

# *The Anvil's Horn*

A Publication of the Arizona Artist Blacksmith Association

Issue No. 217, July 2022



*One of the creations using hollow forms  
by  
Darla Selander*

# President's Message

Greetings Blacksmiths,

The Crossroads Conference in Denton, TX was well attended for a last-minute event when the ABANA conference got canceled and are glad I went. I met many new faces and made some new friends. I learned how to alter the design I use for horseshoe hearts.

I'll have to make a few of each design to see what I stick with or when to use each. The new way draws out the heels less so you end up with a more rounded horseshoe.

The July President's Project will be a J-hook. There is a wide variety to choose from here. Be creative and try to come up with something that no one has seen before by a combination of different features or a unique design you have not seen before. It will be interesting to see how many different designs we can come up with. To add some incentive, there will be an optional judging contest with categories to be determined. Here are a few links for examples to get you thinking about it. Type "Forged J-hook" into YouTube or see websites like this one:

<https://www.instructables.com/Forging-a-J-hook/>.

The September President's Project will be an adjustable tong clamp suggested by Bill Ganoe. This one requires a few more skills. Let's see how many beginner, intermediate, and advanced smiths can make one of these? It's recommended to use 3/8" square even though 1/4" square stock is referenced. This design is from Nate Pressel of Michigan Artist Blacksmiths Association.

What ever you do, get to your shop and forge something!



Forge On,  
*Steve Miller*

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Material submitted for publication in the Anvil's Horn may be edited or rejected by the editor. Material submitted must be your own work, not plagiarized. By submitting material, you agree to allow AABA to edit, print, or post on the AABA website. You also give permission for the material to be reprinted by other blacksmith publications (i.e. publications of ABANA and of ABANA affiliates). **Copyright.** The creator may retain copyright for the work. If we publish a copyrighted item, consent of the copyright holder will need to be obtained before republication. **Graphics.** High-contrast, high-resolution digital picture files and original drawings are preferred, but we can work with lower-contrast, lower-resolution graphics.

*The Anvil's Horn* is printed by Sundance Press, Tucson, AZ  
*The Anvil's Horn* is created with Scribus 1.4.8

**Demonstration: Saturday, July 16, 2022**  
**Northern Arizona University**  
**Flagstaff, AZ**  
**Workshop: Sunday, July 17, 2022**

**Demonstrator: Gordon Williams**

Gordon's demonstration will include:

1. Sunflower and upsetting jig.
2. Bolt tongs with cool tricks..these are new under the sun!  
Sign up for Gordon's workshop on Sunday to make your own bolt tongs.
3. Pipe joint.
4. Wine rack with leaves and welds.
5. Long edge cut designs made easy.
6. A new helpful way to make a forge step weld.
7. As time permits a vote on birds, horses, animals, glass melting, snakes and other quickies.

- Registration begins at 8:00 AM, the demonstration starts at 9:00 AM.
- Registration fee:
  - \$15 for members
  - \$20 for non-members
- Lunch is on your own. There are several good eating spots near the NAU campus.
- Tailgating is encouraged. Tailgaters, please consider donating to Iron in the Hat.
- Bring things for Iron-In-the-Hat and Show-and-Tell.  
Be sure to put your name on anything you bring for Show-and-Tell.
- The workshop on Sunday is \$100. Students will make bolt tongs . Contact Richard Rozinski at 602-803-7255 or [neongod52@gmail.com](mailto:neongod52@gmail.com) to register.

**As always, safety glasses  
are required in the  
demonstration area.**

Hearing protection, closed-toe shoes,  
and long clothes of natural fibers are  
recommended.

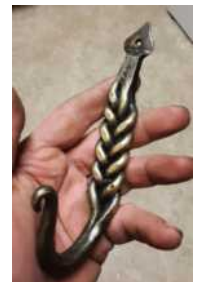
**Directions to the NAU Sculpture Studio**  
Flagstaff, AZ

- North on I-17
- Exit McConnell Dr (First exit north of I-40)
- Turn right on McConnell Dr
- Turn right on Pine Knoll Dr
- Turn right into Parking Lot for Facility Services (Marked "Parking" at the east side of the map on page 4)
- The Sculpture Studio is building 84 (black arrow) on the map on page 4.



