Saltfork Craftsmen
Artist-Blacksmith Association
May 2020

Cross with Rose by Rory Kirk - Cheyenne, OK

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Editor's Notes:

With the COVID19 safety directives, regional meetings have been postponed lately. So there aren't many meeting photos for the newsletter. Thankfully, several members helped to save the day with a variety of gallery items and a project article to fill some of the empty space. Thank you!

And thanks need to go out to the other ABANA affiliate groups who's editors freely share their newsletter content as well. A few of them even provided extra project how-to content for their own members during the down time and shared that with the rest of us. So thank you affiliate editors!

Stay tuned for future schedules as it is really hard to plan right now. Hopefully scheduling will be a little more stable by the next newsletter and we will try to update the website calendar/Facebook announcements when possible.

-Russell Bartling, Editor

The Saltfork Craftsmen Artist-Blacksmith Association, a non-profit organization Our purposes are the sharing of knowledge, education and to promote a more general appreciation of the fine craftsmanship everywhere. We are a chapter of the Artist-Blacksmith Association of North America.

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Visit our Saltfork Craftsmen Website:
www.saltforkcraftsmen.org

President's Notes:

Well summer is coming on very fast. I hope everyone is doing well during this Covid-19 situation.

One thing about blacksmithing, it's not hard to work by yourself. I have been making tools to work with in my shop and calling fellow smiths every few days. I also have been working a little bit with copper. It is a learning curve to work with something that melts so easily. And the heat travels down it so fast you can burn yourself very easy if you don't like to wear gloves.

Without meetings going on it seems like I am lost on the weekends. I will be glad when we get to see our smith friends again. I think everyone will be glad when we can get our lives back to normal.

When you stay home a dollar stays in your pocket a lot longer. Just think about the old days when they just went to town once or twice a month. When I was little we went to see our neighbors in the evening to play cards or board games. It was a true personal interaction. You really got to know your neighbors.

Maybe when this is over, people will get to know their neighbors better than just talking across the street or fence (or phone or e-mail.)

I hope everyone is staying well.

Enjoy your shop! Thanks,

- Mandell

All Regional Meetings are Free to Attend and are Always Open to Any Member or Guest…

New to Saltfork or just want to check out Blacksmithing but don't know where to start? These meetings are a great place for new members or guests who just want to see what it is all about to come network with like-minded people. If you want some pointers on how to get started, there is always someone happy to help get you started hammering. And guests are always welcomed.

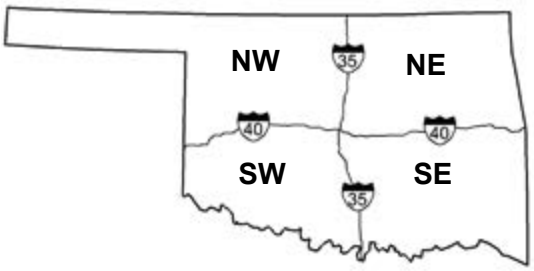
Want to host a meeting? The meeting hosting form can be found on the last page along with membership application form. If you want to host a meeting in any area, please fill out one of the host forms on the website under the calendar section or in the newsletter and e-mail the information or mail the hard copy form in as soon as possible. If you mail a form, please call or e-mail to verify that it is received. E-mail is the most convenient for me but you can also phone in the information if you prefer. The sooner the meeting is scheduled, the more time there is to get the word out to potential attendees. -Russell Bartling 918-633-0234 or rbartling@ionet.net

What's My Region?

The four main regions are currently defined within the state by being separated by I35 and I40. (For example, the NW region is anything north if I40 and west of I35.)

All meetings are encouraged. These boundary definitions and regional meeting dates are a suggested framework to facilitate orderly meeting scheduling, planning and promotion with a minimum of overlaps and a maximum exposure to the greatest number of members. Not all meetings fit precisely within a rigid boundary definition and members in an area may want to hold meetings on a date that doesn't match their physical region or at a location other than their own region. This may be especially true in the center of state for areas that are close to the I35 and I40 boundary crossing. Special events such as shows, fairs, etc. may also dictate adjustments to the meeting dates within a region.

SCABA Regions



The regions are meant to be a simplification and clarification to the regional boundaries rather than a rigid restriction to any meeting scenario. ***Saltfork members all belong to one club.*** Regional boundaries are not intended to imply division within the club, but are intended to help spread distribution and promote monthly meetings.

Safety

Blacksmithing can be an inherently dangerous exercise. There is no substitute for personal responsibility and common sense and no list of safety rules can adequately cover every situation. Every person who attends a meeting, demonstration or event sponsored by the Saltfork Craftsmen Artist Blacksmith Association (SCABA) or its members does so at their own risk and assumes all responsibility for their own safety needs. The SCABA organization, its officers, members, demonstrators, volunteers and guests disclaim any responsibility for any damages, injuries, or destruction of property resulting from the use of any information or methods published or distributed by SCABA or demonstrated at workshops, meetings, conferences or other events. SCABA recommends proper attire and safety gear and standard shop safety procedures appropriate for blacksmithing and shop work during any event where blacksmithing and other related methods are involved. Safety attire includes, but is not limited to, appropriate clothing, eyewear, hearing protection, gloves, and face shields when appropriate. It is every individual's responsibility to provide for their own safety, to determine what safety gear is appropriate for each situation and to provide, maintain and use that gear as appropriate for each individual situation.

Around the State...

NW Region March Meeting: No Meeting was held.
NW Region April Meeting: No Meeting was held.
SE Region April Meeting: No Meeting was held.
SW Region April Meeting: No Meeting was held.

Due to the COVID19 safety directives, no regional meetings were held last month and the SCABA Annual Picnic was canceled.

Caronavirus Safety Concerns/Event Cancellations:

With recent developments concerning COVID19, a large number of blacksmithing related events have been canceled for safety reasons. It will be more important than ever to stay posted with websites, social media, etc. and to double check before assuming events will be held.

UPDATE: The Southwestern Iron Works Annual Tailgate and Swap Meet in Guthrie is CANCELED. -Russell Bartling, Editor

Membership Dues:

Thanks to Eric Jergensen, starting with April, **your membership expiration date is now printed on the back of the newsletter.** Memberships are no longer limited to the March to March duration but are a full year from the date of registration or renewal. So the back of the newsletter will now be a quick reference to check your renewal date. - Editor

2020 Workshop Schedule

Currently no workshops are scheduled.

Have an idea for a workshop or class? If you have an idea for a workshop that you would like to attend (or teach), please let the workshop coordinator know so that details for time and place can be worked out.

Mandell Greteman is the SCABA Workshop Coordinator.
Contact Mandell at 580-515-1292.

2020 REGIONAL MEETING SCHEDULE

NE Region (1st Sat)	SE Region (2nd Sat)	SW Region (3rd Sat)	NW Region (4th Sat)
Jan 4th (Open)	Jan 11th (Byron Doner)	Jan 18th (Open)	Jan 25th (Rory Kirk)
Feb 1st (Open)	Feb 8th (Byron Doner)	Feb 15th (Open)	Feb 22nd (Monte Smith)
Mar 7th (Open)	Mar 14th (Open)	Mar 21st (Bruce Willenberg) CANCELLED	Mar 28th (Mandell Greteman) CANCELLED
Apr 4th (Open)	Apr 11th (Open)	Apr 18th (SCABA Picnic) CANCELED	Apr 25th (Don Garner) CANCELED
May 2nd (Open)	May 9th (Open)	May 16th (Ricky Vardell) **CANCELED**	**May 23rd (Terry Kauk)**
			May 23rd (SW-JJ McGill Boy Scouts-**CANCELED)**
Jun 6th (Open)	Jun 13th (Open)	**Jun 20th (Jim Obenshain)**	**Jun 27th (Everett Timmons)**
Jul 4th (Open)	Jul 11th (Open)	Jul 18th (Open)	Jul 25th (Open)
Aug 1st (Open)	Aug 8th (Open)	Aug 15th (Open)	Aug 22nd (Open)
Sep 5th (Open)	Sep 12th (Open)	**Sep 19th (Ricky Vardell - JJ McGill - Sulphur Tractor Show)**	**Sep 26th (Ron Lehen-Bauer as Host - Don Garner as Contact Person)**
Oct 3rd (Open)	**Oct 10th (Conference Setup Work Day)**	**Oct 17th (Conference Weekend)**	**Oct 24th (Rory Kirk)**
Nov 7th (Open)	**Nov 14th (Bill Phillips)**	Nov 21st (Open)	**Nov 28th (Bob Kennemer)**
Dec 5th (Open)	Dec 12th (Open)	Dec 19th (Open)	Dec 26th (Open)

2020 Fifth Saturdays:

February 29th (Tong Making Class in Elk City - See Workshop Schedule)
May 30 (Open)
August 29th (Open)
October 31st (Open)

May 2020

NE Regional Meeting May 2nd: Open.

SE Regional Meeting May 9th: Open.

SW Regional Meeting May 16th: Open.

NW Regional Meeting May 23rd : Will be hosted by Terry Kauk at the Route 66 Museum Blacksmith Shop in Elk City.

Trade item is a Hardy Tool. Lunch is provided but please bring a side dish or dessert to help out. Contact Terry Kauk at 580-821-0139 if you have questions.

NOTE: This meeting is has not been canceled at newsletter press time but check with Terry closer to the meeting date. The meeting may be canceled or relocated depending on developments at the time.

SW Regional Meeting (Alternate Date) May 23rd : This meeting is <u>CANCELED</u>

June 2020

NE Regional Meeting June 6th : Open.

SE Regional Meeting June 13th: Open.

SW Regional Meeting June 20th: Will be hosted by Jim Obenshain. Look for details to be posted online when available and in the June newsletter.

NW Regional Meeting June 27th: Will be hosted by Everett Timmons at the Route 66 Museum Blacksmith Shop in Elk City. (Pending open or closed status at the time and if meetings are no longer restricted at that time.) Lunch will be provided but please bring a side dish or desert to help out.

The trade item is an egg spoon. (Everett says when you research this item it should be interesting and will be enlightening on what your work is worth.)

Contact Everett at 806-930-0052 if you have questions.

