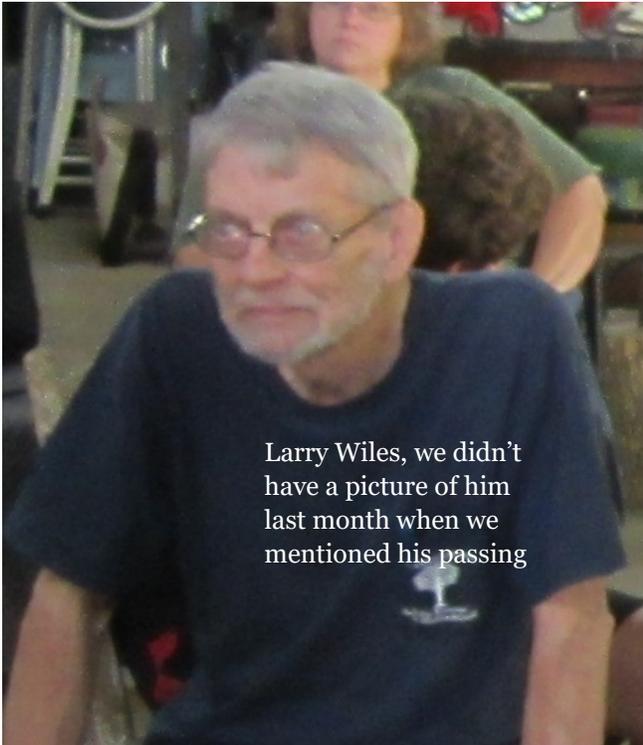




PHILIP SIMMONS ARTIST BLACKSMITH GUILD  
**On the Anvil NEWSLETTER**

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Larry Wiles, we didn't have a picture of him last month when we mentioned his passing

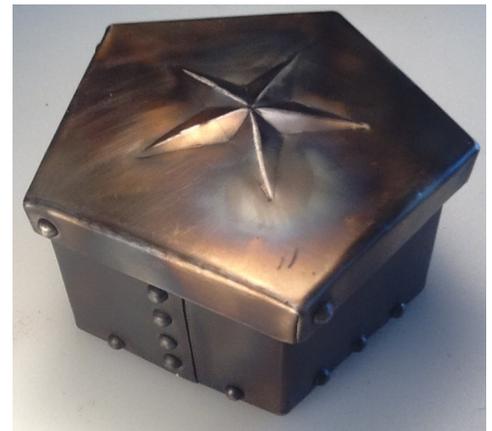
I want to thank our gracious hosts, Tammy and Jeff for allowing the Guild to meet at their home once again, we always have a good time at their place Attendance was good for such a cool day, about 40 people braved the weather, we were able to take turns warming at the wood stove Jeff had going in the shop. Joe Marsh demonstrated a pair of blacksmith tongs at our December meeting in Woodruff, SC at the forge and home of our hosts, Tammy and Jeff Hatfield. He wowed us with his newfound skills received from John C Campbell Folk School in a blacksmithing class he attended with instructor Lucas House. Joe went through the steps describing how to make the tongs, which way to rotate them as you forge the different sections, and how thick they should be. By the way Joe is left handed and that can make a difference in the end product which could be noticed by a right handed smith, or not.

After Joe set the rivet, the tongs looked good and will be a functional tool for one of the smiths in our Guild as he kindly placed them in Iron in the Hat. After lunch Jeff Hatfield did a demonstration on shaping and texturing a rail cap he had been working on for one of his commissions. He made it look easy as all good smiths that do this work for a living can do, Then, Barry, Jody and Jerry Fowler showed Bill Kirkley how to add a lump on the end of tong handles. Barry started with the lump and then Jody and Jerry helped turn it into an acorn using Jeff's swage. Lunch was a very good pork BBQ cooked by Jeff but I bet Tammy had something to do with, either way it was delicious. As always the sides provided by the ladies of the Guild were award winning. The pecan brittle brought by J.D. Norris gets honorable mention by ME, I won a plate full of it in IITH and ate most of it on the 80 mile trip back home (I shouldn't have done that!). New Members are Charlie Harper and Charles Antwine. Iron in the Hat donations brought in \$478.00 for our funds. Thank you one and all. You are too generous. Remember our members that are unable to attend due to sickness: Bob Hill and Meck that we know of, others that we don't. We are ready for another election Thanks to John Tanner and Ryan Calloway who are term limited to come off the Board. Todd Elder and Duke Baxter have been nominated for the next term. Other nominations are welcome, as are write-ins on the ballot included on Page 9. By the time this newsletter reaches you I hope you and your families have had a Merry Christmas and having a Happy New Year. Remember, it's not a bad thing if a blacksmith get coal in his stocking on Christmas morning. At least I don't think it is. A special thanks to the Guild President (he is a helluva guy) and the newsletter editor for repairing the forge at Historic Camden. Those guys do yeoman's work! Thanks for all your support and friendship Jesse

