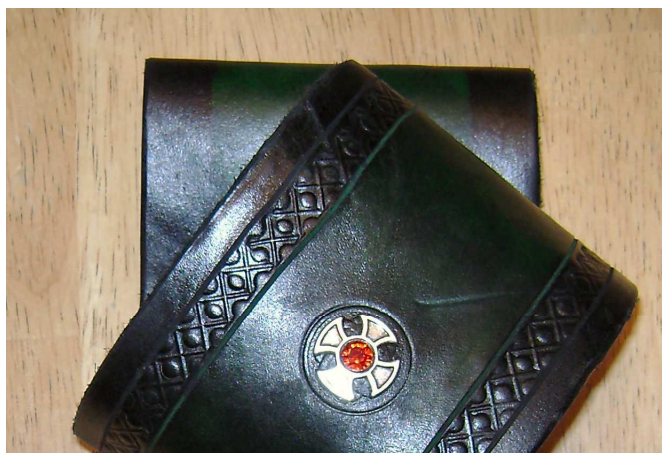
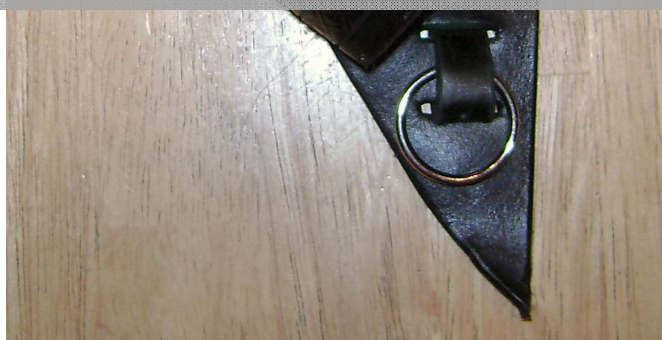


12/26/2009



BEGINNING
LEATHERWORK

HOW TO MAKE A LARP SWORD FROG



A Complete Tutorial | David Haldenwang

This tutorial is designed to help the average LARPer who is interested in learning leatherwork build a simple leather holder for a boffer sword, which will hang from a belt. This is known as a *frog*, which is different from a sheath or a scabbard in that it does not cover the entire blade.



This is written with the assumption that the builder is a fairly handy person, comfortable with hand tools, but that the builder has no leatherworking experience or tools – they are starting from scratch. This document will provide lists of materials and tools necessary, and also include part numbers from specific retailers and approximate prices. I will be referring to part numbers and prices from Tandy Leather Factory (www.tandy Leather Factory.com), as it is a fairly common chain store for leathercrafters to purchase from. For other tools, I'll use numbers and prices from Harbor Freight. Do not be afraid to shop around for better prices.

Sometimes, I'm going to do some advanced things in this tutorial, mostly cosmetic things. I'll clearly tell you when you can skip a step, and I'll put it in italics. Skipping these things won't affect the function of your frog, but it'll be less pretty.

I'll also sometimes use tools you can do without for this project, because they're more convenient or comfortable for me. If the text and pictures disagree on what I'm using, go with the text.

First, make sure you have a good work area. You will need a sturdy table or bench and good light. You will also need a cutting board to pound your punches on – the white plastic/poly boards work best.

When pounding rivets or punches, it helps to pound directly above the leg of the table. Finally, you'll want an old hand or dish towel. We're going to destroy this towel with leather dye, and cut a chunk out for burnishing too, so don't use anything nice.

Next, assemble your tools:

Stuff you probably already have:

1. Ruler
2. Ballpoint pen
3. Measuring tape (Not to be confused with a tape measure. You can substitute a piece of string for this if you don't have one, and just measure the string on a ruler.)

From Harbor Freight:

1. 1 pound rubber mallet (black or white), #39646-0VGA, \$1.99
2. 8" x 12" carpenter's square, #65702-0VGA, \$3.99
3. Snap blade utility knife, #97069-2VGA, \$.99
4. 16 oz. ball peen hammer, #39616-5VGA, \$2.99 (really, you only need an 8 oz hammer, but Harbor Freight doesn't sell one of those alone, only in a slightly more expensive hammer set. If you can afford a little extra, get a set with an 8oz hammer.)

Total cost: \$9.96

From Tandy Leather Factory:

1. Craftool Rivet Setter, #8100-00, \$3.49
2. Mini Punch Set, #3003-00, \$14.99 (Throughout this tutorial, I use individual drive punches, but for the beginning leatherworker, this punch set is far more economical – but slower to use.)
3. Craftool Circle Edge Slicker, #8122-00, \$3.99 (optional)
4. Eco-Flo Super Shene, #2610-01, \$6.99
5. Rapid Rivets, 100 pack medium nickel plate, #1273-12, \$4.99
6. Fiebing's Dye, 4 oz, #2100-xx, \$5.99 (any color you want, there's many)
7. Vegetable tanned tooling belly, 8-10 oz, #9080-03, about \$27 (exact price varies depending on exact square footage of leather)
8. Mini Anvil, #3101-00, \$12.99 (if you have a random piece of thick steel around, use that. You can also just pound on your poly cutting board. It's not recommended for long-term use like that, but we're only pounding a half-dozen rivets, so it'll be fine.)

Total cost: \$80.36

Right about now, you're freaking out at the price tag of your boffer frog, right? Eighty bucks for a frog? "No way!" you're thinking. Hear me out.

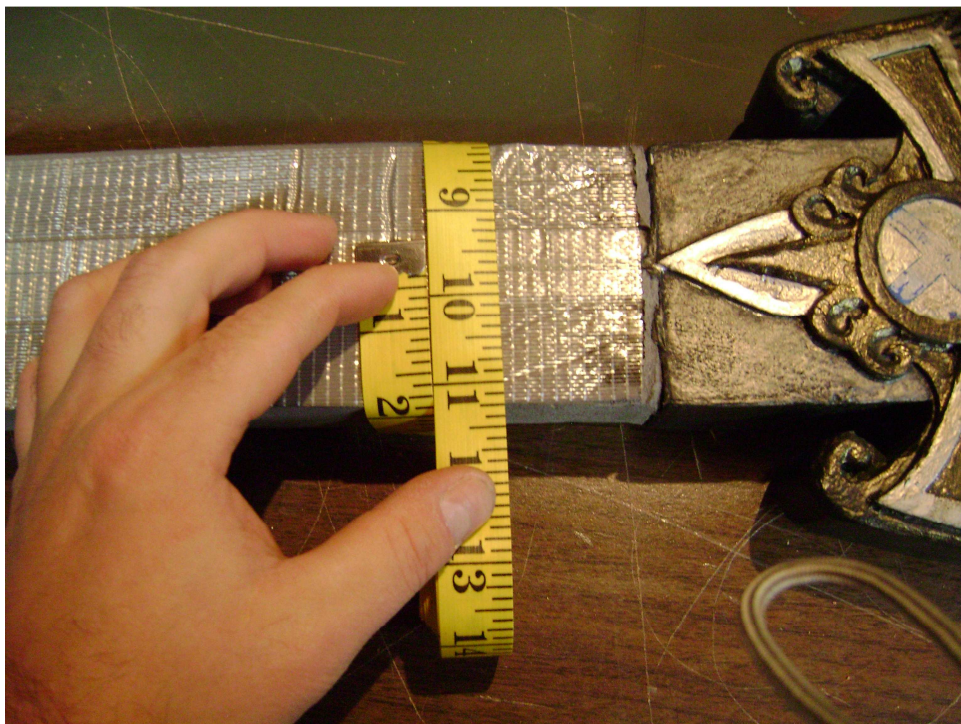
First, tools cost money, this is an undeniable fact. However, tools don't get used up, so these up-front costs don't recur. Any craftsman is only as good as his tools, so to do good work, you need to spend some money on tools.

Second, Tandy has a wholesale club that gets you great discounts on a lot of their stuff, as well as members-only specials. A one-year membership is \$35, but it is money well spent. With my wholesale club membership, the above stuff only cost me \$58.27. That's \$22.16 saved, so you paid for more than half of your membership right there. Next time you need stuff, after the remaining \$12.84 of the membership cost, it's all savings. If you know someone who already has a membership, just give them your shopping list and save it all the first time.

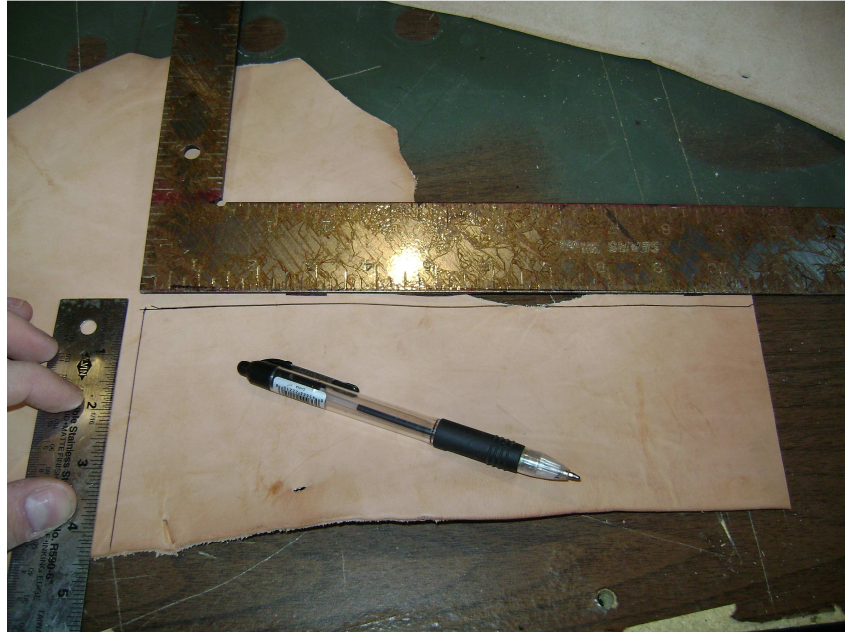
Third, and most importantly, most of your materials aren't used up to make this. You're going to use a tiny portion of your belly. There's enough left there for a couple belts, a couple pouches, several more frogs, some bracers (you may have to layer them a little to meet your game's thickness standards for leather armor though), or all of this stuff if you're careful in laying out your patterns. You're buying a bag of 100 rivets, and using eight or so. You'll use a quarter of your dye, and a tenth or less of your shene. Looking at it that way, it doesn't seem so bad, now, does it? Get some friends on board, sell them some frogs for \$10 each, and you're getting it all back pretty quickly.