2020 Saltfork Conference Demonstrators

The 2020 Saltfork Conference demonstrators have been selected. Based on demonstrator availability and an online member voting survey implemented by Saltfork Director, Eric Jergensen, this year's demonstrators by popular demand are:

Brent Bailey
(California)

Joey Van Der Steeg
(Netherlands)

J.J. McGill and Eric Jergensen have arranged commitments from both demonstrators for the Conference.

As with recent years, both demonstrators will remain after the Conference for workshops with a limited number of participants.

Details of the Conference demonstration and workshop topics will be posted once they are arranged. Stay tuned for more information in upcoming newsletters.

If you are not already familiar with these demonstrators, they both have a strong You-Tube presence. Just look them up by name.

UPDATE: At the present time, the Saltfork Conference in October is on with no plans of canceling. Hopefully October is far enough out to be unaffected by the Caronavirus. If conditions change, updates will be posted as soon as possible. - Editor

Don’t Forget About the Saltfork Gate Project!

This is a new group project that is open to all Saltfork members. The project is a four foot high by sixteen foot long gate to be displayed outside at the Route 66 Blacksmith Shop Museum at Elk City.

Participating members will be given a steel ring that can be filled with any (family appropriate) forged work that will fit in the ring and be permanently attached to it. Each ring is 10 1/4” O.D. and made of 3/8” round. Most of the rings will be connected at the four cardinal direction points (N, S, E, W) by welding. A small spacer of 1” by 3/8” will be placed between the connection points of each ring.

Try to keep the projects inside the rings from projecting more than approximately 4” out from either face. Otherwise, the design and connection methods to the ring are strictly up to you.

There will be a central large ring with a Saltfork Craftsmen title.

Mandell Greteman is coordinating the project and will provide the standardized rings. All of the rings will be provided to ensure they are a standardized size. Once the projects are returned, Mandell will weld them into the gate to be displayed at the museum.

There is space for 56 ring projects in this gate. If there are more participants, additional gates will be made and installed inside the blacksmith shop.

Contact Mandell if you have any additional questions or to find out where to obtain one of the project rings: **Mandell Greteman 580-515-1292**.

Concept Sketch for the Gate Project:

Member Gallery

Grape Arbor by Gerald Brostek

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Member Gallery (Continued...)

When I began this project I thought I would make all the leaves, vines and grape bunches by hand. After forging nearly 20 leaves and one small bunch of grapes I realized that at my age (78), I did not have enough years left to complete it. For I would need about 300-400 leaves alone.

Grapes I found were extremely hard to hold while forging. I even made a special pair of tongs I thought would hold them. After struggling for a week or so I came to my senses and contacted Bill Kendall. Bill used my pattern and cut out about 300+ various sizes of leaves out of 12ga. sheet on his plasma table. I then bought 20 lbs. of ball bearings.

I decided it would have a powder coat finish so I did not spend too much time on detail of the leaves for the powder coat mutes any fine detail work.

Each leave had to have it's stem forged to a semi-round shape to give it more strength and natural appearance. I did this on the treadle hammer. The large support vines were forged from 1" round bar, forged down and hammered using my hand made "Bark" hammer to

Member Gallery (Continued...)

create a rough natural look. The leaves were welded to small vines and then they were welded to the thicker vines. Broken Arrow Powder Coating blasted and coated it.
It stands about seven and a half feet tall.

Member Gallery (Continued...)

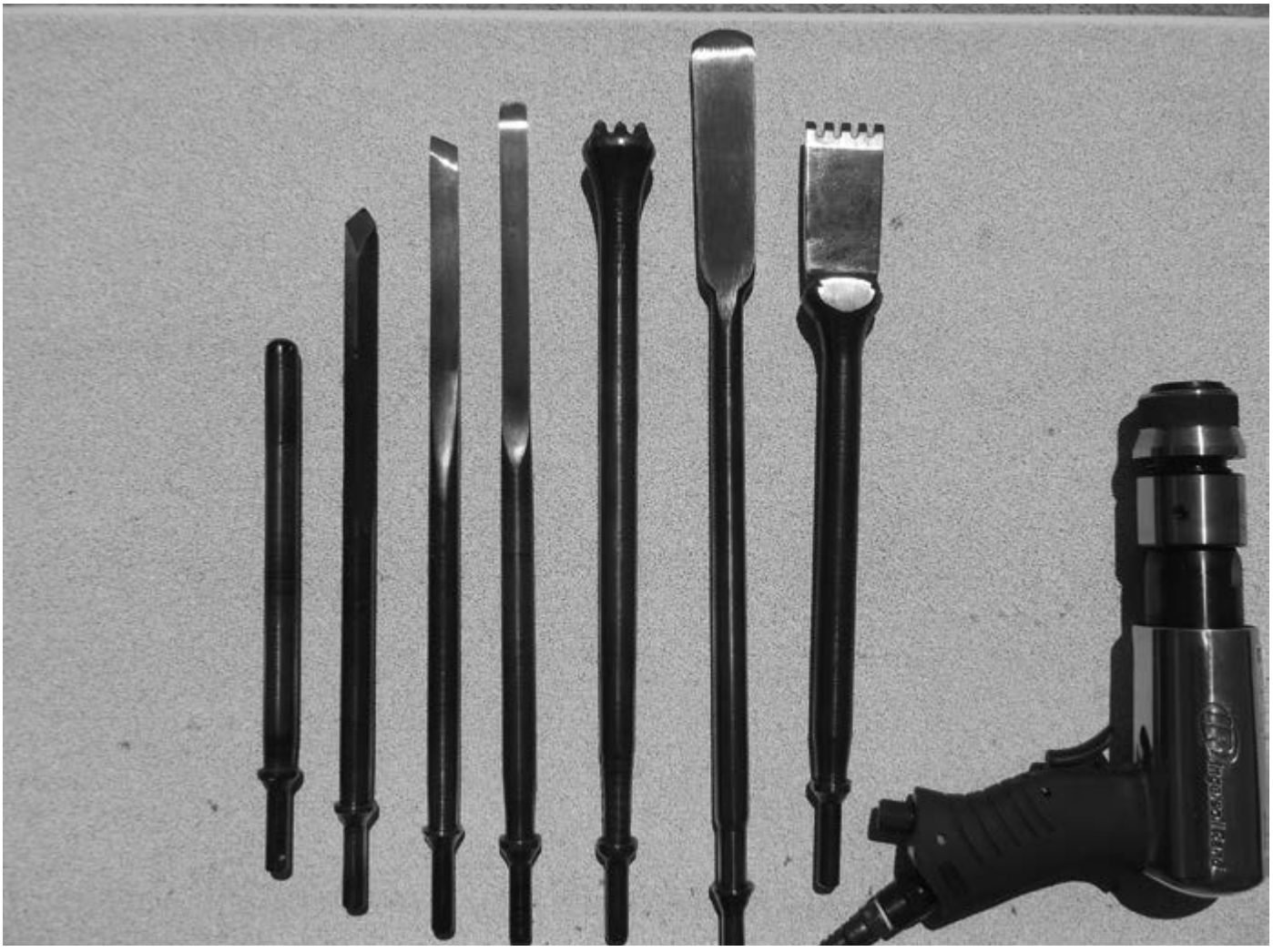
Rose-Candle Holder-Fence Pliers by Dorvan Ivey:

Member Gallery (Continued...)

