Hot Iron News

THE VOICE OF THE NORTHWEST BLACKSMITH ASSOCIATION

Third Quarter 2017

Northwest Blacksmith Association

"To promote and preserve the Art and Craft of Blacksmithing while building friendship and good will."

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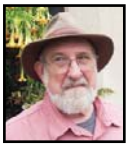

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Quick Reference for NWBA Members

Submit articles, photos, how-to's to HIN:
nwbainfo@gmail.com

NWBA Website: www.blacksmith.org

For NWBA correspondence or membership, or to change your address (must be in writing) send to:

Northwest Blacksmith Association
4742 42nd Ave SW #185
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Annual dues 2017: $60 (foreign, $70)
Dues include quarterly subscription to Hot Iron News.
Dues may also be paid online at
http://blacksmith.org/membership-payment-gateway/

Want to be sure to keep up to date?
Sign-up to receive email announcements monthly so you don't have to miss another event!
http://blacksmith.org/sign-up-email-announcements/

ON THE COVERS

Front Cover: Blacksmith Week Fish Sculpture in progress. See page 16 for more photos.

Back Cover: fish swimming around the blacksmith shop.

WHAT'S INSIDE

Next

NWBA Board Meeting

Get in on the behind the scenes action

Friday October 27, 2017 1 PM

All NWBA members welcome

Cowlitz County Fairgrounds, Longview, WA

SWAPTOBERFEST
Demonstrations - Hammer In...
'a mini conference'

Open forge

Blacksmiths' Swap Meet

Three demonstrators:

David Tuthill 'sculpture';
Andy Dohner 'fly press tooling';
Darryl Nelson 'making it look easy, tips from a master'

"Masquerade Metallique" mask contest!

Friday October 27th - Sunday Oct 29th
at NWBA Mentoring Center, Longview, WA

. **Look for details online on page 30**

www.blacksmith.org/events/

A Word From What's-His-Name

Hello, Everyone!

Seasons come and seasons go… This Summer has been an especially eventful one. Autumn will be eventful as well!

As mentioned last quarter, Lynn Gledhill has stepped down from the board for personal reasons. Paul Thorne has been appointed by the Board to finish out Lynn's term and will be a Director until January of 2018. Paul's contact information, as well as that of the rest of the Board, may be found inside the front cover of this issue of the Hot Iron News. You may also find our contact information online at http://blacksmith.org/board-directors/ .

"Cowlitz County Fair time" was again "NWBA-meets-the-public time." NWBA volunteers welcomed the fair-goers and let them know what we're all about. We made some fun and interesting items while generally having a great time. A few visitors even decided to join our Association. Special thanks go to The Neely brothers, Ronnie Selby, Billy-O, and Craig Flynn.

It would be great to involve even more of us for July 25-28 of 2018. Four people per day on Friday & Saturday (27th and 28th) would be ideal; on Wednesday & Thursday, we could use two or three per day. A sign-up sheet will be in the Mentoring Center.

As Summer gives way to Autumn, get ready for SWAPTOBERFEST! October 27-29 of 2017 (Save the date!) we will see tailgaters galore, have open forge time, and learn from three excellent demonstrators! Get working right now on your mask for the Masquerade Metallique competition! There will be prizes! If you would like to help out in Registration / Orphans' Booth contact Peggy Gudgell or Kellen Bateham. Folk willing to help out will earn a complimentary event membership. Page 30 (or http://blacksmith.org/events/swaptoberfest/) has all the information.

The 2018 Conference will take place May 11-13, 2018 (Mother's Day Weekend). ***Save the date!*** Check page 31 of this issue (or online at http://blacksmith.org/events/nwba-conference-2018/)! We're working on making it just a wee bit bigger & better than before. Thank you to all the folk who made such good suggestions! The Dessert Dash should be especially fun. There will be more details on the Dash in the coming months.

In the meantime, your Board of Directors is searching for ways to better serve our Association's Mission Statement. We're hoping to better coordinate with similar groups in the region to preserve and promote the craft. We are also striving to draw more young people into the craft. If you have any ideas on how these things might be accomplished, please DO contact any member of the Board.

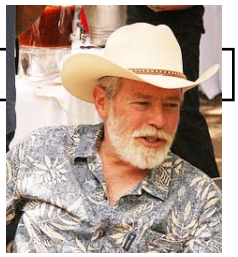
We are always on the lookout for folk willing to serve on the board. Elections happen every year, per the Bylaws. Nominations close in mid-November. Look for your ballots in the mail soon thereafter and be sure to get them back in the mail before the Christmas postal crunch.

Stay Inspired!

-Lee Cordochorea

(You pronounce that just like it's spelled.)

Treasurer's Report *NWBA Treasurer Jim von Mosch*



Second Quarter 2017 Financial Report

Income	
General Income	
Other Income - Sale of Asset	2,000.00
Membership Dues	12,641.00
Donations	243.00
General Income - Other	107.48
Total General Income	**14,991.48**
Mentoring Center Income	
Event Fees	520.00
Merchandise Sales	95.00
Total Mentoring Center Income	**615.00**
Conference Income	
Registration Fees	14,369.00
Banquet Fees	3,150.00
Camping Fees	935.00
Merchandise Sales	3,512.00
Auction Income	8,225.00
Total Conference Income	**30,191.00**
Total Income	**45,797.48**
Expense	
General Expenses	
Bank Charges	33.90
Merchant Fees	368.70
PayPal Fees 7	53.65
Board Meeting Expenses	150.00
Communications Director	3,600.00
Donations, Scholarships, Grants	600.00
Insurance	35.00
Legal and Accounting	679.00
Licenses & Permits	60.00
Postage & Delivery	354.48
Printing & Publishing	2,764.52
Total General Expenses	**9,399.25**
Mentoring Center Expenses	
Demonstrator Fees	700.00
Propane	355.51
Total Mentoring Center Expenses	**1,055.51**
Conference Expenses	
Materials and supplies	309.61
Hospitality	399.70
Demonstrator Supplies/Mat'ls	589.59
Refund	275.00
Banquet expense	2,792.50
Camping Fees	1,013.00
Conference Site Expenses	2,952.00
Demonstrator Fees	3,567.81
Demonstrator Travel & Lodging	1,344.73
Merchandise Expenses	1,273.63
Total Conference Expenses	**14,517.57**
Total Expense	**24,972.33**
Net Ordinary Income	**20,825.15**
Other Income/Expense	
Other Expense	
Capital Asset Purchases	640.80
Total Other Expense	**640.80**
Net Other Income	**-640.80**
Net Income	**20,184.35**

A Note from the Editor *Amy Mook*

Hello NWBA Members,

This quarter there were plenty of activities to fill yet another edition of the Hot Iron News with event coverage. There is an article about a Silas Maddox demonstration at the Mentoring Center, and an article about Matt Moore's bronze pour demonstration at the NWBA Conference 2017. I have coverage of 5 Blacksmith Week 2017 demonstrations. Lots of great opportunities to get together, learn and share blacksmithing tips and tales, play in the fire... ***thanks to all who made those events possible.***

Regrettably, I did not get to attend all these events, but my favorite of what I did see and participate in was the group project at Blacksmith Week 2017, on Mount Hood August 17-20. The project is featured on both covers and on pages 16-17... I love this project! Darryl Nelson created the project concept, brought all the parts, will finalize the assembly and will install the completed piece at the Blacksmith Shop, Government Camp, Mt. Hood. His contribution to the spirit of inclusivity is truly outstanding. Anyone could try their hand at making a single fish, to be joined with the other fishes as a unified sculpture. No fish was excluded. (provided it was finished before the end of the weekend). Thank you Darryl for your ingenuity and generosity of time and materials.

Most of the articles in this issue are simplified notes, not intended to be "how-to" articles. Photos speak a thousand words it is true, but so much more could be learned if there was more information included. I invite and welcome any submissions of step by step demonstration notes, any photos, anything that could assist in creating more instructive and exacting articles.

Hope you have a peaceful and safe Autumn,
Thank you for the opportunity to serve the NWBA,

Amy Mook, NWBA Editor

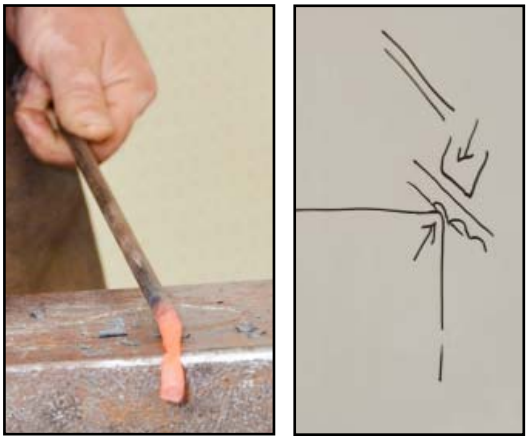
Mentoring Center June 24, 2017

Silas Maddox: Efficient and Controlled Hand Forging: Making Eating Utensils

By Hardie Swage, Photography by Dan Bowyer

June 4th Saturday demo was Silas Maddox, Forge and Nail, Sedro Woolley, WA. If you visit his web site www.forgeandnail.com you will get a feel for how much this very accomplished talent has spread himself in construction and iron work. He has combined these two fields in architectural work and furniture to name just two areas. Be sure to read the "about" tab to learn the breadth of his talents and areas of interest.