**The President's Project for July: J-Hooks**

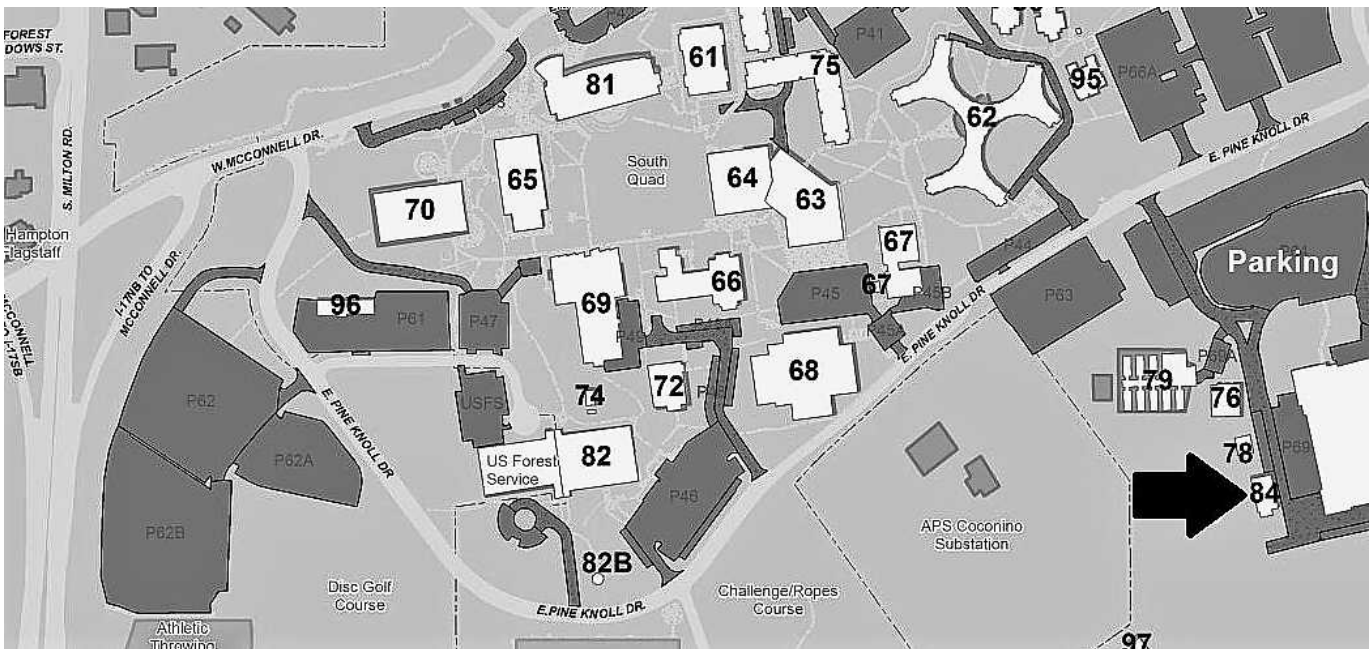
Bring your hooks to discuss your challenges or to just showoff  
around 8:45 Saturday morning. To add some incentive, there will  
be an optional judging contest with categories to be determined.



## Our July Demonstrator: Gordon Williams

I have been blacksmithing since 1986. I began my school in 1994 at my shop near Camp Verde, then at Pieh Tool Company in Camp Verde, and now my new school located at the east entrance of Zion National Park. I've also done custom work and production smithing, but teaching is truly my passion. I've have been demonstrator at ABANA chapters in twenty two states including Arizona. My demo will include many projects, with an offering of good explanation of techniques and helpful hints.

Thank you for asking me to be your demonstrator. It will be a blessing to see all my Arizona friends again. I'll see you in July!



*The south end of the Northern Arizona University campus in Flagstaff.  
The arrow points to the sculpture studio. I-17 (Milton Rd.) is at the far left.*



## Coming Attractions

### Winterfest V January 19-21, 2023



Look for program and registration details in *The Anvil's Horn* for September (out in late August). Also online around the end of August at [www.azblacksmiths.org](http://www.azblacksmiths.org).

## Other Events of Interest

### California Blacksmith Association

2022 ROARING CAMP HAMMER-IN  
August 19-21, 2022  
Felton, California

Demonstrators: Leah Aripotch, Dennis Dusek, Shawn Lovell, Mark Aspery  
(with John West and Randy Augsburger), Anna Bobisuthi.

Full details and registration: <https://calsmith.org/event-4760192>



# May Demo Report

Bill Ganoe  
(photos by Bill Ganoe)

## ABANA National Curriculum

Steve Miller, our president, opened the morning with news about ABANA's national curriculum or NC. The NC is a structured set of projects designed to teach and develop a blacksmith's skills. When completed, a blacksmith will have demonstrated a broad range of high-level skills. The NC is a self-paced, and anyone who wants to learn can participate. It consists of projects laid out in three levels of increasingly challenging projects.

I know there are people who balk at the idea of certification (formal or informal) of knowledge and skills, but the NC is structured so you can work on the various projects for your own benefit without submitting projects for formal review by anyone else. Or, you could submit your projects to NC instructors to certify that you've achieved a prescribed skill level.