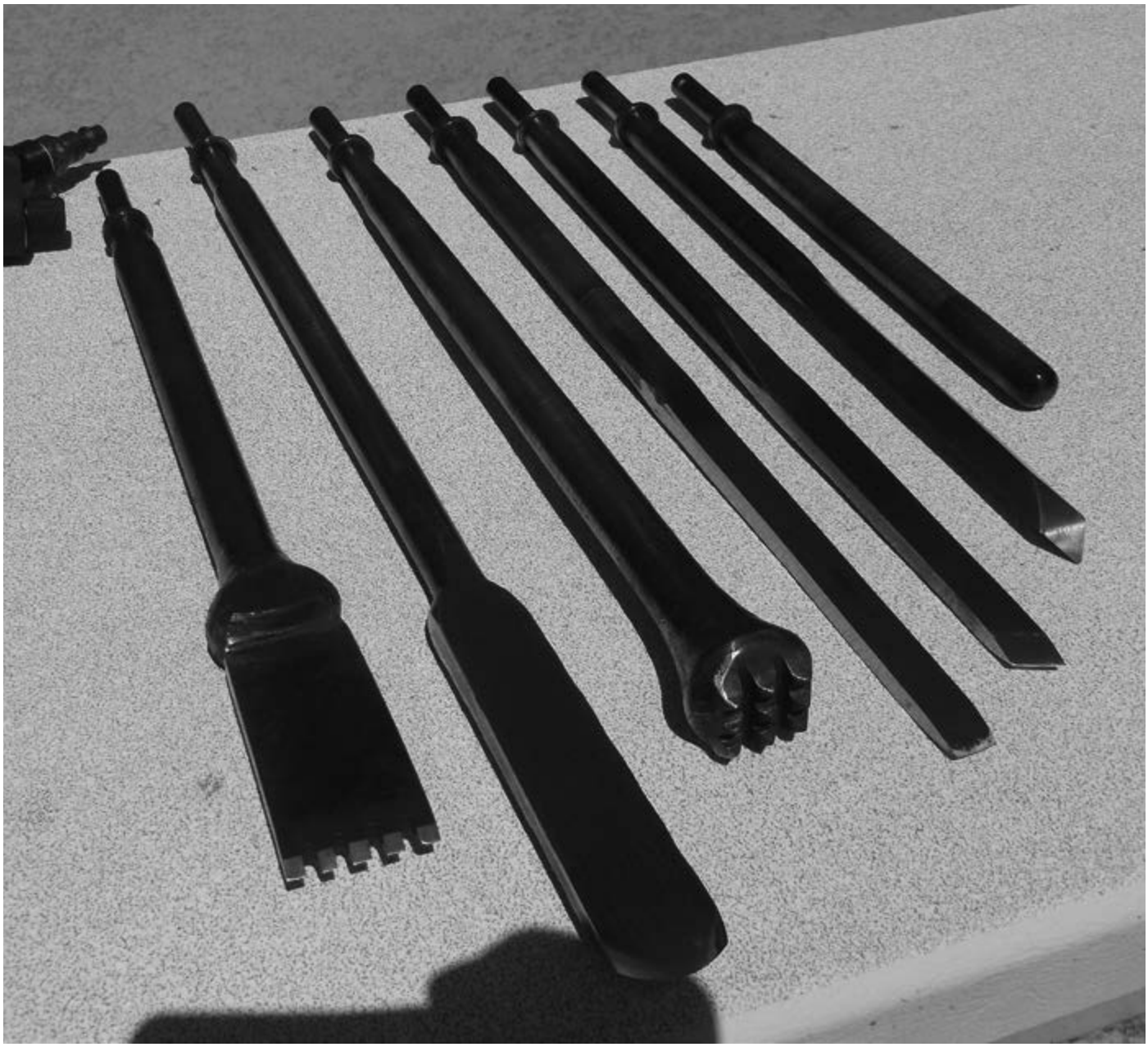
Stone Carving Tools by Gerald Brostek

Pictured are a set of basic stone carving tools forged and machined from ¾ in. sucker rod. The sucker rod was annealed and one end machined to fit my Ingersoll-Rand air hammer. The working end was forged, shaped, filed, and ground to produce a working tool. They were hardened in water, and tempered to purple on the hammer end and straw on the working end. I kind of followed the design of tools that George Carpenter made and uses. For those of you who don't know George Carpenter he is the Blacksmith and Master stone carver at the Clear Creek Monastary located between Hulbert and Tahlequah Oklahoma. George was kind enough to spend nearly an entire day showing me the basics of stone carving. George is a great blacksmith, sculptor and teacher.

Now that I have made my tools I am ready to begin creating a master piece in stone. For a beginning project I have in mind a Roman Obelisk with all the hieroglyphs. I just need a large chunk of limestone about 40 ft or so. If any of you have a piece laying around please let me know. - Gerald Brostek



Member Gallery (Continued...)



Member Gallery (Continued...)

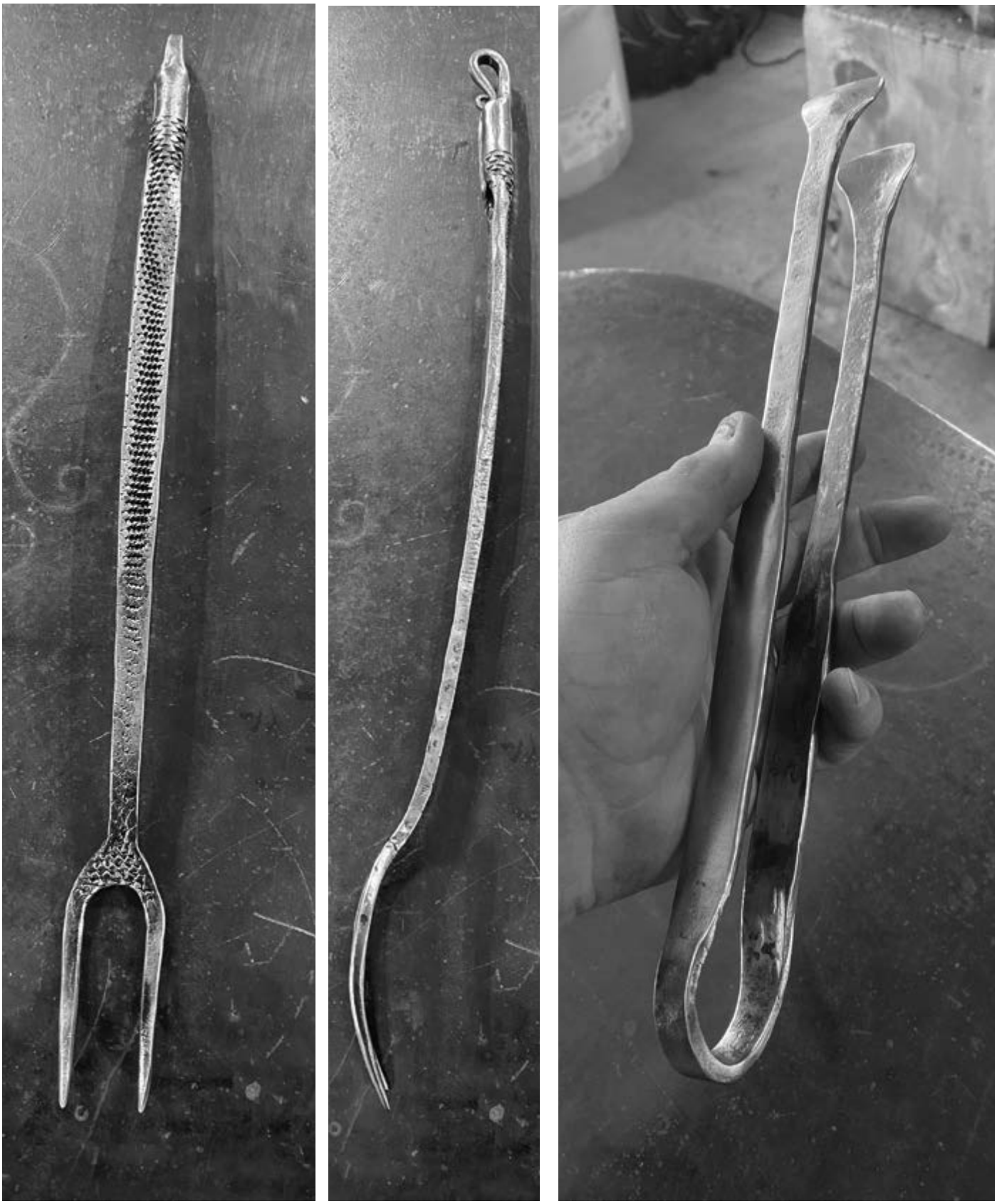
Copper Bracelet and Pendants by Mandell Greteman:

Member Gallery (Continued...)

Cross with Rose by Rory Kirk:

Member Gallery (Continued...)

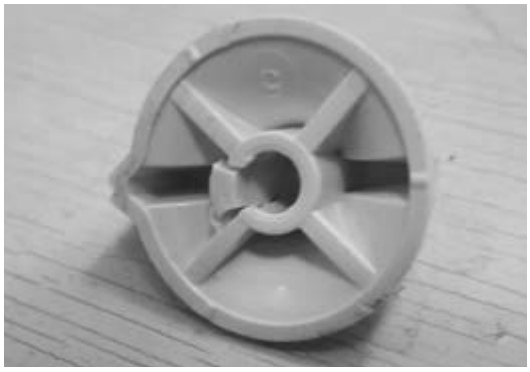
Farrier Rasp Fork and Grilling Tongs by Rory Kirk:



Timer Knob

Eric Jergensen

The knob on the bathroom fan timer broke. I recognized that I could “quickly” adapt a traditional forged wing-nut instead of spending $4 to replace it. (Makes you wonder what - or who - the actual wing-nut is here, but I suspect you share my disease so here we go!)



We need a wing nut with a D shaped hole. The timer shaft is 5mm rod w/ a flat (4mm from flat to opposite side).

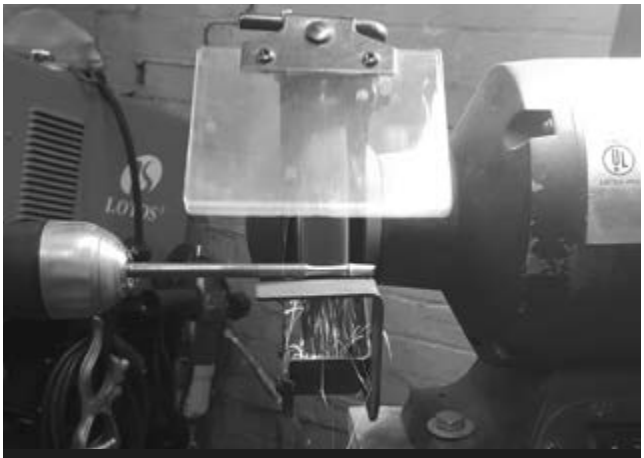
Timer Knob From 3/8” Rod

The storyboard is pretty self explanatory, but there are a few tips:

- Set down ⅜” to ⅝” of material on two sides for each wing
- Staying square until the second side is set down helps with alignment
- Use ⅜” or just under for the center part
- Make a D shaped punch and drift

Actually, you should just skip the drift and use your needle files for final shaping. But if you were that kind of person, you would have stopped reading once you saw there was a $4 solution that didn’t involve all this “work”.

So, here’s how I made the drift with ¼” W1 drill rod:



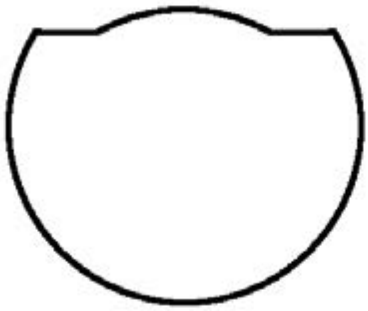
Note the line at the 5mm point on the taper

Making the flat on the belt sander

The finished drift

This is really a drift with a “handle”. If I had a lathe, I’d use it instead of this sander / grinder hack. I did make a tiny drift first, but it was much harder to make and clumsy to use:

In my first try, I drilled the hole and then drifted. After drifting, the flat part was incomplete:



The remnant of the drilled hole ruins the flat

I used the drift as a mandrel to correct, but that flattened the top and bottom of the knob and also widened the hole slightly to an ellipse. The results were adequate, but unsatisfying.

Upper left is punched and drifted (better result.) Bottom right is drilled and drifted but requires cleanup with the hammer.

The punch is easier to make than the drift. I used the drill and belt sander to make the taper and then followed that taper with the flat. It’s best to keep the 5mm point and the flat for 4mm lined up, but the drift can correct a bit of mismatch as long as the punch stays under final size at the full punch depth.

When using the punch, it's hard to line up the back punch accurately. I found that using a bolster plate to punch far enough that the D outline is clear really helps. A mis-matched back punch ends up making the D-shaped hole angle such that the knob doesn't sit squarely on the shaft.

The induction forge was used on this project with a 0.84" ID coil (formed around a 1/2" pipe.) Heats were less than 10 seconds.

The finished knob serves its purpose very well and was a good excuse to get in some extra forging time.