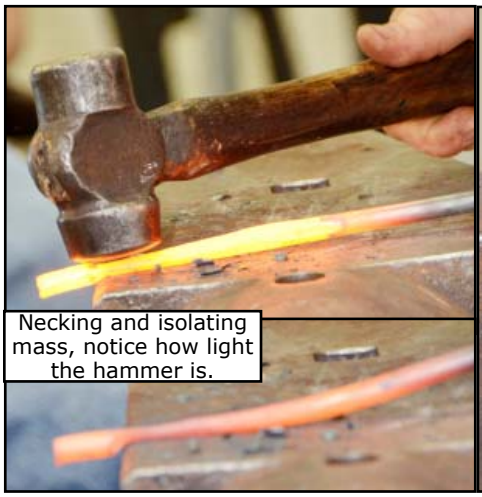
The subject of the demo was small tableware eating utensils and more. The message was very accurate forging of light material with very minimal tooling to create items that have function as well as cleverness that really invites you to grasp them. Never has a demonstrator off loaded less tools and materials than Silas for this demo. No part of the finished piece tells you the stock it came from. He believes that forging many of these types of items is a great self teaching experience. He told us how and he showed us how, and he went to the dry board often. He totally held the interest of his audience.



Isolating mass on far anvil edge

Silas used a hammer with a round and flat face, most commonly used by farriers but increasingly popular with smiths. The custom hammer folks are making this type of tool aimed for the general blacksmith trade. The edge of the anvil is used to spread, when you position the hot iron right the anvil's edge acts as a fuller or the peen of a hammer. It is effective for drawing out to a longer length or spreading wider. A second technique is to place the iron on the anvil face along the edge and use the round face of the hammer to draw out from the center line. On small objects like the spoon and fork handles, as well as the body of the leaf, this technique was very effective. To spread on two sides you use both sides of the anvil face. This technique also has a texturing effect that can be quite pleasing.

THE SPOON: Starting on a spoon from 3/8" round stock, he isolates about an inch of the end over the far edge of the anvil by forging two shoulders 90 degrees apart. Behind the neck a long taper that ended in the five and one half inch range, another shoulder with a drawn rat tail about one and a half inches long and approximately half of the bar mass of the original 3/8" RD. On all the projects shown he estimated by eye rather than specific rule measurements. The details above are given as approximations to give the reader a sense of scale. The neck between the long taper that will be the handle and the isolated mass that will be the bowl is narrow and holds the potential for disaster. Excessive heats, inaccurate hammer blows and the end mass neck bending back and forth as other parts of the item are worked can cause excessive scaling loss and fatigued metal.



Necking and isolating mass, notice how light the hammer is.

Forming shoulder on rat tail.

Cut off rat tail off parent bar.

First step in spreading one side of spoon handle.

The long taper is drawn using the anvil edge as a fuller. Once it is in its final taper it is spread also using the edge. The orientation of the piece to the anvil edge is the difference between drawing and spreading. The rat tail is drawn out, the end scrolled and folded over and laid on the spread handle. The inside radius of the rat tail will benefit from light filing with a half round file dedicated to hot work. The finished handle has a slight radius to its full length.

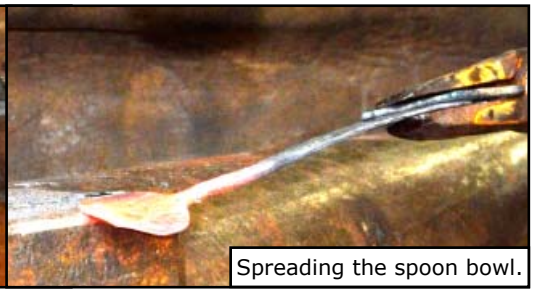
The spreading of the bowl is the last step. Flatten the round bar slightly and round slightly this the end. This is the set up for the round disc you will forge this mass into using peening and anvil face techniques. The bowl was sunk using the round hardie hole on the Nimbus anvil and a depression made on the end grain of a wood block. Final bowl round shape is in the inch and a half range. All the steps in this project are basic blacksmith 101 skills but executed at a very high degree of hammer skills and minimal number of heats. You will find these are not as easy as they appear. Silas also repeated often that if the piece gets away from you discard and start again rather than spending too much time and effort in an attempt to correct.

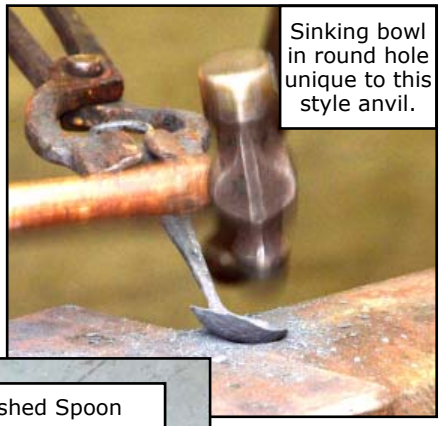

Spreading the spoon handle.

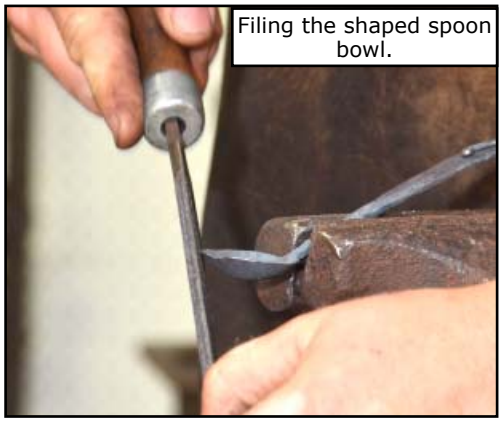

Forming shoulder on rat tail.

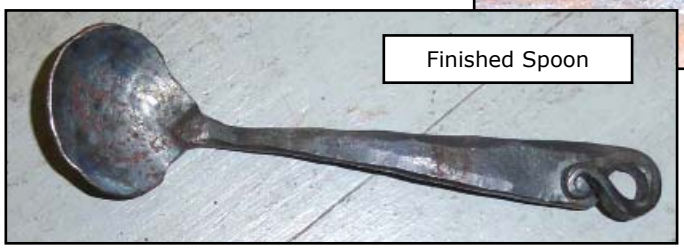

Drawing out rat tail.


Setup of spoon bowl.

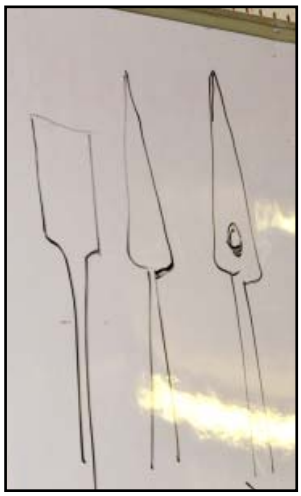

Spreading the spoon bowl.

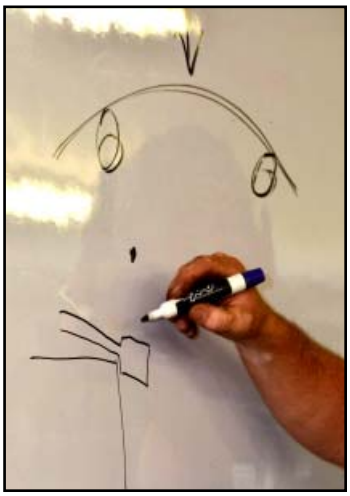

Sinking bowl in round hole unique to this style anvil.


Filing the shaped spoon bowl.


Finished Spoon

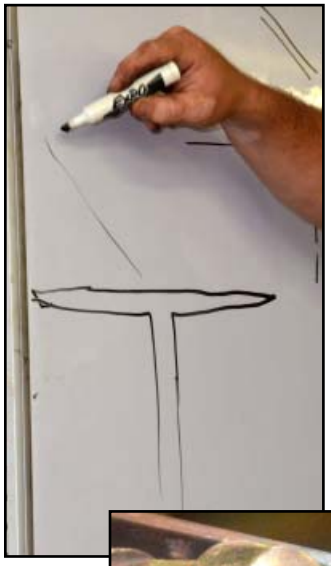
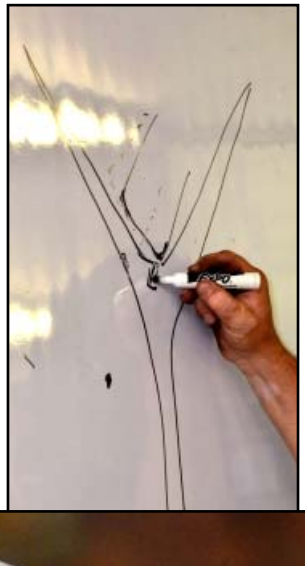
THE FORK: The fork started out as 3/4" X 1/4" bar. Isolate about an inch of parent bar on the end. The very refined neck needs to be centered or the tines will suffer. The hammer and far edge of the anvil were used for this step. The handle is much like the spoon, taking into consideration the extra mass of the parent bar.