### IRON IN THE HAT

Item	Donated By	Won By
File Handles	Jody Durham	Jason Jaco
Car Spring	Jody Durham	William James
Forged Hatchet	Todd Elder	Jeff Lindsay
Bottle Opener	Todd Elder	Jeff Hatfield
Dinner Bell Triangle	Robert Campbell	Clyde Umphlett
Fish Hook Bottle Opener	Jim Bausman	Barry Myers
Dragon Bottle Opener	Jim Bausman	Ray Pearre
Corner Brackets	Bill Kirkley	Curly Larson
Steer head and steer head kit	Jerry Fowler	Barry Myers
Knife Scales	Duke Baxter	John Tanner
1/4" square hooks	Mike Hair	Todd Elder
Whitesmithed Spatula	Barry Myers	Joe Chapman
Possibly S-7 Jackhammer Bit	Chuck Baldwin	John Tanner
Fireplace Poker	Ryan Calloway	Jim Bausman
Artistry Tee Shirt	Ryan Calloway	Curly Larson
Basket Twist Fire Rake	Jesse Barfield	Clyde Umphlett
RR Spike Knife	Jesse Barfield	Clyde Umphlett
RR Spike Knife Kit	Jesse Barfield	Ray Pearre
BBQ Fork	Ryan Calloway	Clyde Umphlett
Grinding Pads	Ryan Calloway	Chuck Baldwin
3/8" square punch	John Tanner	Joe Marsh
Yard Candle	Ed Sylvester	Jesse Barfield
AA Shotgun Shells	JD Norris	Curly Larson
Pecan Nut Brittle	JD Norris	Jesse Barfield
Demo Tongs	Joe Marsh	Clyde Umphlett
Horse Head Bottle Opener	Jason Jaco	ML Tanner

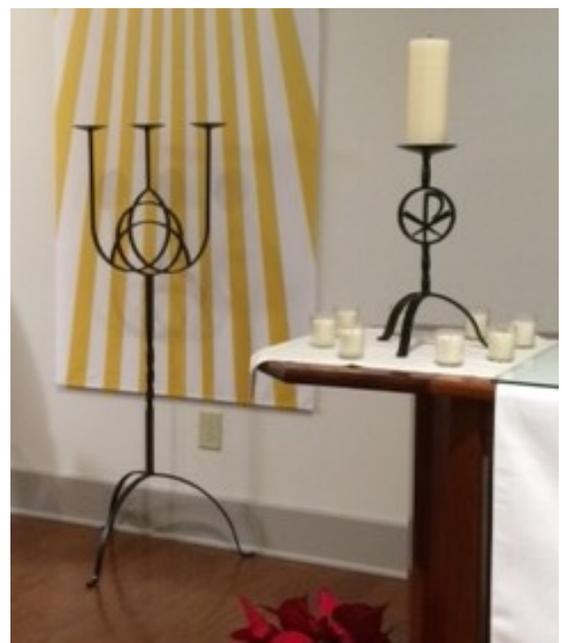
**Not seeing the Content you want?**  
Submit requests for the kind of info and articles you are interested in, or better yet, submit an article yourself!



Copper Box by John Thompson



Ray Pearre's latest project.



## For Sale:

**Fire Bricks** – Brand New, Industrial Grade. \$1 ea. Ed Sylvester 803.414.2487

**Tire Hammer Plans:** Send a check or money order for \$30US or send \$32US to Paypal.Me/ClaySpencer. [clay@otelco.net](mailto:clay@otelco.net). PDFs will be e-mailed outside US.

**Beverly shear blades sharpened.** Remove your blades and send in USPS small flat rate box with check for \$41US Clay Spencer 73 Penniston Pvt. Drive, Somerville, AL 35670-7103.

**Blacksmith Classes:** Beginner to Advanced. Glenn Owen, Hemmingway. Contact Glenn at [forgeontheridge@yahoo.com](mailto:forgeontheridge@yahoo.com) or [www.forgeontheridge.com](http://www.forgeontheridge.com).

**Forklift tine sections for striking anvils,** \$30. Jody Durham, 864-985-3919 [ironsmith@gmail.com](mailto:ironsmith@gmail.com)

## Upcoming Events

**Jan 27, 28,29. Traditional Joinery Class. Historic Camden. Shel Browder instructing. Barry Myers or Ray Pearre contact.**

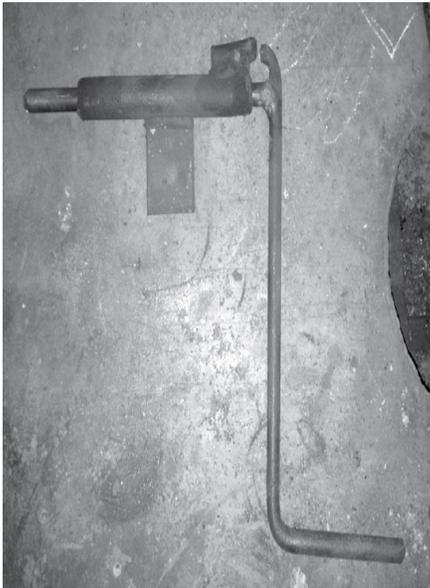
**Feb 4 PSABG Meeting at the LW Paul Living History Farm, Conway.**