(Photos by Eric Jergensen)

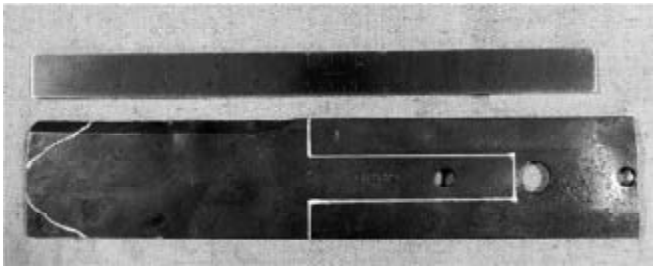
The induction forge made for quick heats on this project

The new knob in place

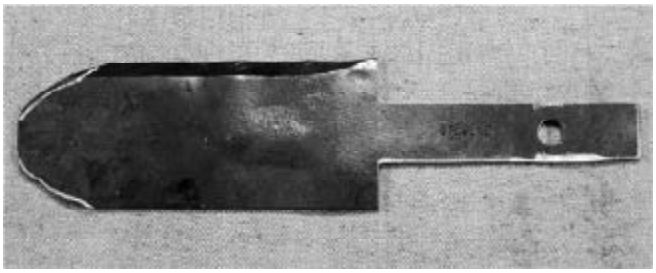
garden trowel

By Ken Glowski, a MABA member

The garden trowel is made from scrap materials.

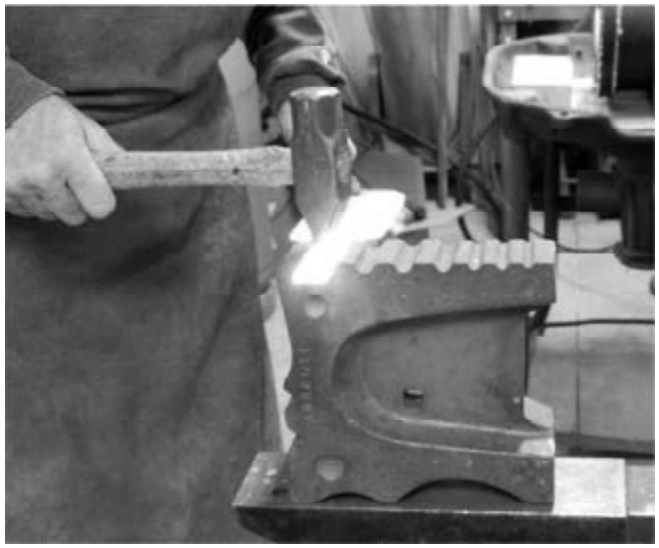


This trowel is made from the remnants of an old lawn mower blade, a piece of maple firewood and a copper ferrule from old water pipe. Your dimensions will be different depending on what materials you have on hand.
The blade started out at, 6"x 2-½" x $\frac{3}{16}$" and the tang is 1" x 4-½".

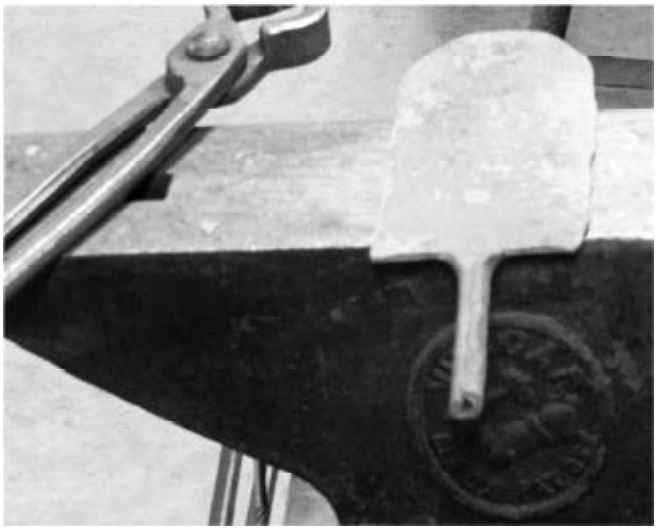


Cut away the excess material with a band saw, hack saw or angle grinder with a cutoff wheel.

Start from the center and pein the blade towards the sides. End up with approximately 6-½" x 3".



Begin folding the tang in a swage block to form a "U" shape.



Then hammer it into a cylinder.

Bend an offset into the tang, approximately 1".

Form the blade into a curve in a swage block, table of the anvil or over the horn.

The handle is made from a piece of maple firewood that was sawn into a block, 1-¾" x 1-¾" x 10". It was then turned on a lathe. If you don't have a lathe, you can form the handle with a draw knife, spoke shave or any other carving knife.

The ferrule shown is a piece of ¾" copper. Any pipe or conduit can be used. Cut a shoulder into the handle the size of the inside diameter of the ferrule. Place the ferrule on the handle. Drill a hole in the handle the size of the tang. Put exterior glue or epoxy into the handle and insert the tang. Finish the handle with boiled linseed oil.

This article is reprinted courtesy of the Michigan Artist Blacksmith Association "The Upsetter" newsletter extra "E-newsletter" 2020.

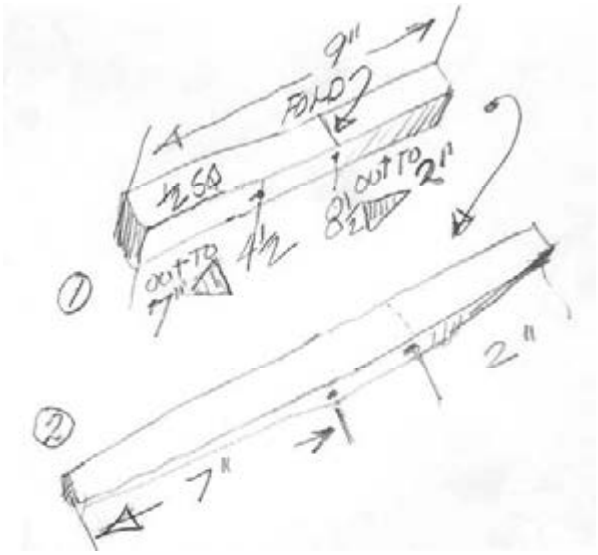
Scroll Door Knocker

By Steve Alling, a MABA member

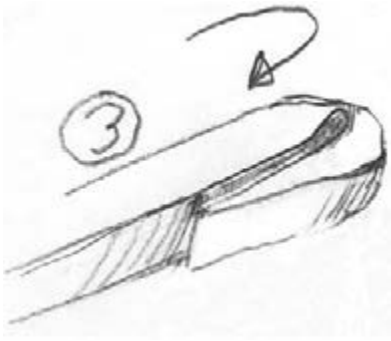
This will be a little different than normal; people see these projects when they are all finished. But when you work through an idea for yourself, you may run into problems.

The finished projects that we put in the newsletter are often the result of trial and error. Things don't always go so well and things have to be done over. So, on this project I will point out a few places where I ran into trouble.

Mark your stock-

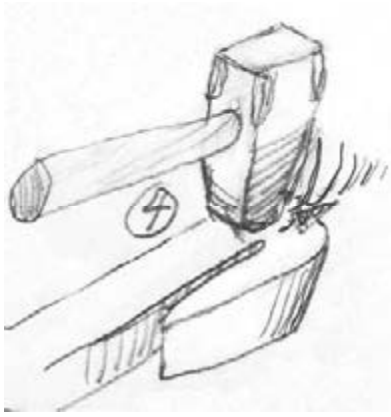


Taper your stock leaving it ½ inch wide.

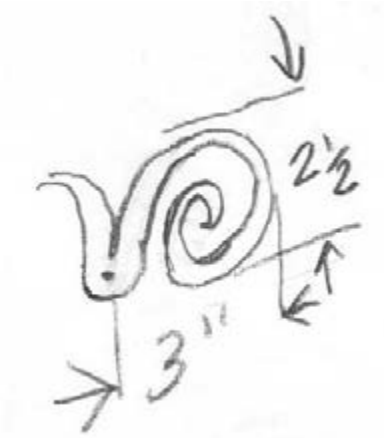


Fold the stock over-

Here is the first place I ran into trouble. Initially I just hammered the fold area flat but when you make a bend like this the inside is compressed and swells up where the outside is stretched and thin. No amount of flat hammering would restore the ½ inch thickness to the outside of the bend.

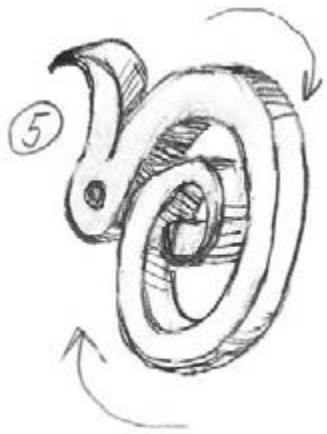


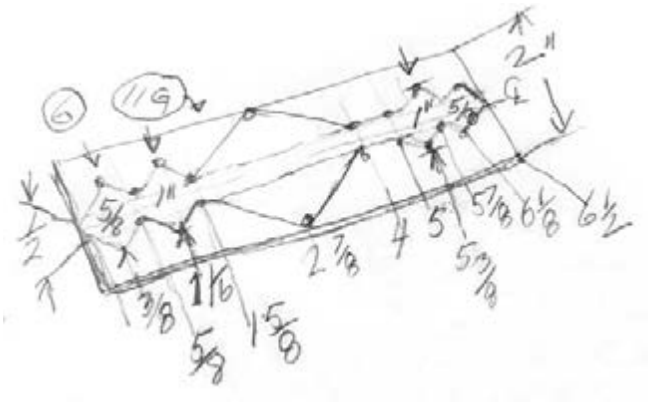
I had to start over and this time use the pien of the hammer starting on the inside of the bend and work the stock toward the outside of the bend.



Shape the scroll and drill the hole for the hinge pin.

This is where if you don't maintain the ½ inch thickness your parts will wobble.