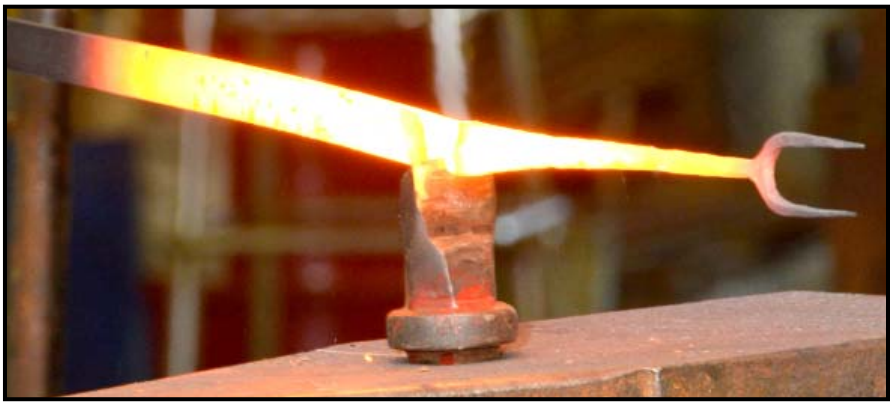



To form the tines the isolated end is tapered to a spear like point. A well centered 1/4" hole is punched that will become the inside radius between the tines. Two cut lines from the outside of the holes result in the tapered tines that need a little dressing with the hot file to take out the rag edges. As above everything is done by eyeball measurement and the individual pieces are not intended as perfectly matching items of a set.

Hot Cutting tools: From a two week Peter Ross class Silas took many years ago... Hot cuts should be thin and sharp. This is true for hand held and hardie tools. Silas prefers his hardie cuts to be of the "butcher" style, as it gives a cleaner straight edge.

Tool Tip: The hot cut is resting on the edge of the hardie hole, at some point the edge will start to chip away.



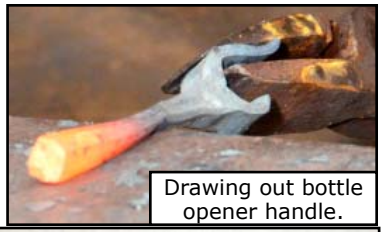
Suggestion: grinding just below the collar so the collar rests directly on the anvil, then at a very high heat fuller the collar down and out to create a wider base in direct contact with the anvil face. Secondary benefit, the tool won't get stuck each time it is used.

BOTTLE OPENER: Next up was a bottle opener from 3/8" square bar. About 3/8" of the end of the bar is reduced by half over the near anvil edge and half face blows. This step will be the starting point for a hot cut of about 3/8". The hot cut is used first on the sides at about a 45 degree angle and then down from the top. This helps keep the cut straight and centered. The small neck is again repeated in this piece and the handle formed as you see fit. The options are limitless. The cut is spread and the cut bottom cleaned up with a narrow fuller. The resulting jaws are drawn out to fine tapers. The bending of the jaws is done by hammer with no special tooling and light carefully placed blows. You might consider a few simple practice pieces before putting all the effort into the handle only to have the lips not met your needs.

Cut start on bottle opener.

Tool Tip: the anvil used has its corners ground to a gradually increasing radius taper on both sides. This can clearly be seen in the photos above. This gives the smith a wide variety of inside radius options and should be considered for all anvils.

Opener jaws cut mark cleaned and radiused with fuller.



Drawing out bottle opener handle.

Finished bottle opener.

LEAVES: Last was a leaf on the end of 3/8" round stock. The end is tapered and back an inch or more a narrow neck if formed. Lots of artistic license here for the smith, the length of the mass, the taper to the point and neck, everything has an effect on the final form. As the isolated mass is spread the pointy round mass becomes a leaf shape. While the leaf form is clear but still rather thick a center line is cut from tip to stem. The line will be along the anvil edge as the outside leaf edge is drawn thinner and wider. For this demo a depression in end grain was used. Sinking with the cut line down, results with the line gaining boldness. The sinking of the leaf is not as uniform as a spoon. Irregularities in the final form give the leaf life.

Thank you Silas for a great demonstration!

Learn more about Silas Maddox at his website,
www.forgeandnail.com

NWBA Conference May 2017

Matt Moore: Bronze Pour

Matt Moore, who casts metal as a hobby, treated the conference crowd to a bronze pouring demonstration on Sunday morning. Though many people had gone home, there were quite a number who stayed around to take it in. This is a sketchy overview of the process, as with all technical skills, the details (which may be missing here) are vital... i.e. this is not a how to article!!

Sand casting, also known as sand molded casting, uses sand as the mold material. Over 70% of all metal castings are produced via sand casting process.

Molds made of sand are relatively cheap, and sufficiently refractory even for steel foundry use. In addition to the sand, a suitable bonding agent (usually clay) is mixed or occurs with the sand. The mixture is moistened, typically with water, but sometimes with other substances, to develop the strength and plasticity of the clay and to make the aggregate suitable for molding. The sand is typically contained in a system of frames or mold boxes known as a flask. The mold cavities and gate system are created by compacting the sand around models, or patterns, or carved directly into the sand.

Mixing up the sand with oil.

Casting Sand

To create the mold for casting, a very fine sand with approximately 10% clay is used. Clay makes the sand stick together, but too much clay does not allow for air flow around the particles, trapped air can cause defects in the cast metals. Water is added to the sand to make it stick together and have the right consistency. Oil may be used as well, as Matt did for this pour. Water may cause steam that can blister the surface of the cast piece. Oil does not cause a steam problem, but too much oil makes it so the air cannot get out and results in blistered casting. Two types of sand blends were mentioned K-Bond, an oil bonded casting sand, an almost smokeless oil bonded foundry sand for casting zinc, aluminum, brass, bronze and iron, and Petrobond. Both can be bought at a foundry supply, on ebay or on other websites, and both give good results in creating castings with great detailing and a fine finish. Matt used Petrobond retempered with 30 weight non-detergent oil. Brand new Petrobond is nice and red, not dirty. The Petrobond turns black where hot metal touches it in casting. Try to separate out the black sand if reusing casting sand.

Another way to get the right consistency of sand for casting is to use 30w non-detergent motor oil. The goal is to get it to coat the sand grains until the sand has the consistency of brown sugar.

Preheat the crucible by placing it in the furnace, homemade from a 5 gallon metal bucket.

Crucibles are made of silicone carbide or graphite. Only one type of metal should be used in each crucible.

Everdur Silicone Bronze ingots were purchased from the foundry supply La Grande Industrial Supply, Portland. Everdur has silicone and copper but no zinc, and it does not degrade. Beware: Zinc bronze gasses off at melting temperature, exposure to the gas can cause illness.

About Everdur: With its pleasant color (and ability to accept a range of patinas) combined with good fluidity, low drossing, and a reasonable solidification range, Everdur Silicon Bronze is widely used in both industrial and creative applications. Everdur's balance of mechanical properties and corrosion resistance has led to its use in valve and pump parts, impellers, bells and a variety of other engineering applications. More recently, Everdur's excellent casting characteristics have resulted in it being the preferred Bronze for sculpture casting in its wide acceptance for the jewelry caster as well.

Making the Pattern

The mold is formed by laying a pattern onto the prepared casting sand and packing sand over it. Pressing the pattern into the sand makes the sand bulges and gets fluffy. Patterns can be carved from wood, shaped from putty that hardens (Durham's Rock Hard Putty, Fix-It-All patching compound, Plaster of Paris), or an original part that you want to duplicate. Fine tune the pattern with a pattern making friend - glazing putty (air dries in 5-10 minutes) or bondo. Castings shrink 3-5%. If you need a piece the exact size of an original you will need to make it slightly larger, take the original and coat it with wax or heavy paint. Shrinkage is slightly different for every metal, there are specifications for each alloy, but you may need to experiment with the casting to achieve exact dimensions.

Hammer head pattern piece.

Matt used carved wood coated with plastic for the hammer pattern. Indexing holes were drilled in the piece before it was cut in half for casting the hammer head. The other piece to be cast was a rifle butt plate, and the pattern was an original rifle butt plate sliced in half as the pattern for pouring a duplicate.

Preparing the Mold

A multi-part molding box (known as a casting flask, the top and bottom halves of which are known respectively as the cope and drag) is prepared to receive the pattern.

Pack the sand into the top piece of the molding box, the cope, making it as dense and even as possible. The sand needs to be compacted to hold its shape when the pattern is removed. Use a tool to hand pack the sand around the form until it is super dense. Sprinkle pattern piece with some kind of parting compound (bon ami, limestone, feldspar), so it can be removed from the sand without damaging the mold. Putting the pattern piece in a sock or a nylon stocking filled with chalk can work as well. Place the dusted pattern piece onto the mold, then pack the sand around it very firmly. The pattern piece needs to have a very slight taper so that it can be removed from the sand. There are tricks to creating the taper when you don't want the cast piece itself to have a taper.

After the bottom of the flask has been rammed around the pattern, talc (or other releasing powder) is dusted over the surface of the pattern to ensure the releasing agent coats it on all surfaces.

Put the flask together, sift sand over the pattern using a riddle of ¼"hardware cloth. Riddling gets rid of lumps and non-sand bits (old bb's of bronze) that might be left in recycled sand.

Continue to add sand evenly until the flask is full. Tamp it down very firmly, continuing to add sand until it completely fills the flask. If there is an under cut on a pattern piece, you need to push sand packed around

the tapered edge. Use the pointy end of tamper. Ram edges first, don't ram too hard. Too soft the whole thing might fall out, too hard, air can't get out and causes porous casting.

When the flask is full and packed as much as possible, screed the mold - run a straight edge along the top edge of the flask to remove any excess sand.

Separate the mold. If you did a good job, you'll get good detail and shape accuracy. If it falls apart, you have to go back and pack the sand better.