The first level involves demonstrating a knowledge of basic blacksmithing skills and safety plus some fairly simple projects like making a punch, a drift, a hook, some chain links, and, finally, a gate latch. Most AABA members should have all of the basic knowledge and skills if they have attended a few AABA demonstrations and open forges and some of the formal classes around here. The projects might take a bit of additional practice for some of us, but it's all good skill-building work.

Things get a bit harder at level II. It involves more challenging scrolling and small-scale joinery. Those skills will be the subject of the 5-day AABA course to be taught by Mark Aspery this fall - probably in or near Camp Verde.

Steve urged people to check out the details of the national curriculum and try to complete the level I projects before Mark's class this fall, so, if you are seeking formal recognition of your progress, you can have Mark evaluate your projects and sign off on them. You can find NC details and drawings at <https://abana.org/abana-curriculum/>. Instructional videos are available from the California Blacksmith Association (<https://calsmith.org/cbavideos>) and other places.

## Rich Greenwood's demo

After Steve's introduction to the National Curriculum, Rich Greenwood started his grinder demonstration. You don't have to be a bladesmith to find a grinder useful. Tasks that almost any

blacksmith would use a grinder for include: reshaping tools like chisels, mushroomed tools, and fullers; facing or refacing a hammer; removing scale; deburring parts; making saddle (cope) cuts on tubing; "fixing" an ugly welding bead; etc. These tasks may not always require a grinder worth thousands of dollars, but those high-end grinders can often make the job a lot easier and more efficient. If you're doing things like this often, you may want to get a better grinder.

Rich spent a fair amount of time describing the advantages of high-end professional grinders, and he compared some of the commercially available grinders and their attachments. He covered different abrasives, when and how to use those different abrasives, and some of the unique characteristics of different abrasives. For example, when you use belts with ceramic abrasive, you need to apply heavy pressure. If you use light pressure, the abrasive tends to glaze over and get dull.

He also covered some safety issues and how to minimize the danger. One such issue is exploding grinding belts (when belts separate at their joint while traveling at high speed) and why they might explode. Another issue is the grinder grabbing your work piece and throwing it around the shop. Some good advice: keep your hand below the work rest on your grinder, so if your hand slips, it won't fall into the moving belt.

## Joe Madrid's demo

After lunch, Joe Madrid and Sean Lindsay demonstrated simple tool making. Joe presented a series of tools in which he used each tool to make the next tool in the series. He started out with a striker plate to protect your anvil's face when you use a chisel or punch. He went on to make a hold-down, a bolster plate, a twisting wrench, a chalk holder, and finally dividers to be used laying out your projects and to measure things as your project progresses.

Sean, Joe's assistant then demonstrated a good way to make tongs without using tongs. He started out with a piece of 1/4" x 1" flat bar 24" long. He laid out the jaws and bosses in the middle of the bar, then he drew out the reins on both ends of the bar. As you would expect, when he cut the bar in two to work on the jaws and bosses, he could hold the reins for quite some time before worrying about the heat.

## May Demo Report (Cont.)



*Rich Greenwood*



*One of the grinders Rich demonstrated*



*Joe Madrid (left) and Sean Lindsay*

## Show and Tell at the May demo



*Tools made by Kurt Fehrenbach at the March AABA demo. This will be auctioned off at the AABA Annual Banquet and Auction.*



*The small anvil that Kurt Fehrenbach made at the end of the March AABA demo. Look for it at the AABA Annual Banquet and Auction.*



*Darla Selander*



*Darla Selander*



# **#366Hooks: Form and Design Revealed Over a Year's Time**

June 21 - August 15 , 2022

Post House

Sculpture Tucson

Brandi Fenton Memorial Park

Tucson, AZ

*(Photos: Manitoba Craft Council)*

#366Hooks started as a twelve-month personal journey to get through a creative rut.

In 2016, Matt Jenkins, of Cloverdale Forge in the Manitoba province of Canada, challenged himself to design and forge a different hook for each day of the year. Being a leap year, Matt created a total of 366 hooks.

From start to finish, the process averaged an hour each day. The forms and designs created in #366Hooks utilize a mixture of techniques and approaches — ranging from primary blacksmithing skills to inspirational details found in masters works.

Setting a long-term goal, a daily time allotment, and using materials and tools on hand, Matt discovered seemingly endless inspiration for hooks, including the metal scrap bin.

During the course of the year, the #366Hooks project amassed a following of creative tastemakers, including professional and hobby blacksmiths.

All viewers will appreciate the design and creative forms coaxed from the metal, while artist-blacksmiths will undoubtedly contemplate and attempt to decipher the starting stock and methods used to create each piece.