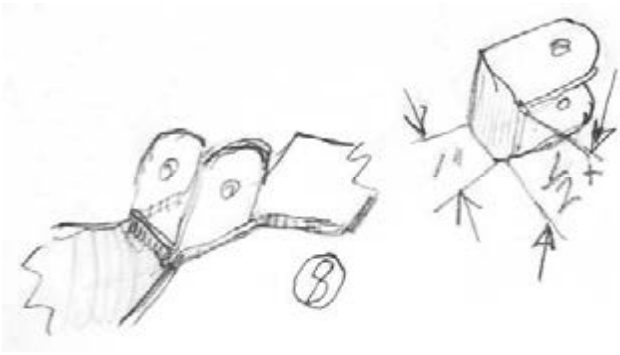


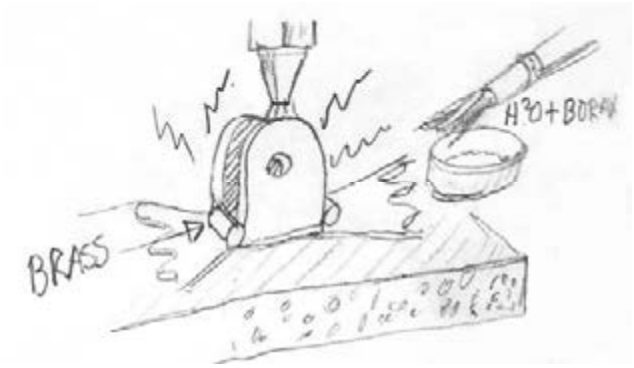


On flat stock like 11 gauge, mark out the points shown in the drawing and 90 % of this can be cut with a grinder and a ⅛ inch cut off. You will need to cold chisel just a few little spots.

In a block of wood, dome the back plate and make sure it lays flat.

Originally, I had included two tabs that I intended to bend up to form the hinge, this proved to be a mistake. I couldn't get the part held in my drill press to make parallel holes. Fortunately, I was able to flatten things out and chisel the two tabs off.





It's better to form the hinge separately, this way you can slide in a ½ inch piece of stock to make the drilling simple.

Then flux just the area you want the braze to be, otherwise it will follow the flux. Place carefully in its proper position laying two thin brass wires on either side and bring to a red heat. The brass will melt and flow under the part. Then it's an easy assembly with a short pin and piening the ends.

Note: So, you can see what looks like things went smoothly, is not always the case.

MABA Editors note: We think the person that received this in Iron in the Hat was lucky you worked through your idea! And thanks for the project.

This article is reprinted courtesy of the Michigan Artist Blacksmith Association "The Upsetter" newsletter extra "E-newsletter" 2020.

Forge Welding

Mike Chisham, Petaluma

I find there are several areas that need to be addressed when a project incorporates forge welding.

Fire

A fire is made up of three elements – heat, fuel and oxygen. Take even one away and you no longer have a fire. All three are easily controlled by a blacksmith. As a point of reference, I am going to refer to oxygen-acetylene welding because it is the easiest to explain and understand and most of us have heard of it.

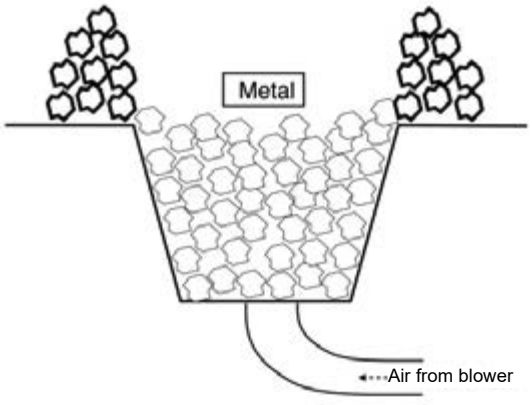
Acetylene is the fuel or the combustible material. It's ignited by a heat source, which is usually a flint striker that emits a spark. The spark ignites the fuel, and oxygen is added to intensify the heat. To bring metal to a molten state for welding, the welding torch has to emit the proper flame. There are three distinct flames that can be emitted by a welding torch. They are oxidizing flame, neutral flame and carburizing or reducing flame. A flame that lacks oxygen is referred to as a carburizing flame because of the excess amount of acetylene, a carbon-based fuel. This flame is referred to a *cooler* flame. You will know if it's a carburizing flame because the surface of your metal turns black. A carburizing flame will not heat your metal hot enough for you to perform a cohesive weld.

At the other end of the spectrum is an oxidizing flame. This is a flame that has an excess amount of oxygen. The excessive amount of oxygen makes the surface of your metal scale. When metal is exposed to oxygen, the surface begins to oxidize or rust. When forging, we will call this surface rust *scale*. When the surface scales, you are usually welding scale to scale and not molten metal to molten metal. Another problem with an oxidizing flame is that if you do actually get your pieces of metal to weld, the weld is porous and filled with tiny air pockets from the excess oxygen.

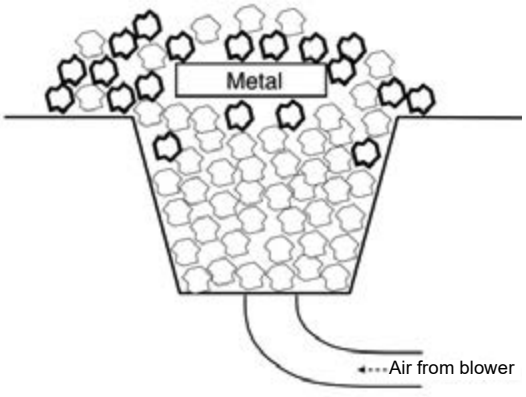
This leaves a neutral flame. A neutral flame has a proper amount of fuel combined with a proper amount of oxygen. No scale, no black stuff and a perfect environment for welding.

A good smith wants to do all forge welding in a neutral flame or fire.

Different types of common fires used for blacksmithing



Common fire used by beginners. Minimum fuel in the firepot with lots of green coal on both sides. Very oxidizing fire, lots of hard scale on metal all the time. Hard to heat the metal enough for forging.



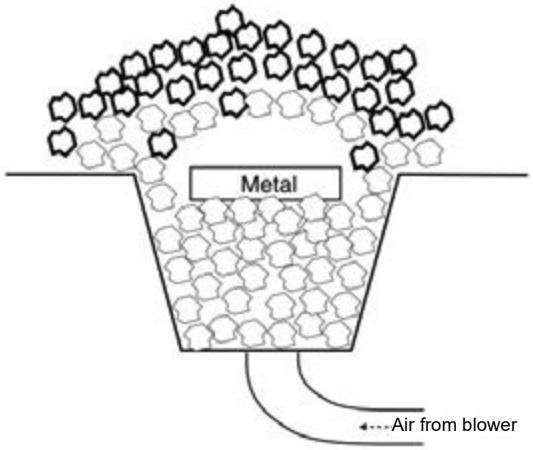
Better fire, but minimum amount of coke in the firepot. Lots of green coal mixed with coke. Hard to heat metal enough for forging. Lots of residue on metal because of a carburizing fire.

Forge Welding

Where is a neutral flame in a coal fire?

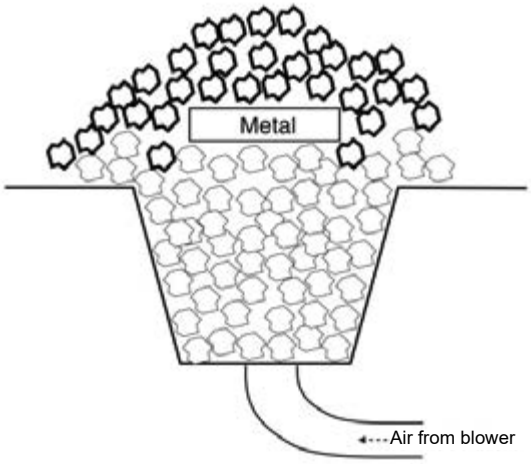
Coal is your fuel. Green coal, from right out of the ground or a sack is a natural resource and needs to be refined to be used as a fuel. Like oil from the ground that has to be refined into gasoline, coal has to be refined into coke. Coke is still considered a carbon-based material though. Metal placed in the forge where it's exposed to green coal or partially refined coke will be in a carburizing environment. Your metal will never get hot enough to reach a welding temperature. The heated metal will absorb a lot of carbon into its surface – great for bladesmiths or toolmakers, but not so good when forge welding.

Oxygen comes from your blower, whether hand-cranked or electric. Air is air, and air is mostly oxygen. The incoming air is forced into and between the chunks of coke. Like when you blow on a stick that's on fire, the addition of forced air helps to intensify the heat. The ignited coke becomes hot enough to produce a heat that will reach a temperature that is sufficient enough to melt metal. The problem is that the excessive amount of oxygen makes the surface of your metal scale very easily or actually burn up. Your metal looks like it has reached a molten state, but it is actually scale. Then you wonder why your pieces of metal didn't stick together. An oxidizing fire can also burn off flux and actually destroy the surface of the metal, making proper welding almost impossible. It might stick, but it won't be a cohesive weld.

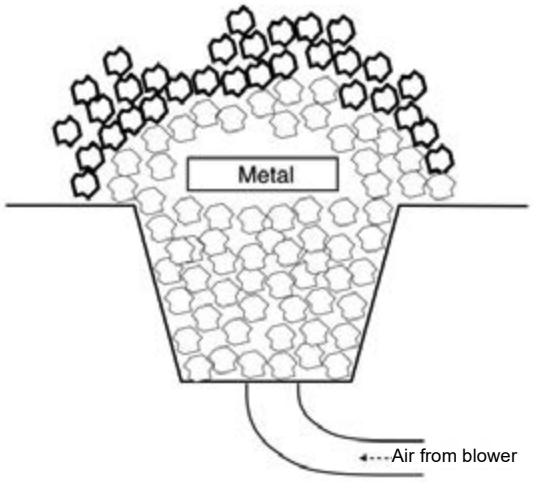


More useable fire, but metal is too far down in the firepot. Very oxidizing fire. Metal has a lot of scale and very hard to keep hot. Metal is easily destroyed from burning up, too hot.

The area in your forge that is under the carburizing flame and over the top of an oxidizing flame is the neutral flame area. This is the area where not only forge welding, but all heating of metal should really be done – in a neutral fire.

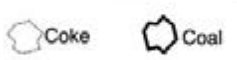


Much more useable fire, but metal is too close to the green coal to be of use for forging. Upper side of metal doesn't want to get hot.