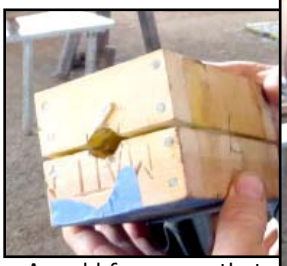
Vents are needed to vent air so the metal flows freely, without compressing air in front of it. They can prevent blowouts with water tempered sand, as too much water can create steam that can cause a mold to blow out. Matt has not used that kind of sand, so has not had that experience. With Petrobond, he typically only vents where there is an area that may trap air. On the subject of venting, sometimes you put in a large vent, called a riser. It vents, it also provides a blob of metal to refill part of the object that may have lots of shrinkage from size. It also lets you know you've completely filled the mold by seeing the metal flow up the riser.

To make the vents, poke a stiff wire or rod repeatedly into the cope's sand, forming the vent channels. The vent channels must not pierce into the mold cavity or they will fill with metal.

Next, channels, or "gates" need to be carved into the sand to give the bronze a way enter and fill the mold. Cut in the gate and smooth it with your finger, working on top side. Now you have to pull the pattern out, which may be hard to do. To help get it out, push down sand around the piece causing the bottom sand to be bowled and top to be proud. If it is still difficult to remove, you can rattle it slightly. Matt used a helpful little tool, looking a little

like a tuning fork, to gently rattle the piece and loosen it. Drywall screws, with coarse cut threads will also work, touching only the pattern itself to loosen it so you don't disturb the mold.

After the vent and gate channels have been made, the pattern is removed, a cavity will remain that forms the external shape of the casting. It is possible to smooth small defects at this stage, using a smoothing tool or finger to clean up the surfaces.



A mold for a core that would be used to create the eye in the hammer head. Matt said if he found a workable sand to make cores, he would have poured it with the core. .

Some internal cavities of the casting may be formed by cores. Cores are additional pieces that form the internal holes and passages of the casting. Cores are typically made out of sand so that they can be shaken out of the casting, rather than require the necessary geometry to slide out. As a result, sand cores allow for the fabrication of many complex internal features. There are many recipes for making core material, Matt's recipe for making a core includes used mold sand, whole wheat flour, salt, molasses and water. Cores were not part of the demonstration because the pieces to be cast did not have any internal cavities.

After the gates are cut into the sand and the pattern pieces removed, put the flask back together and clamp the top and bottom of the box together. Now, you're ready to pour.

The Pour

Matt made the furnace with a metal five gallon can, coated on the inside with refractory cement. The cement is given structural support with castable refractory tie wire woven around the inside, keeping the wire within the cement walls of the furnace.

Pipe gas in at an angle so gas doesn't go straight in. When the gas is piped straight in it does not flow well. At an angle the gas flows around the crucible. In Matt's furnace, the bottom of crucible is the last to heat. He mentioned that if he had a brick at the bottom it would help a lot.

Don't put cold metal in a hot crucible. Preheat it by setting it on top of the furnace. Any moisture on it will steam blast out.

Put one block of bronze in at a time, it will expand before it melts, and you don't want to blow out the sides of the crucible. Wait for the first chunk to melt before adding more. When melted he added flux (just a sprinkle of borax) and stirred it with a steel stick, then continued heating for a minute. Molten metal can rapidly absorb hydrogen gas from

the atmosphere causing surface defects and porosity. Using a flux will result in a better surface finish and improved material strength in your part. (It also helps to recover metal that would otherwise be stuck in the dross).

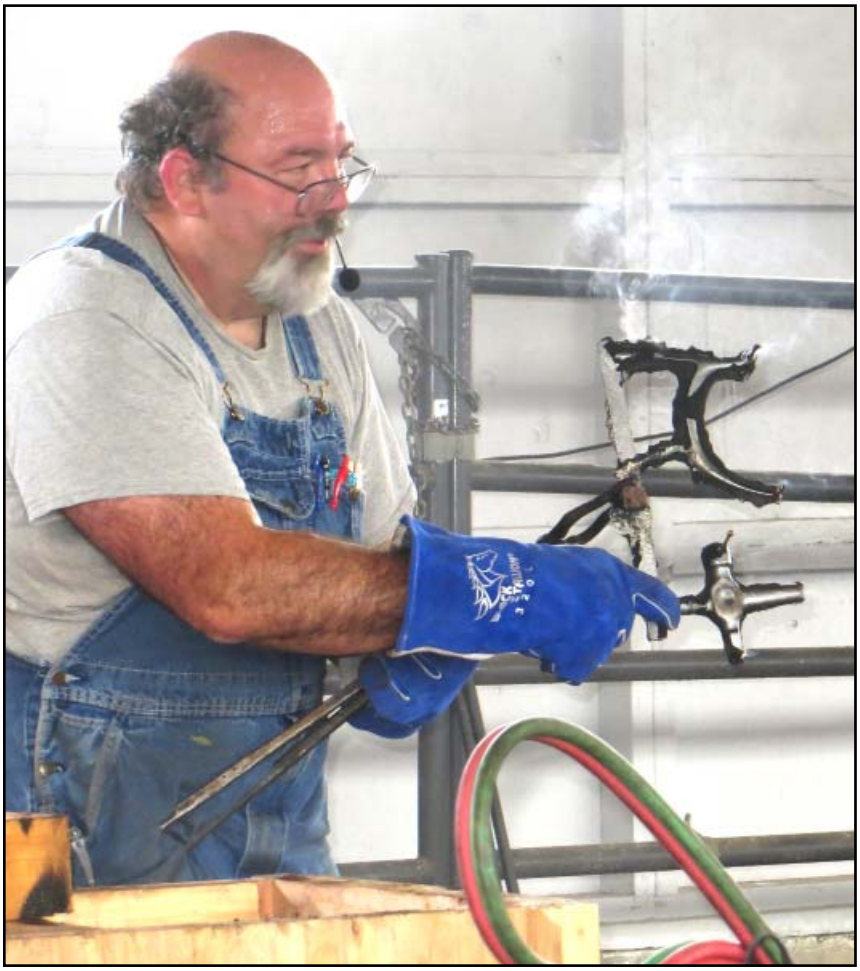
Matt wears a heavy duty mask when working with molten metal. He plans his steps so when the hot metal comes out of the furnace he can swiftly go directly to pouring in the fewest possible steps. First, he set the flask, clamped all around, next to the fire. He removed the lid from the furnace and set it off to the side, lifted the crucible and set it on the hot lid. Then, he adjusted his grip on the crucible and began to pour right away. Don't stop pouring once you start, stopping would probably cause a blockage.

Word of Warning! When pouring, don't put hand over the top of the vent holes, even with a glove on.

As flames come up sprinkle sand on top.

When pour is complete, allow to cool down slightly.

Remove clamps, remove cope. Scrape sand into bin. Pat sprue overflow into crucible.



When cool, your bronze will easily separate from the sand but you'll need to clean it up a bit and maybe fix some imperfections in the casting. Sand blasting and wire brushing works great for making it pretty.

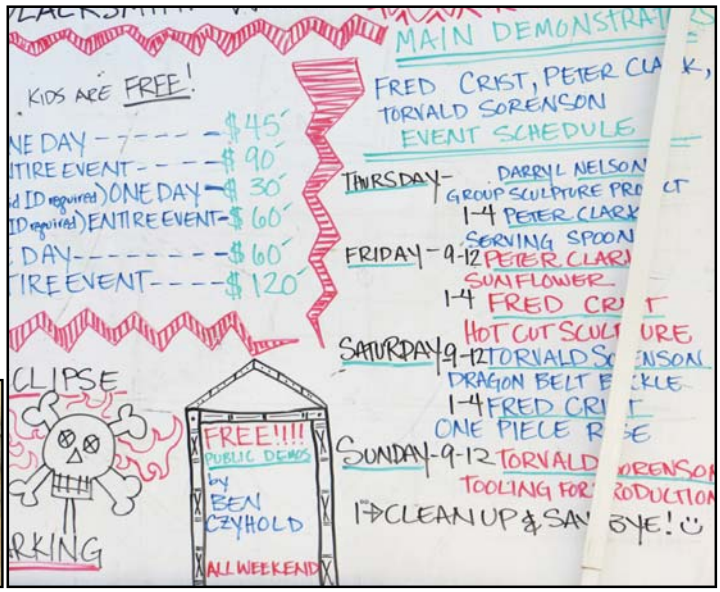
Many thanks to Matt Moore for a great demonstration!

Matt's dedication and commitment is amazing. Even though he was not feeling well on the day of the demo, he brought all his equipment and spent many hours to show us how it is done. These notes are not really enough to send you on your way to making your own furnace and bronze castings, but they will point you in the right direction. There is plenty of detailed information out on the internet, just do a search for bronze sand casting and you will be inundated. The possibilities are endless... stay inspired, and put your inspiration into action!

Blacksmith Week 2017 Thursday Aug. 17-Sunday Aug. 20

Sponsored by Cascadia Center for Arts and Crafts **www.cascadiaarts.org**

If you arrived at Summit Camp mid-afternoon Thursday, you were greeted by friendly blacksmiths tinkering in the shop and this sign that said it all, an incredible lineup of demonstrators at a ridiculously affordable cost. The camp, in a magnificent mountain setting, was especially enjoyable this year; perfect weather, great demonstrations, and days and nights full of blacksmith enthusiasm and camaraderie.



The Group Project

Darryl Nelson generously donated the fish blanks and great idea for a group project. He brought a large stack of fish blanks ready for forging, and a vision for putting them together in a sculpture. Many attendees took up the challenge, people of all skill levels, zero experience to professional blacksmiths. The individually forged fish were assembled as a sculpture, a motley school spiraling upward.