So, on to the building.

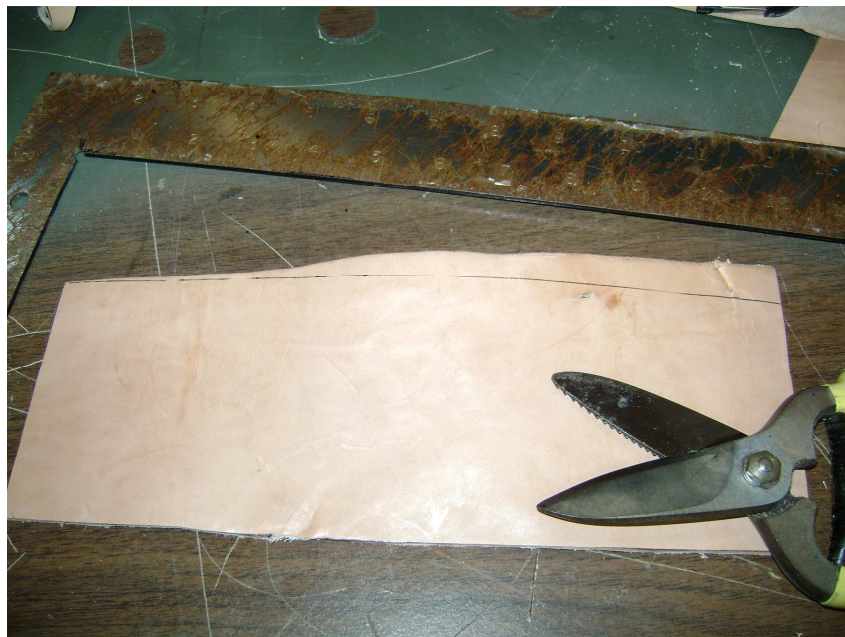
Take the sword you're going to use this frog with, and use your measuring tape to measure around the widest part of the blade. For this tutorial, I'm making a frog for Excalibur from Badon Hill IV. One of the guys in my unit won it there, and I want him to be able to carry it in something pretty. The cover's missing off the sword, and the pommel's being redone, so please excuse the ugliness.



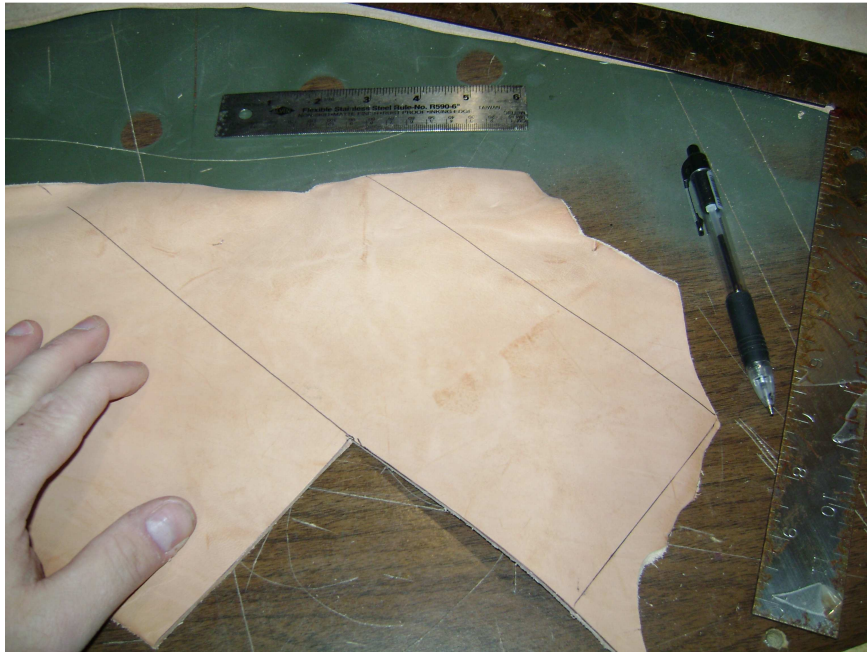
It is about 9 1/2" around. Using your carpenter's square, mark out a piece 10 1/2" long by about 4" wide on the leather. This is the part that will hold the sword.



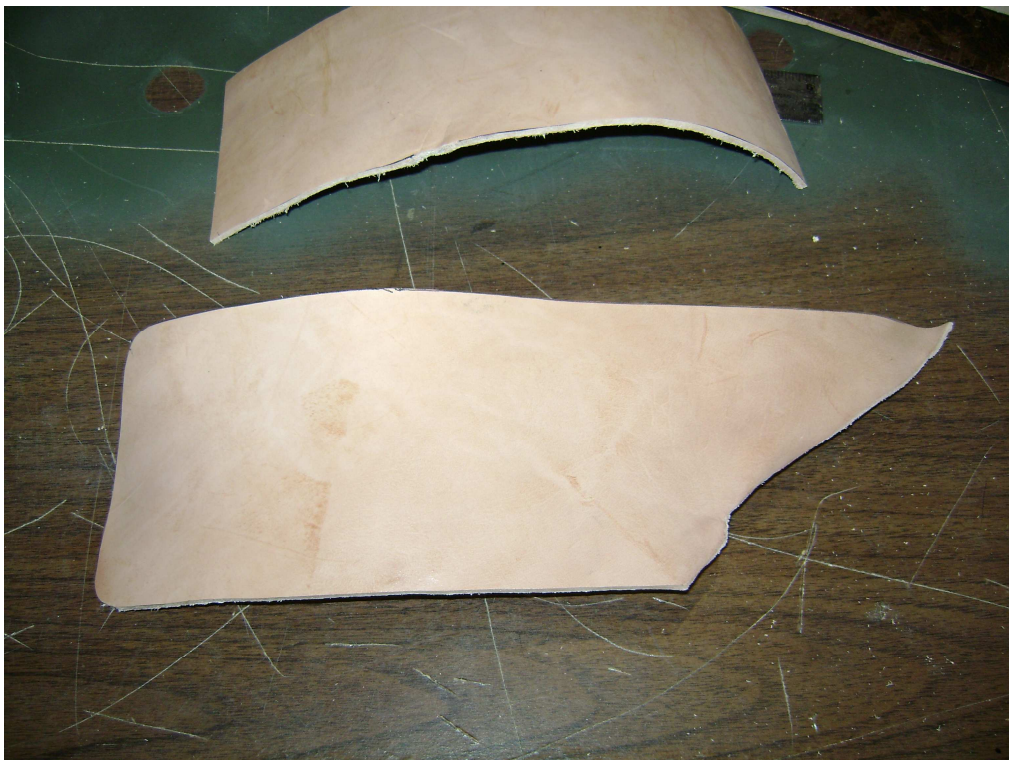
Cut that out, and then square it off. I'm using my leather shears to cut; you should be using your utility knife.



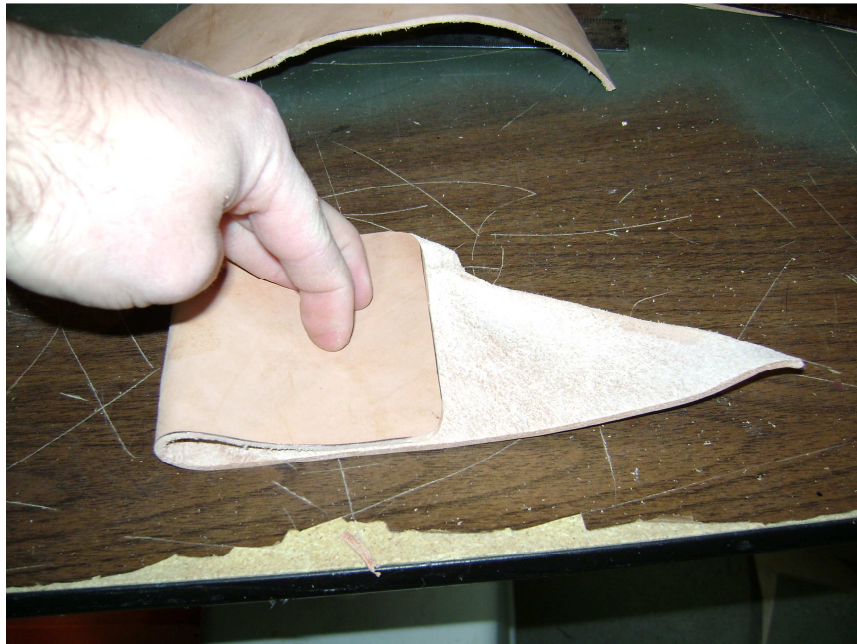
Now, mark out a piece to be the belt loop. I've marked out a rather irregular piece here to give the frog some character; you should feel free to cut a rectangle if you wish. It should be at least 8" long and 4" wide.



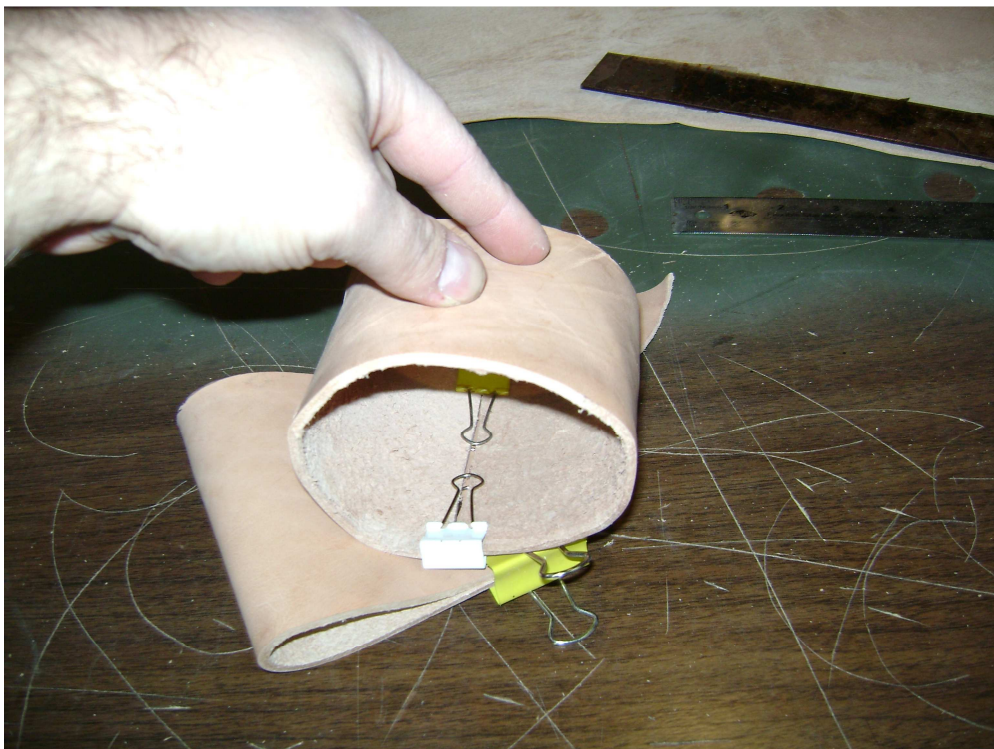
I round off the square corners on the belt loop (in front here) to make it prettier, but not on the frog piece (shown in back). Those ends will butt up square against each other when we form the ring with them.