**Battle of Charleston, April 8 &9. Legare Farms. Ray Pearre contact.**

**April Meeting. Sometime in April, probably at Magnolia Gardens.**

**2nd Saturdays Blacksmith demonstrations at Roper Mountain Science Center, Greenville, SC**

**3rd Saturdays Blacksmith demonstrations at Hagood Mill, Pickens, SC**



### Jig for Quick Rings. By THOMAS BOUCHER.

At the March meeting, Tom Sheets showed us a jig that he uses for making quick rings. He had a number of the jigs in various sizes, but they all work the same. The tab on the bottom is secured in a vise.

A piece of hot steel is locked under the tab on the top of handle as it gets cranked around. The corresponding tab on the crank shaft housing keeps the steel wound tightly as it gets rotated around. The crank shaft gradually advances out as the stock is wrapped around further and further. The handle then slips out of the housing and the coil of steel can be easily slipped off of the end.

Tom suggested that the crank shaft can be lubricated with grease for bridle calipers, graphite or molly grease. After slipping the coil from the jig, the rings can be cut apart using a cut off wheel.

Tom uses his power hammer to close the gap of the rings, but it can be done by hand as well.



Reprinted from the Hammer's Arc, Newsletter of the Alex Bealer Blacksmith Association

## Class Report or Tongs I have Known by Joe Marsh

In August 2016, I took a week from my employment to go to the John C. Campbell Folk Art School in Brasstown, NC. The instructor was Lucas House, from the Raleigh area (see

[www.ironhouseforge.com](http://www.ironhouseforge.com)). *He is a rather young man but carries a vast knowledge in the craft. The course, entitled Tool, Tools, Tools, piqued my interest. Since I figured if I could make the tool, then I should also be able to make the item the tool was designed for.*

Instead of waiting until Monday a.m. to begin the class, Lucas had the ten of us fire up the forges on Sunday p.m. and begin work. The project was a hook with a scrolled end. Since we all had different levels of experience it gave him the clues of where we each were in our skills.

Monday is when the work began. The first order of business was drifts and punches. I ended up creating a couple of "center" punches and a couple of "animal eye" punches, along with a "drift" punch. We discussed and did some heat treating and tempering. Albeit tempering on a tool that is to be used on a heated workpiece is sometimes a wasted effort.

Tuesday and Wednesday was for tongs. Now you don't have to be exposed to the blacksmith trade very long before you realize that tongs come in many shapes, sizes, and functions. If you stay at blacksmithing you will see your collection of tongs grow exponentially compared to your other tools. So for that reason I listened very carefully when Lucas began discussing this subject.

In short, when making tongs you actually make a tong, two times. In my imagining how the process worked I thought you made two pieces in a mirror image of each other. Not so. This is the process that I learned...

We will start using a 1/2" round stock. It is not necessary to use tool steel for this as heat treating and tempering will not be necessary. Mild steel is usually the best option since you may have to modify the jaws after construction. Along with that mild steel is usually more forgiving in the forge.

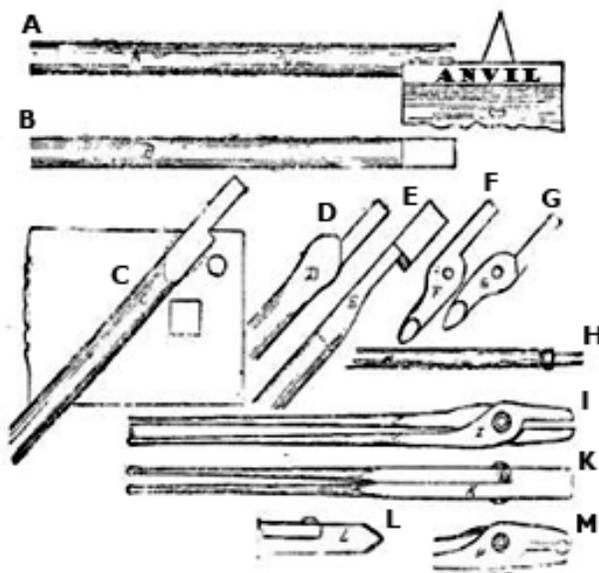
Notice the three primary parts of the tong. The divisions represent where the dimensions are set by the edge of the anvil or fullering tool you may be using.



In the next illustration you should see that "A" shows the work piece set at the point where the reins meet the boss/bearing. "B" shows the result of that. The best way to obtain that is with hammer blows that land half on and half off the anvil face. Notice also the workpiece is on the near side of the anvil.