*#366Hooks*

*Curated and produced by Cloverdale Forge and the Manitoba Craft Council, Manitoba, Canada  
Toured in the USA by the Artist Blacksmith Association of North America (ABANA.org)*



# AABA Workday at Sculpture Tucson



*Richard Rozinski and Steve Miller building racks for the #366Hooks exhibit.*



*Sam Rivera fixing the track for the barn doors for Winterfest V.*



*Sam Rivera and Steve Miller working on the racks for the #366Hooks exhibit.*

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## President's Project Series - Forging a Mushroom

For the President's Project Mushroom (the May Project), I used 2 different methods to forge the mushrooms I made as described below. Both are made from a single bar. I used 3/8" round for both methods.

Method 1: Lay off 1/2 " on the far side of the anvil with a sharp edge and raise your tong hand up at an angle of 45°. Using half faced blows, strike the bar at the same angle as perpendicular to the bar, rotate about 45° and strike again going all around the bar. Watch the alignment so the shoulder you're making lines up as you rotate the bar. Once you have set the shoulder, lower the bar and strike the end of the bar edge at about the same angle as when it was lifted to 45°, rotate the bar and strike again. Keep striking and rotating until the edge that develops reaches the first shoulder created. The remaining stem can be left as is or drawn down and then trimmed to the desired length.

Method 2: Using a butcher fuller, neck down 1/2" or so from the end of the bar with the angled part of the butcher away from the end of the bar. Neck down to near the finished dimension desired for the stem. Cut off from the parent bar leaving enough room to forge the desired stem length. Draw down and smooth out the stem using the square, octagon, round method. Insert the drawn down stem in a bolster over the hardy hole in your anvil or a pass-thru swage block and flatten the head allowing it to "mushroom" out. Flatten until a uniform thickness of 1/16" or so all around is achieved. Next, I turned the mushroom upside down and using a dull chisel or narrow fuller, hammered in radially outward placing marks to look like the fins for the underside of the mushroom cap. Heating only the cap, hammer the cap, striking on the end of the stem, into a dished form or appropriate size piece of pipe with rounded inside edges. This will form the rounded cap. Hammer slightly for a slightly domed cap or deeper for a



*Mushrooms by Steve Miller*

more draped looking cap. I had one edge that folded in and it looks like a roughed-up edge where an insect took a bite out of it.

Other methods: Other methods include welding the cap to the stem after forging both to the desired shape. For large mushrooms, it's easier to use this method.



*Mushrooms by Mark Jackson*

## AABA Calendar 2022

Jun-Aug	#366Hooks exhibit	Sculpture Tucson	Tucson
July 16	Demo: Gordon Williams	NAU Sculpture Studio	Flagstaff
September 17	Demo: Mike Riemer	TBA	Camp Verde
October	5-day class by Mark Aspery	TBA	Camp Verde
November 19	Demo: Dennis Dusek	Grizzly Iron	Phoenix

### Welcome New Members

Mark Wilkerson	Casa Grande, AZ
Valerie Ostenak	Phoenix, AZ
Braedan Feldtkeller	Salem, OR
Joshua Kappler	Tucson, AZ
Adrian Vega	Tucson, AZ

### We Need Your Help

Is there a project, tool, ornament you would like to see at an AABA demonstration? Is there a particular demonstrator you would like to see? Send your request(s) to the AABA 1st Vice President, Richard Rozinski, 602-803-7255 or [neongod52@gmail.com](mailto:neongod52@gmail.com)

Is there a particular project or technique you would like to see in The Anvil's Horn? Is there a general topic you would like to see covered? Send your request(s) to the editor, Bill Ganoe, by email to: [editor@azblacksmiths.org](mailto:editor@azblacksmiths.org) or by regular mail to:  
Bill Ganoe  
PO Box 40233  
Tucson, AZ 85717

### Deadline for the September 2022 issue

August 1, 2022 is the deadline submitting photos and articles for the September 2022 issue of the Anvil's Horn.

Send articles, pictures, etc. by email to:

[editor@azblacksmiths.org](mailto:editor@azblacksmiths.org)

or by regular mail to:

Bill Ganoe, PO Box 40233, Tucson, AZ 85717

### MCC Blacksmithing & Welding Class

The Mesa Community College blacksmithing program is an excellent deal - over 60 hours of instruction including material and propane! Summer Session classes are on Monday, Wednesday and Friday for 8 weeks. Richard Rozinski will be teaching each day from 9:00 am to 1:30 pm and Robert Ratliff will be teaching each day from 4:00 pm to 8:30 pm. Blacksmithing is listed as **WLD103** in the class schedule.

Classes fill up early, but waiting lists may be available. For more information go to: [www.mesacc.edu](http://www.mesacc.edu)

### Classes at Pieh Tool in Camp Verde

- Beginning/Intermediate blacksmithing classes with Dylan Cook  
Registration is \$585.  
Students will make several simple projects to take home.
- Knifemaking class with Master Bladesmith, Ray Rybar  
Registration is \$585.  
Students will make one knife.