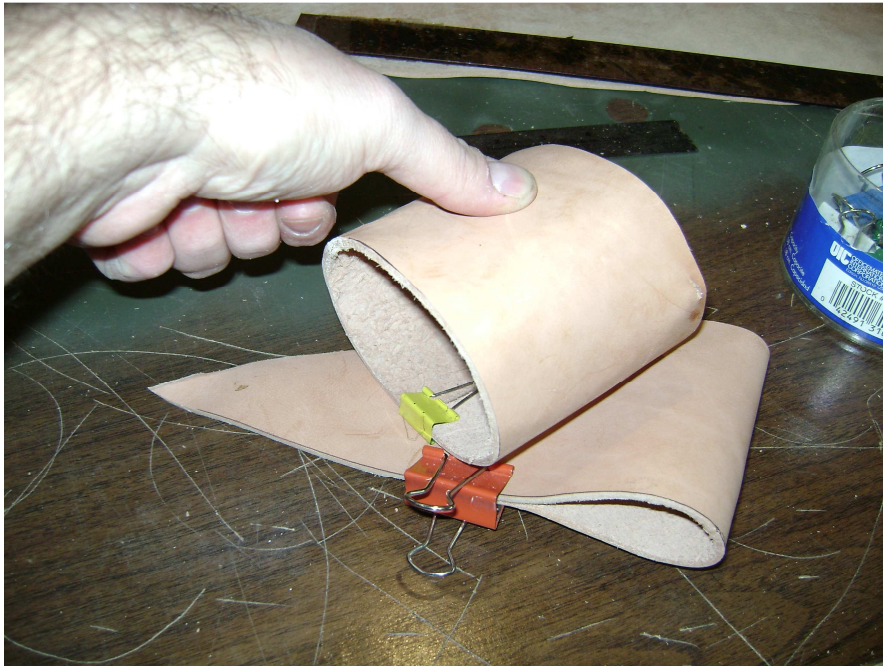


Here, we can see how it's going to fold over to create a belt loop.



I use some binder clips to hold it all together to test my design, but you can use your fingers to do the same thing.





Here, I'm using an edge beveler to round off the edges of the leather pieces. You're going to use your utility knife to very carefully slice away the edges of the leather pieces, front and back, for the same effect. You're trying to take off the right angle edges of the leather from cutting so that we can slick them smooth later in this process. This is probably an optional part, but will really make your stuff look more professional and finished. If you skip this part, you can also skip buying the circle edge slicker from Tandy.

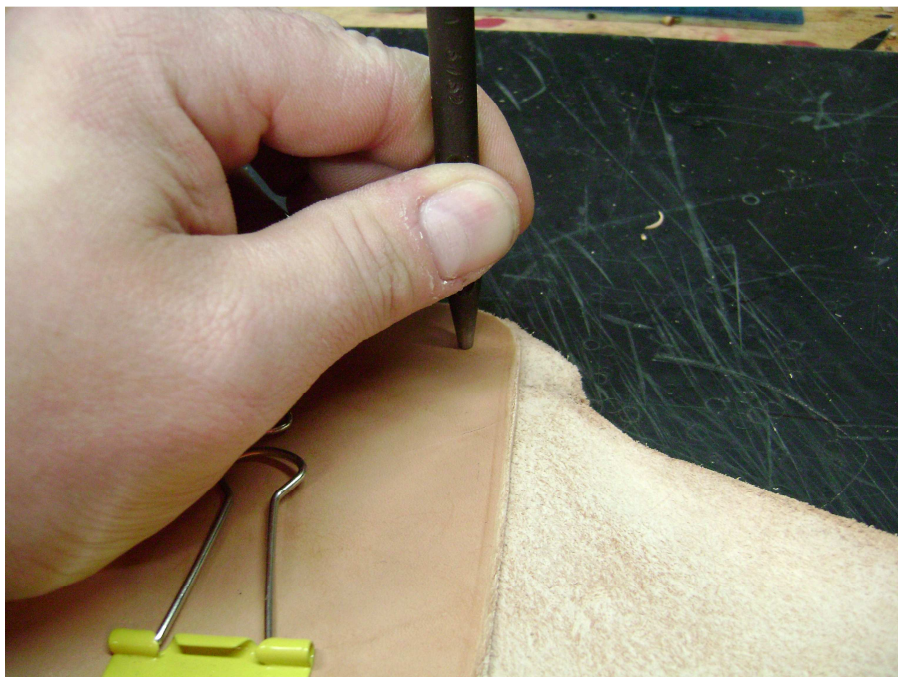


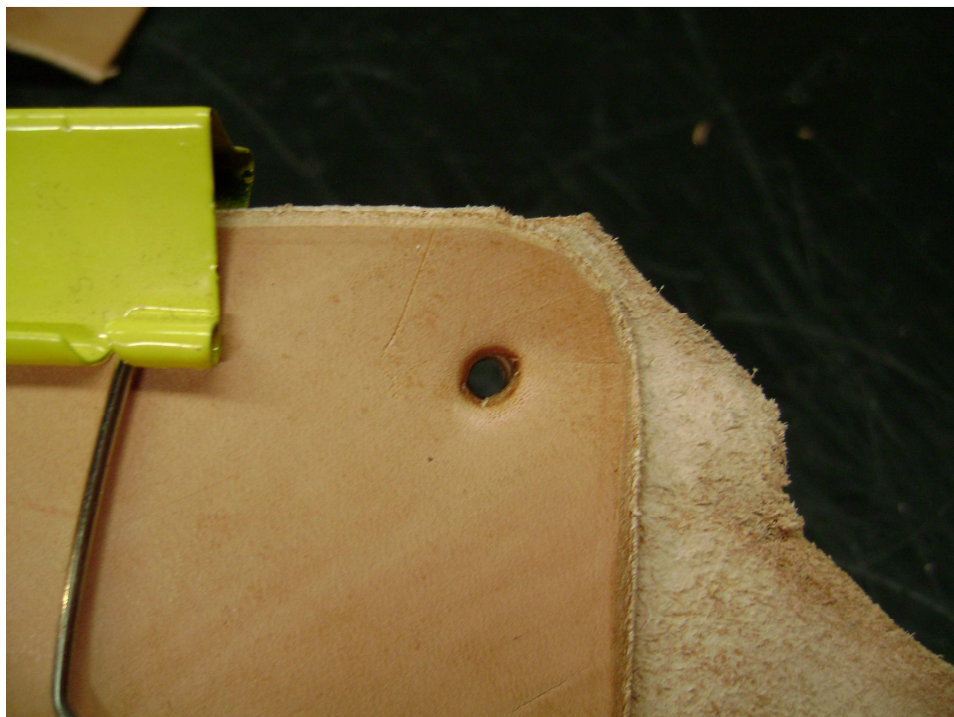
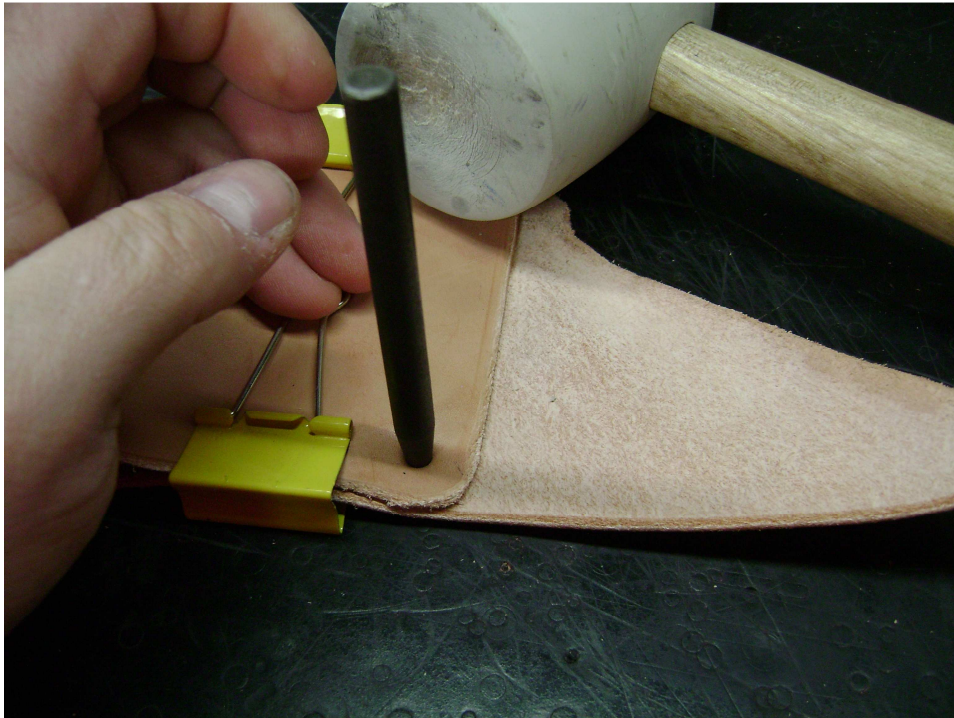


Here's what a beveled edge should look like. I didn't bevel the ends of the frog piece. There's no need to there, we're butting those pieces together in an unseen area. Notice the nice, rounded edge. Try and duplicate this with your utility knife. Use your carpenter's square for a straight edge guide if it helps.