Step "C" shows a counter-clockwise, 90° rotation, of the workpiece. (*Should you be a left-handed person, you may wish to rotate clockwise for this step.*) Notice here the half blows will be on the far side of the anvil and the workpiece positioned at a 45° angle.

Figure "D" shows the result of how the workpiece should look. Here is when you would repeat the initial steps in order to get the next tong.



When striking the workpiece you should try to reduce the thickness to 1/2 the original thickness. This is where much care is to be taken. Too much reduction could cause the boss/bearing to be too weak. Too little reduction will cause the two pieces not to fit together correctly.

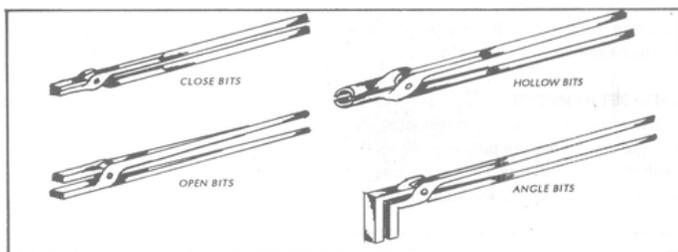
To make the jaw, rotate again 90° counter clockwise and use half blows on the far side of the anvil (*note "E"*) This step will determine the material you will have for the reins.

After completing the second tong and getting the two pieces to be close to symmetrical, it is time to draw out the reins. This can be done by making a square out of the round stock and draw it out by fullering. When drawn to the desired length (14-18") round off the corners to be rid of any sharp edges. True up each tong and get ready to rivet.

Making the rivet hole can be done by drilling or by punching. Drifting a punched hole will offer the advantage of keeping more material on the bearing. Also, if you are doing this job with limited tools you may only have a punch and drift. It is not critical to get the hole perfect. You do want to try to get the hole close to center of the bearing. (*I'll not go into the process of punching and drifting a hole in this article.*)

After the hole is made, choose a rivet that is slightly smaller than the hole and whose length extends beyond the opposite side. That length should equal the diameter of the rivet. (*i.e. a 3/16" rivet should extend 3/16" beyond the opposite side*).

The next step is where you create the shape of the jaw. The variations of jaws are as great as the number of blacksmiths. You may need a particular shape only for a single use. Some shapes can be functional for multiple uses. It is important to get each of the two tongs as close to symmetrical as possible before setting the rivet.



In setting the rivet you can do it cold or hot. If using the hot method, the rivet is placed in the hole and the two tongs and rivet are heated to-

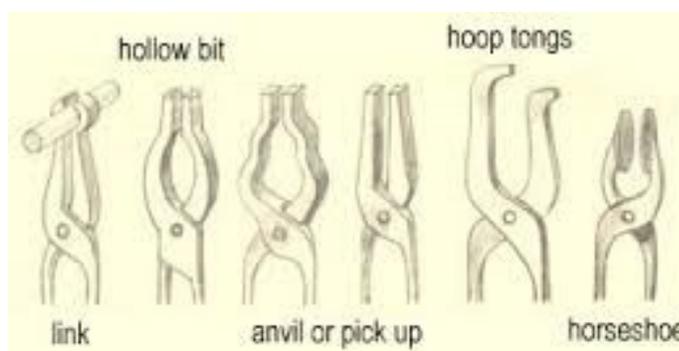
gether. Dark red heat is sufficient. (Too much heat can distort the shape of the bearing.) Strike the heated rivet; this will cause the rivet to upset and fill the hole. If the tongs do not pivot, heat again to red and water quench. During the quench, begin to work the reins back and forth. They should loosen. This will also allow the two bearing surfaces to marry up and begin to work together.

*On a side note: if the pivot/bearing surfaces are too loose, strike down on the rivet with the opposite end on the anvil face. If they are too tight, strike down on the rivet with the opposite side over the pritchel hole.*

Another series of heats can give you the opportunity to adjust the jaws so they will function for the intended workpiece.

I mentioned early on using a 1/2" round stock. However, small tongs, such as a pick-up tool, can be made with 3/8" stock. Heavier tongs can go as large as you wish. Only bear in mind that your hands have to wrap around the reins. In the case of needing a larger jaw you can build the bearing and jaw with a large stock and weld the reins with a smaller stock.

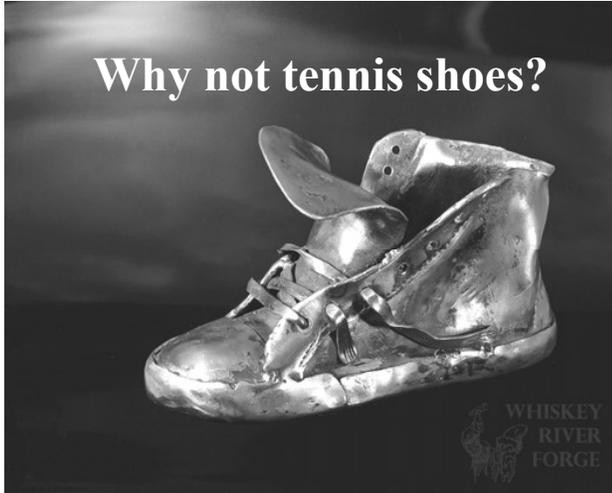
Thursday and Friday was hammer making. This required drifting a hole for a handle and heat-treating. That story will have to come at another time as you are probably dozing right about now.....zzzzz...Joe Marsh



### Jerry Darnell's New Book

Jerry has released Volume III of his Colonial Ironwork series! He has kept the price the same at \$20.