Very good fire for heating and welding. Plenty of fuel in the firepot to avoid an oxidizing flame. Plenty of coke surrounding the metal. Lots of green coal sits on top, constantly being turned into coke. No carburizing flame, but a large useable neutral fire.

Different types of common fires used for blacksmithing



Forge Welding

Now the hard part: explaining a neutral fire. Let's say, you have a hot glowing fire with a 6" high mound of coal and coke mixture on top of the firepot. The upper part of the mound will form a hard, crusty layer that actually forms a lid on top of your fire. There will be a shallow space just under it. Let's say it's about 3" high. This space is a neutral fire. If your fire pot is 4" deep, your whole fire is about 10" in total height. If a proper amount of controlled air is forced up into your fire pot, oxygen should only affect the bottom half of the fuel in the fire pot. With a neutral fire that is 3" under the top carburizing flame and 2" above the bottom oxidizing flame, you will have around a 5" space that is referred to as a neutral fire. Metal placed above this space will be in a carburizing fire, and metal placed below will be in an oxidizing fire. Therefore, the area in the center of your fire is the optimal place you seek. Forge welding is best accomplished in a neutral fire.

Material Prep

Learn what type of a scarf you need for your particular forge-welding project. It's a good idea to make your scarf on several practice pieces before attempting it on your final project. Before applying your flux, wire brush your pieces with a stiff wire butcher-block-style brush. A thin wire brush usually will not remove all the surface scale, but will only polish it so that it looks good to the eye.

Fluxing

After thoroughly wire brushing your metal, place it back into the fire and bring it to a red color. Don't get your metal much hotter than cherry red because as metal gets hotter, it begins to form scale when you take it out of the fire. Take your metal out of the fire and apply flux. After the flux melts, put your fluxed metal back into the fire. If you apply flux and your metal is too hot, the flux will bubble and fall off your metal and not put on a protective coating. If you apply your flux below a blood red color, the flux will not melt because the metal is too cold. As flux melts, it will flow around all the surfaces of your metal. Therefore, you don't need to apply flux everywhere; it will find its own way.

Forging

Once your pieces are back into the fire, constantly check and observe the surface color of your metal. When your metal reaches the same temperature as the fuel in your fire, your metal will disappear in the fire and it will be hard to see. It's time to pay strict attention to your metal. As soon as your metal gets a glassy liquid look to it, that tells you the flux has now melted and your metal is reaching a melting temperature. You want a rising heat as you take your metal out of the fire and begin your forge welding process. Now is the time to increase the air flow from your blower for about three seconds and then remove your pieces from the fire and begin welding. If you bring your metal up to welding temperature and you wait for any length of time, your metal is either burning up or beginning to form scale as your metal begins to cool down. When you take it out of the fire, you will be welding scale to scale, not molten metal to molten metal. Or, the flux is burnt off and the surface of your metal is pitted from too much heat. Forge the scarfs first with light, pushy type hammer blows. It you hit too hard, it will splatter the molten metal off and out of the surfaces of the scarf. Forge one scarf until it sticks and then quickly turn your metal over and do the same to the other side. As soon as the scarfs are stuck, wire brush your metal, flux it again and get it back into the fire ASAP. You want the center of your metal to stay as hot as possible. Repeat the process.

Forge welding is not complicated. Just like everything else, it takes practice to become good at it. ♣

This article is reprinted courtesy of the California Blacksmith Association newsletter May-June 2020.

How I Make a Copper Coffee Scoop
by David Robertson

I have been working on some smaller scale pieces recently and I thought I would share the process of making two different types of copper coffee scoops.

Of the two scoops *(seen on the next page)* , the bottom is more traditional, based loosely on a basting spoon. The top more of a free form leaf design.

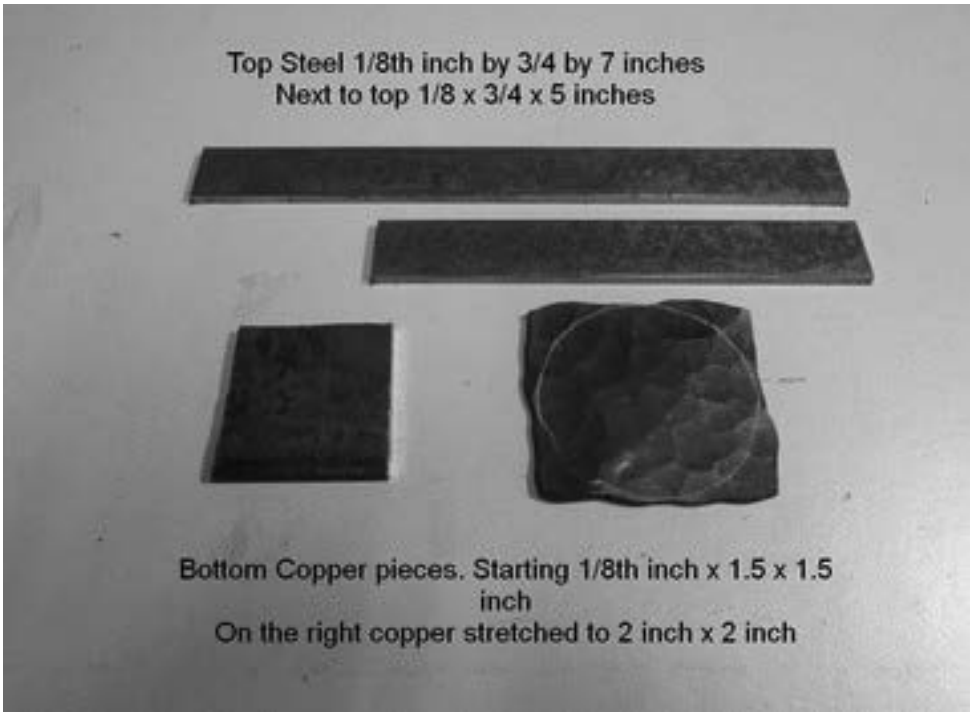
The copper scoops are the most interesting part of the process as I do not get to use copper all that often. Although copper is more expensive than steel the added impact of a shiny copper surface is well worth the added cost.

Copper is a very soft metal to work. It is a joy to work hot out of the forge. It is almost like working with clay it is so soft.

A caution here. Copper melts at 1085 deg. C or 1984 deg. F. This temperature is easily reached in our forges. If you happen to be using an alloy of copper (such as a bronze) your melting point may be lower. Most brass does not like to be forged.

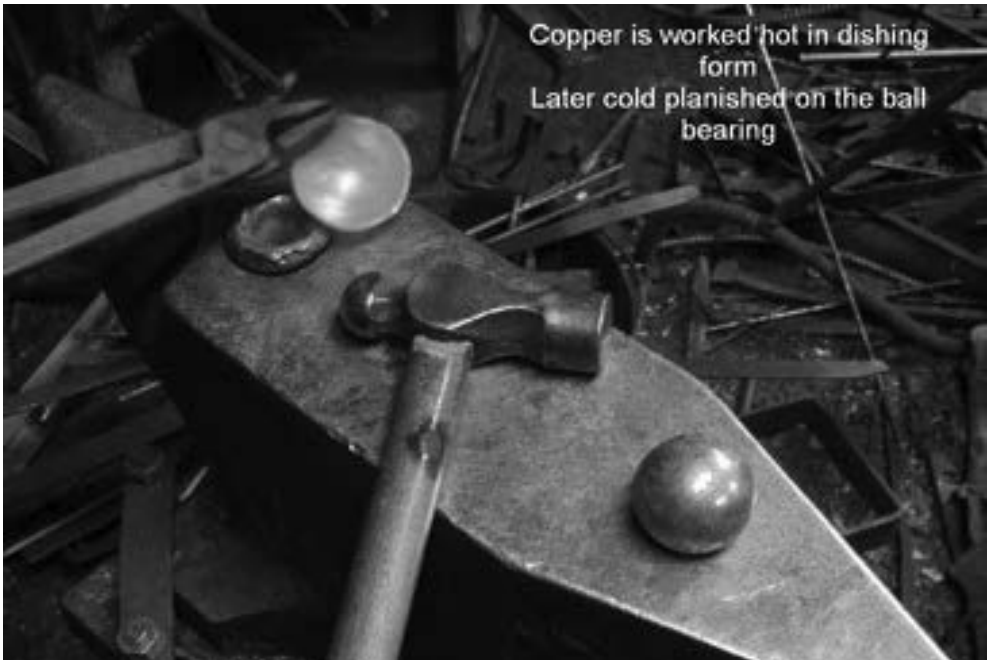
Be a little cautious with your temperature at first. Copper and some bronzes will let you work well into black heat. (Aluminum bronze does not like this and will crack below incandescent colour.)

The starting pieces for the handles are are steel strip 1/8th x 3/4 x7 inches *(leaf)* or 1/8th x 3/4 x 5 inches *(traditional)*.



The Copper Scoops

The copper I have on hand is 1/8th inch thick and I cut pieces 1.5 inches on a side (left side bottom – *image above*). I then forge with rounding hammer to 2 inch x 2 inch plate (bottom right side). Then a roughly 2 inch circle is drawn (I used 1.5inch black pipe which gives an OD of just under 2 “.



Next I rough cut the circle with aviation or tin snips. The circle is refined later.

The above photo shows the tools used in the forming process of the copper scoop. Small tongs to grip the side of the bowl. Below the tongs is a dishing tool. In this case it is a piece of pipe that has been flared on the top and squared on the bottom to fit the hardy hole. There is also a steel ring welded to the underside of the flare for reinforcement. It is very important that the surface is radiased smooth as any sharp bits will cut into the copper.

The copper is hammered starting in the centre with the ball of the ball peen hammer. Multiple heats and constant turning and changing angle is required to create a rough deep bowl shape.
I then anneal the copper. Heat to medium orange and quench in water. (opposite of ferrous metals) Once annealed it is cold dishing further roughly shape the scoop. Many small hammer blows with the ball to get a shape that is slightly smaller than the ball bearing at the right.