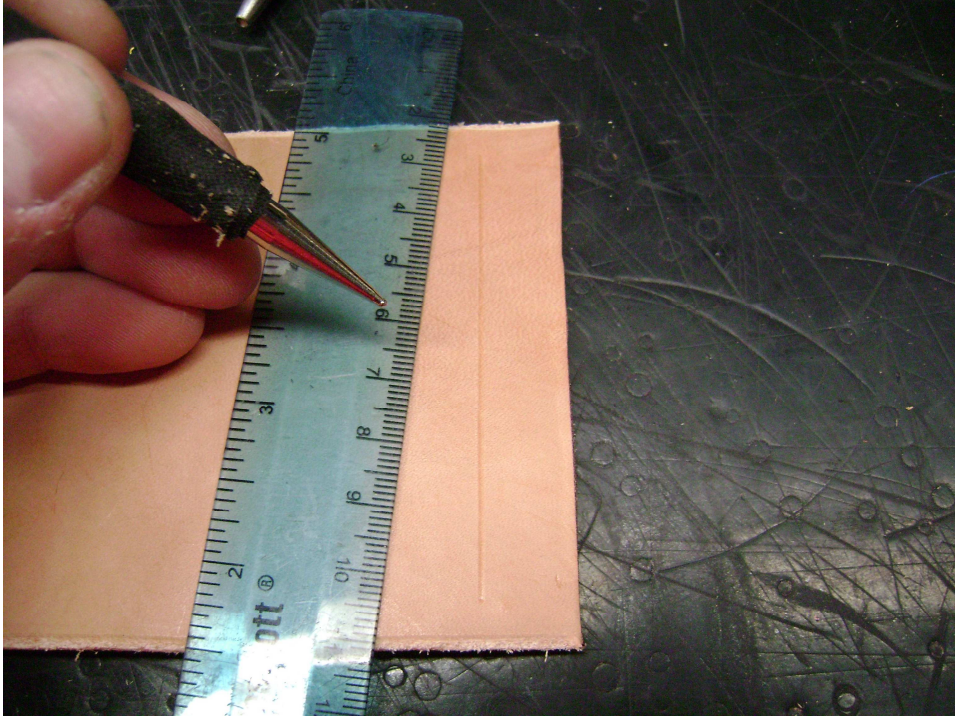


Now, fold the belt loop over about 3", and use your punch to put a hole through both pieces of leather at once. Make one hole in each corner as shown, using your punch and rubber mallet on your cutting board. Don't pound them through onto anything hard, like your anvil, you'll dull your punches. Use the correct size punch barrel for the rivets you bought. Make a few test holes in some scrap to make sure. The rivets should fit in snugly, but not tightly. The binder clips help again here if you have a few. The pictures show me using an Osborne drive punch, it's not modular like the ones you bought, but it does the same thing.

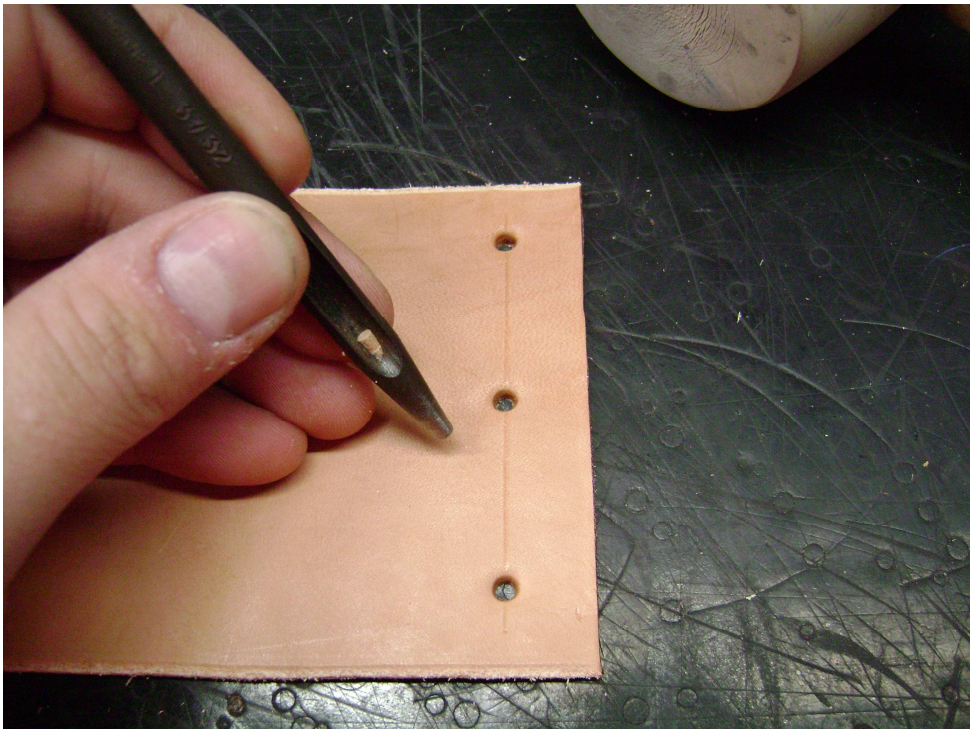




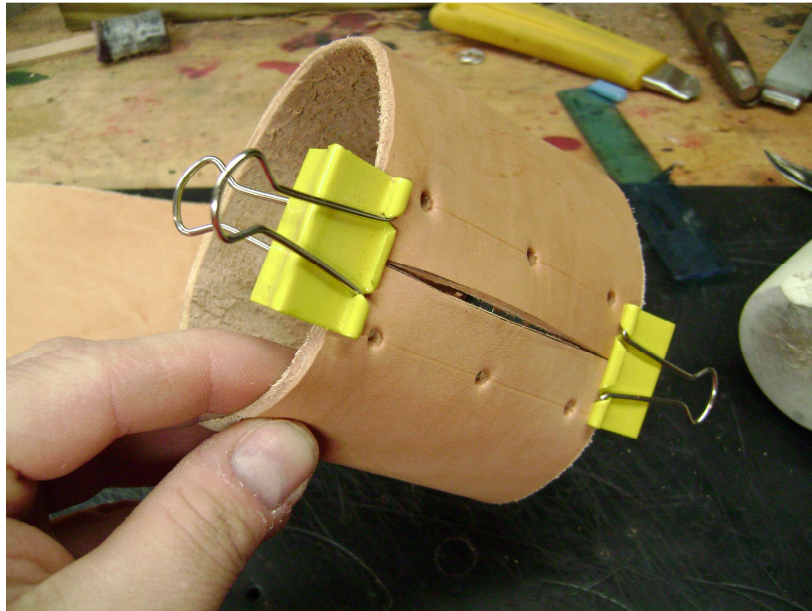
Now, use your ballpoint pen and ruler to draw a line about $\frac{1}{2}$ " in from both sides of your frog piece. This is giving us a line to punch more holes on, to attach the frog to the belt loop.



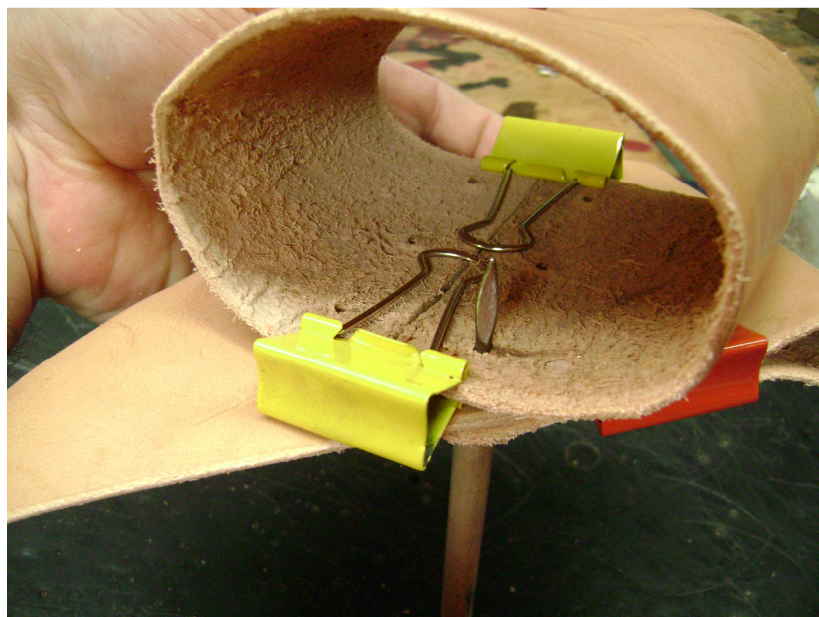
On that line, punch three holes as shown, in each end of the frog piece.