Contact Jerry at Mill Creek Forge, 4512 Busbee Road Seagrove, NC 27341. Email: [forge\\_on@rtmc.net](mailto:forge_on@rtmc.net) or [www.millcreekforge.com](http://www.millcreekforge.com) Phone: 910-464-3888 (Shop); 910-464-2636 (House) The cost is \$20.00 plus 6.75% tax and \$10.00 for shipping and handling.



*By Otto Bacon, a MABA member*

*Whiskey River Forge*

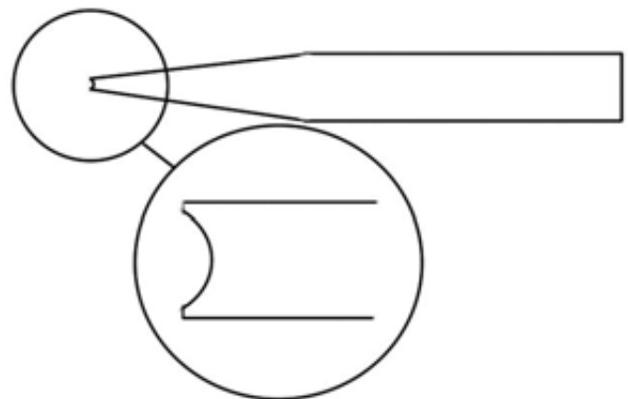


It is common for blacksmiths to make horse shoes. Why not tennis shoes?

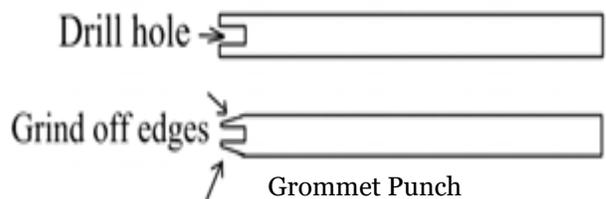
If you are going to reproduce a tennis shoe, find a pair you like at a thrift store and carefully take one apart. Throw out all the liner, padding, and parts you won't see, and then figure out how each remaining part can be made from steel. Use the original parts as patterns. Don't even try using steel thinner than 14 gauge. You'll waste a lot of time and eventually go to the heavier stock anyway. Heavier metal is easier to shape, holds shape better, and doesn't burn thru when you weld it. Each piece should be formed and finished so that the entire project fits together nearly perfectly before you weld anything. Attempting to adjust one part after you've welded it to another part is often impossible. Get it all perfect first. Cold form everything you can, using wooden mallets to eliminate hammer marks. If the metal work hardens, anneal it and let it cool. Drill all holes and make all punch marks before the parts are

welded. Better yet, do it while the parts are still flat. Make a stitch punch. It is tedious, but stitching looks better if you do it one stitch at a time. Do it hot to get nice clean impressions. Laces are difficult. Each lace goes over and under and through. They should not look like sticks. Start with round stock, and hammer it flat except for where it will go through an eyelet. Cut each segment of lace to length and form the ends to match the eyelets. Start assembly of a tennis shoe from the rubber around the sole. Welds are mostly on the inside where they won't show. Get the "rubber" to the right shape, and then add the toe cap. Now the sides and back. Do the laces before the tongue. Get good wrinkles in the tongue before you weld it in, as it will show under the laces. Use a rosebud torch or big forge fire and heat the whole assembly to a nice red color. Work it over with wooden punches to make the wrinkles. There are no flat spots on a shoe. Finally, weld on the sole. These welds will show, but will be on the bottom. Make them pretty and grind them out smooth like a worn sole on a shoe. If you are really crazy, make a matching pair!

Stitch punch - you may need several for different size stitching. I tried making a punch with several stitches in a row. It doesn't look natural. Stitching is done one stitch at a time. Sorry.



Grommet punch. If you need grommets or eyelets, make a punch. This is hollow punch that makes a ring around the lace hole that looks like a metal grommet in fabric or leather. Drill a hole in the end of a bar and



then grind away the outer edge until you have the look you want. To make the grommet, drill a hole and then heat the area around the hole and drive the punch in to form the grommet.

Wooden punches. Use sticks of hardwood to form wrinkles and dents without leaving hammer marks. I've used oak pallet material cut to length and then split to the width I need.

Wooden mallets. Again, pallet material.

The whole process works for boots too.