The fish range in style and species, expert forging skills to absolute beginner, and all will be added to the final sculpture.

The plan is to install the sculpture in the sculpture garden at Summit Camp. Already installed there are last year's coyote sculpture, and a few others. There is a sculptural firepit that is a natural gathering place in the evening hours. A spread of photos of the sculpture garden will be in a future Hot Iron News.

The final assembly of the sculpture will include reeds and seaweed and a few more fish.

A Group Project really gives people a great opportunity to have fun forging, supported and encouraged by others who share the passion for fire and steel, and contributing to the creation of a beautiful sculpture garden.

Thank you Darryl for instigating another year of history making forging fun.

Blacksmith Week 2017 Sponsored by Cascadia Center for Arts and Crafts

Peter Clark: Serving Spoon

Peter Clark offered us a straight forward project, perfect for a gift or a gallery, with lots of room for creativity and flair.

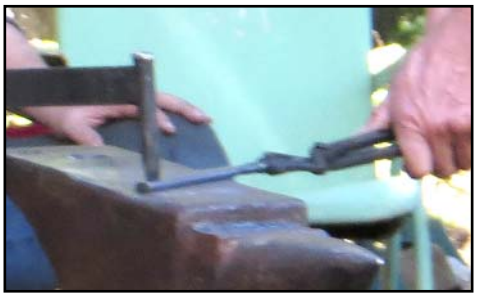
Materials:
410 Stainless Steel, 22 gauge
Bronze Rod: 1/2" x 6"

The stainless steel bowl of the spoon is worked cold, no annealing necessary. Peter used a pipe in the vise for forming the boat shaped spoon. Make sure the outer curve is smooth, the eye and hand can see and feel very small irregularities. Level the rim of the spoon by laying flat on the anvil and hammering it gently. Peter likes the hammer texture marks on his spoons. He smoothed the rim with a belt sander.

Fire brick and steel pedestal used when torch heating bronze.

Heating the bronze with a torch, Peter forged a short four sided taper, then using an octagonal hardy tool with radiused corners began to isolate the point.

The spoon handle was drawn down further using a guillotine die made with two small profiles in the 2 inch width of the guillotine. Peter used both profiles of the die to forge the taper back from the point. With each blow the piece is turned, but only around 1/8" turns, to avoid cold shuts.



Flatten and form the end point into a leaf form.

Working the other end of the handle: flatten the rod, mark and slit the hole, and punch through hole with large marlinspike. Peter used a mix of ultra-fine graphite powder, Seed SLIK® and water painted onto the spike for easy release. A small ball peen hammer finished the hole opening nicely.

Forge a decorative groove down the handle on both sides, using a fuller top and bottom. Bronze is soft, straighten on a wood block.

Mark and drill the spoon bowl for the rivets. Using a square center punch for marking makes the marks easier to see. Take care drilling, the drill will walk, Drill at an angle in the spoon and the leaf on the handle. Set both rivets at the same time. A handy set tool aided in finishing the rivets.

Straighten the handle in the vise, heating with a torch. Re-set the rivets.

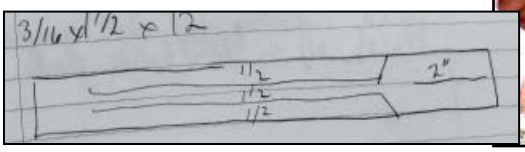
Heat the stainless steel bowl to red hot to get a blackened finish. Use 220 sand paper very lightly to create highlight, buffing without scratching.

A maker's mark is a nice finishing touch.

Peter Clark: Sunflower

The inspiration for this all of one piece sunflower comes from techniques Peter learned from Fred Crist.

Materials: 3/16 " x 1 1/2" x 12" - 14 gauge steel



First things first, have a plan! Then, mark the cutting lines. The starting piece was already grooved on the pattern lines to save time for the demo. Peter then used a narrow fuller and fullered along the groove lines before punching through.

Blacksmith Week 2017 Sponsored by Cascadia Center for Arts and Crafts
Peter Clark: Sunflower continued...

Begin cutting the lines, starting all the lines without cutting all the way through, then use a cut plate for the final blows cutting all the way through.

Peter dips his chisel in a graphite and water mix. The fine graphite is a product called ***Seed SLIK®*** and can be purchased from farm supply stores and online.

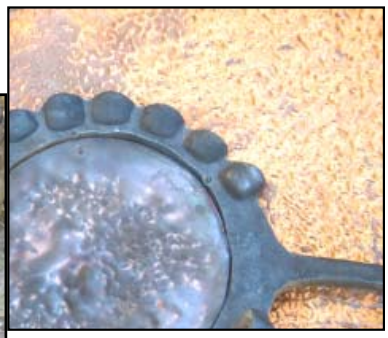
Bend leaves out of the way while working on the flower's circle. Use graphite mix painted on the spike with a brush, for easy release. Continue to widen the opening, working to keep the circle growing evenly. Avoid bending the stem this way and that while rounding out the flower, to prevent weakening of the stem and flower junction, flatten and align as you go.

Round up the stem. Then, bend the leaves back into alignment with the flower stem. Forge the bottom of the stem and leaves into a "V", and spread the leaves.

Punch in the decorative petals, spacing them evenly around the circle, all around except adjacent to the stem.

Heat the leaves, bend and twist into a natural, lifelike form.

The center of the flower is made from a textured copper sheet (purchased pre-textured). The forged flower was used as a template to draw out the circle on the copper, first tracing the circle with a blue Sharpie, then scribing the line. The marker line is easy to see, and the etched line provides accuracy. Cut the copper circle out, test the fit. Adjust as needed, use a grinder to shape and smooth to the final shape, to fill the circle as closely as possible. Peter heated the copper to neutral color and used Scotch-Brite to make highlights.



Set the copper disk by creating 6 tiny tabs with a pointy punch, so the edge barely dimples out, like a jeweler might set a bead or small stone. Match these marks on the opposite side.

Thank You Peter for two excellent demonstrations!

Peter Clark sells a line hand forged utensils and skillets.
http://northwestskilletcompany.com/

He also offers blacksmithing classes and events:
http://www.kunepigs.com/oregonhandforged

Blacksmith Week 2017 Sponsored by Cascadia Center for Arts and Crafts

Fred Crist: Hot Cut Sculpture

Photography by Amy Mook and Dan Bowyer

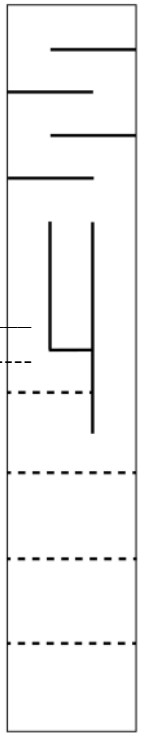
Fred Crist's blacksmithing career stretches back many decades. Blacksmith Week attendees were treated to a slideshow of his career and body of work and got to learn a lot about his artist and blacksmithing history. He worked for many years with Samuel Yellin Metalworkers and as an instructor at Philadelphia College of Art, he has taught numerous classes at various institutions and he has demonstrated at many conferences, and has had many exhibitions... and more. And now, two demonstrations at Mount Hood, Blacksmith Week 2017.

A hot cut sculpture can be made to any scale, the weight of the material determines the design scale. The design may be based on the tooling on hand, or a tool can be made specific to the design. Of course the cuts can be made with power tools, but Fred prefers the softer edge relief of hand cut edges.

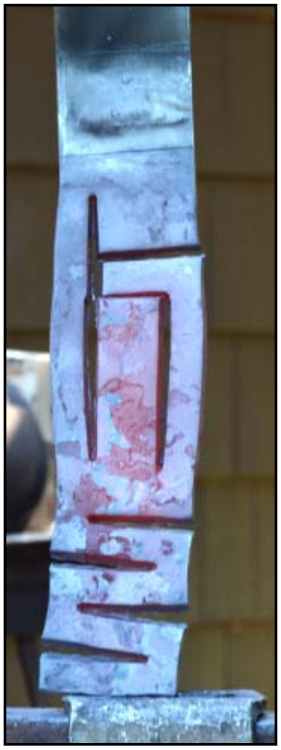
A fine example of hot cut sculpture. These two design element samples are each forged from one piece of steel (same design but the one on the left has more completed detail)

Starting material for the demo sculpture was 1/2" steel ~4" wide.

With the assistance of Hunter Dahlberg as striker, Fred cut through some of his design lines and cut relief lines as designated in the diagram at right (not precisely to scale). On the final through-cuts he placed a protective aluminum plate on the anvil to save the blade of the cutter and the anvil from damage.



Take care to straighten and flatten the piece throughout the cutting process, so you don't have to fight random twists and bends later when forming the sculpture.



Fred Crist maker's mark.

Heating a piece this big takes a lot of heat, so the forge is cranked up.

First bends in the sculpture are along the relief cut lines, creating an integrated base for the sculpture to stand on.

To assure the bending was isolated to specifically where Fred wanted to bend, the torch was used for the final bends. File down the edges as you open the sculpture up, removing sharp edges and burrs. Fred likes to play with the natural tendency of steel to twist as it is bent, often incorporating something unexpected in the final design.

Fred bending the piece at the heat using a large bending fork.

Finished demo piece.