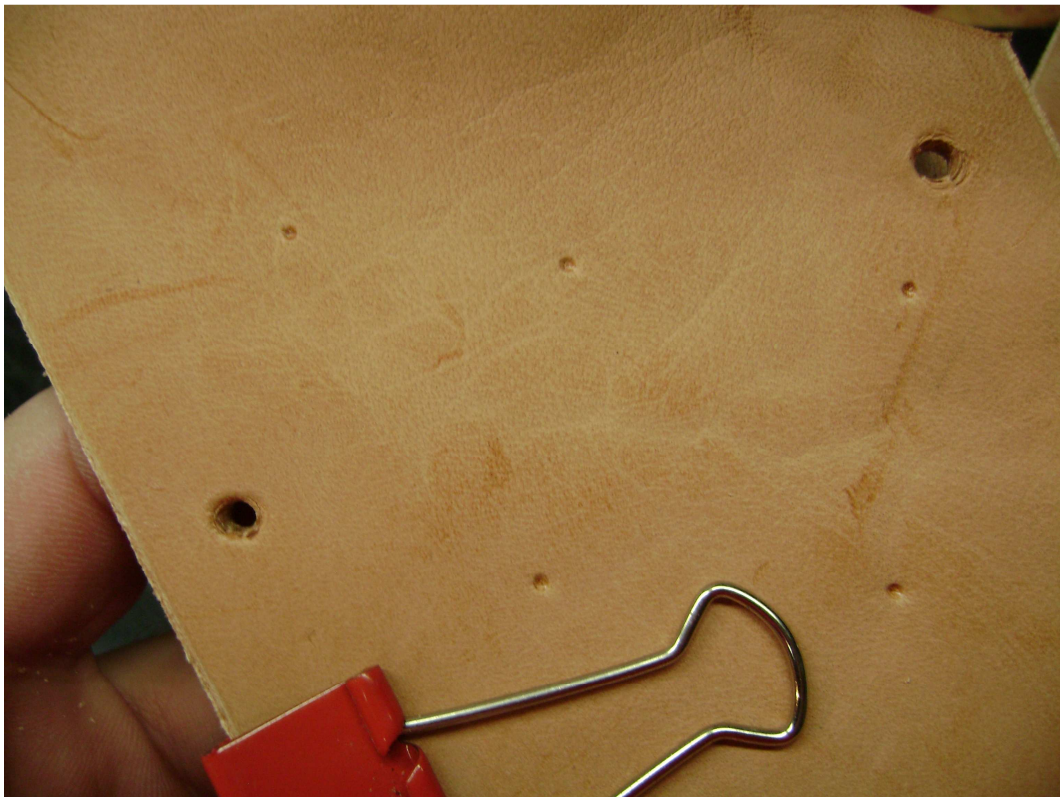
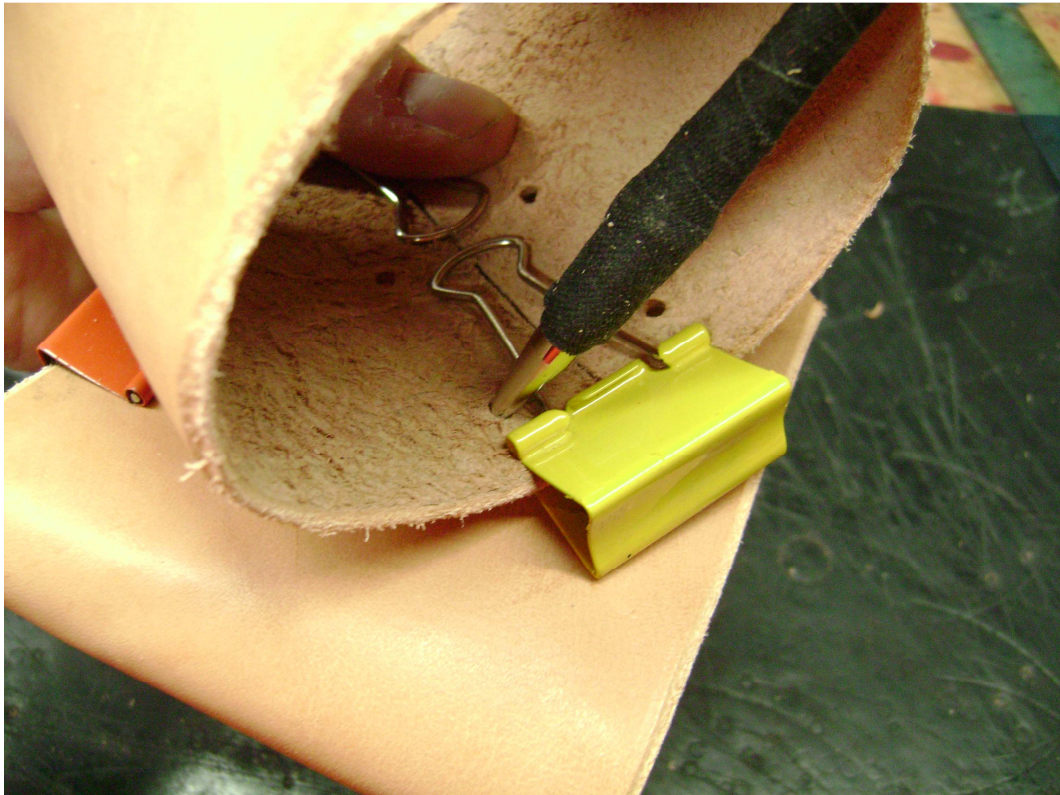


I've again used my binder clips to show the frog part, this time bent around like it will be when attached. I'm going to line it up where I want it on the belt loop and mark through the holes I just punched right onto the belt loop piece, to show where it'll be riveted onto that piece. Make sure you're tilting it the right way – this one is a right-handed draw.

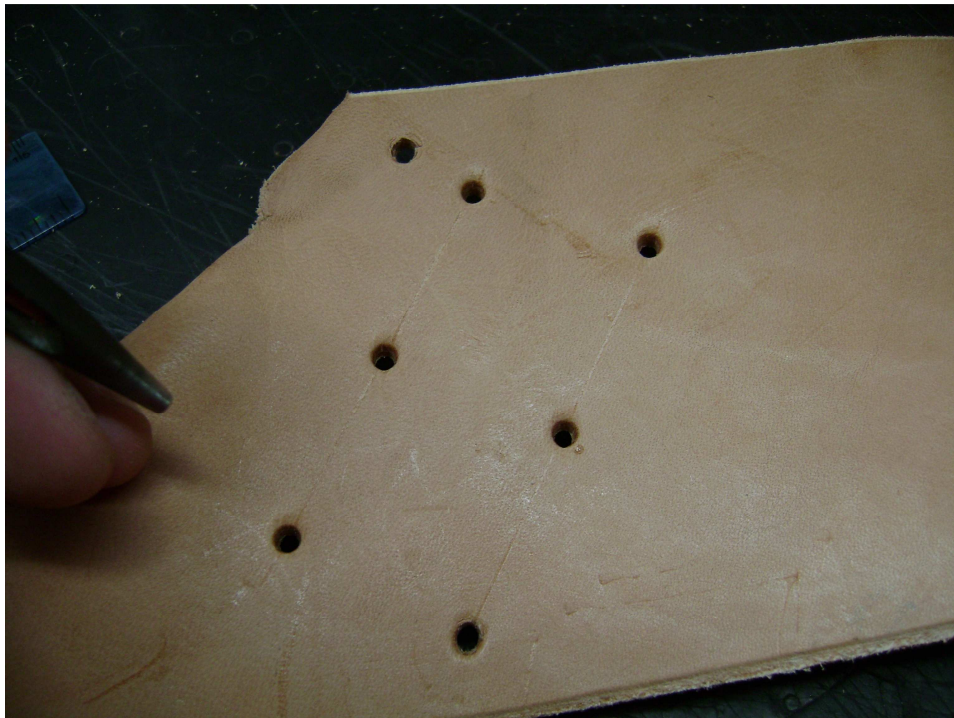
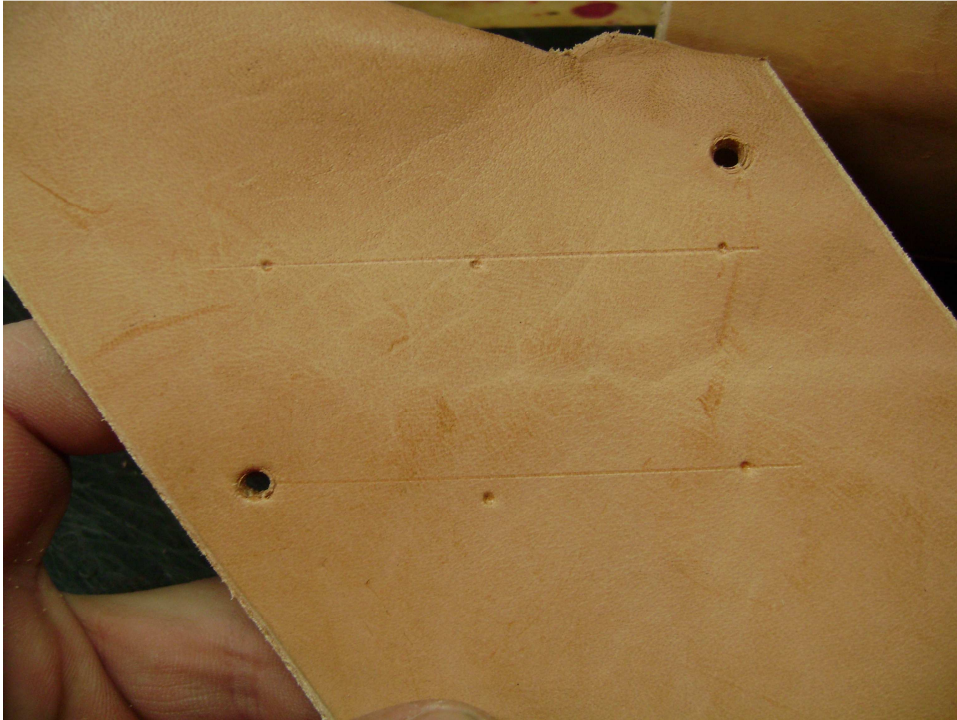


The way this one lay, one of the holes lined up through all three layers of leather. I could move it away, but I happen to have some longer rivets, so I'll use one of them to go through all three layers. You can just move it around until you miss the two holes that hold the belt loop folded over. I stuck a steel scribe tool through all three layers to hold it steady and then marked the other five holes.



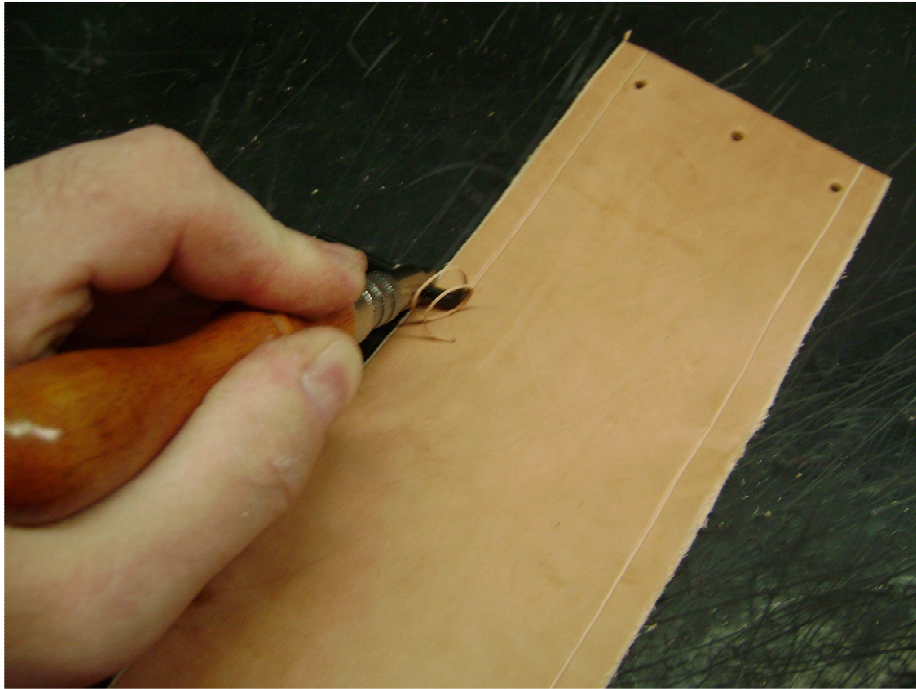


Those marks aren't quite exact, since you have to angle the pen to mark in there, so I'm going to draw a line across them and guesstimate where they should have been. If it's not exact, it's not the end of the world. You can always flex the leather a little, or punch slightly bigger holes, or even punch a new one. These six rivets are hidden inside the frog when a sword's in it, and when the sword's out, no one should be examining your frog rivets – they should be concentrating on avoiding the sword.