REPRINTED FROM THE UPSETTER, NEWSLETTER OF THE MICHIGAN ARTIST BLACKSMITH ASSOCIATION

## Remember to return your library books. Don't make Tony and Pam come to your house! They know where you live, just like creepy Santa...

### A Better Way To Cool Tools

*By Randy Stoltz*

Both paraffin wax and beeswax have an excellent ability to absorb and store heat. Additionally both of these substances do not have a melting point, they have a melting range (i.e. they slowly liquefy over a range of temperatures not a single point like water). This makes wax a great medium for cooling punches, chisels, drifts, and other tools used to work hot steel as it will cool and lubricate the tool without the risk of hardening it.

I have used a mixture of paraffin wax, beeswax, and powdered graphite to cool my punches and other tools for some time now and have had very good results.

You can use all paraffin or all beeswax but I used a 50 - 50 mix since the paraffin is harder than the beeswax (and I had several pounds of it sitting around). I added the powdered graphite to improve the lubricating properties of the mixture. Graphite is a high pressure high temperature lubricant often used on dies or presses. It works very well on drifts to keep them from sticking. You can also use molybdenum disulfide powder for extreme lubricating applications but it usually costs a lot more.

To make the mixture, I add one tube of the powdered graphite (.21 oz / 6 grams) to 2 cups of melted wax and pour it into a metal cup. Note that wax expands 5-10 percent when heated so leave some room in the cup.

Here is some additional technical information. Paraffin wax is part of a family of hydrocarbon compounds known as alkanes with the general formula of  $nH_{2n+2}$  that are solid at room temperature. Paraffin that is liquid at room temperature is known as mineral oil.

Beeswax is not a single compound but is a mixture of several compounds with the base compound very similar to paraffin. Both paraffin and beeswax are solid at room temperature and have a flashpoint of 400° F. The melting range of paraffin wax varies with the exact compound but can be classified as:

low (125° F - 135° F),

medium (135° F - 145° F),

And high (150° F - 165° F).

Beeswax has a melting range of 144° F - 147° F.

Reprinted from The Anvil's Horn, January 2011 and probably from the Hot Iron Sparkle, newsletter of NCABANA somewhere along the line.

## A Shocking Outcome– Paul Diefenderfer

### Electrical Etching

*Editor's note: PAABA President, John Steel, saw this article on the Arizona Blacksmiths Association web site. It was written by their President "Dief", who was happy to share the article with us. I spoke to him and he said if anyone has questions, please feel free to contact him. (602-509-1543 or president@azblacksmiths.org If you reverse the process...it is a rust cleaner! It's like Doublemint gum...double the pleasure or if you forget..... it's either clean or gone!*

This process uses electrolysis to create a very organic pitted texture on steel. I "discovered" this process when I was using this method to remove rust from some metal sconces. After doing one successfully I hooked the clamps up backwards and created a mess. The scone was covered in thick rust overnight. After cleaning the rust off, I was amazed at the deep pits that were created. It was a texture unlike anything you can create with fire and hammer. I was hooked. I really opened up new ways to create solid privacy gates and wall hangings

**Here's what you need to get started.** 12 volt 10amp battery charger. Plastic bucket or tank. 3/8 rebar. I started with a 5gal bucket, then moved up to a 55gal drum. As my addiction to etching increased I switched to a 250gal plastic water hauling container that is supported on the exterior with an aluminum frame. I've also built a custom single use tank from 2x12 lumber and plastic sheeting to etch a 4ft by 8ft picture frame.

**Step 1:** Line the inside of your plastic tank with vertical rebar spaced about 3 inches apart. These can be secured to the tank by drilling a small hole on each side of the rebar (at the lip of the tank) and using wire to "twist tie" the rebar in place. My 250 gal tank has a curved lip on top that overhangs the interior. I drilled 3/8 holes through this lip and pushed the rebar down through the holes so nothing else was needed to secure the rebar.

**Step2:** Connect all the rebar pieces together in a loop. For temporary tanks, I use copper wire wrapped around each piece of rebar. Over time the copper and rebar oxidize and the electrical connection between the wire and rebar will deteriorate. For my permanent tank, I welded horizontal pieces of rebar across the tops of the vertical rebar. This ensures a great electrical connection. You basically have a rebar cage hanging inside of your tank.

**Step 3:** Fill the tank with water. Add 1 tablespoon of washing soda per gallon of water. This is not a critical measurement so when in doubt add too much soda. I use a whole box for my 250gal tank. You will find washing soda (Arm & Hammer is the most popular brand) next to the laundry soap in any grocery store.

**Step 4:** Place a wood 2x4 across the top of the tank. From this 2x4 suspend your iron work in the tank so it is completely submersed. It must not have any direct contact with the rebar cage! If it does you will short your charger out. For small pieces I use hooks made from 1/8 round stock. For larger heavier pieces I bolt or weld on a piece of rebar. Note: if you use 1/8 stock and leave the piece in the tank for more than 3 days you risk having the hook rust away and break sending your ironwork to the bottom of the tank. A magnet bolted to the end of a stick is handy for getting small flat pieces out of a 250gal tank – not that yours truly has ever had to do this.