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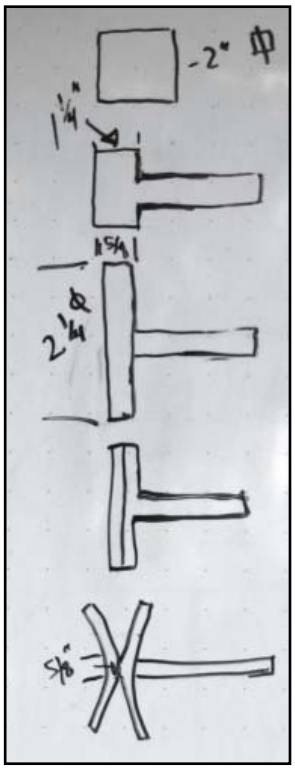
Fred Crist: One Piece Rose



Starting material for this one piece rose was a 2 inch cube. Previously, Fred had forged the starting cube into a disk with a tenon on it, the far left piece as pictured in the photo above. The steps for forging the disk with tenon is seen in the diagram at right.

The demo began with Fred beginning to split the disk into 2 layers along a previously marked center line. He began the cut with a chisel and hammer in the vise, and continued with striker, chisel and bottom cut tool. The cut should be fairly centered, but slight variations will be forged out as the flower is developed. Split the disks down to around 5/8". Be very careful during all the forging process to avoid stress cracking the tenon where it joins the disks. It takes around 3 heats to split to desired depth. There is no need to fuller the inside of the cut smooth because that will all be hidden inside the finished flower.

Spread the disks evenly, until they are 2 /12" diameter. Fred tried spreading them on the very handy bridge tool he brought, but it proved awkward and inefficient with the demo setup, so he finished the forging using the anvil and a block with a hole in it, first hitting one side then the other, evenly all the way around, heating as needed. The two disks will not forge weld together when worked this way.

Bridge shaped anvil tool (placed in the vise because the demo anvil was not stable enough).




Draw cut lines in the top disk layer, for seven evenly sized petals with a silver pen. Heat and cut lines as drawn, don't worry about marking the bottom disk layer, but try not to cut into it. Heat and pry up the first two petals. Forge the petals out, thinning them and fanning out the outer edge of the petal. Curl the petal around the horn then tightening the curl on the bridge tool or the anvil, whichever surface was best for the blow. Once the petal is curled up tightly, heat and forge the base of the bud a bit tighter.





Work one petal, then the petal opposite it, one by one, until all 7 petals of the top disk (the inside petals of the flower) have been curled into a tight bud.


Mark the bottom disk (outer petals) for five evenly sized petals. Wrap outer petals following the same steps as for the inner petals. Heat with a torch to isolate the petals and to minimize stress on the top of the stem.



When all the petals are wrapped tightly into a bud, forge the base of the bud just a bit tighter yet. To spread the petals, opening it from the outermost petals inward, heat the flower with a torch and pry open the petals with a pliers and screw driver. Shape the flower to a natural looking form... A flower!

The source of this one piece flower technique is Paul Zimmermann, passed down to Heiner Zimmermann his son, and on to Fred.


Thank you Fred Crist for two great demos and a slide show.

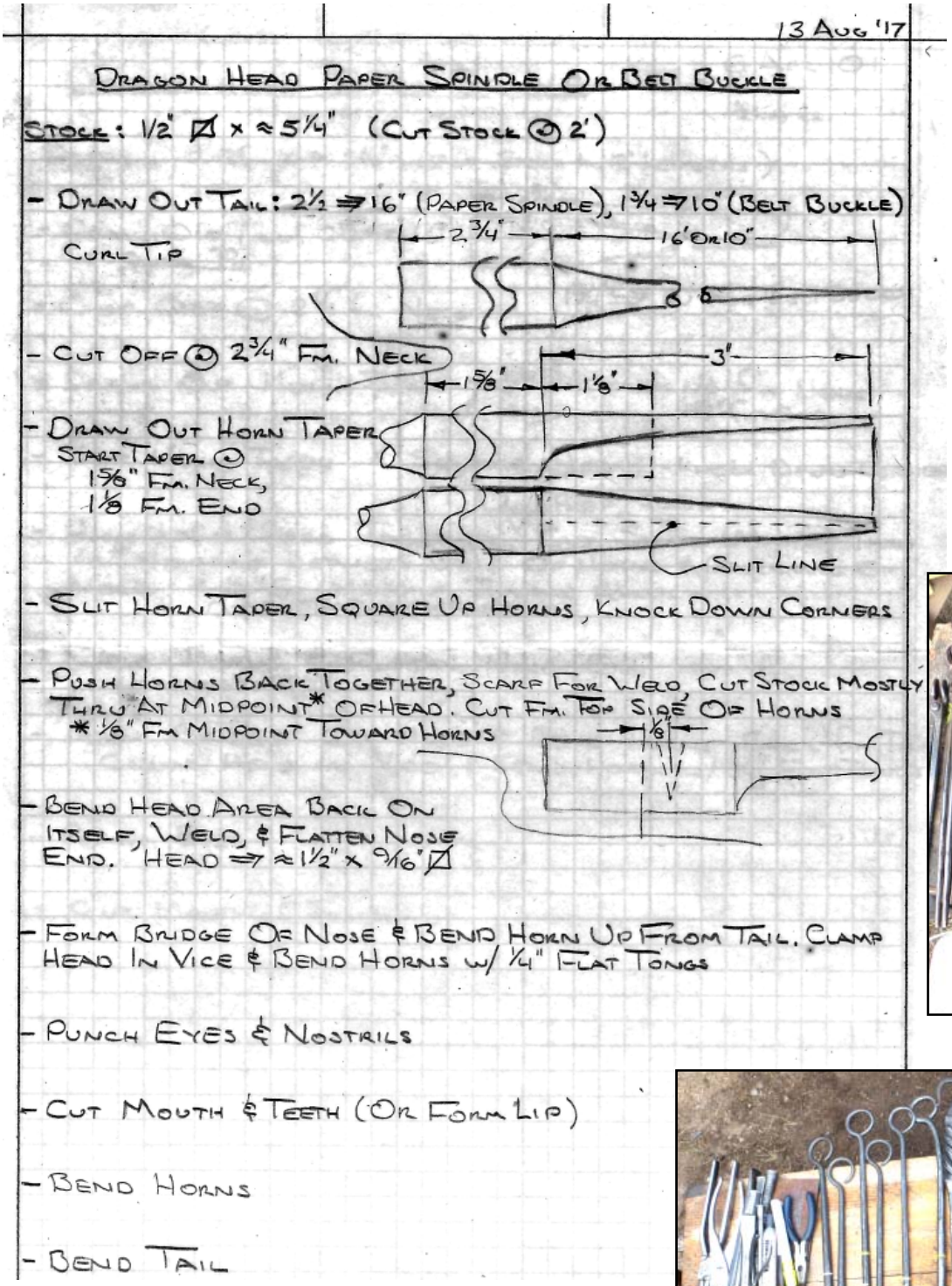
More information about Fred Crist can be found online: http://facristmetalsmith.com/

Follow Fred on FaceBook https://www.facebook.com/fred.crist.3

Blacksmith Week 2017 Sponsored by Cascadia Center for Arts and Crafts

Torvald Sorenson: Dragon Head Belt Buckle or Paper Spindle

Torvald is an entertaining and effective demonstrator. His exacting and organized (i.e. engineering) sensibilities and his years of experience and paying attention are all synthesized into a dynamic style. I was very sorry I only saw this one demonstration. For the demonstration Sunday morning, which I missed, Torvald presented "Tooling for Production" and I am sure it was filled with very useful information, as you can see by the photos of Torvald's tools for this demonstration, he likes to have the right size tool for the job. (I hope that perhaps someone was there taking notes and photos and would be willing to send them to the editor for future publication).



Torvald's notes are organized to give hints about the forging process, each bullet point dash indicates one heat. Once familiar with basic blacksmithing terminology and skills you can follow his notes fairly well, but of course watching him skillfully execute the plan makes it look easy... remember, blacksmithing is really not easy unless you have had a lot of practice.

Torvald's own belt buckle, passed around the crowd to show the intended result of the demonstration

Torvald brought his own anvil setup, which had some practical features: a rim around the top edge to hold tools from rolling off, anvil near the edge of the stump so he can stand close, the horn of the anvil facing the direction he prefers - to his left, brackets for holding handled tools, the stump has 3 legs for stability on any surface, etc. Everything that is part of his setup has a reason and a purpose.

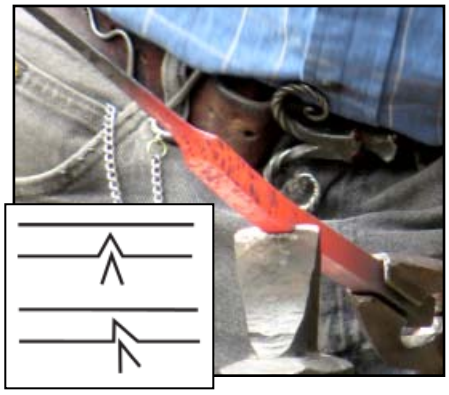
The project notes are for two variations with a dragonhead, belt buckle or paper spindle (remember those things?). Torvald made the belt buckle, featuring his dragonhead with bottle opener mouth.

He began with 1/2" stock approximately 5 1/4" long.

Marking for the tail section at 1 3/4" from one end, using a punch with a diamond point is easier to see, and marking off to one side making a little pooch out and even easier to see.