For full details call 928-554-0700 or go to <https://piehtoolco.com>

### Xerocraft Makerspace in Tucson

Xerocraft, a Makerspace in Tucson at 6th St. and 9th Ave., is moving ahead to create a new blacksmith shop. It will be designed for teaching, doing, and developing blacksmith skills. AABA member Ed Snyder would appreciate your assistance in spreading the word, by any means, to anyone you think might be interested in getting started in blacksmithing or in building on their current skill set. Ed also needs help getting things set up and operational at Xerocraft in Tucson.

Anyone who thinks they might be interested should contact Ed Snyder at [ejsblacksmith@gmail.com](mailto:ejsblacksmith@gmail.com). Interested responders will be contacted only if they have questions or as plans develop and they chose to be involved.

# AABA Website: [www.azblacksmiths.org](http://www.azblacksmiths.org)

## Open Forge: Tucson

Regularly scheduled open forges in Tucson are on hold for the summer and will restart on the first Saturday of September or October. Pickup events may be organized during the summer on short notice. Details of these events may be sent out to the southern Arizona email list. If you aren't already getting email about southern Arizona events and you would like to be included on this list, send your email address to Bill Ganoe, [editor@azblacksmiths.org](mailto:editor@azblacksmiths.org).

## Open Forge: Grizzly Iron

Don't have a power hammer? Use one at Grizzly Iron, 1329 W. Lincoln St., Phoenix, Wednesdays from 5:00 PM to 8:00 PM, more or less. The last open forge for this season is scheduled for June 15. Open forges will probably restart around mid-September. Check <http://grizzlyiron.com/open-forge> or the **Grizzly Iron Open Forge and Workshops** group on Facebook for current details.

## Open Forge: Desert Rat Forge (Phoenix area)

Paul Diefenderfer will host an open forge at Desert Rat Forge on Saturday, July 2, 2022 and Saturday, August 6, 2022, from 9 AM to noon followed by lunch (You gotta' buy your own.) at the world famous Big Earl's Greasy Eats in Cave Creek. Have fun with propane or coal forge, flypress, powerhammer, widgets and gadgets.

Desert Rat Forge is at: 7645 E. Highland Rd., Cave Creek. 602-509-1543 or [dief@phoenixrockgym.com](mailto:dief@phoenixrockgym.com). Directions: From the center of Cave Creek – 4-way stop at Cave Creek Rd & School House Rd. Head north on School House 1.2 miles to Highland Rd (if you get to the 4-way stop at Fleming Springs you've gone a tad too far) . Turn right (east) on Highland After about 1 mile the pavement ends. Please drive slow to avoid kicking up dust. As the gravel road makes a turn to the left there will be a single lane gravel road on the right with a sign for 7645. Drive down this road for bit until you see the big anvil. You are there! Park in the pullout if there is room – please do not park on top of any vegetation! If no room, return to main dirt road, park along the north edge, and walk the 700ft back to property.

## If You Are Attending An Open Forge...

These open forges are part of AABA educational activities, but AABA does not provide funds for these events. They are hosted by our members for all of our benefit. So if you participate in forging, welding, use shop materials, or accidentally damaged something, please put something in the donation box to help our hosts with their expenses. Thank you! From all of your open forge hosts. **You will need to wear safety glasses. Hearing protection is recommended.**

## Classes and Events at AABA Members' Shops

### Desert Metal Craft

544 E. 24th St., Tucson, AZ

The schedule at Desert Metal Craft features a wide range of classes and workshops. Check the DMC website, <https://desert-metal-craft-108715.square.site>, for on-line events, details of specific events, and to register for each class or workshop

Special classes to note - check the DMC website for full details:

**Fire Sculpture Design and Apparatus.** Designing, planning, and building a fire sculpture.

October 28-30, 2022

**Utensils with Anna Koplik.** Make your own hand-forged steel and brass spoons and spatulas.

November 10-11, 2022 or November 12-13, 2022

### Grizzly Iron

1329 W. Lincoln St., Phoenix, AZ

The schedule at Grizzly Iron features a wide range of classes, open forges, and workshops. For the current schedule, prices, and registration check the website: <http://grizzlyiron.com/classes-and-workshops>, or the **Grizzly Iron Open Forge and Workshops** group on Facebook.



# Member Gallery



*Best of the West*



*Leaf Candle Holder*



*I Heart You*

## David Flynn

This 1/4 page article originally appeared in the Philip Simmons Artist Blacksmith Guild, January February 2022

### On-Line Cope Cutting Templates For Pipe or Tubing

*By Jim Carothers, a PSMBG member-*

Lately I have had to saddle (cope) cut a few pieces of tubing for a fence project. This site will make templates that you can download and print off. They saved me a lot of time in making those saddle cuts.