**Step 5:** Connect the negative clamp of the battery charger to the rebar cage. Clean the rebar of any rust so you get a good connection. Clip the positive camp of the charger to the piece of metal your iron work is suspended from. Note: Do not immerse the battery charger clamps in the water. This etching process also works on copper and you don't want to have to keep replacing the clamps.

**Step 6:** Double check that there is no direct contact between your ironwork and the rebar cage. If your charger has amp settings, set it on the 10amp trickle charge. Do not use the 50 amp "Quick Start" option. Plug in the charger. You should notice a ghostly blue white film develop around your piece within minutes. You will then notice lots of little bubbles coming off the piece and the rebar cage. Now leave it alone for about 2 days. Note: this process produces oxygen and hydrogen gas! Needless to say this should not be done indoors where these gasses could accumulate.

**Step 7:** Turn off the charger and remove your piece. I find that 48 hours give a good deep pit-ted texture on 1/8 thick or thicker steel. Longer time means more pitting. Thinner stock will develop holes so a shorter time may be in order. Hint: lots of small holes makes for an interesting light scone.

**Step 8:** Your beautiful iron work is covered in a heavy coat of gooey rust. Most of it will come off using a scrub brush and water. I follow this up with a twisted wire brush on my grinder (wear a full face shield as these buggers throw off eye seeking wire strands). Using a wire brush by hand is usually not aggressive enough to get all the rust out of the pits. I have also used a sand blaster to remove the rust. This will give the iron work a very uniform flat finish so I prefer the wire brush. Cleaning the rust off with the wire brush throws up a bunch of fine rust dust so do this in a well ventilated place.

**Step 9:** I use several coats of Permalac lacquer to seal my ironwork. Add solvent dye to the lacquer for some great color effects. The pits take more lacquer/color for a wonderful organic look.

**Step 10:** Have Fun! Experiment and report back to me with your discoveries.

**Notes:** The rust off of your iron work collects on the bottom of your tank. You will need to periodically drain your tank and clean this sludge out. It is iron oxide. Experiment and find some cool uses for it. Do not let your metal hang down into this sludge. It prevents the metal from etching.

This is an electrical process and thus you need good electrical connections. I have found that as the copper wire on the battery charger clamps oxidizes the clamps with heat up from the resistance. Take a few minutes and solder the wire to the clamps.

In general electrons are lazy little buggers and take the shortest route in any circuit. What does this mean for you? Hang your piece in the center of your tank. If you hang it to one side that side will get a heavier etching. This also means that if you hang a large flat piece from corner to corner in a square tank the edges of the piece near the corners will etch a lot and the center will etch very little. This is because the center of the piece is father away from the rebar cage – re-member electrons are lazy and always take the short route.

You can etch more than one piece at a time if they are flat and hung edge to edge. If you hang them back to back the sides facing each other will not etch. This may not be a problem if you are etching a wall hanging and don't care about the back side.

If you mask off areas of the steel they will not etch. This allows for all sorts of design option. I use two things to mask off the steel. For crisp edges on your design use latex sticker material (scraps available at any sign shop). Peel off the backing and stick the material on to your clean steel. Use an X-Acto knife to cut out the design and peel off the latex on the areas you want to etch. If you have a design already drawn (or printed) on paper use spray adhesive to glue the paper to the latex. For fuzzier edges in my designs I use oil based paint. Apply it as thick as possible using a dabbing technique instead of brushing as brushing applies the paint too thin. The paint along the edge of the design will be thinner and thus will create softer fuzzy edge to the design.

As you turn the water in your tank into oxygen and hydrogen and it also evaporates, just add more water. No need to add more washing soda as it stays in the tank. Reprinted from the PAABA newsletter who got it from the *Arizona Blacksmiths Association*



Jamie Herndon, our webmistress extroinaire, won a commission from the City of Mauldin. She created the sculpture shown here. As part of that commission, there was a \$250 grant to a charity of her choice.—thus the mention here! She chose US! Thank you, Jamie, and thank you City of Mauldin.