These next bits are all optional. I'm going to make it pretty.

First, I use a Tandy adjustable groover to mark off some lines in the face of the frog piece.



Then, I fill the space between the two lines with a simple geometric stamp.





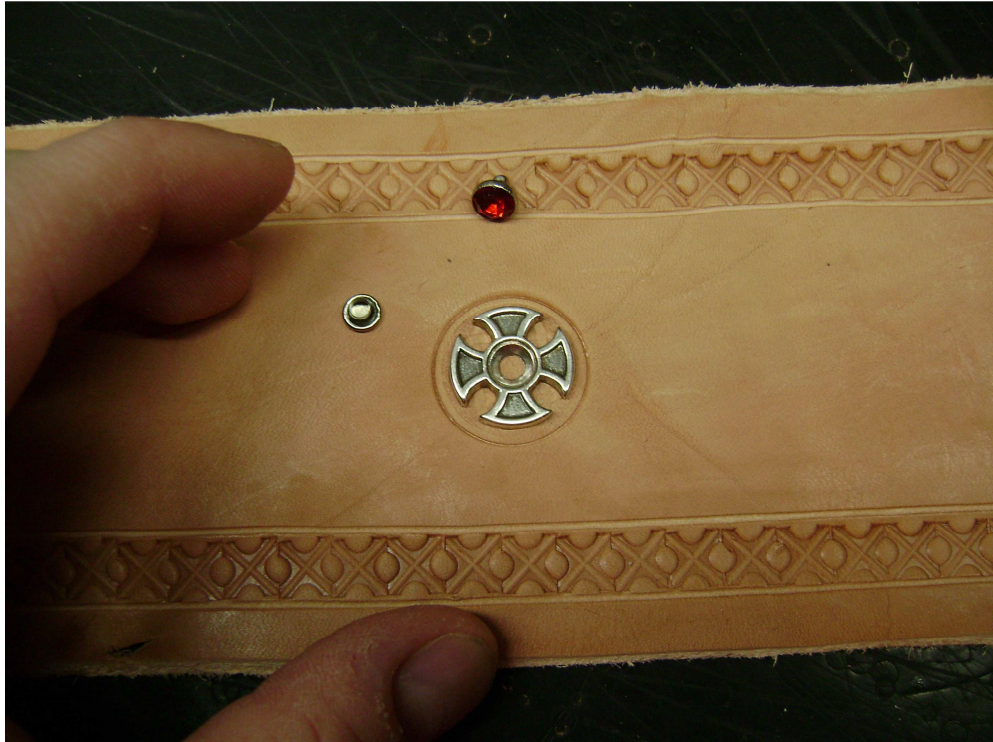
I have a Celtic knotwork stamp that I put in the middle.





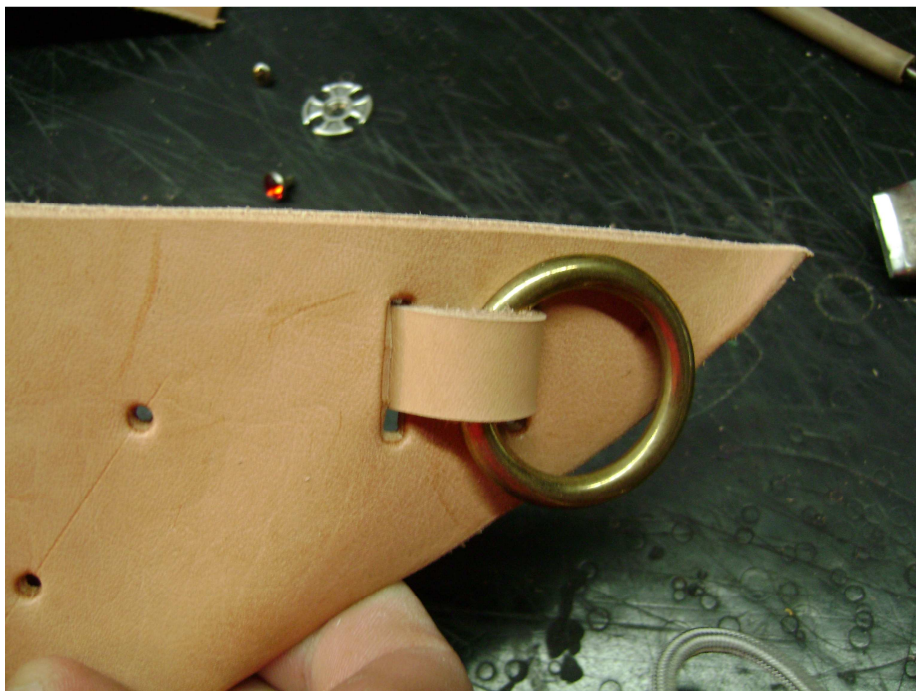
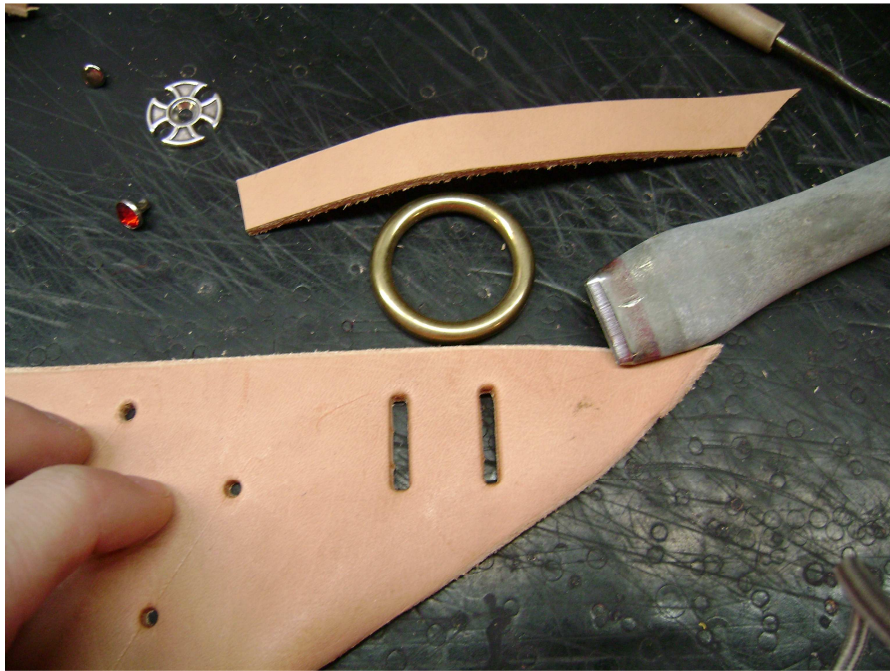
I'm not entirely happy with the way that stamp imprinted. This is probably because I haven't wet the leather before stamping it. Leatherworkers know this as "casing" the leather, and it's usually an essential step to getting clear, crisp imprints, but in this case I'm trying to do this all in one go, and if I wet it I can't dye it today.