<http://metalgeek.com/static/cope.pcgi>

The intersection angle does not have to be 90° and the intersection can also be offset from the centerline.

I usually add about .05 to .07" the OD of the pipe to be cut to allow for the thickness of the wrap-around template.

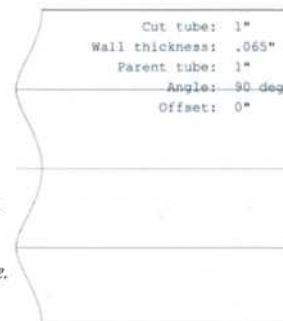


*The article was edited for space-*

*MABA editors notes:*

[metalgeek.com](http://metalgeek.com) is as basic as a site can get. The "Tube Coping" calculator lets you choose inches or mm, lets you download 5 formats and has plenty of informational notes to help you use the calculator.

*This is a sample of a template.*



Doug Thayer, a MABA member saw the article reprinted in The Forge Fire, February 2022. In an email to MABAeditors, he said the site would have come in handy over the years and recommended we share the information.

We later did a Google search for pipe coping, and we found <https://www.blocklayer.com> a site with an extensive list of construction related calculators. Including ones for pipe coping, stairs, gates, gazebos, fences, roofs, decks, circles, geometry...

Go to the blue "Menu" button then go to the "Calculator Directory" button for the list.

If you have a construction or a blacksmithing project this site is definitely interesting and may be helpful. We had fun with the sundial calculators.

This 2-column article was reprinted from **The Upsetter**, the newsletter of the Michigan Artist Blacksmith Association, May-June 2022

## California Blacksmith *Online*

### Propane Safety: A Cautionary Tale Joy Fire, Irvine

I have been a working blacksmith since 2011, and while I have had a few run ins with angle grinders and hot metal I have had the good fortune to avoid any serious accidents. Until this past January, that is.

#### **Flash Fire!**

On the 12<sup>th</sup> of January I was in what I have now learned is called a flash fire, the ignition of a cloud of flammable gas. My forearms, hands, and face were badly burned, and I ended up spending a week in the hospital. As of today, I am recovered and fully back to work, with a few limitations. I have learned a lot through this experience about propane safety and I wanted to share it with as many people as possible so others can avoid going through what I did. In this article I will describe what happened that caused my accident and what I have done since then to make my shop safe. Every blacksmith's situation is going to be a little different, but I hope that anyone reading this can take the parts that are relevant for them and adjust to fit their own needs.



**Before**

*Ed. Note: I was horrified to learn of this event. Both for Joy's life, and for the many of us who use propane forges. I use a propane forge 99% of the time - and at times, I have had leaky joints, burnt hoses, but never had to go through an event like this. Please take this as a cautionary guide for safely operating your smithy.*

My forge was made by me based on the design of Jeffrey Funk, the very talented blacksmith and founder of New Agrarian School in Montana. It is a single burner forced-air forge, cast from Mizzou and insulated with Inswool from Harbison Walker. (See figure below left, my forge before the accident) The design had nothing to do with the accident, it could have happened with any other forge.

On the day of the accident, my forge had been running for a several hours. It is well insulated, but the metal shell still gets very hot. I don't remember the psi but somewhere between 5-10 is where I usually run it. The tank I was using (100lb) started to drop pressure because it was empty, so I closed everything off, attached a new 40lb tank, (brass fittings on a black flexible high pressure gas line) and lit it back up again. A few minutes later I noticed my regulator was freezing up badly, visible condensation on the outside and cold to the touch. As you can see in the pictures I had a ball valve after the regulator, I shut this off, but the needle on my regulator kept climbing. This really concerned me, so I closed off the tank. My memory is a little fuzzy here, but basically I was fiddling with my system to try to clear all the pressure. I know the tank was closed and the ball valve at my forge was closed, and I decided the safest thing to do was unscrew the fitting from the tank just so everything was disconnected.





## **Propane Safety**

After a few turns of the brass fitting at the tank I remember hearing gas escape, and then a fireball erupted in my face. I fell to the ground and rolled to make sure I wasn't on fire. I could see the severe burns on my arms immediately and ran over to a shop neighbor and asked him to call 911. The result was second and third degree burns on my arms, hands, and face.

I was very lucky that the hospital I was taken to happened to have a specialty burn center. I spent a week there and had two surgeries but didn't end up needing grafts, which is the best-case scenario. My skin is all grown back now, but still sensitive to the touch, and I have to be especially careful of keeping it covered when I'm out in the sun. All things considered; I am extremely lucky this accident wasn't far worse.

### **Over-Filled Tank**

Here is what caused the flash fire. The biggest problem was that the new tank I started to use was very overfilled.