Torvald aggressively fullered the tail over a fullering hardy tool and the anvil edge, drawing it out to 10" length. Then using the face of the anvil faired out the length of tail. Each blow he rotated the piece with a slight twist of his wrist, going from square to octagonal to round.

Torvald usually uses a coal forge which enables more controlled heating, to heat up just the area wanted, so when forging the area at the base of the tail you don't have to heat up the thin stock of the tail over and over again. Take care during the forging to make sure the tail does not get so thin that it gets oxidized away.



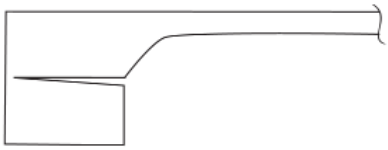
Measure back from the tail 2 3/4", mark and cut off. A square end is desired, so Torvald made the cut at an angle so that one edge came in at a 90° angle. Some fullers are made with a 90° angle on one side.

Isolate the horns at 1 5/8" from the neck (base of tail = neck of the head), drawing out the remaining 1 1/8" of material into a 3 inch flat taper, leaving a step at the base of the horns, as shown in the photos at left.

Mark the center line, slit with a cold chisel, start at one end of the slit line then the other, working toward the middle. The more accurate the line the less work there will be straightening out the horns.

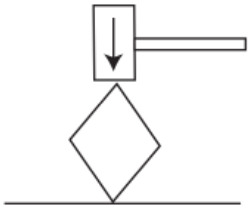
This sequence of pictures shows the split horns, working the horns into evenly tapered square, then knock down the corners. (Notice in the photo at left that the tail is bent out of the way to enable getting a better grip on the piece while making the horns and head). Once the horns are shaped, bend them back together.

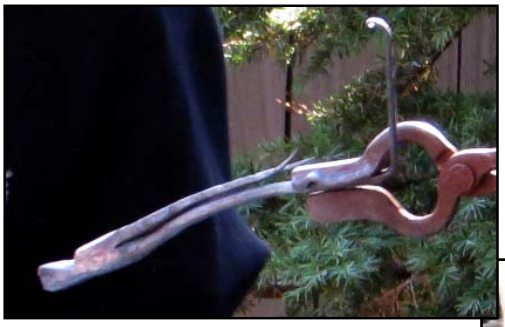
Prepare to fold back the head section. Cut in along the top edge slightly forward of the halfway mark, when folded it will be folded at the center.



Scarf the two surfaces to weld them together, making them a little convex. Use flux for welding, Torvald uses borax and easy weld. Borax works fine for a faggot weld. Because borax is slippery, when welding two separate pieces Torvald likes using Easy Weld, which has a little stickiness to help hold the pieces together. The forge welded head should be about 9/16" square.

If the head section gets off square, you can set it on the anvil on edge and hit the corner, it will square back up.





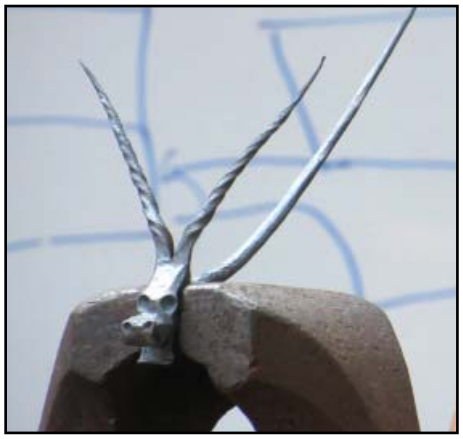
Keep the piece at a welding heat while the weld is still fresh to avoid it breaking apart. Start the bridge of the nose on an anvil stake with very square edges.

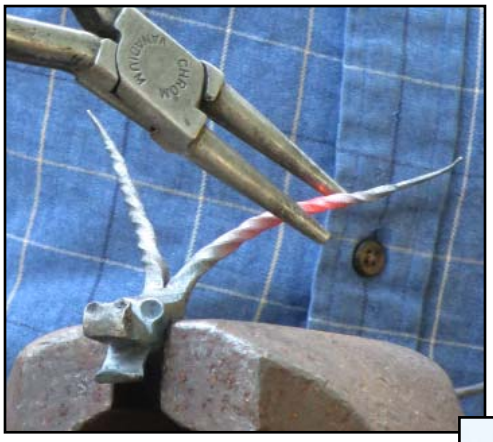
Place in the vise using specially made plates that hold the tail and horns out of the way while working on the face of the dragon. Flatten the nose to square to make the nostril placement easier.

For the eyes and nostrils, first mark the features to make sure they are even. Next heat fully and define the nostrils and the eye sockets.

Make the slit for the mouth, going deep enough to enable a wide enough spread for a bottle opener. Curl the bottom lip up to form the opener. Test of course!

Reset in the vise to be able to work on the horns. Twist them lengthwise then curl them into spirals. Heat with the torch as you twist and spiral.





Finishing the tail: curl the end tip, then fold in a zig- zag to form the bar for the belt to attach to, making sure the first bend is wide enough to hold the width of the belt leather.

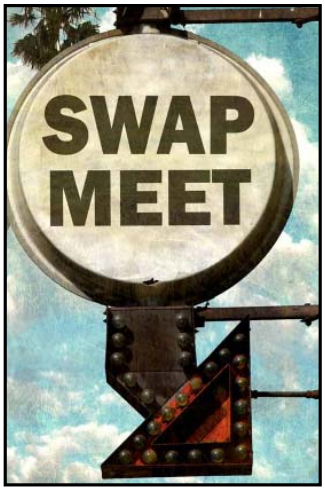
A pin is needed to hook into the belt holes so the belt can be adjustable. Hot punch the mark then drill for a piece of 3/16" rod. Cut to size before pounding in the pin, and flatten the rod end to broaden it slightly creating a tighter fit.

Heat just hot enough to wax, and brush on Johnson's paste wax to finish.

Fasten the leather belt to the buckle and the Dragonhead Belt Buckle Bottle Opener is ready to be deployed.

Thank you Torvald for a fun demonstration, a big supply of useful tips, and a versatile and whimsical project.

Learn more about Torvald Sorenson
Artist Blacksmith & Proprietor of
Weland Smithy
http://www.welandsmithy.com/



SWAPTOBERFEST

Swap Meet & Hammer-In in October!!

NWBA Blacksmith Swap Meet & Mini-Conference

October 27,28, 29, Friday - Sunday

at the Mentoring Center and Fairgrounds, Longview, WA

~ So Much More than a Swap Meet ~

- Open forge on Friday and Saturday night! *
- Blacksmiths' Swap Meet - All Day Saturday! Huge tailgating area! Vending in the tailgating area is open to anyone. Attendance to swap meet free of charge, and will be open to public buyers. Surcharge for vending booth is $10, except for Orphan Vendors.
- Orphan Vendors' Booth! Orphan Vendors (folk with less than $65 worth of stuff to sell) may sell in the Orphans' booth for a 15% service charge. This booth will be staffed, so Orphans can go play.
- Three demonstrators*

  Saturday AM - David Tuthill 'sculpture'
  Saturday PM - Andy Dohner 'fly press tooling'
  Sunday AM - Darryl Nelson 'making it look easy, tips from a master'

- "***Masquerade Metallique***" contest! Make a mask out of metal and bring it to this event. Anything from aluminum foil to pattern-welded stainless is allowed. Masks will be on display and all participants will vote for Crowd Favorites. Prizes will be awarded!

* Mentoring Center activities require NWBA membership. $30 cover charge for full weekend or portion thereof. Cover charge is in addition to vending surcharge.

Folk willing to help out as a volunteer will earn a complimentary event membership!

Your Junk is Someone Else's Treasure!

Treasure as far as the eye can see...

Demonstrations and Open Forge Too!!

PARADISE!!!

NWBA CONFERENCE 2018

Save the Date!! Friday May 11- Sunday May 13 2018

Planning for the conference is well underway. Info about our demonstrators will be posted as soon as they are available. Below is a brief outline of what to expect for 2018… and even more will be added as the plans are confirmed.

Set up day Thursday, May 10, 2018

- Demonstrators to be Announced
- Hands-On Classes: beginner, intermediate and advanced hands on classes
- Repoussé Station
- Gallery: bring your works to display in our gallery, show off your latest creations.
- Auction: support the NWBA with an entry into the auction, something hand-made, materials, tools or services. Anything of value that can be sold at our auction.
- Black Smoke Alley: bring your solid fuel forge and set up in Black Smoke Alley to demonstrate and offer hands on experiences, or just enjoy forging at your own setup during the conference.
- Tailgate Sales: fill your pickup with tools and materials, sell them to your friends, and buy enough of someone else's stuff to fill the truck back up.
- Contests with prizes: to be announced. If you have a great idea for a contest send it to nwbaweb@blacksmith.org
- Potluck Social: large grill will be available to cook your barbecue meats, bring food to share. It is a potluck and the NWBA will be providing the grill and the picnic spot and some food. Last year there was confusion about this, and even though a lot of people did not bring food, there was a lot to eat and people had a really good time hanging out and sharing a meal together. Plan on being there!
- Banquet and Dessert Dash!

STAY TUNED FOR MORE INFO!