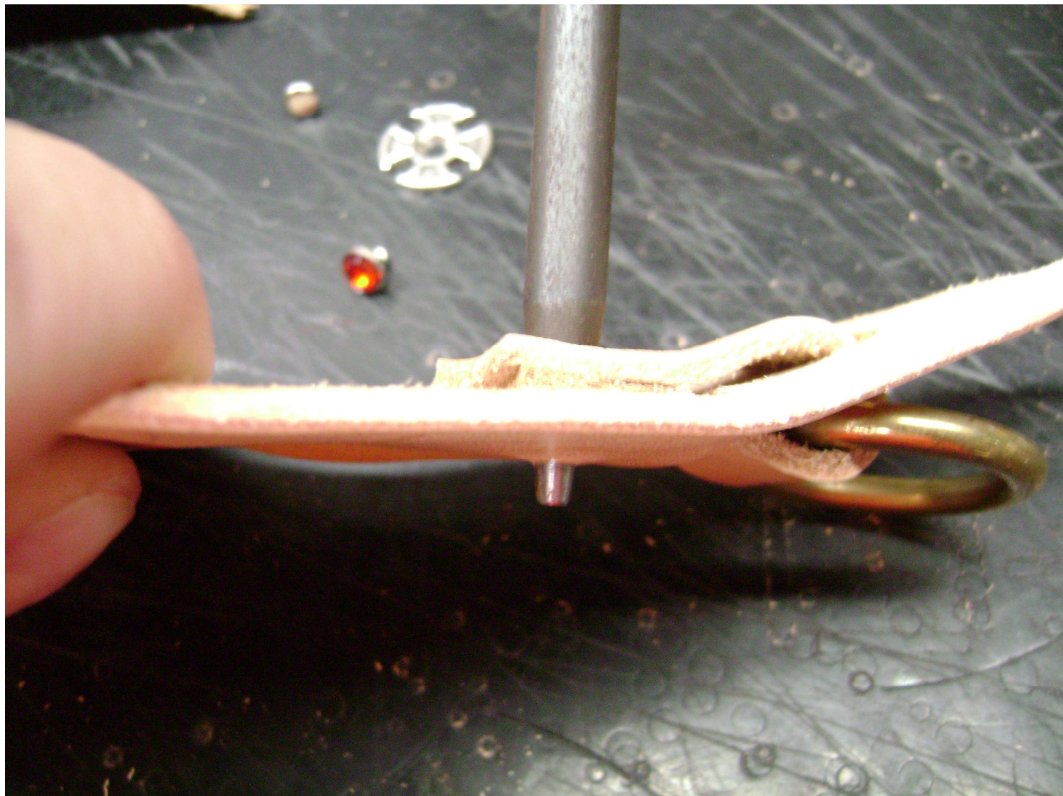
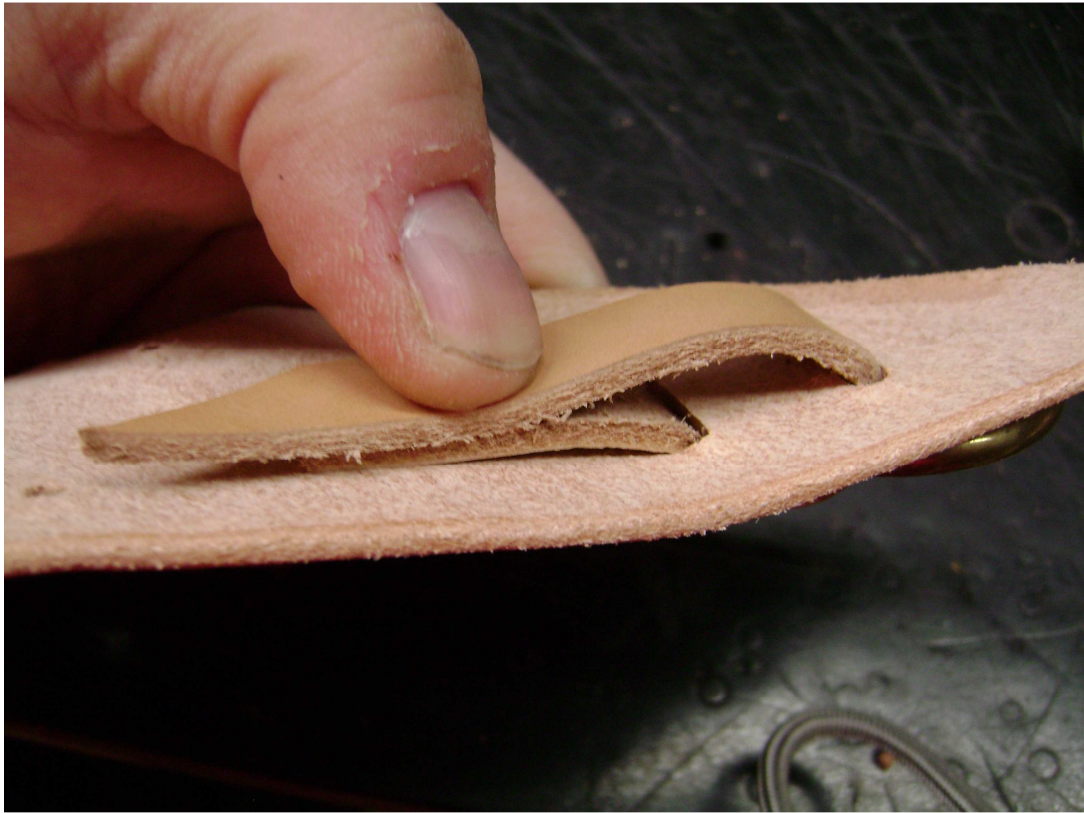
To fix this, I'm going to add a simple bezel concho with a synthetic gemstone in the middle. Our unit insignia is the iron cross, so I'll use one of those I have on-hand.



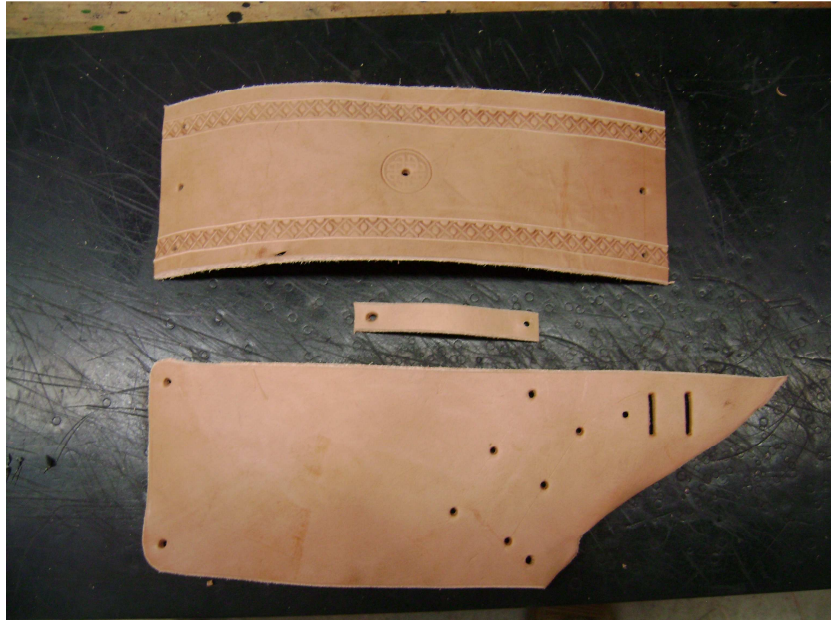
Lots of stuff in leatherwork is improvisation. Sometimes things are happy accidents, and sometimes you just muck it up and have to start over. This looks pretty cool, so I'll pretend I meant it this way from the beginning.

I also want to do something with the hanging excess on the front. I think I'll add a little ring there. This can be decorative, or you could tie a thong off it and tie the frog down to your leg if it helps your draw. I use a small piece of scrap strapping, a 1" steel ring, and a 3/4" slot punch to do this.





Here are all our pieces, ready for dye.

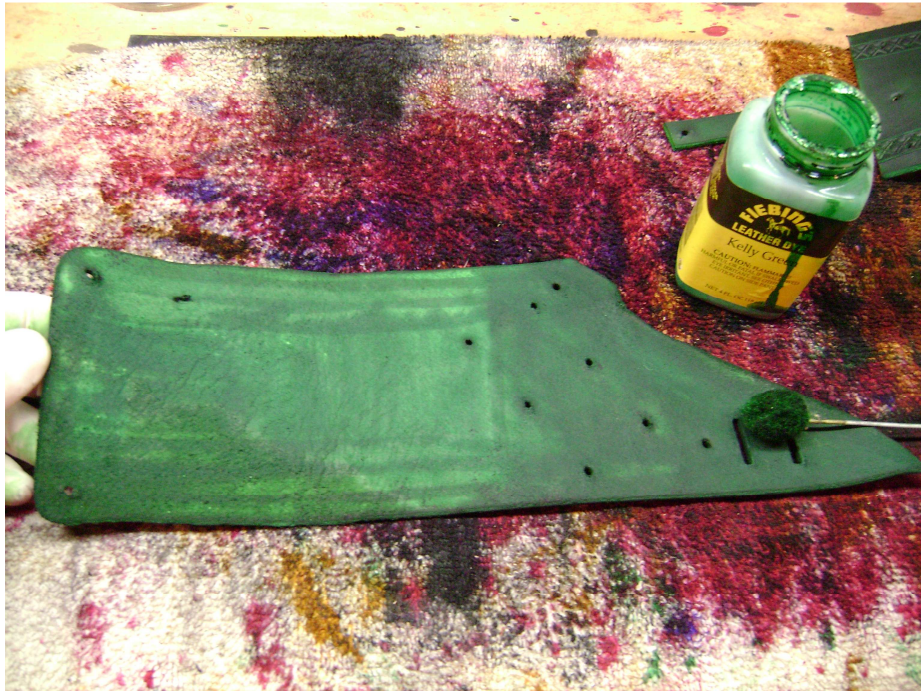


Grab your towel, cut off a 4" wide strip and lay that aside, then lay the towel out on your table. Double it up if you can. Get out your dye; it should have come with a little wool dauber in the box. If it didn't, you'll need to cut off a second chunk of towel and apply dye with that, or find a 1" foam brush. Either one works fine. I wear latex gloves when working with dye. The dye doesn't hurt your hands, but it does stain them, and it doesn't come off. Think about it, this is dye designed to color skin.