This photo may be seen on Jamie's and our Facebook pages. It is more impressive if you see it in color. Barry

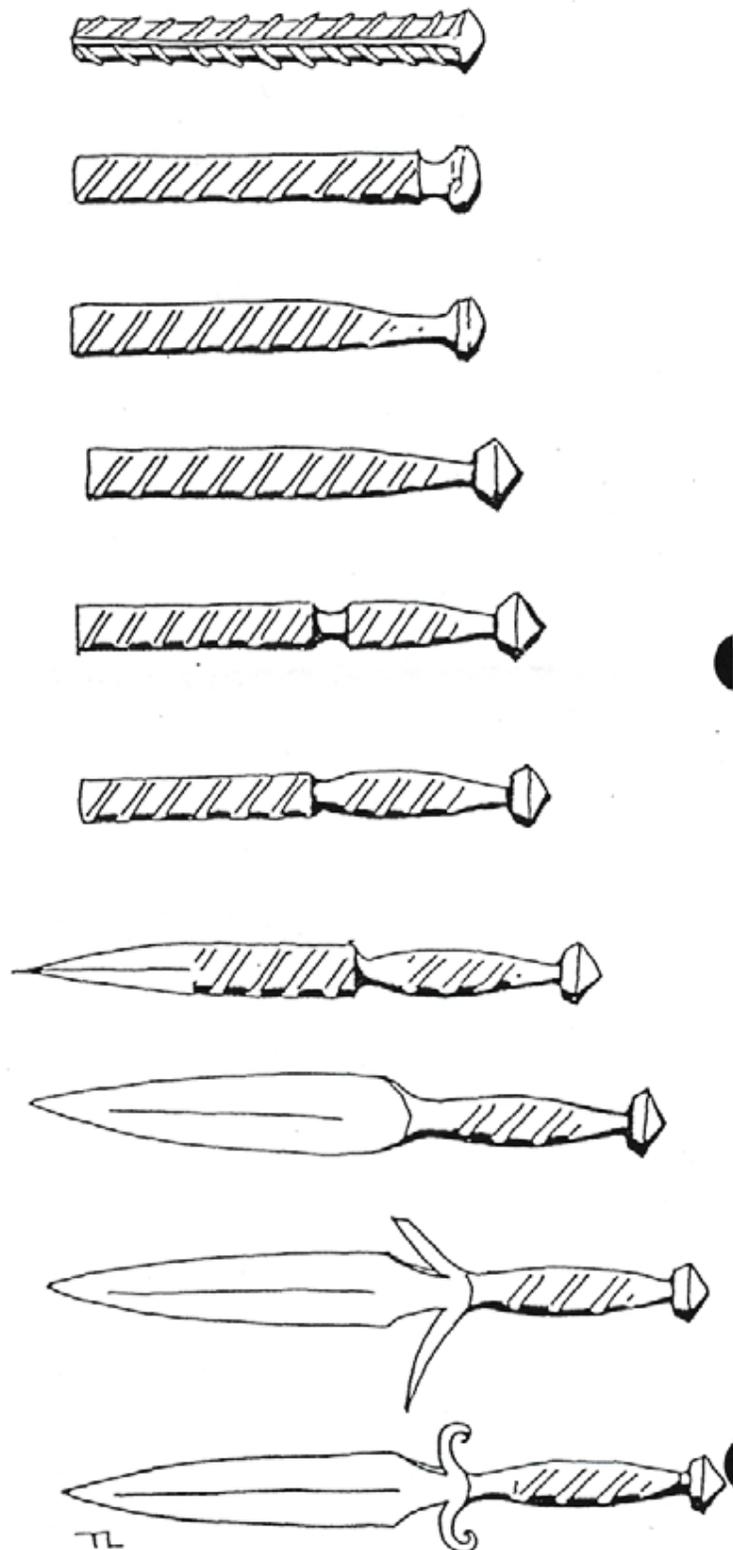
# Letter Opener

*By Tom Latane*

The drawing enclosed shows the steps I used making a letter opener from reinforcement rod from the Berlin Wall. Lots of smiths bought pieces at the past two Metalsmith Madnesses thanks to donations by Doug Johnson.

The project can be done from any rebar or round rod. Round rod will not have the nice decoration on the handle.

1. Upset end slightly.
2. Fuller around and below upset.
3. Draw down to fullered depth (do not reduce to less than 1/2 the original diameter).
4. Dress ball or knob on end over anvil edge.
5. Fuller to define handle allowing slightly more than 1/2 bar length for blade.
6. Draw down to fuller depth on handle side taking care to preserve a portion of ridges at center of handle.
7. Point blade drawing squarely.
8. Flatten blade in plane with continuous ridge on each side of bar. Spread with cross or straight pein for greatest width.
9. Chisel away a portion each side of blade for guards. Draw guards to points.
10. Scroll guards, dress with file.



Reprinted from Guild of Metalsmiths, July 1992

## Philip Simmons Artist Blacksmith Guild

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## Officer Ballot

**Board Members**

\_\_\_\_\_ **Todd Elder**

\_\_\_\_\_ **Duke Baxter**

Write-in \_\_\_\_\_

Write-in \_\_\_\_\_

**Send this ballot to Ray Pearre at his address above or bring it to Conway!**

## Come to Conway on February 4, 10 AM

### Walter Hill will demonstrate at the Farm!

The Conway Museum's L. W. Paul Living History Farm is located at 2279 Harris Shortcut Ln, north of Conway on US 701.

Bring a side or dessert and something nice for iron-in-the-hat - maybe something you've forged! Ray still gives 5 tickets if you donate something you've forged...