I have since learned that there is a valve built into the tank that is supposed to prevent this, but obviously that failed. Unfortunately, it was mainly the fault of the technician who filled that tank, more on that later. This caused the condensation on my regulator and probably froze parts internally, essentially making it nonfunctional. There was obviously still gas in the high-pressure hose connecting that regulator to the tank. When I disconnected it from the tank that cloud of gas was released, hit the hot side of my forge, and ignited.

I was wearing a cotton t-shirt, jeans, and my safety glasses. I had one minor burn on my abdomen under the shirt, but other than that the material protected my skin. If I had been wearing gloves, my welding jacket, or other nonflammable sleeves, and a face shield over my safety glasses, I think I would have avoided getting burnt all together. This is an extra step of PPE and preparation that I obviously hadn't considered earlier but is important to note as an important and simple precaution that anyone can take.

### **Rebuilding My Shop**

So, what I have done since the fire? When I was back to stable, I contacted Mutual Propane, which is the company that has filled my tanks for years. They were extremely concerned to hear about this accident and have been very instrumental in rebuilding my shop set up. The technician who filled that tank was not the person I usually work with, who has never made any mistakes like this. I took the overfull tank back in and they just opened it up in an open space with no source of ignition and let it drain until it was at the proper pressure. I've used it since then with no problem. Then they sent out their V.P. and general manager to meet with me at my shop and come up with a rebuild plan.





## Propane Safety

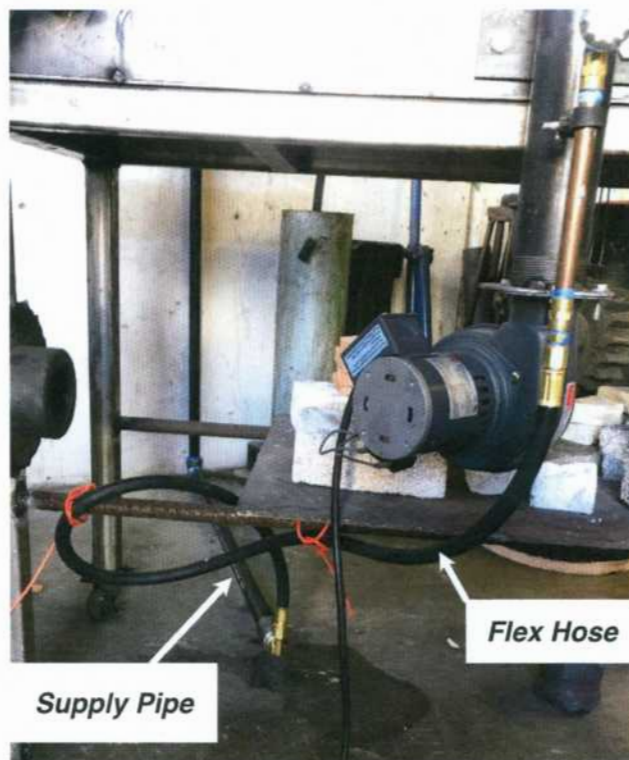
### Indoor Tank: Illegal

I learned from him that it is illegal to operate a propane tank indoors, in accordance with NFPA 58, a national code. This seems logical of course, but my set up was just the same as almost every other shop I have seen, so I didn't think much of it. While I had certainly had the thought that a rubber hose seems not the safest to use in a situation with hot metal, this also was so common that I let that slide as well.

I also learned that it is illegal to bring gas into a building at anything above 20 lbs. I have looked through NFPA 58 and did some internet research on my own, but I haven't been able to confirm the exact rules myself. This is one of those technical code issues that professional people learn and study, and unfortunately that is not me! For now, I keep my regulator at 10 psi coming into my shop.

The V.P. Tom taught me that it best not to have a regulator indoors if possible, since they have a safety valve that will release gas if the diaphragm fails, and that would mean flammable gas leaking into an enclosed space. In the end we did end up using some rubber line, but it was manufactured by the company and much more robust than the cheap one I had been using. Again, there are rules in NFPA 58 about rubber, and I think my shop conforms to them, though it would be better to use iron or brass pipe if possible. In my shop, my concern was that I need to be able to move my forge, and had thought that a solid setup might be susceptible to breakage in an earthquake. So, the rubber hose seemed to be the best option.

Tom's main concern was keeping it off the ground and away from anywhere it could be cut or melted. My forge is close to an outside wall, so what we ended up doing is moving all my tanks out there, where they can be properly secured by a chain, and drilling a hole through the wall. A 20lb regulator attaches directly to the tank, then to another short hose, so I can use different size tanks, that attaches to 3/4" black pipe



(schedule 80). This pipe goes into my shop, drops down to the floor, then comes up under my forge, where it attaches to the hose that connects to brass fittings on the forge itself. In NFPA 58 there are tables for calculating what size pipe to use for different gas pressures. There are also requirements on the kinds of pipe, like using flare fittings for the copper.