Plannishing
I wanted a fairly uniform final shape that would hold roughly the right amount of coffee. I had a 1.5 inch diameter ball bearing. This works perfectly for a plannishing stake. I simple place the copper on top and gently hammer all the facets down on the ball bearing. Around the whole surface smoothing the whole scoop. This is smoothing the inside as well. The edges are ragged from the stretching and cutting. This evened out on a belt sander. Each scoop is a slightly different size but are of uniform shape.

The copper gets a heavy copper oxide developing when it is heated in the forge. This can be removed by acid as in pickling jewelry, or by mechanical means such as sanding or wire wheel.
I use the wire wheel on both inside and outside to create a nice clean shiny surface.

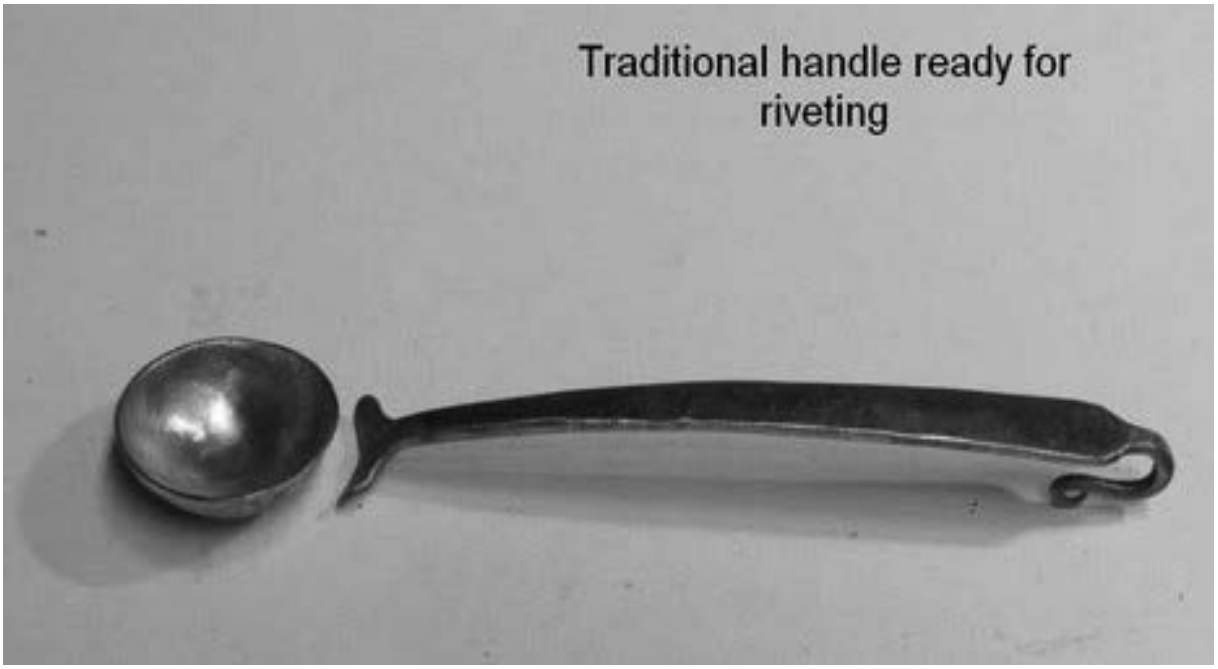
The Handles
Both handles start as small flat bars. Both have some level of draw out on them but the leaf one is quite a stretch.

First on both styles of handles I need some sort of tab for the riveting to the bowl. At this point it is just shouldering with leaving 1/4 inch hanging over the shouldering tool as in the photo above.

The traditional handle above is shouldered on the top end about 1/2 of an inch between the shouldering tool and end of the bar. The over hang is drawn out to a little more than an inch long. If too long you can cut off. This will get formed into a hook for hanging at the end of the shaping of the handle.

The handle is tapered from shoulder to top end in a smooth taper. The tabs are stretched laterally with the cross peen and then smoothed with the face of the hammer. The goal hear is to thin and get enough material to support the bowl. They can be cleaned up for shape and size with belt sander or angle grinder with flap disk.

The handle should have the edges sanded off and a pleasing curve forged in for comfort. The tabs need to be dished a little to match the curve of your bowl. The angle of the scoop also has to work. Can you comfortably get the coffee out of the bottom of the bag?



The sanding of the corners before finishing shaping the handle is important. You do not want any sharp or rough spots for early morning ease of use.

The leaf handle is similar steps. Major difference is the leaf finial and the heavy draw out.

The longer flat bar is hot cut at roughly 45 deg. The point is then refined and tapped to the middle of the bar. I then knock the very tip over the far edge of the anvil to give it more of a leaf look.

Shouldering is done just behind the taper of the point. The centre part between the leaf shoulder and the tab shoulder, is squared up and drawn out over the horn until nearly twice the length. All corners are rounded off and smoothed out.

At this point I use the cross peen to stretch the leaf laterally. Note in the Hardy hole is a bolt that has a square shank. This provides a tight working surface. If you happen to miss with the cross peen you won't ding up your anvil.

The above photo shows the diagonal peening to create the vein structure in the leaf. Again done on the heavy bolt.

Last step on the leaf is to use a Vee bottom stake to give the leaf some 3 dimensional relief. I use a sharp cross peen on a lighter hammer to make the shape.

Next is bending about 2/3 rd of the way from the scoop (shorter bit is towards the leaf). This can be bent over the horn, with bending forks, pliers or your favourite jig. Then twisting around the handle to make the finished look. Orienting the tabs and the loop in the handle and the bowl of the scoop at the correct angle.

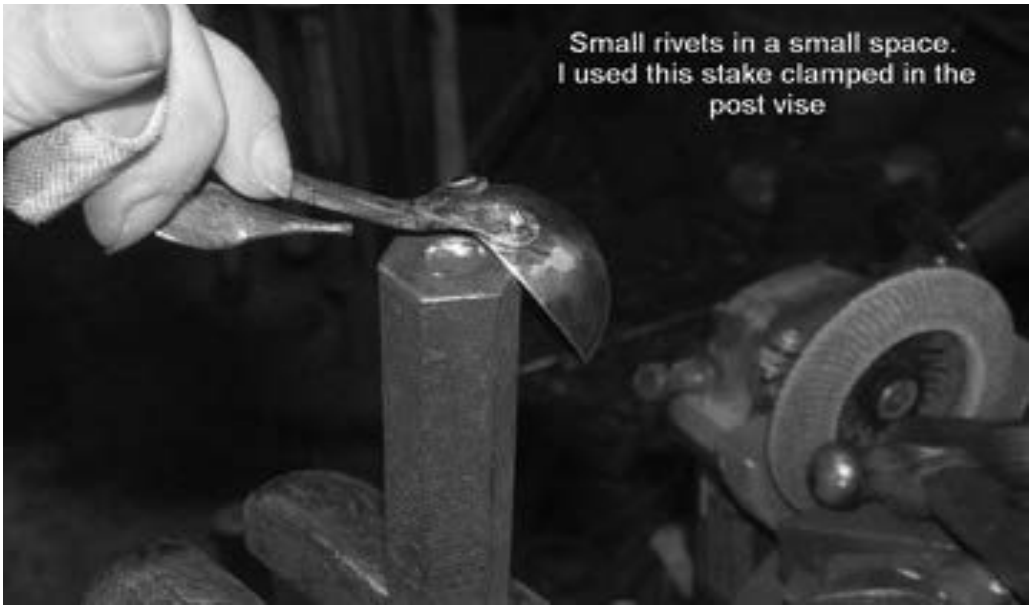
It should be pleasing and comfortable in your hand. This is very light material when it is all stretched out so minor adjustments are easy to do hot.

Final Steps
Once the pieces are formed it is time to drill and wire wheel. All surfaces need to be clean and free from sharp edges and catch points. The scoop needs to have the heavy copper oxide removed either chemically or by abrasion, then buffed to a shiny surface. The inside of the scoop may be easiest tackled with a Dremel tool or similar. Outside surface standard wire wheel works fine.

The easiest way I have found for assembly is to drill the two holes in the handle first. I use 1/8th by 1/2 inch rivets so 1/8th inch holes. I then mark and drill one hole in the copper clean up the bur and rivet one side to the handle. Align the second hole and clamp with small vise grips and drill the second hole through the open hole in the handle. That way I am guaranteed of the alignment. Rivet the second rivet.

The stake allows me to support the rivet head while peening over the shortened rivet. Depending on the thickness of the material I may end up cutting off about 1/4 inch of the rivet. I use the ball peen the for riveting.

Once all completed run your fingers over the surface to make sure no sharp or catch points. If there are file or sand them down.



I like to do a double coat of clear coat to protect the steel from rusting and the copper from oxidizing. I have used Tremclad clear and lately Rust-oleum clear. Both seem to have reasonable durability.
Remember these are not dishwasher safe. They should be cleaned with a damp cloth and dried right away. The joy of traditional materials.

A great little project using multiple techniques and the bonus of working with non ferrous metal.

