out just enough material to get a tooth or 2 in and then cut the slot. Test fit the clip to see when it will just fit in the slot.

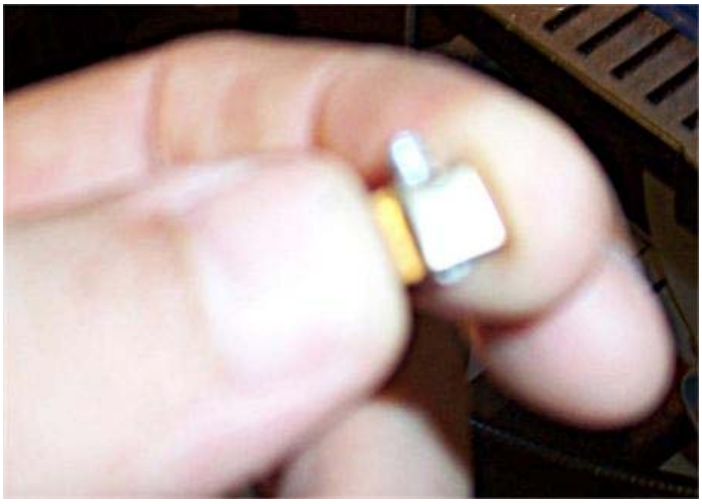
Now remove the clip and you can sand and finish the cap.

Next we will need to secure the clip to the cap. I use the existing part that you would usually press fit into the top on the cap and screw the cap into.

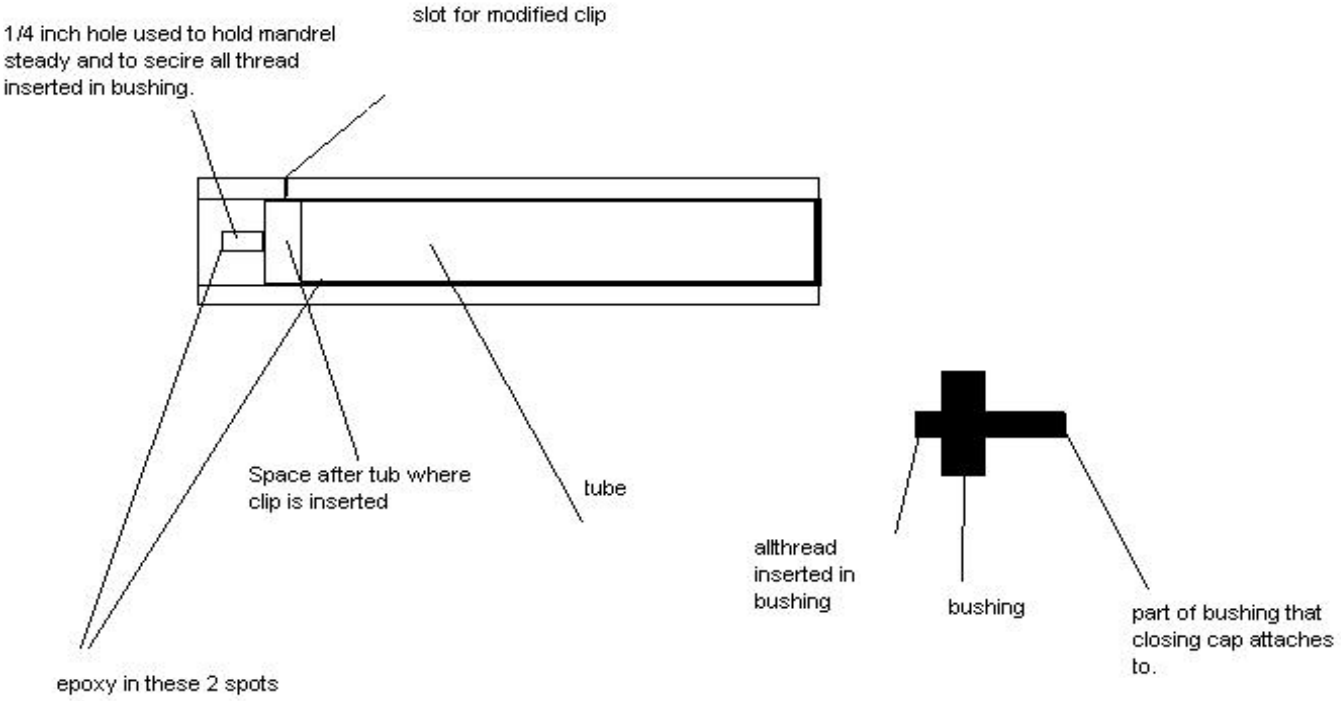
First I need to grind off the outside of the part so that it slides into the tube. I do this by threading it onto a small piece of all thread and lightly rotating in against my grinding wheel.

Next I want to grind one side of the part flat. The reason I do this is simply to let air escape. I found that when I did not do this and I tried to epoxy the part in glue would come out the clip slot from air pressure. This allows the air a path to escape that will not ruin the pen. I just hold it in my hand against my grinder very briefly then let it cool. Be careful it heats up fast but it does not take very long to cool down

Next I cut a small piece of all thread with a hack saw or Dremel cutting wheel and glue it into the part using CA glue and let dry.



Now the moment we have been waiting for, insert your clip and test fit that the hole in the clip lines up with the hole in the blank and the all-thread on the part. This picture was made to illustrate this method for a snap cap but the idea is the same.



Once everything fits, mix up a little epoxy and carefully insert it in the bottom of the hole. You do not need very much epoxy just a dab or two. I use a wooden BBQ skewer that I put epoxy on the end and smear it in the bottom of the hole. Be careful not to get it on the side of the tube near where the nib goes in. Then I press my part down using a

piece of all-thread or what ever is on hand. The piece of all thread that was glued into the part goes through the hole in the clip. The all thread is supported on both sides: on one side in the small 1/8 inch diameter hole at the top of the cap, and on the other side in the metal part. Once the epoxy is dry the clip should be very secure.

Have fun and good luck. Please feel free to contact me if you have any questions.

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IAP screen name VICK

Links:
Links to posts Russ made about his Invisible clip method.
http://groups.yahoo.com/group/PenMakersGuild/message/1760

http://groups.yahoo.com/group/PenMakersGuild/message/1292

Link to an article Russ wrote about turning solid body pens.
http://www.woodturner-russ.com/Pen61.html

A special thanks to Russ Fairfield for his generosity with his ideas and techniques. Also a special thanks to DCBluesman, RonInDrumPA and Alamocdc for editing and contributing to this document.