In the line of these fittings that deliver the gas to the burner we installed a needle valve and a dial pressure gauge. I keep the regulator at the tank set at 10psi, and fine tune the adjustment with the needle valve, using the gauge to determine the pressure.





## Propane Safety

It may be the addition of the pipe instead of just a small diameter hose, a better regulator, the needle valve, or a combination of all three, but my forge works better than ever now, and I am pretty happy with it overall. I do still think the rubber hose isn't ideal, and perhaps I will talk with Tom about changing it in the future, but according to our judgment so far, it is safe enough for comfort. Of course I am sure there are many other ways we could have done something similar, but this worked best for my situation according to our best judgement.

I am very grateful for the help of Tom, Roger, and Jose, the two technicians who did the actual installation, and to Merrilee, who is the parts department expert I first talked to about my accident. I would recommend this company to folks in the southern California area, you can look them up and give them a call if you have any questions yourself. They aren't in Northern California unfortunately, but Tom suggested a company called Delta Liquid for anyone up north. I hope this article has been informative and will help you to consider your own safety at your shop. Please know that I am not an expert, you should absolutely consult with a professional. Have fun forging, and remember, fire is hot!

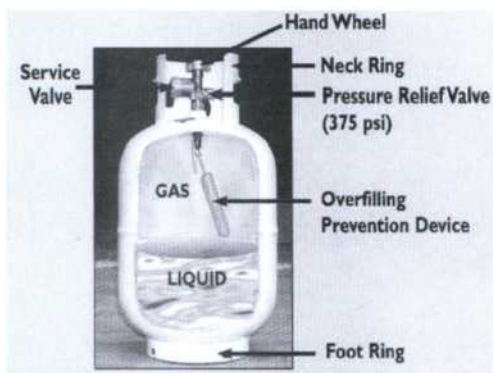
*Joy Fire is an artist blacksmith with a small shop located in Santa Ana. Her specialty is furniture and functional art and design. She also teaches welding at a local community college and will be completing her graduate program to receive an MFA this May.*

## Add From the CBA Safety Chairman Eric Stephens

I recommend a couple safety inspection processes that should be completed on a regular basis.

1. Check the dates on their tanks when they refill or exchange them. Tanks are only good for 12 years then must be recertified. Recertifications can range from 5-12 years depending on which process is used. At right is a picture of where the date on the tank should be stamped.
2. Check all hoses and connections with a soap and water mix. I have dish soap and water in a spray bottle next to the forge. Every time I swap tanks, I spray with soap to make sure that there are no leaks at the valve.
3. At least once every few months, inspect all hoses for cracks or damage, and check all connections. I wipe down the entire length of the hoses with a soap and water mixture while the gas is on, and spray all connections as well.
4. Ensure the safety kit that is near the forge contains burn cream and sterile, non-stick dressings.
5. Make sure you have a fire extinguisher within reach of the forge, and that it is inspected and in good working order.

We are glad that Joy didn't have worse injuries and that she is recovering well.





# **Artist-Blacksmith Association of North America**

ABANA is widely recognized as the preeminent organization of blacksmithing in the world. Visit us online at **[www.abana.org](http://www.abana.org)** and like us on Facebook and Twitter. Join or renew your membership at: **[www.abana.org/membership](http://www.abana.org/membership)**

Blacksmithing, the cornerstone of all crafts for centuries, has come back to life. Once rendered nearly obsolete by the Industrial Revolution and 20th Century technology, this ancient craft has undergone a contemporary renaissance. A new appreciation of the honest, enduring qualities of forged metal has developed.

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The Johnstown Festival 2023 is coming up. Details as they become available.

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"Since its founding in 1973, ABANA has been committed to the education of its members. The purpose of the ABANA Scholarship Fund is to provide financial assistance to our Affiliates and members to assist them in the development of blacksmithing skills and abilities."

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Classified ads are free to members and can be submitted by email to: [editor@azblacksmiths.org](mailto:editor@azblacksmiths.org). Ads will run for 3 issues. You can renew your ad if you need to run it after the third issue. Please let the editor know when you no longer need to run the ad. I am including photos, but, if space runs short, photos will be dropped as needed beginning with the oldest..

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Benefits for members include:

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For membership information or address change, contact:  
Terry Porter, 2310 E. Melrose St., Gilbert, AZ 85297, 480-988-2070, [trp555@prodigy.net](mailto:trp555@prodigy.net)



*Steve Miller in the Chain-Making Competition, sponsored by Artisan Ideas, at the California Blacksmith Association's Spring Conference last April. Steve is second from the right, next to Mark Aspery. Steve won second place in the intermediate level competition.*  
*(Photo by Mike Mumford)*