David Robertson has been blacksmithing full time since 1993 and currently works and teaches from his shop in mid-western Ontario. He has a passion for making tools, jigs, and organic forms in his work.
www.ArtistBlacksmith.com

(All photos by the author)

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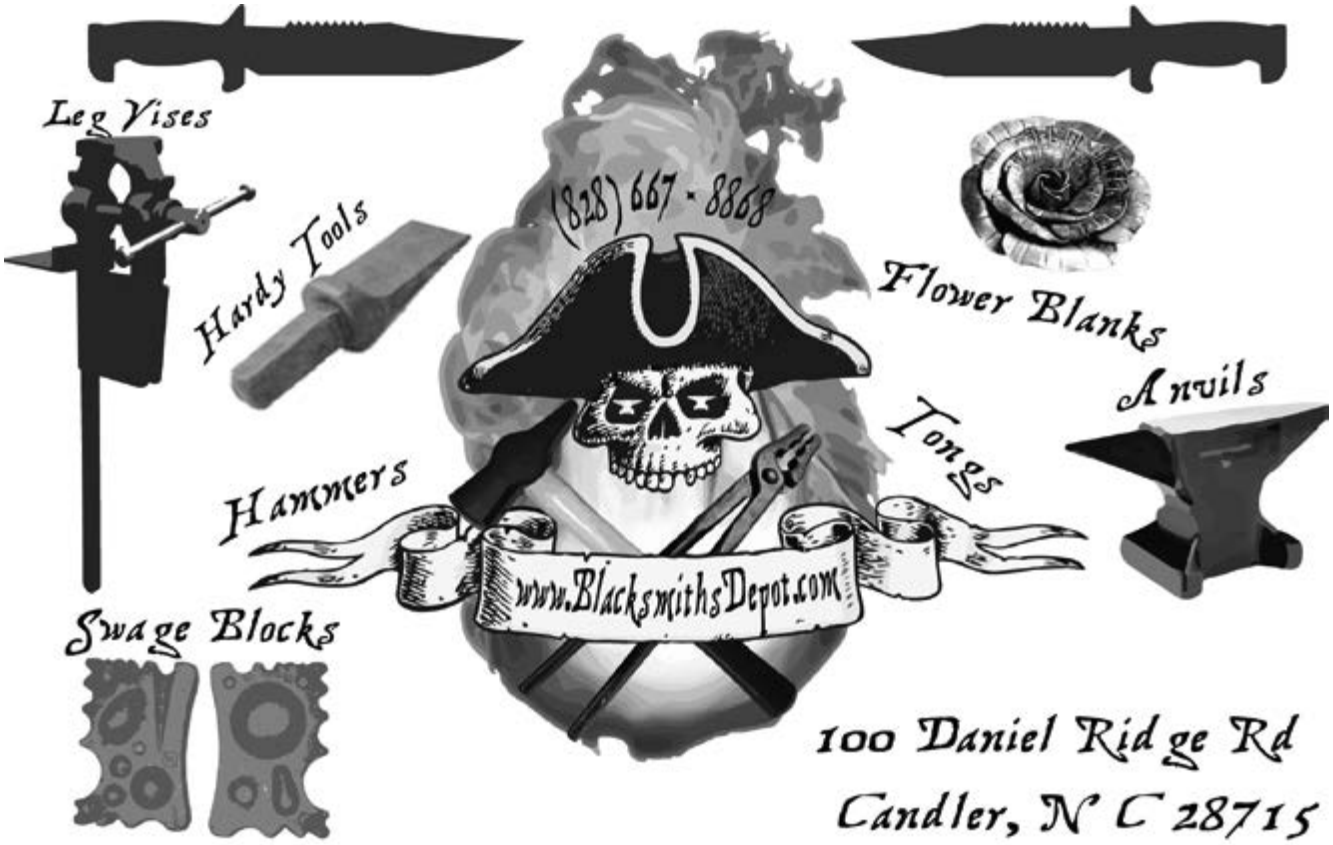
SCABA Shop and Swap



For Sale: 15 Lb Tire Hammers:

$1,200 for everything from the base plate up. Two rounding dies included as standard. Has 1/2 HP 115V Motor. Contact: David Barfield - 580-595-1476

SCABA Shop and Swap

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Bill Davis Forge Welded Tomahawk DVD

This DVD is now available to members for a minimal cost (cost of DVD's is minimal to cover reproduction and shipping if applicable.) Contact the SCABA Librarian, Don Garner, if you would like to get a copy of this DVD.
Don Garner: 580-302-1845
(Call or Text. If you get voice mail, Please leave a message.)

For Sale:

Tire Hammer Plans by Clay Spencer
Send a check or money order for $30 US to Clay Spencer, 73 Penniston Pvt. Drive, Somerville, AL 35670-7013. Or send $32 US to Paypal.Me/ClaySpencer. E-mail me at clay@otelco.net. PDFs will be e-mailed outside US. Phone 256-558-3658

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

For Sale: I have numerous old tools and collectible items of various kinds including blacksmith related tools and equipment. Too many tools to list them all. Inventory is always changing.
Contact: Craig Guy (SCABA Member), Piedmont, OK
Cell Phone: 405-630-7769 (Call or Text)

SCABA Shop and Swap

SCABA Library DVD's Available:

This is a partial list of the DVD titles available to members from the SCABA Library. Contact the Librarian (Don Garner) if you would like to obtain a copy of any listed title or if you have questions on any other titles that may be available. Additional titles are listed on the website. DVD's are available for a very minimal cost to offset the blank disc and cases or sleeves. Shipping cost applies if you need these delivered by mail.

- Robb Gunter Basic Blacksmithing parts 1,2,3 and the controlled hand forging series
- Clay Spencer SCABA conf.2013 pts. 1,2 and 3
- Jerry Darnell 18th century lighting, door latches and hinges
- Brent Baily SCABA conf. 2011
- Mark Aspery SCABA conf. 2011
- Robb Gunter SCABA conf. 1998
- Robb, Brad and Chad Gunter 2009 joinery, forging, repousse, scrollwork, etc.
- Bill Bastas SCABA 2002 pts. 1 - 6
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- Power hammer forging with Clifton Ralph pts. 1 - 5
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- M. Hamburger SCABA 2007

Librarian: Don Garner 580-302-1845 (Cell)
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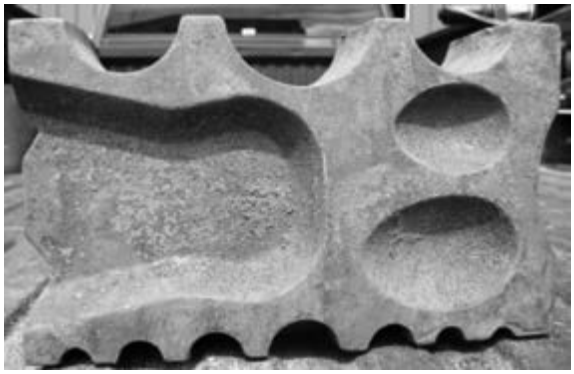
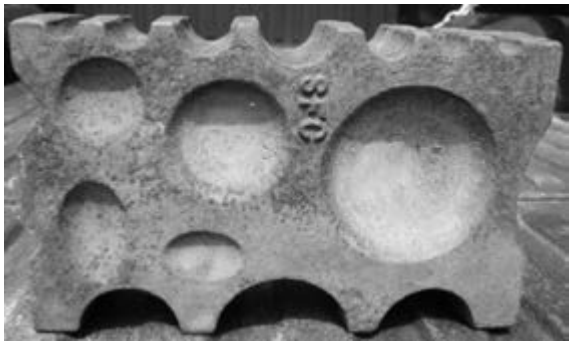
SCABA Swage Blocks

$200.00 plus shipping.
(Same price to members and non-members.)





SCABA Floor Cones

$200.00 plus shipping.

(Same price to members and non-members.)

To order swage blocks or cones, contact our distributor:

Nolan Walker at Nature Farms Farrier Supply in Norman, OK.

405-307-8031

SCABA Shop and Swap

Club Coal:

Saltfork Craftsmen has coal for sale. Coal is in 1-2" size pieces. The coal is $140.00/ton or .07 /pound to members.
No sales to non-members.

NW Region coal pile located in Douglas, OK. If you make arrangements well in advance, Tom Nelson can load your truck or trailer with his skid steer loader for a fee of $10 to be paid directly to Tom. Tom has moved his skid steer and must now haul the loader to the coal pile to load you out, hence the $10 charge. You may opt to load your own coal without using Tom's loader. The coal can be weighed out at the Douglas Coop Elevator scales. Contact Tom Nelson (580-862-7691) to make arrangements to pick up a load. Do not call Tom after 9 PM!! Bring your own containers and shovels. Payment for the coal ($.07 per pound) should be made directly to the Saltfork Treasurer.

NW Region Coal Pile in Thomas:
Don Garner now has a new pile of club coal available for sales to SCABA members. The shop is at 23713 E 860 Rd in Thomas, OK. (One mile west, then one mile north of Thomas.) Contact Don at 580-302-1845 (Cell Phone) to arrange details for purchases.

NE Region coal location:
******NOTICE:******
Charlie McGee is no longer hosting the coal pile in the NE region. If you would be interested in hosting a location in NE, let one of the SCABA Board members know.

S/C region coal location: Club coal is now available at Norman at Byron Doner's place. Call Byron to make arrangements to come by and get coal.

SCABA T-Shirts!

2018 Saltfork Collector T-shirts are available with the 2018 Conference Logo. $20.00 (plus shipping if applicable.) Contact Josh Perkins to check sizes and quantities that are still available.

Legacy SCABA T-shirts and long sleeve denim shirts are also available on clearance while supplies last. T-Shirts are $5.00 and Denim Shirts are $10.00. (Plus shipping if applicable.) Contact Josh Perkins to check sizes and quantities that are still available.

If you would like to purchase shirts, contact Josh Perkins (918) 269-3523.

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SCABA Membership Application

For Annual Membership
(Please Print Clearly!) Date _____

New Member _____
Renewal _____

First Name _____ Last Name _____

Married? _____Yes _____ No Spouse's Name _____

Address _____

City _____ State _____ Zip _____

Phone (Best Number to Contact) (_____)_____

e-mail _____

ABANA Member? _____Yes _____No

I have enclosed $30.00 for dues for one year membership from the date of acceptance.
Signed: _____

Return to: Saltfork Craftsmen, 6520 Alameda, Norman, OK 73026
Note: Registration online by Paypal OR credit card is available from the website.
www.saltforkcraftsmen.org
You do NOT need a Paypal account to use your credit card and registration/renewal is immediate.

Saltfork Regional Meeting Hosting Form

Region: _____NE _____SE _____SW _____NW

Date: Month _____ Day _____ Year _____

Name: _____

Meeting Address: _____

Host Phone (Best Number to Contact) (_____)_____

Host e-mail _____

Trade Item: _____

Lunch Provided: _____ Yes _____ No

Please provide detailed directions and/or a map to meeting location if possible. Meetngs are schduled on a first come basis.

Return to: **Saltfork Craftsmen Regional Meeting Coordinator, Russell Bartling**
70 N 160th W Ave
Sand Springs, OK 74063

You can also send the information in an e-mail or text or fill out the online form available on the website in the top banner of the Calendar Tab: www.saltforkcraftsmen.org/Calendar.shtm

Saltfork Craftsmen Artist Blacksmith Assoc. Inc.
6520 Alameda
Norman, OK. 73026

Non Profit Organization
U S Postage Paid
Oklahoma City, Ok
Permit #2177

Address Service Requested