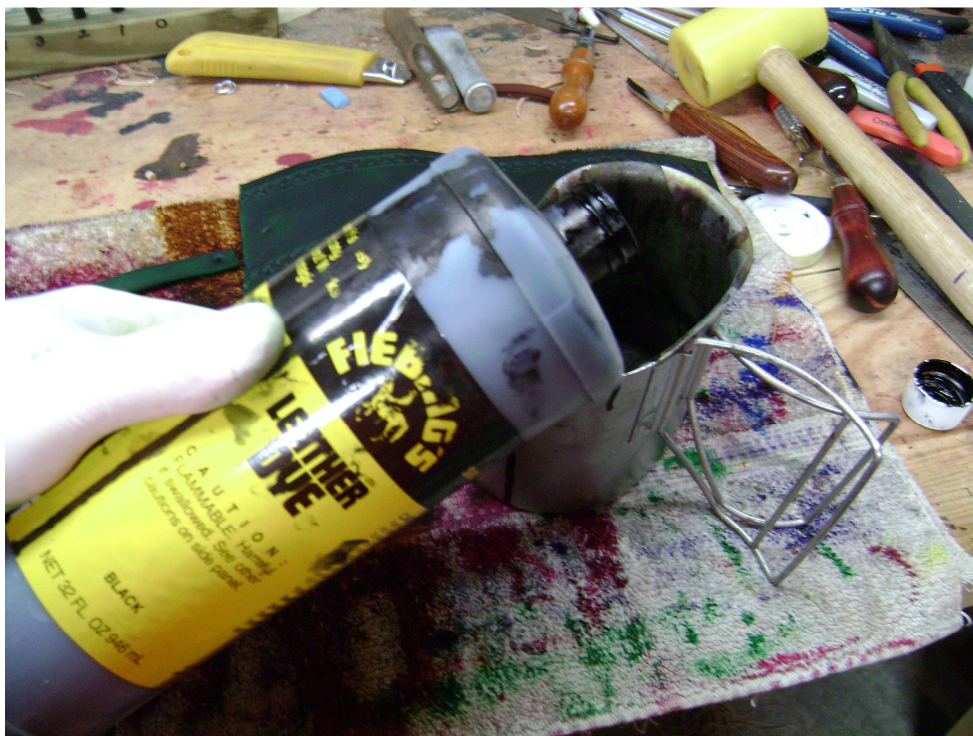


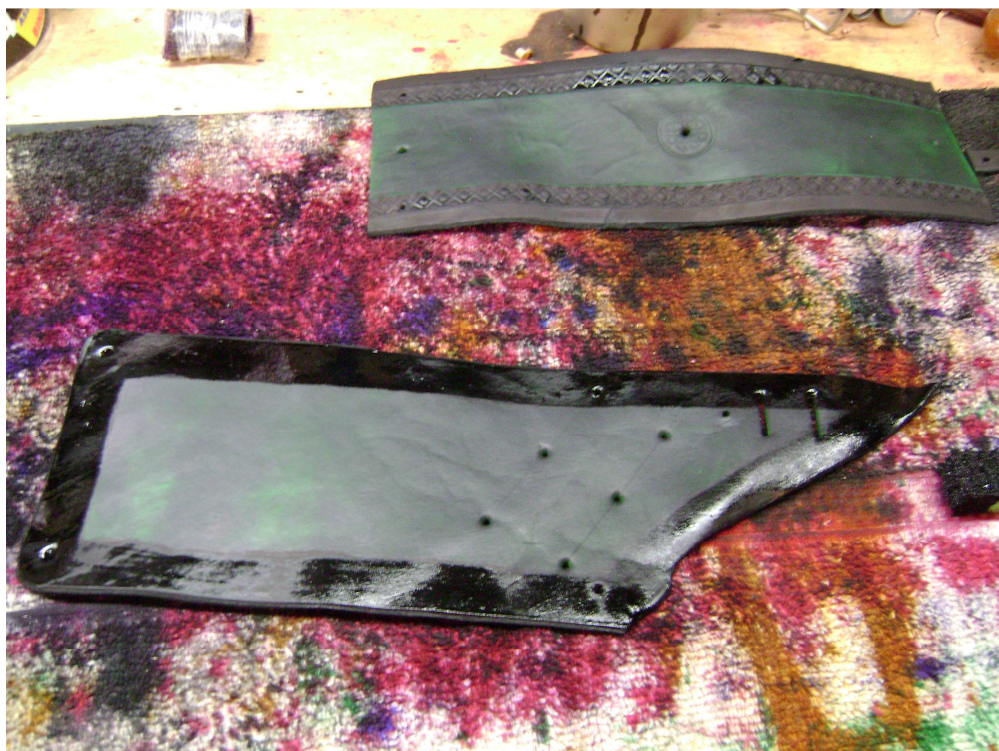
Dip the dauber into the dye, and brush it on. The key here is to really slop it on – don't be stingy with your dye. Give it several coats on the front, a couple on the edges, and give the back a coat too. I don't usually dye the entire backs of things, but some think it looks better if you do, so go ahead if you want to. Make sure if you're not dyeing the backs that you get a quarter inch or so in from the edge on the backs.





This part is optional. I wanted to add some color contrast, so I got out some black dye and poured a little into the canteen cup I use to hold dye. I used a sponge dauber to run a strip of black dye around all the edges of the pieces, and dyed the little loop for the ring black too.





Once your dye looks dry, take the piece of towel you cut off earlier and fold it up into a little square. Use it to vigorously buff the hell out of the front and edges of the leather.



Now, take your white plastic slicking wheel. The key to getting a good, hard, slick edge on leather is saliva. Yes, *spit*. There are enzymes in your saliva that break down the fibers of the leather, and the heat and pressure you're going to generate with your wheel will cause the leather to become hard and smooth. There are commercial products that claim to do this (gum tragacanth is one), but in my experience, nothing works as good as spit.

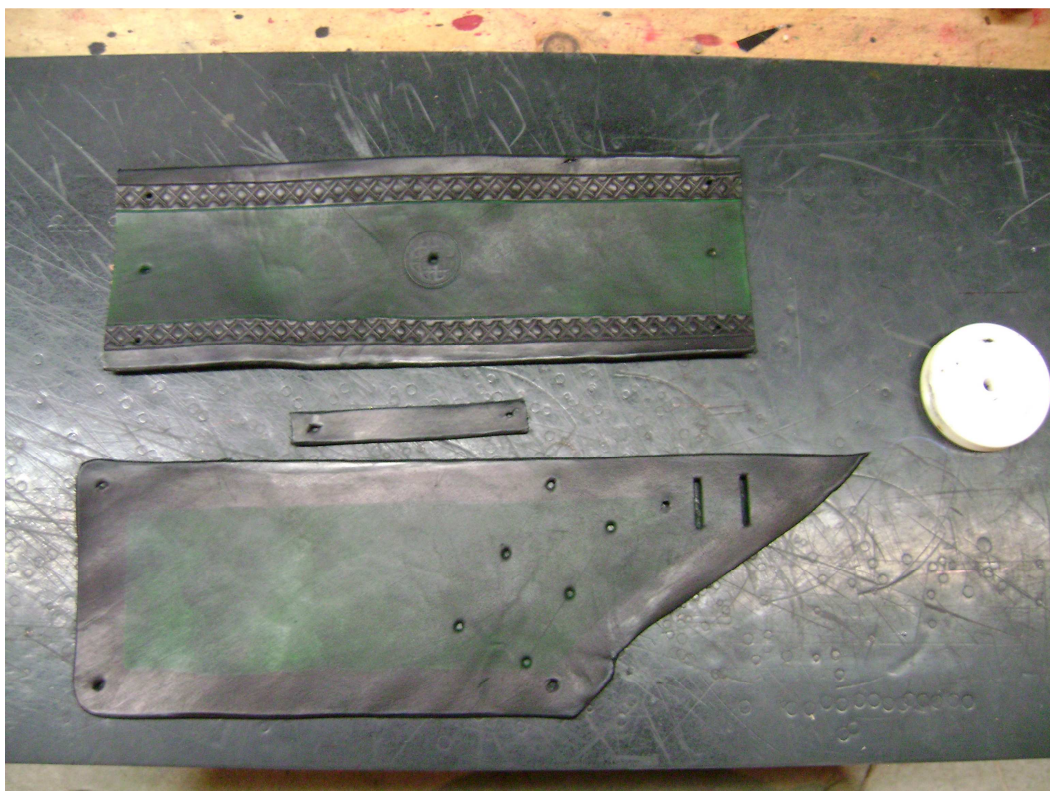
It's sufficient to lick your finger, and then rub the saliva onto the edges, but it's faster if you just hold it up to your mouth and lick it. Get a good bit of spit on the edges, don't be stingy – it's the one free material we're using here.

Rub the edges with the wheel hard and vigorously. You'll be able to see them becoming smooth and hard very quickly. Remember not to slick the short ends of the frog piece, just slick the beveled edges.





Here's the pieces with their edges all slicked.



Now, we're going to use your Super Shene to seal the front of the leather. Follow the directions on the bottle, to wit: "Shake well before each use. Leather should be clean and dry. Apply a light even coat of Super Shene with a slightly damp sponge. Work in a circular motion, making sure finish gets into all cuts and impressions. Allow first coat to dry completely, and then apply a second light coat. After second coat has dried, buff to a high gloss with a clean soft cloth or piece of sheep wool."

I use a spray shene from Fiebing's in this tutorial, but it's much more expensive, so you got the wipe-on stuff.



Optional step: once it's sealed with the Super Shene, I attach the decorative concho and the steel ring.



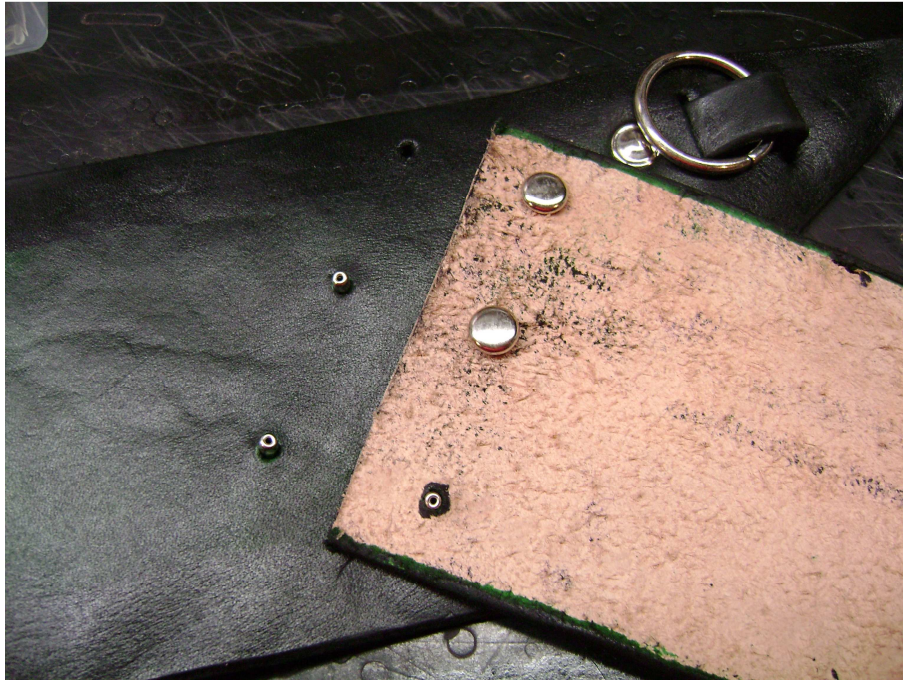




Now you'll attach the frog to the belt loop. Take the belt loop piece, and push six rivet posts up through the holes you punched in the back side.



Lay that piece flat on your table, and put the frog piece on top of it, lining up the holes in the frog piece with the rivets sticking out of the belt loop, then press the rivet caps on with your thumb. They should kind of snap into place and hold there. Do one side, then put it on your mini anvil, and use your rivet setter and ball peen hammer to squash the rivet caps down onto the posts.



Once one side is hammered down, attach the other side and do the same. Getting your rivet setter in there may be tricky, if you have to you can hammer the rivets flat with a hammer. No one will see these in here anyways.





Finally, use two more rivets to attach the two halves of the belt loop together. Just bend the frog leather out of the way to hammer them down if you need to.





That's it, you've made a boffer frog!