Calendar of Upcoming Blacksmith Events 2017-2018

September 23	NWBA: Demo/Open Forge, Dean Mook: Aluminum Forging Techniques NWBA Mentoring Center, Longview WA
September 23-24	Blacksmith I: Tim Middaugh, Old West Forge, White Salmon, WA
October 7- 9	Blacksmith I: Tim Middaugh, Old West Forge, White Salmon, WA
October 14	Northwest Jewelry & Metals Symposium 2017, Seattle Metals Guild
October 16-19	Workshop: Rachel David: Sculptural Forging & Tool Making, Pratt Fine Arts Center, Seattle
October 27-29	NWBA Swaptoberfest & Demonstrations/Open Forge, See page 42 for details. NWBA Mentoring Center, Longview WA
October 27	NWBA Board Meeting, NWBA Mentoring Center, Longview WA
November 11-13	Blacksmithing Basics and Beyond: Tim Middaugh, Old West Forge, White Salmon, WA
November date TBD	NWBA: Demo/Open Forge, Darryl Nelson: Holiday Gifts and Trinkets NWBA Mentoring Center, Longview WA
March 27-29, 2018	NWBA: Mark Aspery Workshop, NWBA Mentoring Center, Longview WA
March 31, 2018	NWBA: Demo/Open Forge: Mark Aspery NWBA Mentoring Center, Longview WA
May 11-13 2018	NWBA CONFERENCE, NWBA Mentoring Center Longview, WA.

Find the details of these events, and the most current event listings at www.blacksmith.org/events/

Submit your blacksmith events: www.blacksmith.org/submit-event

Blacksmithing Schools Around the Northwest

Backwoods Blacksmith
Between Sutherlin and Elkton Oregon on Hwy 138.
Instructor and owner is Gene Bland
Beginning blacksmithing, tool making, organic and garden art.
541 459 2879
bland2879@yahoo.com

Cascadia Center For Arts & Crafts
P.O. Box 64
Government Camp, Oregon 97028
http://www.cascadiaart.org/
Blacksmithing, Visual Arts, Painting & Drawing, Photography, Fiber Arts, Glass, Jewelry

Clackamas Community College
19600 Molalla Avenue
Oregon City, Oregon 97045
Phone: 503-594-6000
Website: http://www.clackamas.edu/
Offering blacksmithing classes under the Welding Technology program.

Clatsop Community College
1651 Lexington Avenue
Astoria, OR 97103
Phone: 503-325-0910
Toll Free 1-855-252-8767;
Website: http://www.clatsopcc.edu/
Blacksmithing classes are taught through the Historic Preservation Program

Editor's note: As a 501(c)3 non-profit organization there are limitations to how we are allowed promote our members' businesses. The listings will now include contact information and one descriptive sentence for your school, a policy subject to change.

To publicize your class you may send your event listing to the editor for inclusion in our online calendar. A short paragraph about the class and time, location, and fee information only please.
Please send information about your events, school and class listings to nwbainfo@gmail.com

Incandescent Ironworks Ltd.
Spokane, WA
509-456-8321
At Incandescent Ironworks I teach introductory and intermediate blacksmithing, introductory and intermediate knife making, and tailored instruction on selected smithing topics.
Contact: Steve McGrew:
stevem@incandescent-iron.com
www.incandescent-iron.com/blcl.html

Old West Forge
PO BOX 2105
White Salmon, WA 98672
(509) 493-4418
For additional details contact Tim Middaugh:
tim@oldwestforge.com.
Current classes are listed at www.oldwestforge.com

Pratt Fine Arts Center
1902 South Main Street
Seattle, WA 98144
http://www.pratt.org/
Phone: 206.328.2200
Fax: 206.328.1260
Email: info@pratt.org

Studio 4 Forging Facility LLC
A state of the art Knife Making and Blacksmith school in Seattle.
Yelm , WA 98597
Email David Lisch: studio4@davidlisch.com

Thorne Metals Studio
13751 Daybreak Ln
Anacortes, WA 98221
(360) 293 8257
Current classes are listed at:
http://learnblacksmithing.com

If you would like to list your blacksmith school here, please send your information to nwbainfo@gmail.com.

Longview Outdoor Gallery

Beautifying Longview

Providing a rotating exhibit of outdoor sculptures in historic downtown Longview and acquiring new pieces for the City of Longview's permanent art collection. Enhancing the beauty of Longview community and providing an attraction for visitors and citizens to the downtown area. Increasing community involvement through volunteer programs, student education, tours, festivals, and other activities.

YOU CAN BE A PART OF THIS WONDERFUL PROGRAM!

Artists contribute sculptures to be installed at various public spaces in the city of Longview. The pieces remain on display for approximately 2 years. At the end of the 2 years the public votes on which 1 or two sculptures to purchase for the city of Longview. The city or donors fund the purchases. NWBA member Berkley Tack installs/welds the sculptures in place. During the loan period your sculptural work can be for sale to the public.

Visit the Longview Outdoor Garden website for more information and to see the previous and current exhibits.
http://www.longviewlog.org

Contact in Longview: Janeen LeRay 360-414-3103

or NWBA contact: Billy O (Ottaviani) 360-701-8451

Northwest Blacksmith Association

"To promote and preserve the Art and Craft of Blacksmithing while building friendship and good will."

2017 MEMBERSHIP REGISTRATION FORM

The NorthWest Blacksmith Association is a Washington corporation and a 501 (c) 3 non-profit charitable organization founded in 1979. Now nearly 400 strong and growing. We have something to offer to anyone with an interest in blacksmithing, from the beginner to the serious professional.

Members of the N.W.B.A. receive our award-winning newsletter The Hot Iron News, the opportunity to attend N.W.B.A. semi-annual conferences, frequent hands on workshops and events, and the camaraderie and support of hundreds of blacksmith enthusiasts.

RELEASE OF LIABILITY

I hereby acknowledge that I have voluntarily applied to become a member of the NorthWest Blacksmith Association, NWBA.

I understand that blacksmithing is an inherently dangerous activity that involves certain risks and dangers. I acknowledge and understand that those risks include the potential for bodily injury.

Nevertheless, in full knowledge and understanding of the above risks, hazards, or dangers, I freely, voluntarily and knowingly agree to assume those risks. By my signature below, I hereby agree to assume all responsibility for myself and my property and hereby release and discharge Northwest Blacksmith Association, NWBA; it's members, employees, representatives, associates, independent contractors, and board from any and all claims, demands, damages, expenses, and any other liability for injuries or damages of any description which may occur as a result of my participation in this organization as a member. This Release shall be legally binding on heirs, my assigns, successors, estate, legal guardians, executors and me.

If I am signing this agreement on behalf of another person, I certify that all representations are true with respect to the participant and that I am the participant's legal guardian or custodial parent with full authority to bind the participant and myself to the terms of the Release.

I have carefully read this Release and fully understand its contents. I am aware that in signing this Release I am releasing and waiving certain rights that I may have and enter into this contract on behalf of myself and/or my family of my own free will.

THIS IS A RELEASE OF LIABILITY DO NOT SIGN THIS REGISTRATION FORM AND RELEASE IF YOU DO NOT UNDERSTAND IT OR DO NOT AGREE WITH ITS TERMS.

Signature: _____ Date:_____

Print Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Phone: _____

*E-mail: _____

*(if you are already registered as a user at www.blacksmith.org your website user account will be updated to allow member privileges only if you use the same email address as the one used to register on the website)

Mail to: NorthWest Blacksmith Association
4742 42nd Ave. S.W. #185
Seattle, WA 98116

To apply online and pay by credit/debit card go to: www.blacksmith.org

Dues are:
$60 in U.S.A.
$70 outside U.S.A.

☐ New Member

☐ Renewing Member

NWBA membership is valid for one year from the date of signup. Renewals are sent out on a quarterly basis, look for your renewal letter sometime in the 3 month period around the anniversary of your registering for membership,.

Classified Ads

Free to members, $10 for non-members
Classified ads are 50 words, text only.

Whitlox Wood-Fired Forges are specially designed for forging with raw wood or charcoal fuel. All our forges are made from 11 gauge steel and double lined with kaowool and firebrick for super long life. Use discount code NWBA for a $50 discount on any full size forge at www.whitloxhomestead.com. Phone: 503-952-6540

For sale: Quality blacksmith coal, coke and charcoal. Contact Jim von Mosch at Mountain Brook Forge 509-493-2246 or Mountainbrookforge@gmail.com for price and availability.

Heavy Duty Cold Bar, Baluster, Picket Twister. Comes with die for ¾" solid square. Plus two extra inserts to make other size dies. Forward and Reverse, 3 Phase elevator motor. Twists up to 6.5' of twist. Great for Blacksmith, Ornamental, or Fab shop. U-Haul $1,200, Located in Redmond, Oregon.

Jeff 541-848-0995 or deschutesironforge@gmail.com

Advertising Submissions

Mail to: NWBA
42nd Ave SW #185
Seattle, WA 98116

Email to: NWBAinfo@gmail.com
or submit online:
http://blacksmith.org/hot-iron-news-advertisement-submission-form/

Download Ad Specification and Pricing Sheet online at:
http://blacksmith.org/advertising-hot-iron-news/
If you have any questions do not hesitate to contact editor Amy Mook at nwbainfo@gmail.com

ATTENTION MEMBERS

Are you receiving our informative monthly email announcements? Sign up online:
http://blacksmith.org/sign-up-email-announcements/

Get the up to the minute details of NWBA events and news.

Announcements that are of general interest to blacksmiths and not specifically in the business interest of an individual will be printed free of charge in the Hot Iron News, at the discrepancy of the editor and within the guidelines of the NWBA Board of Directors. Submit your announcements for publication in the NWBA Hot Iron News and our website.

Hot Iron News

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